Agence Française de Développement

AFD Regional Initiative for Solid Waste Management in the Pacific Region, Feasibility Study (Phase I, Component 2)

Draft Report
Feasibility Study (Phase I, Component 2)

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EXECUTIVE SUMMARY

This report is the Phase I report of the AFD Regional Initiative for Solid Waste Management in the Pacific Region, Feasibility Study (Component 2). The report includes: a literature and activity review of waste management activities in the Pacific Region; and a coherent set of countries organised via subregion (Polynesia, Melanesia, Micronesia) and developed according to shipping routes. A characterisation study of existing facilities, institutions and industries in the region was is also included.

To accurately assess the feasibility of potential subregional activities under Component 2 it was necessary to characterise the composition of wastes and the approximate likely yield of various collection systems. Further, to ensure Pacific Island Country and Territory (PICT) preferences for assistance are taken into account, it was necessary to understand priority areas for PICT assessment. A quantitative and qualitative waste characterisation survey was used to gather primary data.

The results of the survey indicated the following priorities for assistance:

- Lead-acid batteries were prioritised by Polynesia and Melanesia;
- Used oil was prioritised by Polynesia and Melanesia;
- Plastic (PET) was prioritised by Micronesia and Melanesia;
- Scrap metal was prioritised by Micronesia; and
- Pesticides and school chemicals were prioritised by Melanesia.

All of these hazardous wastes and recyclables are difficult to deal with in-country. For example there are no safe disposal options for used oil and lead-acid batteries in most PICTs. Pesticides can be safely disposed of through use according to directions on packaging, however, in many PICTs old stockpiles remain and the pesticides no longer have a use, meaning export and safe destruction is the only option. PET cannot be recycled in PICTs, but recycling facilities do exist in Asia and Australia. Lack of economies of scale currently prevents most PICTs from recycling PET. Scrap metal also requires export and although opportunistic private enterprise has recovered significant volumes of scrap throughout the region, many PICTs remain littered with both low and high value scrap.

The feasibility of subregional recycling programmes for each of the five priorities was assessed and the following projects are recommended for further scoping:

1. Micronesia scrap metal:
The initiative would include a legacy scrap component as well as an initiative being driven by the Government of Kiribati, to introduce regulations for a deposit-refund scheme. The initiative in Kiribati represents a potential flagship project for the entire region, which can be replicated in other PICTs. The initiative is envisaged to be low-cost and the Government of Kiribati has indicated its commitment to, and willingness to drive this initiative.

2. Melanesia POPs/School Laboratory chemicals:
This initiative builds on the successful Persistent Organic Pollutants in Pacific Island Countries (POPs in PICs) model, which has been shown to be cost-effectively when implemented regionally or subregionally. It also addresses the urgent situation of disused pesticides that are at risk of leaching into the environment, as well as adding to the work of POPs in PICs by expanding the scope into school and laboratory chemicals.

3. Polynesia and Melanesia, regional waste oil recycling:

This initiative represents an example of potential regional cooperation involving the public and private sectors. After the initial establishment costs, the programme should become cost-neutral. Prioritised by two of the subregions, it could also be expanded at very little cost to also include Micronesian PICTs.

Recommendations were based on the necessity of the Initiative to achieve its goals within a relatively short timeframe. As such the Team has focused on replicating or extending existing successful models, developing complementary activities, and emphasizing the economic opportunities of some wastes.

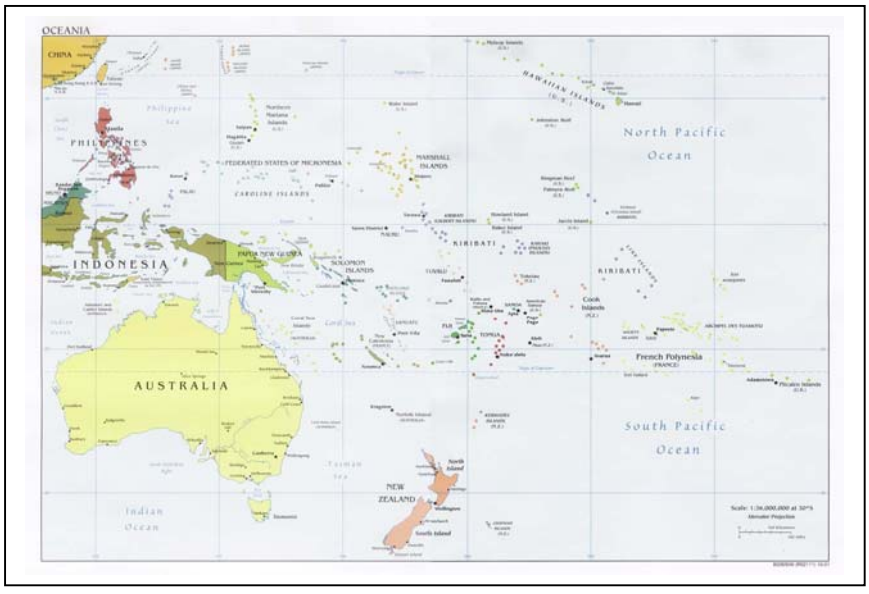
Phase II of the Feasibility Study is limited to three initiatives. The lead-acid batteries and PET initiatives represent important and potentially viable activities. However, the logistics are neither simple nor particularly well suited to sub-regionalism. Poor sorting or contamination of PET can dramatically reduce its value. Shared contracts risk all players being penalised for the poor practices of one member. Similarly, the recycling of lead acid batteries can be nationally-based as Kiribati has shown, but may require the PICT to implement some sustainable funding system, such as a deposit refund scheme.

Lead-acid batteries and PET initiatives require more work at the national level. Under the AFD SWM Initiative, this work may be undertaken under Component 3. In the case of lead-acid batteries, collection and storage is required. Training is required for staff in PICTs to undertake collection and storage safely. For PET segregation and collection must occur. Equipment is also necessary to process PET for shipping.

There may be other options through other donors to further assess the feasibility of these activities and it is recommended that AFD share this report with other donors. One or both of these activities may potentially be taken up under the GEF-PAS.

If the AFD accepts these recommendations, field visits will be made to Kiribati, Fiji and PNG and/or New Caledonia, to gather further information on the feasibility of each of the subregional initiatives. During Phase II, the Team will also assess the feasibility of two fundamentally different approaches to funding waste problems in the Pacific, that of funding ad hoc removal of stockpiles, and that of establishing a permanent funding system and supporting it, as well as a combined approach.

Figure 1: Map of project area:



I. INTRODUCTION

This report is the Phase I report of Component 2 of the AFD Regional Initiative for Solid Waste Management in the Pacific Region, Feasibility Study.

Component 2 focuses on subregional collection schemes for wastes of commercial value including plastics, scrap metal, used oil, lead acid batteries, and hazardous wastes including pesticides, school chemicals and used tyres.

The primary goals of Phase 1, Component 2 were to:

- Identify a coherent set of countries for potential subregional projects;
- Identify country priorities in regard to wastes of commercial value and hazardous waste, including data on current stockpiled and annual volumes;
- Propose and analyse options for subregional projects to address these priorities, to be further investigated in Phase II, Component 2.

The report includes:

- a literature and activity review of waste management activities in the Pacific Region;
- a coherent set of countries organised via subregion and developed according to shipping routes;
- characterisation of existing facilities, institutions and industries in the region;
- characterisation and volume of targeted wastes, developed through a survey of PICTs;
- a summary of PICT priority areas for assistance;
- a preliminary feasibility analysis of subregional initiatives addressing six PICT priorities, and
- recommendations for AFD on the three subregional initiatives for further scoping in Phase II of Component 2 of the feasibility study.

II. ACTIVITY AND LITERATURE REVIEW

2.1 - Introduction

In considering the feasibility of subregional activities on hazardous waste and wastes of commercial value in the Pacific, it is relevant to review initiatives, activities and policies undertaken to date. The aim of the literature and activity review is to assess the state of knowledge and level of activities on recycling and hazardous waste management in the Pacific region. To meet this aim the following objectives must be met: review international policy developments in relation to hazardous waste and recycling in PICTs; review literature on regional activities and initiatives in hazardous waste and recycling in PICTs.

The following sections present the results of the literature review. The review is arranged according in the following manner: international policy; international law; regional and sub-regional programmes, projects and initiatives; and a summary and conclusions.

2.2 - International Policy

2.2.1 - Mauritius Strategy

The Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States (SIDS) was agreed in January 2005. In the Mauritius Strategy countries commit at the national level to, *inter alia*: develop and implement regulatory measures for the safe and efficient management of toxic, hazardous and solid wastes; and ratify and implement the Basel and London Conventions. Regionally, countries committed to actions, including to: develop economic incentives to further pollution prevention and waste management; develop waste management and prevention trust fund; remove and dispose of existing hazardous wastes, such as polychlorinated biphenyls (PCBs), with the technical assistance of developed countries; and to establish, where appropriate, regional centres for the training and transfer to cleaner production and the management of hazardous wastes generated at the national level. Internationally, countries agreed to, *inter alia*: enhance international cooperation in the establishment of waste management facilities, the control of toxic chemicals and pollution prevention as components of international investment projects; provide improved access to financial and technical resources to assist SIDS in establishing regional centres for the training and transfer of cleaner production technologies and the management of hazardous wastes, and in developing inventories to register the training and technical activities of international organizations related to waste management and cleaner production.

2.2.2 - Paris Declaration

The Paris Declaration, endorsed on 2 March 2005, promotes a model of partnership that improves transparency and accountability in the use of development resources. It recognises that for aid to become truly effective, stronger and more balanced, accountability mechanisms are required at different levels. At the international level, the Paris Declaration constitutes a mechanism that donors and recipients of aid are held mutually accountable to each other and compliance in meeting the commitments will be publicly monitored. At the country level, the Paris Declaration encourages donors and partners to jointly assess mutual progress in implementing agreed commitments on aid effectiveness by making best use of local mechanisms.

2.2.3 - The Strategic Approach to International Chemicals Management (SAICM)

The SAICM Quick Start Programme (QSP) provides support to developing countries and countries with economies in transition for initial enabling activities to meet the strategic objectives including to: develop or update national chemical profiles and to identify capacity needs; develop institutions to implement SAICM; and undertake analysis and coordination activities to mainstream chemicals activities into national strategies. To access QSP funds countries must nominate a SAICM National Focal Point. In the Pacific Kiribati, Nauru, Palau, Samoa, Solomon Islands and Tonga, have nominated focal points.

2.3 - International Law

2.3.1 - Basel Convention

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal seeks to minimize the movement of hazardous wastes across international borders, through an agreed regime of rules and procedures. It also commits to assist developing countries manage hazardous waste in an environmentally sound manner. Under Basel, wastes are defined

as substances or objects that are disposed of, or are intended to be disposed of, or are required to be disposed of by the provisions of national law. Annex I of the Convention lists wastes that are classified as hazardous and subject to the control procedures under the Convention, these include POPs and waste pharmaceutical chemicals. Under the Convention, shipments to and from non-Parties are illegal without a bilateral agreement. Each Party is required to introduce appropriate national or domestic legislation to prevent and punish illegal traffic in hazardous and other wastes. The Convention obliges its Parties to ensure that hazardous and other wastes, including lead-acid batteries, are managed and disposed of in an environmentally sound manner (ESM). The Cook Islands, Federated States of Micronesia (FSM), Kiribati, Marshall Islands, Nauru, Papua New Guinea (PNG), France, New Zealand and Samoa are parties to the Basel Convention.

2.3.2 - Waigani Convention

The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region entered into force in 2001. SPREP serves as the Convention's Secretariat. The major difference between the Waigani and Basel Conventions is that Waigani includes radioactive wastes and extends to the Economic Exclusion Zone (200 nautical miles) rather than the territorial sea (12 nautical miles) prescribed under Basel. The Cook Islands, FSM, Fiji, Kiribati, Niue, PNG, Samoa, Solomon Islands, Tonga, Tuvalu, New Zealand and Vanuatu are parties to this Convention.

2.3.3 - Stockholm Convention

The Stockholm Convention on Persistent Organic Pollutants entered into force in May 2004. Under the Convention parties agree to phase out nine of the "dirty dozen" chemicals, limit the use of DDT for malaria control, and curtail inadvertent production of dioxins and furans. The Convention also includes a process by which persistent toxic compounds can be nominated, reviewed and added to the convention, if parties agree they meet certain criteria for persistence and transboundary threat. The Cook Islands, FSM, Fiji, Kiribati, Marshall Islands, Nauru, Niue, PNG, Samoa, Solomon Islands, Tuvalu, France and New Zealand and Vanuatu are party to the Stockholm Convention.

2.3.4 - Rotterdam Convention

The Rotterdam Convention on Prior Informed Consent came into force in 2004. The Convention promotes shared responsibilities in relation to importation of hazardous chemicals. It promotes open exchange of information and calls on exporters of hazardous chemicals to use proper labelling, include directions on safe handling, and inform purchasers of any known restrictions or bans. The Cook Islands, France, Marshall Islands, New Zealand and Samoa are party to this Convention.

2.3.5 - London Dumping Convention

The London Dumping Convention is an agreement to control pollution of the sea by dumping and to encourage regional agreements supplementary to the Convention. It covers the deliberate disposal at sea of wastes or other matter from vessels, aircraft, and platforms. The Cook Islands, FSM, Fiji, France, Marshall Islands, Nauru, New Zealand, PNG, Samoa, Solomon Islands and the USA are party to this convention.

PICTs party or non-party status to the above-mentioned international laws is tabulated in Table 2, Section III.

2.4 - Regional and Subregional Programmes, Projects and Initiatives

2.4.1 - Solid Waste Management Strategy and Action Plan

The guiding policy document for solid waste management in the Pacific is the Solid Waste Management Strategy and Regional Solid Waste Management Strategy Action Plan (SPREP, 2005). The Waste Management Strategy sets out the situation of waste management in the Pacific including challenges and opportunities. The Strategy emphasizes the need for the development of strong partnerships between governments, the community and the private sector efficient waste minimisation and recycling. The disconnect between the constant calls for assistance to address solid waste problems, and the lack of consequent concrete action by member countries, is identified as a significant and complex challenge relating to budgets, capacity, and institutional arrangements (for example waste is usually managed at local government level and donor liaison occurs at the national level).

The Strategy sets out the immediate concerns of PICTs as: increasing quantities of solid waste; the limited land areas in small atoll islands; population density, especially the atolls; limited available appropriate infrastructure; the lack of controls on chemicals imported into the region; and the limited capacity to manage the range of pollutants.

The Regional Solid Waste Strategy Action Plan clarifies the immediate priorities of PICTs on a biennial basis. The Action Plan includes the region's highest priorities, in their order of priority. In the regional meeting in late 2007, the PICT delegates decided the priorities for 2008-10 are:

1. Landfills;
2. Financing Waste;
3. Ensuring Political and Public support;
4. Bulky wastes;
5. National Strategies;
6. Training and Capacity Building;
7. Regional Integration;
8. Electronic waste;
9. Waste Oil;
10. Recycling;
11. Legislation and enforcement; and
12. Organics and composting.

The issues of disposal and funding the waste operations continue to dominate the immediate imperatives. According to the Action Plan, the dominance of disposal and funding are largely due to waste minimization initiatives not keeping pace with growth in waste, driven by economic development. Regarding financing, the Action Plan asserts that in PICTs, infrastructure and innovation has been project-funded by external sources, without sufficient attention internally or by donor agencies, to ensuring ongoing financing. Furthermore, national or federal governments commonly defer daily operations to local and state governments, without providing access to sufficient funding to provide an adequate service. Regarding mobilization of public and political support, the Action Plan sets the goal of developing an annual award for the Pacific's most innovative community engagement in a waste initiative.

SPREP, through its Rubbish as a Resource DVD (2006) has provided practical information about toxic wastes and landfills, to deposit refund systems for collecting recyclables, legislation and planning waste strategies. Practical professional capacity building remains a key outcome of any waste work in the PICTs.

2.4.2 - MEA Hub

From 2009 the EC Programme on Capacity Building for MEA Implementation in African, Caribbean and Pacific (ACP) Countries, will involve the initiation of an MEA "Hub", located at SPREP headquarters in Apia. The MEA Hub will include a component on SAICM to enhance capacities of countries to meet obligations under chemicals-related MEAs, including on improving national policies. Another component of the Hub, in partnership with UN Food and Agriculture Organisation (FAO), will address existing obsolete pesticide stocks elimination and explore opportunities for reduction of reliance on synthetic chemical pesticides.

2.4.3 - Basel Convention Regional Centre

The Pacific Regional Centre for Training and Technology Transfer for the Joint Implementation of the Basel and the Waigani Conventions in the South Pacific Region Business Plan (SPREP, 2008) lists several hazardous waste activities for 2007/8. These include the development and implementation of region-specific hazardous and other wastes minimization programmes in PICTs including assessments of e-waste, asbestos and a pilot project for a partnership on environmentally sound management (ESM) of Used Oils in the North Pacific Countries (FSM, Kiribati, Marshall Islands, Nauru and Palau).

2.4.4 - GEF-PAS

The Global Environment Fund - Pacific Alliance for Sustainability (GEF-PAS) was designed to improve the Pacific Island Countries' access to GEF resources. The Programme will be coordinated regionally, but the focus will be on national activities as components of regional projects. GEF-PAS was designed to respond to the Pacific nations' self-identified priorities, a number of which include integrated waste management. The GEF-PAS is intended to add value to existing efforts by focusing on individual country investments while ensuring that shared regional objectives are met. This will require considerable matching finance from the PICTs, but the AFD monies are elligible to be counted as part of that contribution.

GEF resources of approximately $5.3 million have been allocated for POPs Projects. GEF involvement in POPs Projects should help leverage co-financing from other donors. There is no defined co-financing ratio, but the maximum GEF contribution is 50% of total project value. The benefits of the GEF-PAS include a stable, phased and predictable resource flow to the Pacific. The GEF-PAS will strive to ensure equitable access to the GEF by all PICTs. A key criterion for project eligibility under the GEF-PAS is that projects should be consistent with national priorities as specified in national policy instruments, including the Stockholm Convention and National Implementation Plans. GEF-PAS funding is only available for those countries that are party to the Stockholm Convention.

The GEF-PAS Steering Committee will include PICT representatives as well as representatives from CROP agencies. A GEF-PAS Coordinator will also be employed and be based in the Pacific Region. It is anticipated these will be in place by late 2008.

Three POPs Projects have been approved under GEF-PAS to date. These include a POPs Monitoring Project, a DDT alternatives project, and an Integrated Management of Solid and Hazardous Wastes and POPs project. It is understood that this project is still in the planning stages and that UNEP staff may utilise this study to ensure AFD and GEF-PAS activities are complimentary.

2.4.5 - POPs in PICs Project

The Persistent Organic Pollutants in Pacific Island Countries (POPs in PICs) Project was funded by AusAID and implemented by GHD Pty Ltd in partnership with SPREP. The Project removed over 120 tonnes of disused scheduled POPs and other Persistent Toxic Substances (PTS) from eleven Pacific Island Countries (Niue, Solomon Islands, Cook Islands, Kiribati, Tonga, Fiji, Tuvalu, Vanuatu, FSM, Marshall Islands and Samoa). PNG and Pacific Island Territories were not included in the Project. The logistical challenges due to PNG's size and geography, meant PNG was simply too expensive within the allocated funding and was postponed. Waste could not be collected from Palau because it is Party to neither the Waigani nor Basel Conventions. The total cost of the Project was approximately AUD6 million, significantly less than the cost of a bilateral country-by-country approach. Some of the lessons learned from the POPs in PICs Project included recognition of the need to reduce times between the country planning and clean up visits and for a sytematic approach to be taken for safe waste storage until removal can be undertaken.

2.5 - Summary and Conclusions

The importance of improved solid waste management, recycling and hazardous waste management in SIDS has been highlighted in several international fora and features as a priority in the Mauritius Strategy. The management, phase out, and transport issues relating to hazardous waste is addressed by several MEAs, although ratification of these conventions among PICTs is varied. Few regional projects have been implemented in the Pacific on hazardous wastes and wastes of commercial value. Those that have, such as POPs in PICs, on hazardous wastes, have successfully reduced costs through regional approaches and PICT representatives have requested the model be replicated for other wastes that are proving unviable to remove individually.

According to the ADB (2004), regional approaches should be taken when: a clear role exists for one or more of the established regional organisations; economies of scale can be achieved in administering and /or delivering the programme; and impacts are likely to be more sustainable or replicable because of the programme's regional approach. Whilst there are several initiatives being planned or implemented at the regional level related to waste planning, building institutional capacity and providing training, there are no regional or subregional initiatives providing assistance with collection of hazardous wastes, or wastes with economic value.

III. COHERENT SET OF COUNTRIES

3.1 - Rationale

To determine a coherent set of countries for sub-regional hazardous waste and waste with commercial value recycling programmes, three criteria have informed the recommended groups. While the coherent sets of countries fall mostly within the ethnic/geographical definition of Polynesia, Micronesia and Melanesia, their arrangement is based upon:

- shared opportunities and challenges;
- placement on shipping routes and other logistical issues; and
- relevant experience in environmental management/public education.

The following sections also layout, on a subregional basis, the general level of experience and status of ratification of relevant international conventions dealing with hazardous waste. In cases of low experience in PICTs, ratification of relevant conventions is used as an indicator of commitment. Where hazardous wastes are concerned, being a party to either Basel or Waigani is

essential in determining which countries will be able to benefit from a hazardous waste disposal programme.

Issues such as the GDP and population size of some of the recommended countries increases the economies of scale for long-term viability. Shipping routes were also used to identify which islands are connected to which to assist in identifying the practicality of sub regional projects and may also assist in negotiating preferential shipping rates with the liners concerned especially for islands with limited financial means and low volumes of waste. The following section presents the proposed coherent set of countries; Section V explores the feasibility of subregional initiatives based on the priorities of PICTs.

Although French Polynesia and Wallis and Futuna are ethnically Polynesian, they are better serviced on the Miconesian and Melanesian shipping routes respectively, and so have been included in these subregions.

3.2 - Shipping routes

There are five major shipping companies serving the Pacific region: Bali Hai, Swire, Pacific Direct Line (PDL), Sofrana and Reef Shipping. Between them and using transit states where necessary, including Fiji, they carry outbound freight to treatment facilities or recycling plants in Japan, China, Korea, India, Indonesia, Europe, the United States, Australia and New Zealand. While it is not essential to use a common carrier to implement subregional initiatives, the approach simplifies initiative design, aids in capturing economies of scale, and could facilitate partnerships with shipping lines. Moving freight between the outer islands to the main islands in PICTs will have to be done by inter island barges. Some PICTs, including Kiribati, Cook Islands and the Solomon Islands, are serviced by local shipping companies. The need for inter island services will be explored in Phase II.

In the following section, each subregion includes a short discussion on shipping routes between the PICTs in the subregion and or the origin and destinations of these routes.

3.3 - Hazardous waste and international conventions

Five multilateral environment agreements (MEAs) relate to the phase-out, management and transport of hazardous substances. These include: the Waigani Convention to Ban the Importation into Forum Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movements and Management of Hazardous Wastes within the South Pacific region; Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal; the Rotterdam Convention on Prior Informed Consent Procedure; Stockholm Convention on Persistent Organic Pollutants; London on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972) plus the 1996 Protocol to the London Convention (LDC).

3.4 - Polynesia

The following PICTs have been included in the Polynesian subregion:

- Western Samoa
- Tokelau
- Cook Islands
- Tonga
- Niue
- Tuvalu
- American Samoa

In 1999, SPREP commissioned a series of waste characterization studies throughout key islands, including Samoa, Tuvalu and Tonga. Since 2005, updated plans have been consistent with the SPREP Regional Waste Management Strategy and all PICTs of the Polynesian Subregion have national waste management strategies.

Several of the group (including Cook Islands, Tonga, Samoa and American Samoa) have waste collection and management systems and some private sector actors in recycling. The most developed waste management systems in the islands in the Subregion are the Cook Islands and Samoa, which both have a co-mingled 'at the source' collection of solid waste but rare instances of "source separated" recyclate collection. The Cook Islands also has collection of recyclables. At the source separation (sorting by residents at the home by putting recyclables into dedicated recycling bins or "drop off" centres) is essential to recycling sustainability as it maximises the value of the resource.

Other Polynesian PICTs including Tuvalu and Tokelau are atoll environments and problems with solid waste management are exacerbated by lack of land and landfills. Niue has an active Environment Department with good capacity, but due to its small population, lack of funding for waste management and inability to attain economies of scale for recycling, is not currently recycling. Polynesian characteristics are summarised in Table 1.

Table 1: Polynesian Subregion Characteristics

Country	Capital	Island Type	Land Area sq km	Population	GDP $US
Samoa	Apia	Volcanic Mountainous Nine Islands. Four are inhabited	934	161,298	865
Tokelau	Fakaofo	3 coral atolls	12	1,500	420
Cook Islands	Avarua	Mixed mountains and coral atolls	241	16,800	3,350
Tonga	Nuku'alofa	Mountainous and coral atolls. 171 Islands over four major island groupings	718	105,600	1,170
Niue	Alofi	Raised coral atoll	259	2,000	2,620
Tuvalu	Funafuti	Flat coral atoll	26	10,900	825
American Samoa	Pago Pago	Mountainous	197	58,000	4,295

Most Polynesian PICTs are Party to the Wagani and Stockholm Conventions, indicating a commitment to the phase out of POPs and the prevention of transboundary movement of hazardous substances. Despite some subregional successes, all continue to have persistent

problems with lack of capacity, operational funds, infrastructure and equipment, maintenance issues, and legal frameworks. The ratification status of Polynesian PICTs is described in Table 2.

Table 2: Polynesian Subregion Parties to International Conventions

Country	Basel	Waigani	Rotterdam	Stockholm	London
Samoa	Yes	Yes	Yes	Yes	Yes
Tokelau (non-self governing)	Yes, via New Zealand	Yes, via New Zealand	Yes, via New Zealand	Yes, via New Zealand	Yes, via New Zealand
Cook Islands	Yes	Yes	Yes	Yes	Yes
Tonga	No	Yes	No	No	No
Niue	No	Yes	No	Yes	No
Tuvalu	No	Yes	No	Yes	No
American Samoa	No	No	No	No	Yes

Shipping routes:
The Cook Islands, Niue, Samoa, Tonga and American Samoa are linked by frequent shipping services to and from Auckland, New Zealand. Tokelau is serviced by a regular vessel from Apia, Samoa. Samoa and American Samoa are also serviced by frequent vessels from Brisbane, Australia, which also passes through Fiji. Tuvalu is connected to Fiji by a feeder service.

3.5 - Micronesia

The Micronesian subregion includes the following PICTs:

- Kiribati
- Marshall Islands
- FSM
- Palau
- Northern Marianna Islands
- Guam
- French Polynesia

With the exception of Kiribati, Micronesian PICTs have disposable consumerist economies that generate larger volumes of recyclable packaging. FSM, Marshall Islands and Palau depend on Compact of Free Association funding from the US. Guam and the Northern Mariana Islands receive Compact Impact funding from the US. PICTs in this region generally have a high literacy rate, are organized and enthusiastic. It was the northern islands that formed the Pacific Islands Regional Recycling Initiative Committee (PIRRIC) in an attempt to solve waste issues on a subregional basis, with the Marshall Islands seemingly the most dynamic of the Islands at present. The US-influenced PICTs tend to be reluctant to facilitate private enterprise and see a greater role for an unfettered market mechanism.

Guam's waste management has been mired in political stalemate about a new landfill but the recent court-ordered appointment of an administrator to progress the waste system offers new opportunities. The Northern Mariana Islands has sound waste facilities and a strong desire to diversify its economic activities with the recent collapse of the dominant garment industry.

Kiribati has extensive and successful waste management experience at a grassroots level. It is considered a leader in among Pacific countries, with its innovative use of container deposit and refund schemes to reduce collection costs and to provide a sustainable funding source at no additional cost to government. Recent increases in commodity prices have seen opportunistic

recycling of 'legacy' scrap metals. FSM has recently followed Kiribati's lead into deposit refund schemes and Palau has had similar success exporting tyres through a relationship with a Japanese NGO. Micronesian subregional characteristics are summarized in Table 3.

Table 3: Micronesian Subregion Characteristics

Country	Capital	Island Type	Land Area sq km	Population	GDP $US
Kiribati	Tarawa	Flat coral atoll	811	86,800	545
Marshall Islands	Majuro	Five High Islands, 29 Coral Atolls	180	60,000	1,145
Palau	Koror	200 high and low limestone and coral atolls	500	1,725	7,390
Northern Mariana Islands	Saipan	Volcanic/Limestone mountainous. 14 Islands	472	58,846	8,370
Guam	Hagatna	Raised limestone plateau	549	163,500	8,000
FSM					
• **Pohnpei**	Pohnpei	High, Volcanic	695	114,000	1,930
• **Kosrae**	Kosrae	Volanic 1 island	7,700	43	1,930
• **Yap**	Yap	Mountanous	46	11,900	1,930
• **Chuuk**	Weno	192 islands plus 15 main islands	49	53,700	1,930
French Polynesia	Papeete	Mountainous Volcanic +atolls	3,500	220,000	12,750

The Northern Mariana Islands, Guam and Palau are not parties to the Basel or Waigani Conventions, nor to the Stockholm Convention. As a consequence, hazardous wastes can only be exported under specific bilateral arrangements. All other PICTs have ratified Basel or Waigani and the Stockholm Convention and are actively working on phasing out POPs and regulating the movements of hazardous waste. Micronesian ratification status of relevant conventions is described in Table 4.

Table 4: Micronesian Subregion Parties to International Conventions

Country	Basel	Waigani	Rotterdam	Stockholm	London
Kiribati	Yes	Yes	No	Yes	No
Marshall Islands	Yes	No	Yes	Yes	Yes
FSM	Yes	Yes	No	Yes	Yes
French Polynesia	Yes via France	No	Yes	Yes	Yes
Northern Marianas	No	No	No	No	Yes
Guam	No	No	No	No	Yes
Palau	No	No	No	No	No

Shipping Routes:

Kiribati, Marshall Islands, Northern Marianas, Guam, FSM and French Polynesia are all connected on services running from Australia to China and South Korea. French Polynesia is also connected via a service directly to Australia. Palau is serviced by transit vessels to Guam and Yap, FSM.

3.6 - Melanesia

The following PICTs are included in the Melanesian region:

- PNG
- Solomon Islands
- Vanuatu
- Fiji
- New Caledonia
- Wallis and Futuna
- Nauru

PICTs grouped in the Melanesian subregion are close to recycling markets, reducing transport costs and making commercial recycling more viable. Due to their large populations and mining and development activities, they are a source of particularly heavy and more valuable scrap metal and plastic, but also hazardous wastes. Scrap metal removal is conducted in all these islands regularly by the private sector.

Fiji is a subregional transport hub, a large population and has an emerging industrial base, which could begin to take advantage of the resources recovered. Fiji is also in a position to use materials from the more easterly Polynesian region. PNG, while being the dominant landmass and population centre, has had difficulty establishing a coherent national waste structure and most initiatives remain at the local government level.

The Solomon Islands has suffered from several episodes of tension. The presence of a large contingent of international personnel under the Regional Assistance Mission to the Solomon Islands (RAMSI) on Guadalcanal has increased waste volumes. Many outer islands still exist in subsistence economies, with the population having very little money to import goods. In Vanuatu the outer islands also have very little development and many exist subsistently. The main island, Efate, is developed, but the Environment Department is struggling to address solid and hazardous waste management, due to lack of funding to employ staff. In Nauru waste management programmes are implemented by the Nauru Rehabilitation Corporation but have been challenged by the recent economic issues facing the country.

New Caledonia has different development history to the other six PICTs and is generally more advanced in waste management. Wallis and Futuna have been included in Melanesia due to their direct connection to New Caledonia. Melanesian subregional characteristics are summarized in Table 5.

Table 5: Melanesian Subregion Characteristics

Country	Capital	Island Type	Land Area sq km	Population	GDP $US
PNG	Port Moresby	601 volcanic and atolls	463,000	6,100,000	2,000
Solomon Islands	Honiara	992 Volcanic	27,540	400,000	610
Vanuatu	Port Vila	80 Volcanic	14,760	182,000	1,085
Fiji	Suva	300 Volcanic Islands	18,300	775,077	1,170
New Caledonia	Noumea	12 Volcanic Islands	18,575	197,000	11,600
Wallis and Futuna	Mata Uta	Mountainous and low lying volcanic	274	14,166	1,785
Nauru	None	Raised coral atoll	21	11,300	2,805

All Melanesian PICTs have ratified either the Basel or its regional equivalent of the Waigani Convention. Several are also party to the Stockholm Convention. PNG are signatories to the Convention, have begun work on phasing out POPs and are expected to ratify in the near future. Ratification status of Melanesian PICTs is described in Table 6.

Table 6: Melanesian Subregion Parties to International Conventions

Country	Basel	Waigani	Rotterdam	Stockholm	London
PNG	Yes	Yes	No	No	Yes
Solomon Islands	No	Yes	No	Yes	Yes
Vanuatu	No	Yes	No	Yes	No
Fiji	No	Yes	No	Yes	Yes
New Caledonia	Yes (French territory)	No	Yes (French territory)	Yes (French territory)	Yes (French territory)
Wallis and Futuna	Yes (French territory)	No	Yes (French territory)	Yes (French territory)	Yes (French territory)
Nauru	Yes	No	No	Yes	Yes

Shipping routes:
PNG, Solomon Islands, Vanuatu, Fiji, New Caledonia, Wallis and Futuna are linked by services to and from Australia. PNG, Solomon Islands, Vanuatu, New Caledonia and Wallis and Futuna are also connected to New Zealand. Vanuatu, Fiji, PNG, New Caledonia are also connected by services running to Taiwan, Korea and Japan.

IV. CHARACTERISATION OF FACILITIES, INDUSTRIES AND INSTITUTIONS

4.1 - Introduction

The purpose of this component of the study is to outline facilities, institutions and industries that exist in the PICTs. It should be remembered that often simply an available block of land for storage or consolidation of wastes could be a significant opportunity in a region where land tenure issues can be paralysing. This component is also to identify potential partners within the overall framework of the programme. This information will inform the assessment and development of potentially feasible subregional programme. Potential partners include:

Industries and Facilities:

- Landfill sites which often not only double as Material Waste Recovery Facilities or potential consolidation points but its operators have vehicles and other facilities including trucks and compactors;
- Waste collectors, also in possession of equipment;
- Private industry recyclers; and
- Asia-Pacific Regional recycling facilities/export markets.

Institutions:

- Bilateral, regional and international institutions; and
- National Institutions: government, legal (policies and laws).

The following subsections are arranged according to subregion, followed by subsections on regional recyclers and bilateral, multilateral and regional institutions. A summary of legislation, policies related to waste in PICTs is included as Annex 2.

4.2 - Polynesia

Waste collection in Polynesia (Subregion 1) is mostly the responsibility of municipalities or occasionally national government (particularly for hazardous wastes) with private sector contractors often engaged in collection. Polynesia infrastructure (physical and institutional), however lacking, is sufficiently in place for a subregional programme to be successfully undertaken. This infrastructure may be enhanced by Component 3 of the SWM Initiative (the country or territory-specific allocation of project funds).

In the Cook Islands, government support for effective waste management and collection at the source corresponds with a greater number of private companies engaged in recycling activities. Private company involvement in recycling is a recent phenomenon in the PICTs, driven by increased volumes of generated waste and rapidly rising global commodity prices, and due to the gradual development of waste management systems and facilities. While supporting private industry development in this sector is essential, both for waste management and economic diversification, it should be noted that for the most part in PICTs it is often NGOs and community groups that have been instrumental in raising community awareness, and gaining cooperation in waste management and recycling programmes. This is probably due to the more communal and less individualistic cultures in the Pacific, which tend to value shared outcomes above individual entrepreneurial success. In Tonga for example, while the waste collection charge is legislated, it is women's committees in each village that collect waste management fees from each house, keeping a 10% commission. They are somewhat successful because island communities are small; they know the people and can exert moral pressure on behalf of the entire village.

Table 7 summarises the current roles played by the government, private sector and NGOs in Polynesia, as well as the landfill and collection facilities.

Table 7: Polynesia (Subregion 1) Facilities, NGOs, Private Companies

Country	Landfill	Collection System/Department Responsible	NGOs	Private Companies	Public education
Samoa	Tafaigata Sanitary Landfill - Fukuoka method Savaii Landfill Sporadic illegal dumping still an issue on both islands	Department of Environment and Conservation (DEC) is responsible for Waste Management. In Apia garbage is collected daily. Other parts of the main island are collected 2-3 times a week. Garbage is put out on elevated stands in plastic shopping bags. In 2007 the government tendered for 40,000 wheelie bins for household collection.	SUNGO: Samoa Umbrella of NGO's is the peak representative body. Women in Business operating a mobile shredder based at Tafaigata to create compost for their network of organic vanilla growers and sale of excess to the public or government.	• Vailima Brewery (beer bottles) • Bethams Brother (lead-acid batteries, aluminium cans) • Stricklands (lead-acid batteries, aluminium cans) • Tropical Island Company Ltd • Samoa Recycling & Waste Management • West End Company Limited (scrap metal, lead-acid batteries, aluminium) • Aldan Company Limited • Bluebird Transport	Government, NGOs and volunteer groups very active. High level of public education.

Country	Landfill	Collection System/Department Responsible	NGOs	Private Companies	Public education
				Company and Silva Transport Company • Pacific Recylers (PET, tyres, lead-acid batteries, aluminium cans and scrap metal) • Yazaki (school-based recycling PET) • Peseta (aluminium cans)	
Tokelau	Open dumps on each atoll, with occasional volume-reduction burning and deep sea dumping.	Each atoll's local government (Nokunonu) organise their own community-based collection, clean-ups and some limited recycling. Recyclable wastes are sent to Samoa and hazardous wastes are stored on island waiting to be treated.		Tokelau has minimal private enterprise and operates almost entirely at the family or community / communal enterprise level.	The entire community is involved in waste clean-ups. Good level of public education.
Cook Islands	Nikao Sanitary Landfill capacity almost full. Domestic wastes dumped and burned at the Arorangi site soon to be developed as an engineered landfill. Engineered landfill on Aitutaki atoll. Outer islands have dumpsites.	Combination of government subsidised/user pay. Rubbish collected once a week. Household rubbish is placed in the compactor truck. Recyclables such as glass bottles, plastic bottles & aluminium cans are placed in the trailer. Tuanga Taporoporo responsible for control and management of the discharge or disposal of waste. Environment Service issues contracts for the collection of household waste 95% coverage for Rarotonga residents. Waste collection and disposal service in Aitutaki requires support. Cook Islands Investment Corporation established to act as catalyst for privatization to manage and where necessary dispose of Government assets.	Seventh Day Adventist school collects and recycles cans. Rarotonga Environmental Awareness Programme (REAP) set up recycling bins to encourage recycling. Catholic Church Committee for the Environment (Rarotonga) crushes aluminum cans and storing for recycling. Also working in outer islands.	• T & M Heather Ltd: collects garbage, on contract to Cook Islands Government. • Cook Islands General Transport: collects commercial waste and recycles • Rarotonga Recycling Centre (glass and PET bottles and cans) • Cook Islands Can Crushers (cans) • John Wicham (lead-acid batteries)	Government, NGOs and volunteer groups very active Public Health implement six-monthly Tutakas (village clean up programmes- or Environment Clean up) to keep sections and areas around the household free of waste and rubbish.
Tonga	New Tapuhia Sanitary Landfill Site on Tongatapu has volume for more than 25 years.	Waste Authority responsible for the future management of solid waste management services for the island of Tongatapu including: environmental	• Tonga Community Development Trust (TCDT) an indigenous, development	• Gio Recycling (scrap, paper and aluminium cans) • Waste Management Ltd.	Some successful public education campaigns including: nappies and garbage

Country	Landfill	Collection System/Department Responsible	NGOs	Private Companies	Public education
	Facilities on other islands lacking, particularly the northern tourism centre of Vava'u.	management and groundwater monitoring; waste collection and transportation on Tongatapu (over 10,000 households); administering monthly collection fee of TOP 10 (US $5.00); and disposal operations. Ministry of Health (Outer Islands) Waste collection and disposal at 'Eua and Vava'u urban areas.	NGO. • Langafonua 'a Fafine • Pan Pacific • Tonga National Youth Congress • Tonga Trust • Aloua ma'a Tonga Environment Community Action Network • AusAID project has facilitated container recycling and green waste composting by both private enterprise and NGOs.	• Flying Orchid Recycling (scrap, paper and aluminium cans) • Recycling CGaes • Sunshine Enterprise Ltd. (scrap, paper and aluminium cans) • Royal Beer Company and Moana Recycling • Utensi University (scrap metal)	collection fees managed by women's groups.
Niue	Surface disposal. The current waste disposal facility is an open dumpsite. Inadequate management facilities and waste separation.	The Department of Environment has the responsibility for waste issues. Formerly waste was managed by the Department of Health.	• Catholic Mission Youth (cans) • Niue Island Organic Farmers Association (NIOFA), responsible for Organic Certification of Vanilla and Noni Plantations	Ricky Makani Contractor Rubbish Collector	Formal and non-formal undertaken on radio. High level of public awareness about environmental issues.
Tuvalu	Waste on Tuvalu is disposed of at dumps located in historic borrow pits. High tides have pushed plastics to the top. Incineration and home burning are also common. A small Government-operated garden waste diversion plant also provides shred to the public.	Ministry of Home Affairs responsible for municipal waste management. Waste Collection: 80% on Funafuti covered by Funafuti town council which charges a collection fee, 6 days a week. Have wheelie bins and truck. Environment Department responsible for hazardous wastes, some stored in secure store in aircraft hanger. Island Councils involved in collection & disposal and is the only body allowed to collect fees of $30.00/year. Medical waste disposed of via incineration in capital and burning in outer islands. Some stored on site. Outer islands open burning in dumpsites and on beach.	Kilongatsi Theatre Group Perform plays centered on waste management issues Tuvalu association of NGOs (TANGO). Some of these NGOs do community education work.	• Sweet Memory Agency: Luke Paeniu and Apelamo Brian (exporting scrap metal for the first time) • Some recreational establishments collecting high value aluminium cans. • Matagi Gali Bar/TANGO (aluminium cans)	Good radio and community-led consultation and education.

Country	Landfill	Collection System/Department Responsible	NGOs	Private Companies	Public education
American Samoa	Tutuila Landfill only has a few years left. The Government is considering a semi-aerobic landfill as replacement.	American Samoa Power Authority (ASPA) Landfill service paid through the power bill.		• American Samoa Power Authority (ASPA) Scrap metal. • T&T Recycle and Salvage Company metals • Impress (off-cuts from their tuna cans, then to US) • Goodyear (scrap) • Samoa Pacific Recycling (scrap)	

4.3 - Micronesia

Waste collection in Micronesia (Subregion 2) is a service provided free of charge by local government, with the exception of French Polynesia where there is a fee for service. In Majuro, Marshall Islands (an atoll that generates large quantities of waste), Majuro Atoll Waste Company (MAWC) has recently been created. MAWC was mandated by the national government to handle waste collection and recycling initiatives. MAWC has been proactive and attracted donations of significant reprocessing equipment. Like other US-influenced PICTs Palau, FSM, Guam and the Northern Mariana Islands, there is reliance in the Marshall Islands on unfettered market mechanisms to capitalize on recycling activities as increased prices make them more economic. The ongoing seriousness of the issue of solid waste, which is in large part made of recyclable waste, is evidence that markets for recyclables are not efficient and that intervention is warranted to correct market failure by stimulating private sector activity.

In Kiribati, the Government is proactive and has fostered the participation of several private companies in recycling initiatives. Table 8 described the facilities, NGOs and commercial recycling market in Micronesian PICTs.

Table 8: Micronesia (Subregion 2) Facilities, NGOs, Private Companies

Country	Landfill	Collection System/Department Responsible	NGOs	Private Companies	Public education
Kiribati	The rubbish in South Tarawa disposed of at an engineered landfill. Also surface dumps five locations around South Tarawa. Informal dumps constructed for reclamation activities. Outer islands use open dumps.	Local councils responsible for waste management: Betio Town Council, covering Betio and Teinainano Urban Council (TUC) covering an area from Bairiki to Bonriki responsible for waste management. In South Tarawa some use 44-gallon drums as refuse receptacles. Others pile up their rubbish on the roadside for collection.	• Kaoke Mange • FSP • Te Toamatoa Theatre Company in Kiribati	• 'One Stop' operates the PET recycling system on contract. • Lagoon Motors' Church-based automotive company (scrap/ wreck clean up and export). • Kiribati Recycling • Moel Trading	Very experienced. Strong involvement by village-based community groups which was facilitated by IWP.

Country	Landfill	Collection System/Department Responsible	NGOs	Private Companies	Public education
Marshall Islands	Coral Atoll surface disposal. Open to 2018. Nearly full, months away from no space unless monies for seawall expansion of reef-fill are provided. 400 illegal dump sites.	Majaro Atoll Waste Company (MAWC) runs the landfill and recycling facility. Enough household bins in place to for household waste collection. Trucks and dumpsters and have a customer base of 85 commercial, residential and government accounts being serviced twice weekly. Recycling and composting occurs via separation at dumpsite. Other atolls with few facilities except for US base on Kwajalein.	Women United Together Marshall Islands	• Tings Recycling (scrap) • MAWC (aluminium cans, paper/cardboard, glass, scrap, used tyres) • SIMs/Islands Recycle (lead-acid batteries)	Not very experienced
Palau	Fukuoka sanitary landfill at Koror, Mdock Landfill. New fukuoaka sanitary landfill planned for Babeldoab in 2011.	Municipal daily collections in Koror free of charge with garbage placed in oil drums.	• Palau Conservation Society • Wildlife • Conservation • Palau International - Coral Reef Centre	• San Masang recycling centre • Chau Tai (scrap metal and cans) • Shinhatova Service (plastics and tyres) • Samlo (scrap metal)	Good level of public education. Activities include: public hearings; earth celebration; radio programs; and an education committee in waste management.
Northern Mariana Islands	Engineered landfill on Saipan. Dumps on small islands – semi-aerobic model under consideration.	Government manages co-mingled collection and ad hoc recycling		• Ericco/Maeda • Huag Zheng • Artman • RMI/Pacific • Century • KPMan	
Guam	New landfill under construction	Government collection of municipal waste, but not recyclables.		Some school and community groups collect recyclables	
FSM (Pohnpei Kosrae Yap Chuuk)	Landfills on Pohnpei, Yap and Chuuk. Fukuoka Landfill (Kosrae)	Free of charge municipal service and fee for service private collection.	• Nature Conservancy • Conservation Society of Pohnpei • Kosrae Conservation and Safety Organisation • Yap Community Action Program • Chuuk Conservative Society	• Island Paradise Company • Scrap Metal Removal Co (scrap metal)	Medium level of public awareness Yap State Environmental Protection Agency provides education/awareness of recycling and waste management

Country	Landfill	Collection System/Department Responsible	NGOs	Private Companies	Public education
French Polynesia	Paihoro Sanitary Landfill. Managed by Societe Environnment Polynesien (SEP) a public-private partnership involved in the majority of municipalities in Tahiti.	At source collection; wheelie bins and municipal collection, managed by Societe Environnment Polynesien (SEP). SEP undertake the collection and sorting of waste. SEP transfer and sorting centre in Motu Uta, at the harbour of Papeete, for the export of the metal, plastics, paper and hazardous waste fractions;		SEP is responsible for the near totality of waste collection and recycling in Tahiti.	Professional and well resourced public education campaign

4.4 - Melanesia

Waste Management is *ad hoc* in the Solomon Islands and PNG, where subsistence farming remains the countries' mainstay. Open dumps and burning is common. The French territories have sanitary landfills and high public awareness. New Caledonia and Fiji are in close proximity to export markets, there are quite a number of companies involved in the recycling sector of the more valuable streams of waste including heavy gauge scrap metal. In Wallis and Futuna, all recyclables are collected and stored but due to a lack of equipment to process on island, lack of an opportunity and lack of an export market they have not been commercialized. Table 9 describes the facilities, NGOs and companies involved in recycling in Melanesia.

Table 9: Melanesia (Subregion 3) Facilities, NGOs, Private Companies

Country	Landfill	Collection System/Department Responsible	NGOs	Private Companies	Public Education
Fiji	Engineered landfill, as well as several dumpsites on Vita Levu and outer islands. Semi-aerobic model proposed with JICA for Lautoka area.	Private collection (Waste Recyclers Ltd)	• Partners in Community Development Fiji • Trustee of Vanua Hara (NGO for Legal Advice. in the area of Environment).	• Scrap Metal Fiji Ltd (scrap) • Waste Recyclers Ltd • IA Traders • Fletcher Pacific Steel (Fiji) Ltd – steel recycling • Fiji Water (PET bottles)	Experienced-environmental education taught in schools.
Solomon Islands	Open Landfill. Dump sites on outer islands.			• -PBS • -BTS • -BJS • -Envirotech	Limited public education.
Vanuatu	Trench system, without lining on Efate. Dump sites on outer islands.	Port Vila Municipality undertakes collection 3 times per week for residential areas, and daily for commercial enterprises. Wheelie bins provided. Funded by property taxes. Similar in Santo, Luganville while in some of the provincial councils collection is done by PWD.	• VANGO-UNDP Small Grant Project • Live & Learn Vanuatu • Wan Smol Bag Theatre • Friends of the South Pacific Vanuatu	• Ken Hutton • Vanuatu Recyclers • Vanuatu Beverages • Vanuatu Brewery (glass bottles)	Some experience on Efate and Espirinto Santo, little experience on outer islands.

Country	Landfill	Collection System/Department Responsible	NGOs	Private Companies	Public Education
PNG	Open dumps all over the islands and highlands. Burning and illegal dumping rife.			• PNG Recylers – aluminium cans • Cola-Amatil - cans	Some experience
Wallis and Futuna	Sanitary landfills on both Islands	Council collection system with wheelie bins. Recyclables collected and stored waiting for markets to export		No private companies	Good public awareness
Nauru	Open dump site	Seeking to establish a compostor to treat wastes for unlimited mining rehab.			Low public awareness
New Caledonia	Sanitary landfill in Gadji.	Private operators for the collection and the sorting. Private operators for the export of metal and hazardous wastes and the treatment of medical waste.	WWF installed recycling bins in partner ship with The Grande Brasseries of New Caledonia.	• Robex Recycle (scrap) • Nelimport (scrap) • EMC (scrap and batteries) • Veolia-Proprete - CSP direction régionale • (paper) • Saeml (plastic and scrap) • Ecotrans (scrap, plastic, paper) • Eurl (scrap, plastic, paper)	Good public Awareness

4.4.1 - Regional recyclers

Regional recyclers are numerous throughout the Asia-Pacific. They vary from having a long and established corporate history to companies opportunistically capitalizing on the current resource boom. The following table lists the more reputable recyclers in the Asia-Pacific region. The recycling industries in Australia and New Zealand are heavy regulated and glass, paper, tyres, lead-acid batteries, waste oil, plastic, aluminium cans and scrap can all be recycled in Australia and New Zealand. Disused pesticides can be destroyed in Australia at a dedicated treatment facility, BCD Technologies, which utilizes environmental best practice plasma arc destruction technology. There are many plastic and scrap metal recyclers in China and India, although regulation of these industries are variable. Further consideration of appropriate regional recyclers will be undertaken in Phase II and a list of regional recyclers is included as Annex 3.

4.4.2 - Bilateral, Multilateral, Regional and International Institutions

Several multilateral, bilateral and regional organizations have programmes running in the environment sector, and some work specifically in waste management. The main bilateral institutions operating in the field of the environment and waste management are the development agencies with a geopolitical interest in the Pacific: AusAID, NZAID, JICA and in the Northern Pacific, the US.

Several multilateral institutions are active in the Pacific alone and in partnership with bilateral agencies. Table 10 summarises the waste management related activities of bilateral, regional and multilateral organisations in the Pacific.

Table 10: Bilateral, Regional and Multilateral Institutions

Bilateral	Regional	Multilateral
AFD Provides Governments and Parastatals with credits in the form of long-term loans at concessional interest rates. AFD activities cover various sectors including rural development and environment; health; education; infrastructure and urban development; water; transport. **The SWM Initiative is an AFD project**	**Fiji School of Medicine** FSM trains most of the environmental health officers in the South Pacific. These graduates constitute the majority of government officers dealing with solid wastes. **USP** The University of the South Pacific (USP) is collaborating with SPREP and SOPAC and is part of a worldwide SIDS association. They are working with UNESCO in the decade on education on sustainable development. USP is offering both R&D and capacity building.	**UNEP** The United Nations Environment Programme has a long-standing experience with assisting countries with solid and liquid waste management, including through its Division on Technology, Industry and Economics (DTIE) and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA). UNEP are a partner to this initiative. **UNEP is a partner in the AFD SWM Initiative.**
AusAID AusAID funded the POPs in PICs Phase I and II. This involved the removal, transport and destruction of stockpiles and was implemented by GHD. AusAID supports landfill and integrated waste management orientated waste projects in Tonga and Tuvalu. Waste management funding falls under the environment and infrastructure.	**SPREP** Assists countries in managing their hazardous waste by assessing and enhancing members' capacities to comply with international convention requirements and eliminating hazards posed by existing waste stockpiles (POPs and Ozone Depleting Substances). SPREP supported the development of National Implementation Plans under Stockholm Convention and provides assistance on the development of Solid Waste Management strategies. **SPREP is coordinating Component 1 of the AFD SWM.**	**GEF-PAS** Approximately $100 million is committed to the Global Environment Facility Pacific Alliance for Sustainability programme (GEF PAS) in the Pacific over a three-year period for supporting the Pacific small island developing states' work to identify and implement suitable adaptation measures, including the integration of adaptation into core development sectors such as agriculture and food security, access to drinking and irrigation water, health and disaster risk management. All GEF funding to the Pacific is through GEF-PAS.
NZAID Supported financially the awareness-raising campaign of the year of action against waste 2005. NZAID funds a recycling project in the Cook Islands and can crushers in Tuvalu. They financed the SPREP position of solid waste officer for three years and have been involved in drafting regional strategies and guidelines related to asbestos containing materials, waste oil, scrap metals and glasses.	**Pacific Centre for Environment and Sustainable Development (PACESD)** Interested in carrying out research in the area of waste treatment.	**Asian Development Bank** The ADB is working in several PICTs including provision of: technical assistance to Tuvalu on waste management; and typhoon emergency assistance to the Cook Islands and Tonga.
JICA Supports 14 countries of the region for the development of waste systems. The first phase of support has just been finalised with the adaptation of the regional strategy. The second phase goes from 2005-2010. JICA provides support at four levels: 1. Regional promotion of concepts like 3R and model landfills/ recycling installations. 2. Annual training of waste experts from each of the 14 countries. 3. Technical assistance for governments on collection systems, 3R and hazardous waste fractions through the placement of volunteers. 4. Implementation of pilot projects including finalizing the demonstration project in Samoa (Fukuoa landfill and recycling installation).	**Pacific Islands Forum**, **Secretariat** The Pacific Islands Forum Secretariat is the organisation of the political leaders of the PICTs. Their working areas are policy analysis, economics and governance. They are currently working with the PICTs in the formulation on national strategies on sustainable development.	**World Bank** Currently they are partnering with NZAID, AusAID and the ADB to form the PRIF. The partners will contribute technical expertise and up to A$200 million in new funding through the PRIF over the first four years. The PRIF was to be launched at the time of the Pacific Islands Forum Leaders Summit in August 2008.

Bilateral	Regional	Multilateral
Canada Fund The Canada Fund's activities in the Pacific are mostly limited to health and education. The Canada Fund for Local Initiatives finances community-led projects in the Pacific and is managed by Australian contractor GHD.	**PIANGO** The Pacific Islands Association of NGOs is a regional network of NGO focal points or coordinating bodies known as National Liaison Units (NLUs) based in 22 PICTs. PIANGO was formally established in 1991 to assist NGOs in the Pacific to initiate action, give voice to their concerns and work collaboratively with other development actors for just and sustainable human development. PIANGO's primary role is to be a catalyst for collective action, to facilitate and support coalitions and alliances on issues of common concern, and to strengthen the influence and impact of NGO efforts in the region.	**UNDP** United Nations Development Programme (UNDP) supports the implementation of the International Waters Project. It is involved in the implementation of the Stockholm convention, acting at the implementing agency for several PICTs, and the GEF Small Grants Programme. UNDP are initiating bilateral work with Vanuatu and Fiji on waste management.
EU At the end of the 1990s, the EU funded studies on waste awareness and characterisation at the national level for setting up waste plans in 8 Pacific countries (Fiji, Kiribati, Papua New Guinea, Samoa, Salomon, Tonga, Tuvalu and Vanuatu). In the framework of the 10th European Development Fund (EDF) (2008-2013), the EU has committed € 40 M sustainable management of natural resources and the environment. This includes the development of an MEA Hub at SPREP and a joint project with UN-FAO on pesticides.	**SPC** The work area of the Secretariat of the Pacific Community (SPC) that is most related to waste management is public health, as part of their activities on social questions dealt with in Nouméa. Other clusters of activities are marine (Nouméa) and earth (programme managed from the office in Suva. Fiji). SPC's biggest donor is the EU through programme funding and has 300 staff.	**United Nations Foundation (UNF)** The UN Foundation is an advocate for the UN and platform for connecting people, ideas and resources to help the UN solve global problems. The UN Foundation has since become the premier organization in helping the UN meet these challenges.
US The US provides funding through the Compact of Free Association Environment Sector. Provides grants to environmental intitiative forwhich waste management departments can apply. The San Francisco-based section of the EPA co-ordinates all US Govt. Environmental assistance and compliance issues throughtout the US-associated PICTs.	**SOPAC** South Pacific Applied Geoscience Commission (SOPAC) activities are linked with SPREP in areas of climate change, management of solid, liquid and hazardous wastes, awareness raising and the IWP. SOPAC is being merged into the SPC. A working group consisting of the three CEOs of SPREP, SOPAC and SPC among others to work on a roadmap that will be presented to the Forum Leaders' meeting in Canberra next year in 2009. This will then be implemented in 2010.	

V. CHARACTERISATION OF WASTES AND RECYCLING PRACTICES

To accurately assess the feasibility of potential subregional activities under Component 2, it is necessary to understand the composition of wastes and the approximate likely yield of various collection systems. Further, to ensure PICT preferences for assistance are taken into account, it is necessary to understand priority areas for PICT assessment. A quantitative and qualitative waste characterisation survey was used to gather primary data.

The following subsections describe the methodology, survey questions, responses and a summary of the results. It should be noted that the majority of PICTs have poor or no consistently collected 'trend' data on recyclables.

5.1 - Methodology

Primary data was used to characterise waste in PICTs. Data was collected using a survey including quantitative and qualitative elements. The survey, distributed to all PICTs, asked recipients questions on collection and management of hazardous wastes and wastes of commercial value. Recipients were asked to consider the following types of hazardous wastes:

- lead-acid batteries;
- used engine oil;
- expired pharmaceuticals;
- disused pesticides; and
- laboratory chemicals.

For wastes of commercial value recipients were asked to consider:

- plastic (PET);
- paper/cardboard;
- aluminium cans;
- glass;
- scrap metal; and
- used tyres.

As well as outlining management for each waste or recyclable stream, recipients were asked to rank each as high, medium or low priority for assistance. Once the surveys were returned by PICTs they were reviewed and questions sent back to PICTs clarifying responses and in many cases seeking more specific data. Those PICTs that ranked all hazardous waste and recyclable streams as of a high priority for assistance were requested to note their three highest priorities. PICT responses to these queries were addenda to the survey.

The survey recipient list is included as Annex 4 and the full suite of completed surveys as Annex 5.

Limitations and assumptions:
The following limitations and assumptions require acknowledgement. Surveys were distributed to several individuals in government/administrations and in some cases state owned enterprises, where these relate to waste. Responses were voluntary and not all surveys sent were returned. At least one completed survey per PICT was received in all but three PICTs. The Northern Mariana Islands, Palau and Guam did not complete the surveys. Regarding the qualitative elements consultation was not undertaken at the national level. Therefore it is assumed that the opinions expressed by individuals filling out the surveys were reflecting the preferences of the government they represent. Most PICTs have national solid waste management strategies and many responses referred to these policies. Further, some volumes of waste are estimates and all data received has been normalised for ease of reading and evaluation. It should also be noted that hazardous waste management is an area many environment departments are inexperienced in. Collecting data on hazardous waste management required PICTs to consult with other government departments, which was required a longer period of time than anticipated.

5.2 - Waste of commercial value, summary of characterisation data

Table 11 (on the following pages) summarises the results of the recycling component of the survey, for each PICT. The results are arranged according to subregion. The full suite of complete surveys is included as Annex 5.

KEY to Tables 11 & 12

Denotes **current functioning recycling programme**

Denotes a ranking of **high priority** for assistance

Table 11: Summary of Recyclable Waste Results

COUNTRY	Plastic		Paper / Cardboard		Aluminium Cans		Glass		Scrap Metal		Used Tyres	
	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)
POLYNESIAN SUBREGION												
Western Samoa	6.9 ('07) 3.8 ('08)	No data	Not currently collected	Not currently collected	75 ('07) 25 ('08)	Exported/ not stockpiled	Beer bottles collected/reused	Not currently collected	949,553 ('07) 622,122 ('08)	Exported/ not stockpiled	No data	No data
Tokelau	No data	No data	No data	No data	No annual data	Exported to Samoa	No annual data	Exported to Samoa	No data	No data	No data	No data
Cook Islands	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Tonga	864	Landfilled/ not stockpiled	498	Exported/ Not stockpiled	213	Exported/ Not stockpiled	0.004	Not currently collected	889	Exported/ Not stockpiled	Not currently collected	Not currently collected
Niue	5.5	Landfilled/ not stockpiled	Not currently collected	Not currently collected	7.35	No data	0.1	Not currently collected	No annual data	600 tonne	No annual data	5 tonne
Tuvalu	107	Not currently collected	123	Not currently collected	8	Exported/ Not stockpiled	123	Not currently collected	33	10-30	Not currently collected	Not currently collected
American Samoa	Not currently collected	Not currently collected	Not currently collected	Not currently collected	No data	Exported/ Not stockpiled	No data	No data	No data	No data	Not currently collected	Not currently collected
MICRONESIAN SUBREGION												
Kiribati	21	Exported/ Not stockpiled	Not currently corrected	Not currently corrected	24	Exported/ Not stockpiled	Not currently collected	Not currently collected	No annual data	12,000	Not currently collected	Not currently collected
Marshall Islands	100-200	No data	400-500	No data	20-40	Exported/ Not stockpiled	30-50	No data	No annual data	1000+	30+	No data
FSM (Ponphei, Yap and Chuuk)	>0.002	No data	>0.004	No data	No annual data	Exported	No data	No data	No annual data	Collected and preparing	No annual data	Segregated at dump and used

COUNTRY	Plastic		Paper / Cardboard		Aluminium Cans		Glass		Scrap Metal		Used Tyres	
	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)
										for export		locally
Nauru	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Palau	Survey not completed											
Northern Marianas	Survey not completed											
Guam	Survey not completed											
MELANESIAN SUBREGION												
PNG	Not currently collected	Not currently collected	Not currently collected	Not currently collected	No Data	Exported/ Not stockpiled	Not currently collected	Not currently collected	No data	Exported/ Not stockpiled	Not currently collected	Not currently collected
Solomon Islands	13,000	Not currently collected	Not currently collected	Not currently collected	No annual data	Exported/ Not stockpiled	Not currently collected	Not currently collected	13,000	Exported/ Not stockpiled	Not currently collected	Not currently collected
Vanuatu	Not currently collected	Not currently collected	Not currently collected	Not currently collected	20	Exported/ Not stockpiled	Not currently collected	Not currently collected	No annual data	Not stockpiled/ Exported	Not currently collected	Not currently collected
Fiji	No annual data	Exported/ Not stockpiled	No annual data	Exported/ Not stockpiled	No annual data	Exported/ Not stockpiled	Not currently collected	Not currently collected	No annual data	Exported/ Not stockpiled	Not currently collected	Not currently collected
New Caledonia	17,311	No stockpile data	27,964	No stockpile data	735	Exported/ Not stockpiled	9321	No stockpile data	No data	No data	3,000	No stockpile data
Wallis and Futuna	2.2	>2.2	Not currently collected	Not currently collected	4	At least 10	6	>6	No annual data	1055	No annual data	12.8
French Polynesia	315	Exported/ not stockpiled	947	Exported/not stockpiled	70	Exported/not stockpiled	1.7	No stockpile data / exported	5000	No stockpile data / exported		

5.3 - Hazardous waste characterisation data

Table 12 summarises the results of the recycling component of the survey, for each PICT. The results are arranged according to subregion. The full suite of complete surveys is included as Annex 5.

Table 12: Summary of Hazardous Waste Results

COUNTRY	Plastic Lead acid batteries		Used engine oil		Expired pharmaceuticals		Disused pesticides		Disused school laboratory chemicals	
	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (L/YR)	CURRENT STOCKPILE (L)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)
POLYNESIAN SUBREGION										
Western Samoa	50 (’07)	30+ (’08)	No annual data	18,630	No annual data	>5	No annual data	>2	No annual data	>2
Tokelau	No annual data	10-15	756	Stored on island	No annual data	0.1	Stored on island	No data	0.38	No data
Cook Islands	No data	No data	No data	No data	Incinerated/not stockpiled	Incinerated/not stockpiled	No data	No data	0.05	No stockpile
Tonga	No data	Exported/Not stockpiled	Not currently collected	Not currently collected	No data	No data	Not currently collected	Not currently collected	No currently collected	Not currently collected
Niue	No data	5	1	No data	0.004-0.005	Incinerated	Very limited	No stockpile	No data	0.3
Tuvalu	No data	35	9,400	2,800	No data	No data	0.2	0.2	No data	0.4
American Samoa	No annual data	1+	5,000	Not stockpiled used at cannery	110	Landfilled/Not stockpiled	No data	No data	No data	No data
MICRONESIAN SUBREGION										
Kiribati	60	20	7,200	37,000	No annual data	1	No annual data	0.5	No annual data	0.06
Marshall Islands	No annual data	>100	No annual data	450,000	No data	No data	No annual data	>1 (buried)	No data	No data
FSM (Chuuk, Yap and Pohnpei)	No annual data	5	No annual data	195,000	No data	>0.01	No annual data	0.01	No data	No data

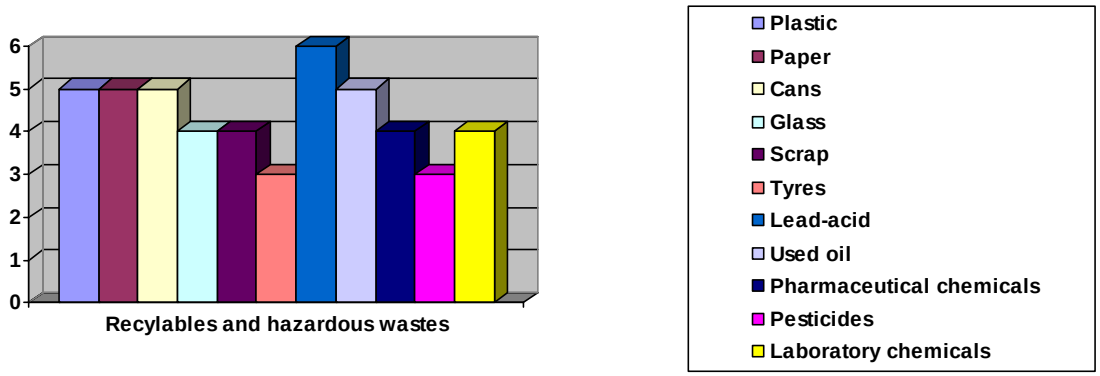
COUNTRY	Plastic Lead acid batteries		Used engine oil		Expired pharmaceuticals		Disused pesticides		Disused school laboratory chemicals	
	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (L/YR)	CURRENT STOCKPILE (L)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)	ANNUALLY (T/YR)	CURRENT STOCKPILE (TONNE)
Nauru	No annual data	Stockpiled (volume unknown)	No annual data	Stockpiled(volume unknown)	No annual data	Incinerated	Pesticides	No stockpile	None	None
Palau	Survey not completed									
Northern Marianas	Survey not completed									
Guam	Survey not completed									
MELANESIAN SUBREGION										
PNG	Not currently collected	Not currently collected	No annual data	68.7 tonnes (PCB-contaminated)	No annual data	Open burning/not stockpiled	No annual data	20 (DDT)	No annual data	No data
Solomon Islands	No currently collected	Not currently collected	Not currently collected	Not currently collected	No data	No data	Not currently collected	Not currently collected	No annual data	0.03
Vanuatu	Not currently collected	*Ad hoc* export/Not stockpiled	No annual data	Exported/Not stockpiled	Not currently collected	Not currently collected	Not currently collected	Not currently collected	Not currently collected	Not currently collected
Fiji	No annual data	Exported/Not stockpiled	No annual data	Not stockpiled/used by steel manufacturer	No annual data	Incinerated	No annual data	No stockpile data	No annual data	No stockpile data
New Caledonia	700	Stockpiled but no data	3000	Used by thermal power station)	No data	Not stockpiled/buried	No data (study underway)	No data (study underway)	No data (study underway)	No data (study underway)
Wallis and Futuna	No annual data	120	6000	Incinerated	2-3	Incinerated	Not currently collected	Not currently collected	Not currently collected	Not currently collected
French Polynesia	350-450	Exported to NZ/Not stockpiled	150-200	Exported to NZ/Not stockpiled	45	Stockpiled but no data	Minor quantities	No data	Minor quantities	No data

5.4 - Discussion and analysis of survey results

The summary tables in the previous pages (Table 11 and Table 12) indicate approximate annual and stockpile/legacy volumes where available, as well as the existence, or nonexistence of a functioning recycling system. The summary also highlights those hazardous waste streams and recyclables ranked by PICTs as high priority for assistance. It should be noted that some PICTs have claimed to be storing "on island" in recognition that they should be doing this rather than they necessarily have an operational storage facility.

5.4.1 - Polynesia

Each of the seven Polynesian PICTs responded to the survey, most also provided further information to additional questions. A summary of the priorities of Polynesian PICTs is provided below:



Several PICTs ranked all categories as high priority, pointing to the perceived need for assistance in all areas. Plastic, paper, aluminium cans and lead-acid batteries and oil were ranked as high priority by the most Polynesian PICTs.

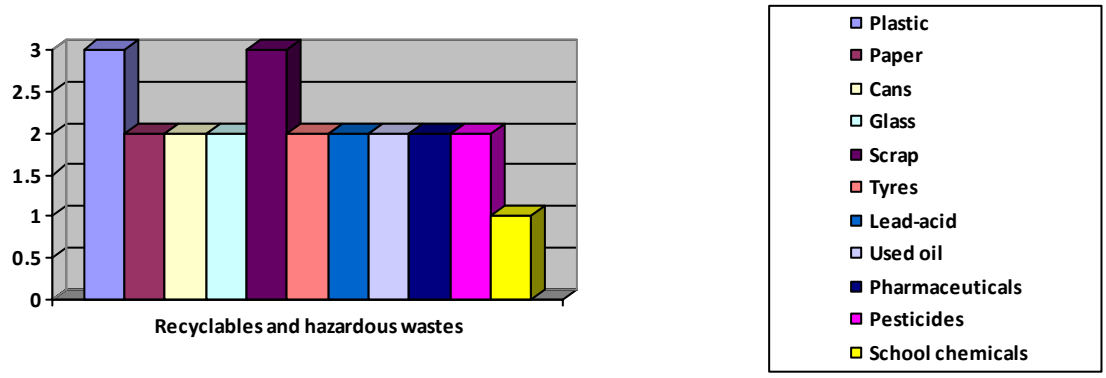
Nearly all Polynesian PICTs noted a functioning recycling system for aluminium cans. Most also ranked cans as a high priority for assistance. When asked to clarify the kind of assistance, several elaborated that assistance was needed to develop recycling programmes on outer islands and that more equipment was required. Although the need for assistance on aluminium cans is common subregionally, the form of assistance, that is the provision of equipment for more efficient can crushing and education and segregation systems for outer islands, may more efficiently delivered under Component 3 at the national level. A similar result arose with paper and cardboard, as many Polynesian PICTs prioritised assistance with this. Paper and cardboard can however by recycled in PICTs, it is biodegradable and can be composted. Similarly, glass was rated low to medium priority, with most respondents noting a need for glass processing equipment, to recycle glass on island. Assistance for these types of activities would be more appropriately delivered at the national level.

Plastic, lead-acid batteries and used oil are therefore considered to be the priorities of Polynesian PICTs that may be efficiently addressed at the subregional level and that will be further considered.

5.4.2 - Micronesia

Only four (Kiribati, Marshall Islands, FSM and Nauru) of the seven Micronesian PICTs responded to the survey. Guam and Palau did not respond. The Northern Mariana Islands responded via email but did not complete the survey. Kiribati and the Marshall Islands also

provided additional information as requested. A summary of the priorities of Micronesian PICTs is provided in the chart below:

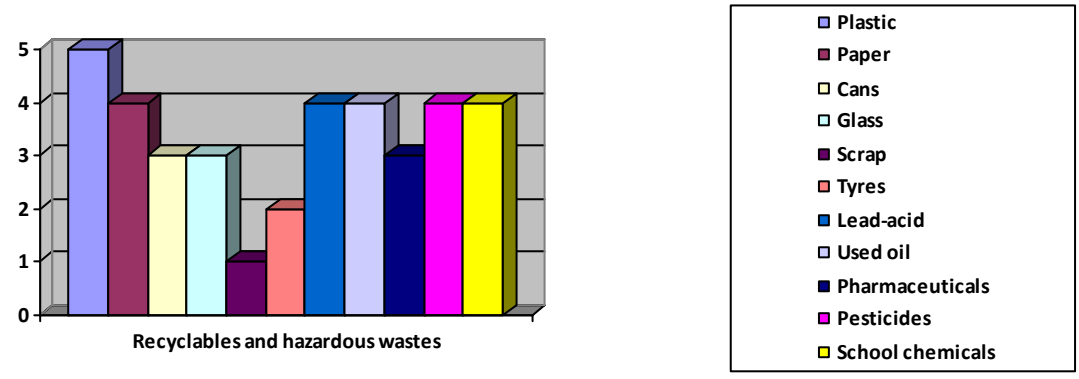


Scrap metal and plastic (PET) were ranked by Micronesian PICTs as the highest priority for assistance. Kiribati and Marshall Islands have good recycling and requested assistance in the area of PET, due the difficulty in making export commercially viable. Although all Micronesian PICTs have already undertaken some form of legacy scrap recycling, according to the responses, much legacy scrap remains. This is likely to be in part due to the tendency of private scrap merchants to target high value scrap and leave lower value or hard to retrieve materials.

Scrap metal and plastic are therefore considered to be the priorities of Micronesian PICTs that may be efficiently addressed at the subregional level and that will be further considered.

5.4.3 - Melanesia

Each of the seven Melanesian PICTs responded to the survey and also provided further information to additional questions. A summary of the priorities of Melanesian PICTs is presented below:



Plastic (PET), paper, lead-acid batteries, used oil, pesticides and school chemicals were ranked by the most Melanesian PICTs for assistance. As discussed in Section 5.4.2, paper is biodegradable and suitable for recycling in PICTs and therefore does not require export. As such, paper is likely to be more efficiently addressed under Component 3, at the national level.

PET, lead-acid batteries, used oil, pesticides and school chemicals are therefore considered to be the priorities of Melanesian PICTs that may be efficiently addressed at the subregional level and that will be further considered.

5.5 - Subregional priorities and potential projects

The results indicate the priorities assistance areas for PICTs, in summary:

- Lead-acid batteries were prioritised by Polynesia and Melanesia
- Used oil was prioritised by Polynesia and Melanesia
- Plastic (PET) was prioritised by Micronesia and Melanesia
- Scrap metal was prioritised by Micronesia
- Pesticides and school chemicals were prioritised by Melanesia

All of these hazardous wastes and recyclables are difficult to deal with in-country. For example there are no safe disposal options for used oil and lead-acid batteries in most PICTs. Pesticides can be safely disposed of through by following the directions on packaging. However, in many PICTs, old stockpiles and the pesticides no longer have a use, meaning export and safe destruction is the only option. The POPs in PICs Project collected disused pesticides in all PICs except for PNG and the French territories. It did not address school chemicals. The PET cannot be recycled by PICTs without some on-going subsidy, but recycling facilities do exist in Asia and Australia. Lack of economies of scale, currently prevents most PICTs from recycling PET. Scrap metal also requires export and although opportunistic private enterprise has recovered significant volumes of scrap throughout the region, many PICTs remain littered with both low and high value scrap.

The priorities of PICTs are consistent with the priorities for assistance in the Regional Solid Waste Management Action Plan, which included financing waste, bulky wastes, waste oil and recycling. Each of the above issues may be addressed on a subregional basis. The following section examines the institutional, operational and economic feasibility of each of the above option.

VI. FEASIBILITY ANALYSIS OF POTENTIAL SUBREGIONAL PROJECTS

This section outlines the design of potential initiatives to address subregional priorities. It then examines the institutional, operational and financial feasibility of these approaches drawing on the volumes of waste, commercial actors, options for recycling and, in the case of hazardous wastes, requirements for transboundary movements under international law.

The purpose of this section is to make a preliminary assessment of the feasibility of the five high priority areas: lead-acid batteries; used oil; plastic (PET); scrap metal; and pesticides and school laboratory chemicals. The results of the assessment have been used to develop recommendations for Phase II of the feasibility study. Phase II of the study will undertake detailed feasibility analysis on three of the options outlined below.

To operate sustainably on a subregional basis will require a strong subregional entity or business to handle contracts etc. These are few and far between. None of the CROP bodies function well in the commercial sphere and no other NGOs have established an ongoing commercial presence. Some private firms do operate subregionally but are often based in the developed rim and repatriate their profits accordingly. Growing the economic diversity of the Pacific is an important sub-theme in this work and so the opportunity, if it arises, of facilitating a Pacific-based recycler should not be discarded lightly.

6.1 - Lead-acid batteries

6.1.1 - Outline of the issue

Assistance with the management of lead-acid batteries was prioritised by Polynesian and Melanesian PICTs. Lead-acid batteries are a ubiquitous product with a predictable lifetime, and the large market for recycled lead creates economies of scale. The increases in motorised transport and stand-alone power systems will see this waste stream increase over the next few years.

Although in most of the Polynesian and Melanesian PICTs surveyed some degree of lead-acid battery recycling is currently occurring through the private sector, PICTs still require assistance. Further investigation revealed this is due to two reasons: the first is the informal, unregulated and often unsafe nature of battery collection and recycling being practiced in many PICTs; and the second is small-scale, *ad hoc* approach to battery recycling by private enterprises and the corresponding large number of batteries in PICTs being disposed of in landfills and therefore not being recycled.

There are no safe disposal or recycling options for lead-acid batteries in PICTs. There are reports of residents pouring spent acid on gardens, in efforts to increase fertility and of using lead plates for tiling. Many fishers retain old batteries for casting sinkers for re-use and smelt inappropriately. Spent lead-acid batteries are hazardous wastes and, therefore, must be handled accordingly in order to prevent damage to the human health or to the environment. Most PICTs are collecting and storing some lead-acid batteries, but there is significant work to do, to upscale collection and storage.

6.1.2 - Subregional initiative for lead-acid batteries

According to the Basel Convention Guidelines on the Environmentally Sound Management of Lead Acid Batteries, lead-acid battery recycling should be pursued as an optimal solution to the environmentally sound management of lead-acid batteries. Obtaining secondary lead from old batteries is economically attractive, cutting about 25% from the energy bill compared with mining primary lead. Spent lead-acid batteries are the number one source of secondary lead in the world today.

Kiribati has instituted a successful recycling and export programme as part of its suite of deposit/ refund materials. The Government levies an AUD5 deposit and refunds AUD4 when the spent battery is returned to a collection yard. Batteries are then exported 'wet' and the recovered value paid for the export and storage costs. Recovered cardboard was used to pack the batteries to prevent spillage during shipping. While the AUD4 incentive was sufficient to recover the batteries from the main island, it hasn't really stimulated people from outer islands to collect and return. A larger incentive is problematic as it encourages theft of good batteries to access the refund. An inter-island scheme that is subsidised by the differential between deposit and refund appears sensible.

An option for a subregional initiative is the coordinated removal, shipping and recycling of lead-acid batteries to Australia, or New Zealand. The Philippines, China and Vietnam also have recycling plants but their environmental standards would require close assessment and ongoing monitoring. In Australia, there are two recognised secondary smelter recyclers Hydromet and Australian Refined Alloys. In New Zealand there is the Exide plant, which also has a secondary smelter. All make lead ingots that are used in the manufacture of new batteries and other lead based products.

According to the survey results there are at least 400 tonne of lead-acid batteries stockpiled in Polynesian and Melanesian PICTs. The current lead-acid battery price being offered per tonne by Australian recyclers is US700. Therefore, from initial survey estimates alone there is US280,000 worth of stockpiled lead-acid batteries present in PICTs. The current market price and available volumes of lead-acid batteries indicate that any programme, once developed may eventually be cost neutral, or depending on the use of economic incentives by PICTs, profitable and sustainable.

A subregional programme would likely require training of governments and members of the private sector in the Basel Guidelines. The Guidelines offer governments and industry a set of best practices and principles for setting up effective systems for recycling batteries. A subregional programme would also involve a facilitated negotiation with recyclers and shippers to establish if any economies of scale exist.

PICTs participating in a subregional programme on lead-acid battery recycling and export to Australia or New Zealand would be contingent on being party to the Basel or Waigani Conventions, as lead-acid batteries must be shipped as hazardous waste. In Polynesia and Melanesia only American Samoa is not a party to either Convention. According to information from the Australian Government, arrangements can also be made for non-parties under Article 11 of the Environment Act, however the feasibility of this requires further investigation.

6.1.3 - Further analysis of subregional initiative

Lead acid batteries are at the margin of viability. They require no specialist equipment, some training and guidance materials and an entity to handle regular Basel-compliant shipments to a recycler. There would be some sub-regional synergies in organising the shipping, contracts and shipping containers but the key issue of viability is unlikely to shrink with sub-regionalisation. The better contract price that may be gained through joint contracts is likely to be eaten up by administrating the payments and shipping co-ordination. A country-specific contract seems more robust in the long term.

Three requirements are key to successfully recycling lead acid batteries.

1. A competent agency, preferably an existing metal recycler with experience of shipping requirements and contractual dealings;
2. A robust system to ensure batteries are collected and returned to the exporter; and
3. A financial subsidy for topping up the current financial returns to make it profitable for the agency.

Requirement 1 exists in most PICTs. Requirements 2 and 3 are more complicated. Collection must be cheap for viability so it is preferable that the batteries are consumer-delivered back to the point of sale or to the recycler. A cash-back scheme seems the most sensible though it could easily be morphed into some more country specific incentive such as food or rebates on government charges. Requirement 3 requires either the importer or consumer paying a levy to fund the shortfall. Either would be in line with a 'polluter pays' principle, though the importer would likely pass it on to the consumer anyway. Levying through the importer may utilise the network of sales outlets and minimise government involvement – a significant issue in PICTs where budgets are fungible and funds are often shifted from the intended use to another seemingly more urgent issue.

If the importers will not voluntarily impose an advance-recycling fee and set up a system for retrieval, the government would have to be involved. This is probably the case if there is more than one or two importers as they would be nervous that they adopted the scheme but their competitors didn't. If government is involved, the deposit refund scheme utilising the Kiribati model appears the most appropriate. Such a scheme can provide the cash back incentive as well as the extra funding needed to make the export viable but does have the drawback of requiring legislation to be passed which can be a very slow process within the Pacific.

Further feasibility analysis in Phase II would involve: field visits to establish extent of likely government commitment; further investigation of private sector involvement and partnership, through consultation with battery recycling companies; consultation with private sector battery collectors in pilot country; analysis of shipping routes; consultation with the Australian Government; and cost estimation of a subregional project.

On balance, the subregional synergies seem to be outweighed by the country-specific issues. This suggests that this issue is best addressed by Component 3.

6.2 - Used oil

6.2.1 - Outline of the issue

Used oil was prioritised for assistance by Polynesian and Melanesian PICTs. Waste oil is generated globally and, because oil causes detrimental effects on the environment if not properly handled, it must be re-used, treated or properly disposed of. Waste oil from bulk fuel storage and Mobil and BP sites has historically been shipped to Australia for recycling. However, due to the region-wide divestment of these sites by petroleum companies to PICT governments, shipping for recycling is now limited and most PICTs are storing, but not exporting waste oil. Furthermore waste oil shipments made by petroleum companies covered only waste oil from those sites, and not waste oil from other businesses or government departments.

Due to the continual increase in the price of oil, recycling opportunities are increasing. Some containerised recycling plants exist which return the oil to a useable standard. However, market mechanisms can't be relied upon in PICTs due to the relatively high capital costs, technical capacity, marketing and distribution, small volumes in individual PICTs and the significant distance from markets. Therefore a coordinated approach is required to capture economies of scale.

Three facilities currently reusing waste oil have been identified in the Pacific, including Fletcher's Steel in Fiji, the thermal power station in New Caledonia and a cannery in American Samoa. Fiji also ranked waste oil as a high priority for assistance and further investigation indicated that not all of Fiji's waste oil is reused by Fletcher's Steel and that more work is needed to organise efficient collection of waste oil and to prevent dumping. Again, a deposit and refund system or advanced recycling fee is worth examining.

6.2.2 - Subregional initiative for used oil

Of the aforementioned facilities, Fletcher's Steel has expressed interest in accepting oil from other PICTs. According to the Basel Convention Technical Guidelines on Used Oil Re-Refining of Other Re-Uses of Previously Used Oil, the inherent high energy content of many used oil streams may encourage their direct use as fuels, without any pretreatment and processing, and without any quality control or product specification. Such direct uses do not constitute good practice, unless it can be demonstrated that combustion of the waste can be undertaken in an environmentally sound manner. Consultation with Department of Environment staff in Fiji indicates that they are also enthusiastic about exploring this option further. Clearly, facilities, emissions and regulatory issues would require further investigation. In the past, Nauru has expressed an interest for used oil to fire its phosphate driers but cannot afford the shipping costs.

A regional location for oil reuse in the Pacific boasts several advantages. It would save costs on shipping and encourage regional cooperation. Also Fiji is a regional hub and most PICTs are connected directly or indirectly to Fiji, by frequent shipping services. According to Fletcher's Steel, the company is prepared to pay for shipping, but is not able to reimburse PICTs for oil. Waste oil is not regulated as a hazardous waste under the Basel or Waigani Conventions; therefore there would be no legislative restriction on PICT participation.

Polynesian and Melanesian PICTs are at varied stages of management and storage of waste oil. Small PICTs, like Niue, have waste oil fairly well managed and stored in a centralised area. PICTs including PNG with large populations and landmasses are less advanced in centralised collection of waste oil and require support. Any subregional initiative should capitalise on the organised PICTs to get the project started, but ensure elements are built into the programme to

increase the capacity of PICTs who are less advanced in waste oil management. According to survey data Polynesian and Melanesian PICTs have over 20,000L of waste oil stockpiled. This figure is doubled if Kiribati is also included.

Wallis and Futuna incinerate waste oil in-country and French Polynesia exports waste oil to New Zealand. These territories would be unlikely to participate in a regional scheme. New Caledonia and American Samoa, may participate as recipients of waste oil.

Given the preparedness of the private sector to pay for shipment, a subregional initiative involving the shipment of waste oil to Fiji, or another PICT for reuse, may become cost neutral after the initial start up cost and collection costs are recovered.

6.2.3 - Further analysis of subregional initiative

There appears to be a number of possible and sensible end uses for the waste oil that warrant further exploration. The Fiji option is currently functioning and is the obvious first choice though a number of end uses is always more robust. All probably require an ongoing commitment of sufficient oil volumes to make setting up the logistical infrastructure worthwhile. Thus, some form of subregional programme seems sensible. The recent spike in the price of oil would be pushing the viability of the project in the right direction though continued price volatility causes some concern.

The key hurdles lie in the wide dispersion of the used oil, from fishing boats to backyard engine services. The retrieval of the oil has proved very difficult all over the world. In the Pacific, it is more so and the nature of the product means that it is safer environmentally not consolidated into one point, unless a safe chain of custody then carries it to disposal. In other words, the collection system must work if it is to be started at all.

Waste oil needs to be returned to the place of sale for the provision of an appropriate incentive, probably cashback. Working with the importers in some form of producer responsibility appears the most obvious system. As there are only a few importers per country, an extra-legislative agreement is more likely.

As far as the best fit with the AFD framework, there are national collection, legislation and logistical issues; sub-regional amalgamation of volumes, shipping/delivery logistics, and the likelihood that many of the oil importers cover more than one PICT so expansion is simpler. The volumes only need to match the end uses so the project is limited by treatment capacity rather than production capacity. As such, it could be slowly expanded throughout the Pacific.

Further scoping during Phase II of the feasibility study would involve: investigation of the preparedness of American Samoa and New Caledonia to accept waste oil and therefore become partners in the subregional initiative; consultation with Fletcher's Steel and facilities assessment, to determine if infrastructure upgrades are necessary; and consultation with Government of Fiji on regulatory issues. Whilst waste oil was prioritised by Polynesia and Melanesia, Micronesian PICTs have also requested assistance with waste oil and therefore the feasibility of region-wide participation in this initiative will be assessed. Further scoping would also involve a preliminary project design and costing.

6.3 - Plastic (PET)

6.3.1 - Outline of the issue

PET was prioritised by Micronesia and Melanesia for assistance. Volumes of PET are dramatically increasing in PICTs. Post-consumer PET when crushed and pressed into bales is recyclable, but at a low value. Transparent post-consumer PET attracts higher sales prices compared to the blue and green fractions and the mixed colour fraction is the least valuable. Recycling companies treat the post-consumer PET by shredding the material into small fragments; removing residues of other products and making "PET flakes". PET flakes are used as the raw material for a range of products that would otherwise be made of virgin PET or polyester.

In the survey responses, numerous PICTs noted the high percentage of PET waste taking up valuable space in landfills and dumpsites. Many cited the challenge in identifying and accessing markets for PET. In the survey responses, several PICTs noted their need for shredders and balers to process PET for recycling. According to private-sector recyclers in Samoa, recycling PET is unviable, as, in their experience, the price for PET is lower than the shipping cost.

Recycling PET in from the Pacific will require assistance. Even with assistance, economies of scale may not be sufficient to cover shipping costs, due to the low market value of PET.

6.3.2 - Subregional initiative for plastic (PET)

Plastic and its most valuable sub-set, PET, has risen in value along with the price of oil. There are now many possible recyclers ranging from high value, high quality separated recyclates all the way to low value, mixed plastics. While this means there is not too much that can’t be recycled, the costs of doing so vary enormously according to the quality of the recyclate. This in turn means that the better at source separation, the more viable any plastics recycling.

Any system is not going to be volume-dependent. In other words, there is not a situation where guaranteed volumes are necessary, though to do so may provide some economies of scale. The quality issues are sufficiently large as to suggest that a sub-regional contract would be extremely difficult to manage and allocate the correct funds. One poor quality sort from a single PICT would ruin the return for the rest. It should be remembered that few if any real MRFs exist so there is little history of sophisticated sorting plus much of the China-sourced plastics have no identifying number to facilitate accurate polymer catagorisation. Thus, the recyclate quality will vary from PICT to PICT and the system must accommodate that. An individual PICT-based contract would be the best outcome, while understanding the value in collaboration and good guidelines and training on a wider level.

Kiribati has been running a viable system using their deposit refund scheme. Good compaction was critical in their clearing the hurdle of viability. They have been able to access a very strong compacter bought for seaweed processing which has given them shipping densities necessary to achieve viability. Depending on the anticipated volumes, such high-pressure balers may be either donor-provided or a shred plant moving from island-to-island in its own container. However, there are significant issues in shared plant, particularly when it under high stress, and given maintenance is never high on the Pacific agenda. Given that, a compromise may be needed between compaction efficiency and cost of plant so that each significant source has its own compaction and baling gear.

The Kiribati container deposit system works well and delivers clean well sorted recyclates, though it is focused on a single readily identifiable product: the PET plastic bottle. Other plastics still go to landfill. The less desirable alternatives to resident-delivered systems are a sorting system of either source separated recyclates or a 'dirty' Material Recycling Facility (MRF) where co-mingled garbage is sorted by hand. Resident-delivery to 'drop-off / bring-back' centres is probably the most desirable in the long term. It avoids the large costs of the two residential bin systems, or the poor quality product and human health consequences of the dirty MRF. More importantly, it establishes a network of infrastructure that can be staffed and expanded into other recyclates from mobile phones and computers through to cardboard or even green waste. The larger the scope, the greater the organisational and financial robustness. Deposit refund systems can be used, as in Kiribati, or simply be government-financed through taxation as in Tuvalu.

Sustainable financing can also have a series of solutions. Consumers can't and probably shouldn't, be shifted away from plastic in the Pacific. It is simply too useful a material – light, waterproof, consumer and marketing friendly. Its use will continue to grow, replacing glass and traditional containers. It is not a material that lends itself to the one-off clean up. Given that, it is sensible to begin to establish ways to reduce its negative impacts. Given the ubiquity of plastic in our modern life, a complementary taxation regime is most appropriate. Charges that mirror general consumption patterns such as GST /VATs, power bill surcharges or import duties seem the most appropriate way to finance plastic recycling fairly and sustainably. If high-cost initial items such as balers are donor-financed and logistical or governmental barriers are addressed, there is no reason why plastic cannot be recycled in volumes that increase each year as the systems mature.

6.3.3 - Further analysis of subregional initiative

It can be seen that plastic recycling shares significant sub-regional characteristics but also faces organisational challenges on a PICT level. The most appropriate place for this issue may lie in Component 3, the individual PICT programme, but incorporating significant input from regional specialists to assist PICTs surmount their individual hurdles. As this would have to be self-identified by each participating PICT and their project commitment assessed and agreed to by the AFD, there would be sufficient 'filtering' to ensure a likelihood of success. The aforementioned lack of significant economies of scale mean that individual projects are viable and more desirable, yet the potential to export methodologies and best practices is undiminished for the future expansion into neighbouring PICTs.

6.4 - Scrap metal

6.4.1 - Outline of the issue

Assistance with scrap metal was prioritised by Micronesia. Scrap recycling has become increasingly prevalent in recent years due to its increased economic value. Most PICTs have been involved in some opportunistic scrap collection by the private sector. Micronesian PICTs' prioritisation of scrap metal collection for assistance is due to the need to overcome several barriers to achieve the full collection of legacy wastes. These barriers include: the preference of the private sector for heavy gauge scrap and the tendency to leave light gauge scrap; and the cost of centralisation of waste, when vehicles are no longer rolling.

According to estimates provided in waste survey responses, in Micronesia alone legacy volumes are estimated to be in the order of 13,000 tonne as well as at least 5 tonne of copper.

Opportunities exist to advance scrap metal collection in the Pacific from opportunistic collection and export, to a sustainable deposit and refund system.

6.4.2 - Subregional initiative for scrap metal

If deposit and subsequent refund schemes are costed correctly, people deliver their wrecks whilst they are still rolling, driving down the cost of the programme by avoiding high collection costs. In Kiribati, one such programme was designed but is yet to be fully implemented. Phase 1 of the programme, funded by JICA and implemented in cooperation with SPREP and the Government of Kiribati, successfully collected legacy wrecks which would have proved to be a financial drain on a deposit refund scheme as legacy wrecks have not had a levy imposed to fund the refund. Phase 2 involved the introduction of regulations for a deposit refund scheme. The scheme is yet to be implemented due to a global decrease in JICA funding and consequential suspension of the initiative.

In their survey response, Kiribati requested AFD consider re-establishing this programme. This deposit refund scheme could be initiated as a pilot project for eventual roll out across Micronesia and the wider Pacific Region. Kiribati has passed the enabling legislation for this initiative and played a coordinating role in the initial feasibility study. Private sector partners have been identified and are committed to the project. Phase 2 of the initiative involves establishing a vehicle dismantling yard and spare parts business, cutting and crushing operation, regular export of scrap metal.

Expected outputs from the pilot programme in Kiribati include: a template of measures for sustainable financing; documented and detailed costings, operational issues and training requirements; and a guideline on implementing “good practice” model.

6.4.3 - Further analysis of subregional initiative

Completing the Kiribati pilot and expanding into neighbouring Micronesia and Melanesia seems the obvious course of action. Much of these sub-regions have significant legacy tonnages from the World War 2 or military activities, expired mining or simply old automobile wrecks. Some of these countries have begun the legislative process for deposit refund schemes. Finally, the China/India resources boom has provided an opportunity to recover these resources cheaply. It is too early to tell if the current financial crises will impact significantly on this opportunity.

Progressing this initiative involves identifying which PICTs wish to follow the Kiribati pilot path and importantly, under what timeframe. Kiribati was able to capitalise on an enormous passing scrap barge, which reduced costs significantly. The next step is identifying such operators and their future Pacific plans or even the possibility of a commissioned circuit visiting a series of Micronesian or Melanesian PICTs to gather their existing stockpiles. The recent converts to deposit refund systems are the obvious first choice participants and the Kiribati pilot and legacy clean-up can proceed while the respective governments move on establishing the necessary systems for a sustainable recycling operation.

This project has two components that will be investigated. The first component is a one-off clean up of scrap metal in Micronesia. Thus, in this component the availability of a barge or other cheap shipping, in-country teams to gather, cut and consolidate the metals will be investigated. This is a necessary precursor to a sustainable system throughout Micronesian PICTs (other than Kiribati), as deposit-refund only applies at the point of import. The second component is the phased and more on-going system requires identification of participants committed to legislative

change, strong in-country partners and training. The feasibility of using Kiribati as a flagship will also be investigated under this component.

6.5 - Pesticides and school chemicals

6.5.1 - Outline of the issue

The issues of disused pesticides and school laboratory chemicals were prioritised by Melanesia. As the methodologies to address these two issues are similar and in some areas duplicative, they are considered together.

Disused pesticides were collected from the Solomon Islands, Vanuatu and Fiji in the POPs in PICs Project from 2003-2008. New Caledonia, Wallis and Futuna, French Polynesia and PNG were not included in this project and therefore all have significant volumes of disused stockpiled chemicals. During the implementation of the POPs in PICs Project the need to dispose of disused school laboratory chemicals was raised an ongoing challenge by most PICs.

POPs are being phased out under the Stockholm Convention on POPs. There are no appropriate disposal methods of POPs or other intractable pesticides in PICTs. They require export and destruction at appropriate facilities. Whilst not regulated under specific international conventions for phase out, school chemicals are often hazardous and transport is regulated under Basel and Waigani. Whilst some of them can be stabilised and landfilled, many of them cannot be stabilised and require export.

6.5.2 - Subregional initiative for pesticides and school chemicals

A Melanesian subregional initiative on pesticides and school chemicals could replicate the methodology of POPs in PICs and incorporate the lessons learned during that project. The methodology has six broad stages. The first involves visiting PICTs, consulting governments and inventorising disused pesticides and school chemicals. In the second stage, inventories are analysed, along with logistical matters, and clean up repackaging needs. Required clean up and repackaging equipment is shipped to PICTs. The third stage involves clean up and repackaging of disused pesticides and school chemicals requiring export, and stabilisation of other school chemicals. The fourth stage is involves permitting under the Basel or Waigani Conventions. The fifth stage involved shipping to an appropriate destruction or treatment facility, and the sixth is the treatment and destruction stage. A seventh stage could also be incorporated to set up secure and safe storage for chemicals.

Participation in such an initiative would be contingent on PICTs being party to the Basel or Waigani Conventions. Review of PICTs' ratifications of the Conventions indicates that all PICTs are party and territories are covered through the French ratification status.

6.5.3 - Further analysis of subregional initiative

Further scoping of a Melanesian disused pesticides and school laboratories chemicals project would involve consultation with PICTs on initial inventories. Parties to Stockholm (Solomon Islands, Vanuatu and Fiji) have at least partial inventories on disused pesticides. PNG has not yet ratified the Convention, but has completed a partial inventory. French territories indicated in the survey, that development of inventories is underway. Most PICTs also have some records of the types of school chemicals present.

Consultation will also be undertaken with the Australian Government, destruction facilities and treatment facilities on importing disused pesticides and school chemicals for destruction, as well as with POPs in PICs stakeholders on their preparedness to continue applying the "good neighbour" policy towards PICTs. Consultation will also be undertaken with shipping agencies on potential shipping costs.

A visit will also be undertaken to one Melanesian PICT, either PNG or New Caledonia to further scope the clean up. A preliminary cost estimate of clean up will also be developed. It is noted that the Australian Government has expressed interest in extending POPs in PICs Project to PNG. Although no progress has been made to date, the feasibility study would incorporate consultation with the Australian Government. It is expected that AusAID would be interested in partnering with AFD.

VII. RECOMMENDED SUBREGIONAL INITIATIVES

Phase II of the Component 2 feasibility study will involve the further scoping of three of the aforementioned activities. This section provides recommendations for the three activities to be further scoped.

7.1 - Recommendations

The recommendations are based on the necessity of the Initiative to achieve its goals within a relatively short timeframe. As such the Team has focused on replicating existing successful models, extending current and developing complementary activities, and the economic opportunities of some wastes.

The following projects are recommended for further scoping:

- **Micronesia scrap metal:**

The initiative would include a legacy scrap component as well as an initiative being driven by the Government of Kiribati, to introduce regulations for a deposit-refund scheme. The initiative in Kiribati represents a potential flagship project for the entire region, which can be replicated in other PICTs. The initiative is envisaged to be low-cost and the Government of Kiribati has indicated its commitment to, and willingness to drive this initiative.

- **Melanesia POPs/ school laboratory chemicals:**

This initiative builds on the successful Persistent Organic Pollutants in Pacific Island Countries (POPs in PICs) model, which has been shown to be cost-effectively when implemented regionally or subregionally. It addresses the urgent situation of disused pesticides that are at risk of leaching into the environment, as well as adding to the work of POPs in PICs by expanding the scope into school and laboratory chemicals.

- **Polynesia and Melanesia, regional waste oil recycling**:

This initiative represents an example of potential regional cooperation involving the public and private sectors. After the initial costs, the programme programme should become cost-neutral. Further although prioritised by two of the subregions, it can expanded be expanded at very little cost to also include Micronesian PICTs.

7.2 - Lead-acid batteries and PET

Phase II of the feasibility study is limited to three initiatives. The lead-acid batteries and PET initiatives represent important and potentially viable activities. However, the logistics are both simple and not particularly well suited to sub-regionalism. Poor sorting or contamination of PET can dramatically reduce its value. Shared contracts risk all players being penalised for the poor practices of one member. Similarly, the recycling of lead acid batteries can be nationally-based as Kiribati has shown, but may require the PICT to implement some sustainable funding system.

Lead-acid batteries and PET initiatives require more work at the national level. Under the AFD SWM Initiative, this work may be undertaken under Component 3. In the case of lead-acid batteries, collection and storage is required. Training is required for staff in PICTs to undertake collection and storage safely. For PET segregation and collection must occur. Equipment is also necessary to process PET for shipping.

There may be other options through other donors to further assess the feasibility of these activities and it is recommended that AFD share this report with other donors. One or both of these activities may potentially be taken up under the GEF-PAS.

VIII. CONCLUSIONS

The Phase I study included a desktop review of information, survey of PICTs waste volumes and preferences. Five priorities were highlighted by PICTs. Three of these have been recommended for further scoping, under Phase II of the study. These are: Micronesia scrap metal; Melanesia POPs/School Laboratory chemicals: and Polynesia and Melanesia, regional waste oil recycling.

If the AFD accepts these recommendations visits will be made to Kiribati, Fiji and PNG and/or New Caledonia, to gather further information on the feasibility of each of the subregional initiatives.

During Phase II the Team will also assess the feasibility of two fundamentally different approaches to funding waste problems in the Pacific, that of funding *ad hoc* removal of stockpiles, and that of establishing a permanent funding system and supporting it, as well as a combined approach.

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ANNEX 1 - Vessel Rotation for Pacific Region

East Pacific

Pacific Direct Line	**Depart Brisbane**	**Noumea**	**Lautoka**	**Suva**	**Apia**	**Pago**	**Tonga**	**Suva**	**Brisbane**
Monthly Rotation									
Wallis and Futuna Serviced via Transhipment over Noumea									
Sofrana	**Depart Brisbane**	**Noumea**	**Wallis**	**Futuna**					
Monthly Rotation									
Wallis and Futuna Service via Transhipment over Noumea									
Swire Shipping	**Depart Brisbane**	**Lautoka**	**Suva**						
Monthly Rotation									
Can carry freight to Asia									
Reef Shipping	**Depart Brisbane**	**Noumea**	**Lautoka**	**Suva**	**Apia**	**Pago**	**Tonga**		
Monthly Rotation									
Vanuatu Serviced Via Transhipment over Noumea									
	Depart Brisbane	**Auckland**	**Rarotonga**	**Niue**	**Aitutaki**	**Vava'u**			
			Cook Is		Cook Is	Tonga			
					will take 40's	will take 40's			
					limit of wt 18t	limit of wt 20t			

Greater Bali Hai												
Fortnightly Service	**Depart Taiwan**	**Korea**	**Japan**	**Pt Vila**	**Noumea**	**Lautoka**	**Suva**	**Apia**	**Pago**	**Papeete**	**Santo**	**Taiwan**

Central Pacific and West Pacific

Swire Shipping	**Depart Brisbane**	**Port Moresby**	**Lae**										
Monthly Rotation													
Sofrana	**Depart Brisbane**	**Port Moresby**	**Lae**	**Rabaul**	**Lihir**	**Honiara**	**Port Vila**						
Monthly Rotation with variations on Ports in PNG													
Neptune	**Depart Brisbane**	**Nauru**											
(New Owners next Vessel due to start August)								T/ship Service	T/ship service	T/ship service			
Swire Shipping	**Depart Brisbane**	**Lutoka**	**Suva**	**Papeete**	**Vanuati**	**Kiribati**	**Marshall Is**	**FSM**	**Guam**	**Nth Mariana**	**China**	**Korea**	**Brisbane**
						Limited	Kwajalin	Kosrae					
						40 foot		Pohnpei					
						capacity		Chuuk					
								Ebeye					

Greater Bali Hai								
Fortnightly Service	**Depart Taiwan**	**Korea**	**Japan**	**Majuro**	**Tarawa**	**Honiara**	**Noro**	**Taiwan**

ANNEX 2

The following provides a summary of legislation, policies related to waste in PICTs. The third column outlines legislation and policies that PICT representatives have stated they require, or that are being developed. All PICTs require a national structure to address waste management.

Polynesia

Country	Legislation	Policies	Legislation/Policies required
Samoa	Lands and Environment Act, 1989 governs waste Management. Provisions for the control of solid waste are given in Division 8, Part VIII titled "Control of Litter". Department of Lands, Survey and Environment coordinated drafting of the National Waste Management Policy for the Government of Samoa, 1999. This document that covers issues such as individual and collective responsibility, sustainability, environmental protection and public health, waste minimisation, and economic development.	An import duty of one tala per litre and an excise of 30 sene per litre on both locally produced and imported products. Samoa National Waste Management Strategy	
Tokelau	Marine Pollution Act 1974 (NZ)	Draft Waste Management Strategy. MOU with Samoa for receipt of Tokelau's wastes and recyclates. Also: Marine Pollution Regulations (1990); Marine Pollution (Dumping and Incineration) Regulations 1982; and Marine Pollution Rules (1998).	
Cook Islands	The Local Government Act contains provisions for Island Councils with the support of the Office of the Minister of Island Administration (OMIA) to be responsible for waste collection. Rarotonga Environment Act, defines institutional arrangements for waste management.	Cook Islands Waste Mangement Strategy Domestic waste management is funded from the environment tax charged as part of the departure tax on all departures from Rarotonga.	Effective regulatory framework to underwrite best practices nationally. National policy that addresses waste management. Regulatory control mechanisms for related areas such as imports of hazardous toxic materials. Waste management plans and drafting of specific regulations is essential.

Tonga	Department of Environment & Natural Resources (DoENR), Ministry of Lands, Survey, Natural Resources & Environment regulate and monitor administration and operations of the Waste Authority Ltd. on Tongatapu, consistent with the Waste Management Act 2005. Also: Environmental Impact Assessment Act 2003; Garbage Act; and Pesticides Act 2002	Tongatapu Waste Management Strategy	Hazardous Wastes and Chemicals Bill submitted and awaiting approval.
Niue	Under the Environment Act 2003, Dept of Environment acts as the over riding authority for environment concerns. Customs Act 1966 - relates to importation and exportation of Goods. Pesticides Act 1991- Controls importation of Pesticides into Niue.	The Niue Integrated Strategic Action Plan	Waste Management Legislation
Tuvalu	The Environmental Protection Bill was passed by Parliament in June 2008. Attempts to legislate all general issues connected with the protection of the Environment. The Public Health Act and Regulation (1926) states that all premises and land should be kept clean through burning or placing of rubbish in bins. Also: Marine Pollution Act (1991); and Pesticides Act 1990	Tuvalu Integrated Solid Waste Plan. Import duty on these wastes – cars, motorbikes with this goes to the government general fund not for waste management, includes AUD4000 custom duty on second hand cars or trucks. Malefatuga Declaration, endorsed at the National Summit for Sustainable Development (NSSD) that convened in July 2005.	Public Works needs a strong plan to address sustainable financing system Instruments such taxes, CDS. Legislation to cover waste minimisation and disposal and proper environmental assessment of landfill sites.
American Samoa	Environmental Quality Act - Waste Management under authority of the Environment Protection Authority	Import duty on cans.	Taxes and duties on imports

Micronesia

Country	**Legislation**	**Policies**	**Legislation and Policy required**
Marshall	Acts include: Littering Act	Majuro Atoll Waste Company	Implementation of the

Islands	(1982); Marine Mammal Protection Act (1990); and National Environmental Protection Act (1984).	Development Vision 2008 On Ebeye Island, in Kwajalein Atoll, beer in glass containers were banned due to public health issues over broken glass. MWCA Landfill & Dredge site Environmental Management Plan recently submitted to RMI EPA for review & comment. MAWC initiating and implementing a SAFETY FIRST program.	legislated government funding commitment to MWCA. Modification to the current sales tax base and tariffs, or taxes on recyclable items.
Kiribati	Acts include: Environment Act (1999); and Special Fund (Waste Material Recovery) Act (2004). Container Deposit Legislation (CDL) on aluminium cans and plastic bottles.	An import tariff on beer cans led to few beer bottles imported.	Expansion of CDL into steel cans and auto wastes.
Palau	Environmental Quality Protection Act.	Nation Solid Waste Management Plan. Regulated by the Environment Quality Protection Board (EQPB). EQPB oversees regulations regarding, *inter alia*: pesticides; environmental impact statements; and air pollution control.	CDL passed in parliament, but not yet implanted. Need advance fee/tax for treatment of bulky waste, e-waste Tipping fee in landfill, operation costs
FSM	Each state has its own Constitution, Code and regulations.	Yap: Draft Solid Waste Management Plan	Developing a National Strategy, to make state strategies consistent.
French Polynesia	XXXX	An import tax of 2% for all goods, to finance activities in favour of the environment and the agriculture. Multi-stakeholder agreement to ban the proliferation of plastics bags Efforts to integrate the neighbour islands into the management system put in place in Tahiti.	
Northern Marianas	Resource Conservation and Recovery Act (RCRA). There are over 400 wastes listed in the Act including solvents, petroleum, some	Numerous relevant regulations including: hazardous waste regulations; pesticides management regulations; used oil management regulations;	

	pharmaceutical products, and some pesticides. Also: Litter Control Act (1989); Safe Drinking Water Act; and Solid Waste Management Act.	drinking water regulations; and solid waste management regulations. Siapan has also developed an Integrated Waste Management System.	
Guam	Guam Environment Protection Agency Act. Also: Solid Waste Management and Litter Control Act; Guam Pesticides Act; Guam Environmental Pollution Control Act; and Guam Water Pollution Control Act.	Recycling revolving fund. Annual registration fee for cars, batteries, oil, plastic and other hard to manage waste. Controlled by Department of Public Works.	Proposed Bottle Bill in legislature.

Melanesia

Country	Legislation	Policies	Legislation and Policies required
Fiji	Environment Management Act (2005): For the protection of the natural resources and for the control and management of developments, waste management and pollution control and for the establishment of a national environment council and for related matters.	Fiji Waste Action Plan The municipal authorities have by-laws dealing with waste management issues such as the Lautoka (Garbage Disposal).	
Solomon Islands	Environment Act (1998): provision for the protection and conservation of the environment; the establishment of the environment and conservation division and the environment advisory committee and for matters connected therewith or incidental thereto.	Draft Solomon Islands National Waste Management Strategy. Developing a NATPLAN	
Vanuatu	Environmental Management and Conservation Act (2002): to provide for the conservation, sustainable development and management of the	National Waste Policy in 2001 waiting to be adopted.	Proposed amendment to the EMC Act to have sections of hazardous materials and hazardous wastes incorporated. CDL may be developed late

	environment.		2008 under UNDP project.
PNG	Several Acts including: Conservation Areas Act (1978); Environmental Contaminants Act (1978); Environment Act (2000); and Oil and Gas Act.	Environmental Contaminants (Pesticides) Regulation 1988	
New Caledonia	New Caledonia Act (1999) identifies four territorial authorities: the French State, New Caledonia, the Provinces (Loyalty Islands, North and South) and the Municipalities and spells out the powers accorded to each authority. The three provinces are given most of powers in environmental matters.	Tax anti-pollution for certain imported products.	Regulations at the territory and province level that nowadays does not provide and adequate framework for the necessary obligations and incentives to put in place a complete and consisting waste management system.
Wallis and Futuna	There are four established authorities: the French State, the Territory, the Wards, and in Wallis only, the Districts. Traditional institutions co-exist alongside these authorities, in Wallis, the Uvea Kingdom and in Futuna the Kingdoms of Sigave and Alo.		-EPR laws
Nauru	Marine Resources Act 1978		

ANNEX 3

List of regional recyclers

Product	Australia/NZ	Asia
Glass	Visy, Australia	
	ACI, Australia	
Paper	Paper Reclaim, Australia	
Tyres	Sims Tyre Cycle, Australia	
Lead Acid Batteries	Tredi Exide, NZ	
	Australian Refined Alloys (secondary smelter recycler that recovers the lead and makes lead ingots), Australia	
	Hydromet (secondary smelter recycler that recovers the lead and makes lead ingots), Australia	
Engine Oil	Nationwide, Australia	
Plastic	Astron Plastics, Australia	
	Close the Loop, Australia	Yantai Great Land Industrial & Commercial Ltd, China
	REPLAS, Australia	Huang Zheng Co, China
	Martogg & Company, Australia	Sancon, China
	Olympic Polymers P/L, Australia	Bright Ways Traders, China
	Plastics Granulating Services (PGS), Australia	
	Sims Plastics, Australia	
	SRM Plastics Pty Ltd, Australia	
	Australian Composite Technology, Australia	
	Australian Plastic Recycling Pty Ltd, Australia	
	Carrington Plastics, Australia	
	Cryo Grind, Australia	
	Collex Recycling, Australia	
	Plastic Technology, Australia	
	Sandhurst Enterprises Recycling, Australia	
	Thermoplastic Recyclers, Australia	
	Unimould, Australia	
Aluminum Cans		
	Kaal, Australia	
	Talls Ingots, Australia	
	Sims Metals, Australia	
	Comalco, Australia	
Scrap Metal		
	Sims Metals, Australia	Rnb Overseas Pvt Ltd, India
	Tall Ingots, Australia	Chemi Industries, India
	Comalco, Australia	RNB Merchantile Pvt Ltd, India
	Queensland Metals, Australia	RNB Overseas Pvt Ltd, India
	Auckland Metal Recycling, Australia	Calypso International, India
	Cableco Corporation, Australia	
	Dominion Recycling NZ	
	Hamilton Recycling Centre NZ	
	Macaulay Metals NZ	
	Metal Man Recyclers NZ	

	Metal Smelters NZ	
	MetalCorp NZ	
	Southern Cross Metal Recyclers AUS	
	Hamilton Recycling Centre NZ	
	Gamma Compaction. NZ	
Pesticide destruction	BCD Technologies, Australia	

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Taulehia Pulefou	Ministry of Environment, Lands, Agricultural Development	Pollution Control Unit. Env and Cons. Division	taulehia.ecd@melad.gov.ki jc132766@gmail.com
Tererei Abete Reema	Ministry of Environment, Lands, Agricultural Development	Director	tererei.ecd@melad.gov.ki
Palau			
Portia Franz	Palau Environmental Quality Protection Board	Executive Officer	eqpbfranz@yahoo.com
Calvin Ikesiil	Bureau of Public Works	Solid Waste Manager	bpw@palaunet.com
Larry Goddard	Office of the President	Legal Adviser	proplag@palaunet.com
John Olbedable Ngiraked	Koror State Government	Technical Activities/ Solid Waste Waste Management	ksgswm@palaunet.com
Joseph Aitaro	Palau Waste Management		iwppalau@msn.com
Donald Dengokl	Environmental Quality Protection Board	Assistant Executive Officer	
Shelda B. Skang	Koror State Government	Solid Waste Management Officer	barah84@yahoo.com
Guam			
Conchita San Nicolas Taitano	Guam Environmental Protection Agency (member of PIRRIC)	Air and Land Programs Division Administrator	Conchita.Taitano@guamepa.net
Lorilee Crisostomo	Guam EPA		Lorilee.Crisostomo@guamepa.net
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Niue			
John Talagi	Ministry of Environment	Solid Waste Manager	johndtalagi@hotmail.com and environment.ca@mail.gov.nu
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Brendan Pasisi	Department of Agriculture, Forestry and Fisheries	Director	bpasisi@mail.gov.nu
Sauni Tongatule	Department of Environment	Director	tongatules@mail.gov.nu
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Mateio Tekinene	Department of Environment	Director of Environment	mataiotekinene@yahoo.com
Pepetua Latasi	Department of Environment	Climate Change Coordinator	pepetua@gmail.com

Susan Tupulaga	Department of Environment	Waste Management	stupulaga@gov.tv
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Kelesoma Saloa	Department of Environment	Advisor to the PM and Cabinet	tuviwp@tuvalu.tv
Cook Islands			
Tauraki Raea	Department of Environment	Senior Environment/ODS Officer	tauraki@environment.org.ck
John Wichman	Foodland Ltd (private recycler)	Managing Director	john@foodland.co.uk
Siona Paku	Ministry of Works	Landfill Manager	siona@recycle.co.uk
Tekao Herrmann	Ministry of Works	Director – Waste Management	t.herrmann@mow.gov.ck
Vavia Puapii	National Environment Service	Environment Officer	climate@aitutaki.net.ck
Donye Numa	Prime Minister's Office		emci@pmoffice.gov.ck
Marshall Islands			
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Lowell R. Alik	Marshall Islands Waste Committee	Chairman	l_alik@hotmail.com
Steve Why	Marshall Islands Conservation Society	Director	stevewhy@coralatolls.org
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Mr. Robert Spegal	Micronesia Human Resource Develoment Center	Director of Waste Management	Eml: opalpac@mail.fm
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Michael Wau	Department of Environment and Conservation	Senior Environment/Technical Officer	michael_wau@yahoo.com.au or odir@daltron.com.pg
Kelly Gawi	Department of Environment and Conservation	Senior Environment Officer	odir@daltron.com.pg
Fiji			
Epeli Nasome	Department of Environment	Director	enasome@govnet.gov.fj or epeli_nasome@hotmail.com
Jope R. Davetanivalu	Department of Environment	Principal Environmental Officer (Waste/EIA)	djjope@yahoo.com

New Caledonia			
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Mr. Jean-Jerome Cassan			jj-cassan@province-nord.nc
Ms Gentiane Bisio			gentiane.bisio@province-sud.nc
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Wallis and Futuna			
Sanele Tauvale			senv@wallis.co.nc
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PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

The AFD (French) Pacific Solid Waste Management Initiative is a significant opportunity to improve your country's waste management. Assistance will be allocated to both multi-country and single country initiatives and this survey will assist in choosing who gets what assistance. Please check with others to make sure your answers are as accurate as possible.

IT IS EXTREMELY IMPORTANT THAT YOU AND YOUR COLLEAGUES COMPLETE THIS SURVEY EVEN IF YOU CANNOT FILL IN ALL THE SPACES.

Introduction: GHD Pty Ltd has been appointed by the Agence Française Développement (AFD) to complete a feasibility study for the preparation of Components 2 and 3 of the Solid Waste Management Initiative. Component 2 will address various potential sub-regional initiatives on hazardous waste and wastes of commercial value.

Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by Amercian Samoa. We understand that Amercian Samoa completed a waste characterization study already. This survey is being transmitted to you to provide Amercian Samoa with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in Amercian Samoa to ensure we gather all available information. All responses received will be collated:

Petelo Lafaele	American Power Authority	Solid Waste Manager
Mr. Fa'amao Asalele Jr.		
Fanuatele, Dr. Toafa Vaiaga'e		

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey American Samoa" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Petero Lafaele
Position	Solid Waste Manager
Department	Solid Waste (American Samoa Power Authority)
Email address	Petero@aspower.com
Phone number	(684) 699-4619

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes or no**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and companies involved**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government is actively trying to address)**	**Does your government think this waste is a high, medium, low, or not a priority for assistance**
Lead acid batteries	Yes (delivered/pick up) to Scrap Metal Site	500+ each	Handle by contractor to ship off-island	NA	Cannot be managed on island (do not have permits to manage	Yes (high priority – need assistance in handling

					Lead/acid)	toxic/acid batteries)
Used engine oil	Yes (wastes oil from private auto shops.) Taken to lube cubes at certain gas stations or to ASPA.	(average 2 drums/mth)	Used at local cannery. Burn waste oil in boilers to make steam for hydraulics in machines. (i.e. steamers, fillers, etc.) After local EPA tests it	NA		Not a priority for assistance
Expired pharmaceuticals	Yes Red bag wastes (disposed at Landfill)	4 cubic yard load per day	Currently disposed at Landfill (awaiting Hospital contruction/installtion of incinerator)	NA	NA	Medium priority
Disused pesticides	NA					
Disused school laboratory chemicals	NA					
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your government think this is a High, medium, low, or not a priority for assistance**

	process recyclable wastes					
Plastic	No Need: recycling equipment	No	No	NA		Yes – High
Paper/cardboard	No Need: recycling equipment	No	No	NA		Yes – High
Aluminum cans	Yes (local business recycling, T&T, GHC Reid Companies) Currently have Can crushing equipment	No	No	NA		Yes – High
Glass	Yes (min; no activity at the moment) Currently have Glass crushing equipment	No	Yes (ASPA SW)	Very minimum (no incentive; collected by SW crews/min turned in by few residents)	Yes (no incentives; non supported by Legislature)	Yes – High
Scrap metal	No Major SM is managed by contractor(s)	Private contractors (local & off-island) 1.Good Year Co. 2.Samoa Pacific	Yes (for GY company)	NA		Yes – High

	Other private companies collect own SM and ship off-island	Recycling				
Used tyres	No	No (except for tires in SM Yard)	No	NA	Yes (shipping costs)	Yes - High

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey?: GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

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Introduction: GHD Pty Ltd has been appointed by the Agence Française Développement (AFD) to complete a feasibility study for the preparation of Components 2 and 3 of the Solid Waste Management Initiative. Component 2 will address various potential sub-regional initiatives on hazardous waste and wastes of commercial value.

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The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by the Cook Islands. We understand that the Cook Islands completed a waste characterization study already. This survey is being transmitted to you to provide the Cook Islands with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in the Cook Islands to ensure we gather all available information. All responses received will be collated:

Tauraki Raea	Department of Environment	Senior Environment/ODS Officer
John Wichman	Foodland Ltd (private recycler)	Managing Director
Siona Paku	Ministry of Works	Landfill Manager
Tekao Herrmann	Ministry of Works	Director – Waste Management
Vavia Puapii	National Environment Service	Environment Officer
Donye Numa	Prime Minister's Office	

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Cook Islands" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
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Survey Completed by:	
Name	TANIA TEMATA
Position	DIVISIONAL MANAGER
Department	NATIONAL ENVIRONMENT SERVICE
Email address	tania@environment.org.ck
Phone number	682-21256

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export**	**Has an inventory been undertaken (for pesticides, pharmaceutic**	**Other information you wish to provide (e.g. this is something your**	**Does your governme nt think this waste is a high, medium, low, or**

	answer yes or no		**destination and companies involved**	**al and lab chemicals only)**	**government is actively trying to address)**	**not a priority for assistance**
Lead acid batteries	yes		Exported by private company – John Wichman	Not applicable		HIGH
Used engine oil	Limited to one of the petroleum company only	n/a		Not applicable		
Expired pharmaceuticals	Ministry of Health maintains their own stock CITC: Holding stock, keeping it quarantined		Incinerated at Ministry of Health incinerator for medical waste Considering re-export to NZ or incineration with Ministry of Health if feasible	No data available		LOW
Disused				Not available	Need to revise	HIGH

pesticides					the pesticides act to deal with pesticides lifecycle. Current legislation only deal with registration of imports and disposal after are not considered.	
Disused school laboratory chemicals	Collected and stored by each of the school	Mainly colleges have laboratories – approximately about 50 kgs in total	Kept in boxes at the colleges	Not available – volume is quite low	Each college is required to manage its own stock. One college have not disposed anything in the last 5 years, but keeping the stockpile. As the Education Ministry, there	LOW

					is no guideline or management regime in place.	
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your governme nt think this is a High, medium, low, or not a priority for assistance**

	to process recyclable wastes					
Plastic						HIGH
Paper/cardboard						MED
Aluminum cans						HIGH
Glass						HIGH
Scrap metal						HIGH
Used tyres						MED

COMMENTS:

***I believe more credible data will be provided by the other recipients of the survey on waste with commercial value as they have the data.**

*** There are other waste streams that need to be considered as part of this survey but we have not been able to do an inventory of, and that is the e-waste and whitewares. This waste stream is contributing a lot to our waste problem. We need to know of markets to export to viably and how to prepare them for processing for export.**

***For the Cook Islands, inter-island export and import of waste is an ongoing issue. Outer islands are asking for assistance to be able to recycle at least aluminium, glass and PET plastic, but do not have the means to do so.**

***Cook Islands as a whole need to revise and update its waste management strategy in order to focus on values of some of the waste and promote it for recycling and re-exporting.**

***The Pacific Region need to establish a re-exporting programme for some of the hazardous waste streams that are not viable for any private sector or for small ecomonies to deal with. Countries that we mainly import from such as New Zealand and Australia should be able to provide an enabling environment to allow for this to happen. As a region, there is a need to cooperate and assess alternative packaging for some goods**

that are imported into the countries, as the scale of economy is more significant, so that waste materials are minimized and small island states can safely handle disposal.

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Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

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Name	TANIA TEMATA
Position	DIVISIONAL MANAGER
Department	NATIONAL ENVIRONMENT SERVICE
Email address	tania@environment.org.ck
Phone number	682-21256

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export**	**Has an inventory been undertaken (for pesticides, pharmaceutic**	**Other information you wish to provide (e.g. this is something your**	**Does your governme nt think this waste is a high, medium, low, or**

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pesticides					the pesticides act to deal with pesticides lifecycle. Current legislation only deal with registration of imports and disposal after are not considered.	
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Plastic						HIGH
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Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

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Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by Fiji. We understand that Fiji completed a waste characterization study already. This survey is being transmitted to you to provide Fiji with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in Fiji to ensure we gather all available information. All responses received will be collated:

- Epeli Nasome	Department of Environment	Director
- Jope R. Davetanivalu	Department of Environment	Principal Environmental Officer (Waste/EIA)

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Fiji" and add your name.

2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Jope Davetanivalu
Position	Principal Environmental Officer
Department	Department of Environment
Email address	jdavetanivalu@govnet.gov.fj
Phone number	3311699/9332581

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes or no**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and companies involved**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government is actively trying to address)**	**Does your government think this waste is a high, medium, low, or not a priority for assistance**

Lead acid batteries	There is no central area for collection in Fiji but there is a small company that is dealing with this known as the Pacific Batteries.	No data available and there ned to some survey done on this.	Some are exported and some are juts dumped away.	Not applicable	Yes we have a Waste Regulation where we look into wasdte batteries recycling and estsbich collection as erquired under the regs.	High priority for assistance
Used engine oil	Steef manufacturing companies are using this.	No data available	Not exported	Not applicable	Under the waste pollution regulation, factories and industries are required to produce management plans for the oil .	High priority
Expired	Incineration	No data	All medical waste		Pharmacy	High

pharmaceuticals		available with Department. Ministry of Health will know this better.	are incinerated but for product in private pharmacies, we don't have infors.		Act	priority
Disused pesticides	This is an issue in Fiji now because we don't have proper disposal mechanism and these chemicals are juts stored away.	There is Chemicla Inventory in Fiji which gives some data on this. Figures can be disclosed in later mails.	Chemical Management Plan exist bu we do need financial asistnce for its implementation.		Chemcial Management Plan	High priority. Schools has been calling us on how to dispose these chemicals away.
Disused school laboratory chemicals	This is an issue in Fiji now because we don't have proper disposal mechanism and these chemicals	There is Chemical Inventory in Fiji which gives some data on this.	Chemical Management Plan exist bu we do need financial asistnce for its implementation.		Chemcial Management Plan	High priority

	are juts stored away.					
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to process recyclable wastes**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your governme nt think this is a High, medium, low, or not a priority for assistance**

Plastic	Only water bottles produced from some Water botling plants are recycled but the rest of plastic waste are not recycled.	Private Company. Fiji Water Company is exporting them to Australia but name of company is not avaloble with me	Government is still trying to get data on this on a few project it will be undertaking this year through UNDP and JICA	No Data	No markets for waste in Fiji; Costly exercise; identifctaion of markets overseas; shipping mechanism; education and awareness;no law and lack of dfaa etc.	High
Paper/cardboard	Yes by Waste Recylce Fiji Limited and they are exporting them to Australia. Name of company I have to get	Private Company	We took part in creating awareness and als provision of collection bags in villagers	No Data	No markets for waste in Fiji; Costly exercise; identifctaion of markets overseas; shipping mechanism; education and	High

	it from them.				awareness; no law and lack of data; etc.	
Aluminum cans	Yes – Coco Cola Amatil is recycling their own cans. They collect them and send them to Australia. Company not available.	Private Company	Education and awarenss	No Data	No markets for waste in Fiji; Costly exercise; identifctaion of markets overseas; shipping mechanism; education and awareness; no law and lack of data;etc.	High
Glass	No	None	None	No Data	No markets for waste in Fiji; Costly exercise; identifctaion of markets overseas;	Medium

					shipping mechanism; education and awareness;no law etc.	
Scrap metal	Yes there is a company in Fiji now and we will forward name and destination when we get infor.	Private Company	Education and awareness	No Data	No markets for waste in Fiji; Costly exercise; identifctaion of markets overseas; shipping mechanism; education and awareness;no law etc.	
Used tyres	No	None	None	No Data	No markets for waste in Fiji; Costly exercise; identifctaion of markets overseas;	High

					shipping mechanism; education and awareness; no law etc.	

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey? GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information – sent later:

1. In Fiji we have the Public Health Act; The Litter Promulgation 2008; and the Environmental Management Act 2005. The Public Health Act is looked after by the Ministry of Health and the other two is looked after by the Department of Environment.

2. We have the National Solid Waste Management Strategy; Waste Characterization study which is not the information about Fiji; national Chemical Waste Management Strategy. The Government has allocated 1$100,000 FJD for the National Solid Waste Management Strategy. We have subject like Tax Incentives and we will need some critical analysis of this to be done in Fiji.
3. UNDP will be undertaking a project on Container Deposit with the assistance of the Department by next month. It will be piloted in one of the City in Fiji. The JICA will also be undertaking a Waste Minimization project in one of the Division and hopefully findings will be adopted as a policy for better waste management in Fiji. Most of the information you are requesting now will be part of the these projects where team engaged will be doing survey and produce reports for the Government. Eg volume of waste; where collected materials are sent to from Fiji for those who are doing it now etc. All these things have been happening, but to have a focal report addressing all these is the big gap.
4. Yes the support from private companies has been very positive and they were very instrumental in the development of the National Solid Waste Management Strategy for Fiji. We have been working together now and with the enforcement of the Environmental Management Act waste pollution regulation, they have been very supportive and creating awareness.
5. NGOs are very much involved in this creating awareness. These are NGOs like Live and learn; Youth groups; Church groups; business houses; bigger companies etc. All these things have been happening, but to have a focal report addressing all these is the big gap.

Some of the waste mentioned in the survey forms like loose engine oil. These are reused by steel making factories as fuel. Tyres are dumped into rubbish dumps and landfill but some are converting them into other decorating products. Majority of them are improperly disposed off through burning.

Additional information (Jope):

Lead Acid Batteries:

1. Phone number is 3362255 and speak with Mr. Dube.
2. What we really want to have is establish a proper collection system and of course disposal. Our public needs to be raised awareness on the importance of proper recycling of this. Mr. Dube got some plans already which he

working with Government and please consult with him. Batteries disposal in really a problem in Fiji. Spoke are taking them in but they are only removing certain parts but the rest are thrown out into the environment. We must have a system that deals with Unused Batteries management holistically.

Used engine oil.

1. This is not the case. There are only some industries that are supplying oil to Fletcher. To establish this system of loose oil collection and transportation to Fletcher will be the issue.
2. Pleased speak with Mr. Hira Lal the Manager compliance of Fletcher Steel Fiji. This is their email address: reception@fps.com.fj and their phone number is 3314 500.
3. As said before that not oil are transported and used by Fletcher. There are huge number of factories in Fiji and without proper data the amount and how they disposing it.

Expired Pharmaceuticals..

1. This is the number to the Fiji Pharmaceutical Services; 3388000.
2. There is not clear data on the amount of waste produced by these people and also the private ones and on how they treat them.

Disused Pesticide.

1. The officer who has the copy of this is away on a field trip and she will be back by Monday. I will send one right across when I get them. We have hard copies of these and they are thick ones.

Plastics

1. I will look up the docs now and send them over (UNDP & JICA)

The current assistance which would like to have on the last three is to identify gaps that are slowing down the processes of collection of these waste collection and management. These are private companies and they wick always need government assistance on their programs. Some area which we would like to have is carrying out a National Awareness Campaign; development of a regulation for waste separation to begin at home and these waste can be easily channeled to their various collection centers by councils; a study on the feasibility of converting to biodegradable plastics. We need funding and expertise who can do this. Talking about car bodies – waste recycle company does not have a compressor to compress the cars so that they are properly tucked away for overseas.

For you information, there in only Landfill in fiji and the rest are open rubbish dumps which are operated by towns and City council.
JOPE – also sent UNDP/JICA Project documents (saved in FIJI lit review file)

L'étude de la caractérisation des déchets des Iles et des Territoires du Pacifique, Août, 2008.

L'Initiative « Gestion des Déchets Solide » de L'AFD représente une opportunité importante dans le but d'améliorer la gestion des déchets dans votre pays. L'assistance sera fourni aux initiatives sub-régionale et par pays. Ce sondage va nous aidez a identifier qui va bénéficier de quoi. Veuillez vérifier avec les autres afin d'être surs que les informations sont aussi juste que possible.

Il est extrêmement important que vous et vos collègues remplissiez ce sondage même si vous ne pouvez pas répondre à toutes les questions.

Introduction: GHD PTY LTD a été nominé par l'Agence Française Développement (AFD) afin d'écrire une étude de faisabilité sur la préparation du partie 2 et 3 de l'Initiative du Gestion des Déchets Solide. La partie 2, s'adresse aux initiatives subrégionales, sur des déchets toxique et des déchets recyclables avec valeur commerciales. Les déchets toxiques susceptibles d'être collectionnés, sont les batteries, les pesticides usagéés, les produits chimiques usagéés des écoles, et les huiles usagéés. Les déchets avec valeur commerciale susceptibles d'être collectionner sur une initiative subrégionale incluent, les cannettes d'aluminium, le verre, les plastiques, les métaux, et les pneus de voitures.

Ce sondage va aider GHD a comprendre les volumes et les types de déchets toxiques, et le niveau du recyclage a (ajoute le nom du payée). Nous comprenons que [add country name] a peut être déjà fait une étude de caractérisation des déchet. Nous vous transmettrons ce sondage pour vous permettez de mettre a jour les résultats et informations. Quand vous remplirez cette étude, vous pouvez utiliser les resultats de vos études existantes si vous n'avez pas d'informations plus récentes.

Nous avons envoyer cette étude aux personnes suivante en Polynésie Française afin d'assurer que nous disposons de toutes des informations possibles disponibles. Toutes les réponses vont être réunies.

Société Environnement Polynésien Managing Director

Karl Meuel
Benoit Layrle Société Environment Polynésien Chief Engineer

Les Instructions pour remplir ce sondage:

1. Sauvegarder ce document dans votre disque dur avec le titre " AFD Etude des Déchets Polynésie Française avec votre nom.
2. Remplissez la section " Rempli Par".
3. Remplissez la section « les déchets toxiques » et « les déchets avec valeur commerciale ».
4. Nous vous prions de nous fournir autant d'information que possible – nous sollicitons vos idées!
5. Si vous avez des questionnes sur le sondage veuillez contacter Petra Campbell a kpmm@ozemail.com.au.
6. Un fois que vous avez terminer le sondage veuillez les envoyer a Petra Campbell a kpmm@ozemail.com.au.

Etude Rempli Par: Benoît LAYRLE	
Nom	Société Environnement Polynésien (SEP) - FENUA MA
Position	Ingénieur – Chef de Projets
Departement	Déchets
Address Email	benoit.layrle@sep.pf
N. de telephone	(689) 54 34 50 / (689) 54 34 53 (direct)

Déchets Toxiques	**Actuellement collectés par (c'est à dire, ou sont ils**	**Volume approximatif des stocks**	**Gestion actuelle (par exemple est ce que vous**	**Est-ce qu'un inventaire a été fait (pour les pesticides, les**	**Information additionnelle que vous voulez fournir**	**Est-ce que votre gouvernement pense que ça**

	stockés, dans un location centrale?)		**exporter les déchets ?)**	**produits pharmaceutiques et les produits chimiques de laboratoire seulement**	**(par exemple, est –ce que votre gouvernement essaye de résoudre ces problèmes ?**	**a un ordre de priorité d'aide par l' AFD : haute, moyenne, basse ou pas du tout.**
Les batteries	SEP	350 à 450 t/an t/per year	NZ	-	Depuis 2003 Since	-
Les huiles usagéés	SEP	150 à 200 t/an t/per year	NZ	-	Depuis 2003 Since	-
Medicaments usagéés	SEP	45 t/an t/per year	Stock sur Tahiti en attendant export en NZ Stored in Tahiti waiting exportation to NZ	-	Octobre 2008 Since	-
Pesticides usagéés	SEP	Très faibles quantités	NZ	-	Depuis 2004 Since	-

		Very small quantities				
Produits chimiques usagéés des écoles (par exemple du laboratoire)	SEP	Très faibles Quantités Very small quantities	NZ	-	Depuis 2004 Since	-
Les déchets avec valeur commerciale (recyclables)	**1.Est ce qu'il sont actuellement recycler? Si oui, vers quelles sociétés de recyclage? 2. Equipements de recyclage que vous avez 3. Equipement de recyclage que vous voulez**	**Est ce qu'il y du recyclage fait par le secteur privé? Si oui, veuillez donner les coordineés des sociétés ou des ONG?**	**Est-ce que le gouvernement fait du recyclage (par exemple, fournit les points de collecte**	**Volume approximatif des déchets générés par an et volume des déchets recyclables disponibles a ce jour**	**Les Difficultés que vous avez pour recycler? (Par exemple: pas de marché pour les déchets, pas de budget, ressources humaines limitées)**	**Est-ce que votre gouvernement pense que ça a un ordre de priorité d'aide par AFD haut, medium, bas ou pas de tout.**

Plastiques (bouteilles seulement PET + PEHD) Only PET and HDPA	SEP	Thaïlande PETRA: NOTE THAT THE 3.500 T/YEAR INCLUDE PLASTIC, PAPER, AND CANS	Bacs verts et gris Green and grey wheelie bins	3.500 t/an t/year	Prix de vente = frais de fret Exprt revenue = freight costs	
Papier/Carton						
Boite d'aluminium et boîtes de conserves And food cans						
Verre	SEP	Valorisation locale Local use	Bornes à verre de 2,5 à 4 m3 Glass collection containers 2.5 to 4m3	1.700 t/an t/year	Déficitaire (subventionné à 100% par la PF) At a loss . 100% subsidised by the SEP	
Métaux	SEP	Carcasses de	Operation	2.500 voitures/an	Subventionné	

		voitures en NZ Car bodies sent to NZ	annuelles exceptionnelles dans chaqe commune de Tahiti Ad hoc exportations from each commune	2,500 cars a year	à 100% par la PF 100% subsidised by FP	
Pneus usagés	SEP	CET de catégorie 3 à Tahti Sanitary Landfill	En mélange avec les encombrnats Mixed with household waste	Non défini	-	-

Veuillez noter : Si vous n'avez pas des informations sur les différents types de déchets ou les systèmes, veuillez écrire plusieurs phrases sur leur gestion actuelle, ainsi que sur vos souhaits de gestion future. Il est très important d'identifier les initiatives que vous avez mise en place qui pourraient se réaliser plus vite avec de l'aide.

Qu'allons nous faire avec cette information? GHD va utiliser les résultat des études des Iles du Pacifique et les informations de caractérisations des déchets afin de développer des options pour un système des recyclage sub-régionale et pour une collecte des déchet toxique. Ces options vont être présentées a l'AFD et deux ou trois des options vont être choisies pour une étude plus poussée sur le faisabilité et la façon de gérer des tels programmes. Nous vous tiendrons au courant de l'évolution de l'étude sur les quatres

prochain quatre mois. L'étude va être terminée en Décembre 2008. A ce moment la, l'AFD va commencer a travailler sur la phase d'implémentation.

Les Contactes de clefs:

Mélanie Ashton – Chef d'équipe, spécialiste des POPs et des institutions, Melanie@iisd.org
Petra Campbell – Spécialiste du recyclage et des ONG, kpmm@ozemail.com.au
Mark Ricketts – Spécialiste du commerce des déchets et du politique, markelaine@bigpond.com

Additional information:

The priorities of the SEPare

1. Toxic wastes: batteries (recreational), leadacid batteries, oil
2. Recyclables waste : aluminium cans, paper, cardboard, PET and HDPE
3. Household waste: find a treatment method to reduce the wastes buried in the Paihoro sanitary landfill
4. To privatley deal with other toxic wastes (actually I can dispose of other typesof toxic wastes but only those companies who can afford to pay can do it) : light globes, neons, pesticides, E waste

Once again, the priorities of PF are not necessarily the same priorioties of Benoit Layrle of the SEP ! My advice would be to call the director of the Environment. (pETRA : I have called several times)

Quantities of recyclabes recovered by theSEP

- Voluntary drop off points : Glass, 1.7 t/year. aggregate
- 3.500 t/an From the green wheelie bins at household collection
  - Paper : 1.925 t/year
  - cardboard 945 t/year
  - PET 280 t/year
  - HDPE 35 tonnes/year
  - Food cans 245 t/year

- Aluminium cans: 70 t/year

3 – Export HDPE

- Exportation :
- Papier : Thaïlande
- Carton : Thaïlande
- PET : Thaïlande
- PEHD : Thaïlande H
- Boîtes de conserves : Thaïlande Food cans
- Cannettes alu : Thaïlande
- Batteries : NZ lead acid
- Huiles de moteurs : NZ motor oil
- Médicaments : NZ pharaceuticals
- Tous les déchets toxiques liquides (pesticides, résines...) : NZ All Toxic liquid waste : NZ
- Voitures : NZ Cars
- Piles : FRANCE recreationsal batteries
- DEEE : FRANCE (E-waste)

Local solutions

- 2 household waste – in sanitary landfill
- 3 inert waste (metal, plastic plastic glass)
- Glass: crushed in the rock grinder
- Déchets hospitaliers : incinerated while waiting a special incinerator.

4- Exportation to NZ is fee for service. We work directly with private companies.

PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

The AFD (French) Pacific Solid Waste Management Initiative is a significant opportunity to improve your country's waste management. Assistance will be allocated to both multi-country and single country initiatives and this survey will assist in choosing who gets what assistance. Please check with others to make sure your answers are as accurate as possible.

IT IS EXTREMELY IMPORTANT THAT YOU AND YOUR COLLEAGUES COMPLETE THIS SURVEY EVEN IF YOU CANNOT FILL IN ALL THE SPACES.

Introduction: GHD Pty Ltd has been appointed by the Agence Française Développement (AFD) to complete a feasibility study for the preparation of Components 2 and 3 of the Solid Waste Management Initiative. Component 2 will address various potential sub-regional initiatives on hazardous waste and wastes of commercial value.

Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by the FSM. We understand that the FSM completed a waste characterization study already. This survey is being transmitted to you to provide the FSM with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in the FSM to ensure we gather all available information. All responses received will be collated:

Pohnpei

Joseph M. Konno	Island Environmental Consulting Services
	Office of Environment and Emergency Management
Mr. Robert Spegal	Micronesia Human Resource Development Center

Kosrea

Simpson Abraham Kosrae Island Resource Management Authority

Chuuk

Jack Sham: Chuuk Environmental Protection Agency
Bosiko Buliche Health Department Chuuk

Yap

Charles Chieng:

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey FSM-Chuuk/Yap/Pohnpei/Kosrea" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Jack Sham
Position	Solid and Hazardous Waste Program Manager
Department	Chuuk Environmental Protection Agency
Email address	Jack_epa@mail.fm

Phone number	691-330-4158

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes or no**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and companies involved**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government is actively trying to address)**	**Does your government think this waste is a high, medium, low, or not a priority for assistance**
Lead acid batteries	No	50 cu.yd	none	Not applicable	Potential for recycling.	Medium
Used engine oil	No	50,000 gallons	none	Not applicable	Need proper disposal	High
Expired pharmaceuticals	No	No available data	none	no	Proper disposal	Medium
Disused pesticides	No	No available data	none	no	Proper disposal	High
Disused school laboratory	No	No available data	none	no	Proper disposal	medium

chemicals						
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to process recyclable wastes**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your governme nt think this is a High, medium, low, or not a priority for assistance**
Plastic	No	N/A	N/A	Est.@ 20 cu.ft	N/A	High

Paper/cardboard	No	N/A	N/A	Est.@50 cu.ft	N/A	Medium
Aluminum cans	Yes	Private: Korean Recycler.	NO			
Glass						
Scrap metal						
Used tyres						

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey? GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

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Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information:

(Jack Sham)

I apologize for not being more clear on our need in the other option category. Yes i meant to say need for proper disposal for disused pesticides, school chemicals, and expired pharmaceuticals.

The second question regarding Hazardous Materials can be articulately answered by Joe Konno, email address at joe-epa@mail.fm.

For scrap metals, glass and tyres, only scrap metals is recycled. We have one scrap metal collector from China collecting junk cars and scrap metals here in Chuuk. The have shipped three shipment of scrap metals to their recycling partners in the Far East since the operation of their company started in January of this year.

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Bosiko Buliche Health Department Chuuk

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Jack

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6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Robert Spegal
Position	Owner/Partner, Pohnpei Waste Management Services (PWMS)
Department	n/a
Email address	opalpac@mail.fm

Phone number	691-320-2328

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes or no**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and companies involved**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government is actively trying to address)**	**Does your government think this waste is a high, medium, low, or not a priority for assistance**
Lead acid batteries	yes	Not stored at dumpsite	Removed by recycling company	Not applicable	Minimal support fomr the govt.	No assistance has been directly tied to this item
Used engine oil	Yes	More than 50 drums	Local oil-burning ship collects some about once per year	Not applicable	Same as above	Same as above
Expired	No	0	Items are buried	No	Hospital	Not a

pharmaceuticals					brings to dump once every two or three years	priority
Disused pesticides	Not known if brought to dump	0	If brought to dump, are not sigregated	No	n/a	Not known
Disused school laboratory chemicals	Same as above	Same	Same	Same	Same	Same
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g.**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your governme nt think this is a High, medium, low, or not a priority for assistance**

	shredder) and 3. Equipment you would like to have to process recyclable wastes					
Plastic	No	n/a	No	n/a	See note below	Not a priority
Paper/cardboard	No	n/a	No	n/a	See note below	Not a priority
Aluminum cans	1. Yes, but not by PWMS	Private sector			See note below	Low priority
Glass	No	n/a	No	n/a	See note below	Not a priority
Scrap metal	Same as aluminum cans				See note below	Not a priority
Used tyres	Segregated at dump, most are taken by local population	n/a	No	n/a	See note below	Not a priority

The largest obstacle that PWMS faces with respect to recycling is that our contract with Pohnpei State to operate the dumpsite is only on a year to year basis, and thus there is no incentive for us to develop recycling activities at the site only to have someone else take over were we not to secure the next year's contract.

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey? GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information (from Bob):
Regarding lead-acid batteries and oil:

1. We are pleased to read that Pohnpei has received assistance for both of these hazardous wastes. Could you provide us some detail of this assistance?

The "minimal" support that I am referring to is the contract that Pohnpei Waste Management has with Pohnpei State Government to operate the dump, and under the contract's scope of work we handle these hazardous wastes. There is no specific direct support for these items. And FYI, I checked with our supervisor and we have more than 100 drums of waste oil.

Jack in Chuuk did not note this. Does this mean the assistance was limited to Pohnpei? I can only provide data for Pohnpei, but I doubt that Chuuk State provides any assistance for handling these items, as they do not even have an organized dump.

2. Who provided the assistance? The funds that pay our contract are from the US Compact Environmental Sector grant funds.

Regarding recycling:

1. For all recyclables, you note that these are not a priority for assistance. Is Pohnpei planning to begin recycling? The Chinese company is doing the recycling. Pohnpei State Government has supported them with a location for their operation. This is an large lot with large garage type building that used to be used by the road construction company. The state is not going to enter the recycling business.

Finally as you didn't note any of the survey categories for assistance, is there any assistance you require in relation to solid and hazardous waste? Help with removal of waste oil, assistance to start recycling plastics, paper/cardboard.

PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

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Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by the Marshall Islands. We understand that the Marshall Islands completed a waste characterization study already. This survey is being transmitted to you to provide the Marshall Islands with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in the Marshall Islands to ensure we gather all available information. All responses received will be collated:

Roger Cooper Majuro	Atoll Waste Corporation	General Manager
Lowell R. Alik	Marshall Islands Waste Committee	Chairman
Steve Why	Marshall Islands Conservation Society	Director
John Bungitak	RMI Environment Protection Authority	General Manager
Stephen Lepton	RMIEPA	POPs Coordinator
Bokna H. Hiram	Sanitation Department, Majaro Atoll Government	Assistant Chief

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Marshall Islands" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Roger Cooper
Position	GM
Department	Majuro Atoll Waste Company
Email address	majurowaste@msn.com
Phone number	692 247 2700

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your**	**Does your government think this waste is a high, medium, low, or**

	answer yes or no		**destination and companies involved**		**government is actively trying to address)**	**not a priority for assistance**
Lead acid batteries	yes	100 ton +-	AU Sims/Isl Rec	Not applicable	MAWC	Not
Used engine oil		120k gallons		Not applicable	MEC	Possible
Expired pharmaceuticals			RMI MOH		MOH	?
Disused pesticides			RMI EPA		EPA	?
Disused school laboratory chemicals			RMI MOE		MOE	?
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your governme nt think this is a High, medium, low, or not a priority for**

	the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to process recyclable wastes					**assistance**
Plastic	Compactor being purchased	MAWC	MAWC operations funded by RMI allows for separation at landfill	100-200 tones annually	Lack of operational funding for separation activities, lack of capital for infrastructure, (warehouse, plastic shreadder	high

					etc)	
Paper/cardboard	Compactor being purchased	MAWC	Same	400-500 tones annually	Lack of infrastructure (storage facility, Forklift etc)	high
Aluminum cans	2 trailer mounted densifiers purchased and will be in service in Sept.	Tings Recycling, MAWC	Same Need bottle bill	20-40 tones annually	Will begin operations in Sept	high
Glass	Need Pulvorizor	MAWC	Need bottle bill	30-50 tones annually	No market Want to cruch and make available as aggregate	low
Scrap metal	Currently harvesting across Majuro 300+ tons exported to date. Log	MAWC, Tings recycling	MAWC is only active group for scrap.	Old scrap on island numbers in the thousands of tones. We (MAWC) expect to be able to continue	Very viable. Lack equipment for in-field harvesting (Grapple truck,	high

	bailer being purchased			harvesting for 3-5 years before the island is cleaned up of old materials	forklift, oxygen generator etc.)	
Used tyres	De-rimmer & cutter purchased and in transit will be in service in Sept.	MAWC	same	3000+ per yr	No market identified as of yet. Will cut and use for landfill until market is found	low

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

MAWC recently received a small grant from NZ and a large grant from Turkey for recycling equipment. MAWC has constructed a separation facility and is currently gathering most green waste(Need a Tub Grinder and a Trommel Screen for compost) The grants have allowed for the procurement of a Log Bailer, a stationary vertical bailer for cardboard & PET, two trailer mounted can crushers, a tire de-rimmer and cutter and a 12” wood chipper. MAWC is currently culling as much green waste as is possible from our waste stream and are processing it into composte. We are culling aluminum & tin cans, glass & PET bottles & containers as well as all other plastic material that we can gather. Once the aforementioned equipment is in service, our production and exports will

increase substantially. MAWC is lacking in infrastructure and other equipment. Our needs in the recycling area are as follows;

Warehouse facility with waste oil storage and incinerator, 6k forklift, Grapple truck, HAZMAT storage area, spill & containment equipment, export hazmat packaging materials & training, Tub Grinder and trommel screen, oxygen generator, 2 small trucks for recycling & green waste, recycling bins for schools and neighborhoods.

Ideally, MAWC would like to increase our recycling activities so we are removing as much of the recyclable material as possible from the waste stream and reduce the amount of material entering our landfill and to become a model for other developing countries.

Majuro, Ebeye, Jaluit and Wotje are all lacking waste collection equipment and bins. Majuro's situation is the worst, with a failing local gov't collection system, waste is piling up and no means of efficient collection exists. MAWC needs 3-5 small compactor trucks for Majuro and one each for the other islands. Also of the utmost importance is 3000-4000 96 gallon wheelie bins and operation funding.

Two other areas of high priority are the need for a Suction dredge with which we can produce cover material for our landfill (Currently we have a contracted shoreline dredge operation which in October 2008 must cease operations per our EPA. Daily cover material is needed to insure containment of the landfill and to prevent desease and odor.

Our landfill is almost full, we have completed an expansion plan, however the $1.4m needed for the seawall is not available at the present. We have about two months before we reach the point of having to "pile" & store our waste until a suitable tip is established.

Assistance in any area will help us continue our progress. We have a plan, we have the people, we only lack the capital and operational funding to do the job. We are already working hard to increase our recycling activity which in turn is producing revenue with which we can continue and expand operations.

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Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information:

John Bungitak: (NB, his email is incorrect in the contact table should be eparmi@ntamar.net). He indicated the only disused pesticides remaining were those that are buried and could not be collected by POPs in PICs. Transformers remain on Ebye. It seemed like there was some further information on these including photos.

Roger Cooper: Regarding hazardous waste :

1. In the section on expired pharmaceuticals you responded RMI MOH. Will RMI MOH be responding or should we contact them? Would you please provide their phone number? Majuro Hospital Francis Silk, Asst. Admin. 692 625 3355
2. In the section on disused pesticides you responded RMI EPA. Will RMI EPA be responding or should we contact them? Would you please provide their phone number? Mr. John Bungitak 692 625 3035

3. In the section on school laboratory chemicals you responded RMI MOE. Will RMI MOE be responding or should we contact them? Would you please provide their phone number? MOE Admin 692 625-5262
4. In the sections on used engine oil you provided a volume. Is this being exported? not yet, need an incinerator or equipment to clean

Regarding paper and plastic:

1. You note a compactor is being purchased and plastic is being collected. You also rank this as a high priority for assistance, what additional assistance do you require for paper and plastic recycling?

Plastics are an area where we think we can make a significant impact. We would ideally like to purchase the following equipment so we can mor effectively handle the plastics. 1. grinder to produce more marketable material. 2. Pellitizer to produce plactic pellets, again very marketable. 3. Roto-mould system to produce our own recycling and waste containers on island. This is a project that would create specialized jobs, allow for future expansion into other manufacturing, remove componants of the plastic waste stream for long periods and create bins that will enhance our collection efforts.

Regarding aluminium:

1. You highlight a functioning recycling system. You also rank this as a high priority for assistance, what additional assistance do you require for aluminium can recycling?

Funding for bins for schools, urban areas etc. Funding to create a public awareness program for all recyclables

Regarding scrap:

1. You describe active intermittent scrap recycling. You also rank this as a high priority for assistance, what additional assistance do you require for scrap recycling? We need matching funds of about 200k to procure the correct log bailer. We currently have about 300k available, but the cost of the machines has risin dramaticly from when we first were quoted and shipping is off the scale. We also need to get funding for a large shear, a forklift, a warehouse, a couple of scales, an oxygen generator, an excavator and a grapple truck. We know that there are

many thousands of tons of metal scrap here, enough to operate for many years and to be able to generate substantial revenue to assist with our waste collection and landfill modernization needs.

Exporting PET:
Not yet. We are however culling it from the waste stream and storing for now. Once our new compactor arrives, we will begin bailing and exporting to Philippines. We have a buyer set up there.
We are also culling all of the HDPE, LDPE, white goods, e-waste, glass, metal (Being exported) and green waste (being ground and composted)

*We have a little machine that was donated by the Japanese that turns plastic bottle caps into petro chemical fuels & oil. It is a reverse process and we should have it operational in the next few weeks.

Just had our first 125 tone of steel arrive at Sims thru Evan. Looks like it is working out. Also have 150 tone of batteries ready to export.

We have an island clean-up this weekend and are going to start purchasing aluminum cans for a penny a peice.

PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

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Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by Kiairbati. We understand that Kiribati completed a waste characterization study already. This survey is being transmitted to you to provide Kiribati with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in Kiribati to ensure we gather all available information. All responses received will be collated:

Farran Redfern	Ministry of Environment, Lands, Agricultural Development	
Betarim Rimon	Ministry of Environment, Lands, Agricultural Development for Ki.	Senior Project Officer and FAO NC
Marii Marae	Ministry of Environment, Lands, Agricultural Development	
Taulehia Pulefou	Ministry of Environment, Lands, Agricultural Development	Pollution Control Unit. Env and Cons. Division

Melanie Ashton, Team Leader for the Solid Waste Management Feasibility Study, has also informed Tererei Abete Reema, of this survey and its importance to developing regional waste management initiatives for the Pacific.

Instructions for completing the survey:

1. Save the document to your hard drive as “AFD Waste Survey Kiribati” and add your name.

Hazardous waste	Currently collected (i.e. stored in a centralized area)? Please answer yes or no	Approximate volume of stockpile	Current management activities (if any exist). If exported, provide details of export destination and companies involved	Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)	Other information you wish to provide (e.g. this is something your government is actively trying to address)	Does your government think this waste is a high, medium, low, or not a priority for assistance
Lead acid batteries	Yes	More than 1 container due to changes to exportation laws in Australia (i.e new government)	3 containers per year (20 tonnes for each container) Exported to Australia	Not applicable	It is believed that with an increase number of imported vehicles would result in increase batteries needing storage and handling (health hazards)	High
Used engine oil	Yes	20 – 30 drums per month	Used to be exported to Australia until early 2008 when agent no longer accepted waste oil now due to oil spillages incidences found in ship container when arrived in Australia	Not applicable	Looking for new agents in Australia or in the region Establishment of effective collection system that is sustainable Looking for other options to process waste oil	High due to increasing waste oil generated and now being rejected for processing/refining in Australia

2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Taulehia Pulefou & Farran Redfern
Position	Pollution Conrol Officer & Environment Inspector
Department	Environment and Conservation Division
Email address	Taulehia.ecd@melad.gov.ki & Farran.ecd@melad.gov.ki
Phone number	

Batteries

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

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Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information (from Taulehia):

1. Under lead-acid batteries – you mark the issue as high priority. However, you describe a functioning recycling practice. Can you specify the help you need.

The level of priority would now be changed to either low or medium. Derek confirmed that the existing system i.e collection and exportation seems to ok at this stage. However, he did mention that he has difficulties now in exporting these (ULABs) to Australia due to changes of exporting procedures under the new government.

2. Under PET bottles - you mark the issue as high priority. However, you describe a functioning recycling practice, can you specify the help you need?

This would be similar to question 1 above which also confirmed by Derek.

3. Also can you provide the phone number of One Stop. Petra will interview them over the telephone. We need to find out which company the PET bottles are sent to.

Derek has been so helpful in providing us with details of what is required in the questionnaire and also agreed to communicate further on the questionnaire so feel free to contact him directly. His contact details are as follows; Name of Operator: Derek Andrewartha, email add: onestop.tarawa@gmail.com, Phone: 686 26168, Fax: 686 25401.

4. Under aluminium cans – you mark the issue as high priority. However, you describe a functioning recycling practice. Can you specify the help you need.

Again this would be similar to Question 1 and 2. That is level of priority be changed from high to Low.

5. Is the aluminium can recycling run by the Gov, donors or the private sector? If donors or private sector, can you provide contact details?
The aluminium recycling in run by the private sector (One Stop) despite government involvement in the early stages of the project. Note that although the recycling operation is run by Derek, it is still on contractual basis where its operation has to be reviewed after every 3 yrs or so. Contact details are provided above.

Other additional information:
Although we have now the recycling operation existing, we still have major problems with scrap metals, bottles (glass) and organic waste which comprises nearly or more than 70% of the waste stream. You may discuss these with Mark Ricketts as he is very much aware of our situation. He also assisted us in developing our waste management strategy in 2007. I have sent Petra our national waste management strategy so hope you would find that useful also especially in knowing what our national priorities are with regards to waste management.

Derek also added that one of their problems now is the exclusion of glass (bottles) under the package deposit system now used for ULABs and cans. This may take a while to happen but they see it now as a need including a bigger press machine that can handle more loads.

For more info, we have now the bulky waste project (phase 2) that is being stalled and I am not sure if there are possibilities under AFD to allow the second phase to proceed. Mark is again aware of this and I would appreciate it if you consult him on this for more info.

Additional information (from Ashton and Macrae-Williams, 2008):
Scrap metal on Banaba:

Overall the quantity of scrap steel is likely to be around 3000 tonnes with up to 100 tonnes of copper and other metal scrap available.

Asbestos on Banaba:

Significant asbestos problem on Banaba. Asbestos requires clean up before scrap (because crumbling/friable asbestos is surrounding scrap. AusAID have agreed in principle to pay for clean up.

Agricultural chemicals:

There is over 0.5 tonne of arsenic contaminated solution, in open top buckets (solid), after being ordered for a timber treatment experient.

Additional information on oil:

We couldn't reach Daniel yesterday as he had a meeting. I met him this morning at KOIL and he provided me with the following;

- Waste oil in 200L drums: 160drums x 200L = 32,000L;
- Waste oil, mixed fuel, water and sludge in horizontal tank = 5000L

Hence, total waste oil = 37000L now stockpiled at KOIL yard

Daniel is copied in this email so he may confirm the above again. Hope the above helps otherwise let me know.

Organizations consulted	Issues of interest	Currently stored or collected?	Approx. Volume of stockpile if stored	How is the waste managed?	Is it exported?	Other information	Priority level High/Med/Low?
Health Department	Expired pharmaceuticals	Yes, temporarily stored (controlled)	No records	Incinerated as soon as possible	No, all incinerated	None	High
	Disused Pesticides	No, only unused pesticides are stored	No records	None	No	None	Med
Agriculture Unit (Dept. Of CIE)	Disused Pesticides	No, all pesticides used until finished	No records	Pesticide is made from local organic waste and only enough is made to be used for the time needed	No	Environmentally friendly pesticide No artificial chemicals required	Low
NFMRA	Used Engine Oil	Stored	No records		No	Nil	
Education Department	Disused school Lab Chemicals	No Schools are re not	Nil	No waste.	No	Nil	
		experimenting with chemicals					
Nauru Rehabilition Corporation	Lead Acid Batteries	Stored	No records	Under consideration	No	Nil	Low
	Used Engine Oil	Stored and reused	No records	Under consideration	No	Nil	Low
RONPHOS (Phosphate Corp)	Lead Acid Batteries	No	No volume of stockpile	Improperly	No	NRC needs to manage it	Low
	Used Engine Oil	No actual information on this					Low

Organization Consulted	Recyclable items of interest	Currently recycled? If yes, is it exported?	What equipment is used for recycling? If none, what is needed?	Provide details of Private sectors involved in recycling process (NGOs)	Provide details Government D or entities invo in recycling pro	List technical or financial constraints towards the recycling activities	Priority level High/Med/Low
Education	Plastic	No No	None Nothing. Recycling is an NRC task	Nil	Nauru Rehabili Corporation (N	Not relevant to this department	High
	Paper/Cardboard	No No	As above	Nil	Nauru Rehabili Corporation	Not relevant to this department	Low
	Aluminium Cans	No No	As above	Nil	Nauru Rehabili Corporation	Not rellevant to this department	High
	Glass	No No	As above	Nil	Nauru Rehabili Corporation	Not relevant to this department	High
	Used Tyres	No No	As above	Nil	Nauru Rehabili Corporation	Not relevant to this department	Low
Nauru Rehab Corporaton	Plastic	No No	Controlled			Urgently ne eds financial support	High
	Paper/Cardboard	No None					Medium
	Aluminium Cans	Under consideration	Can crasher	Nil		Awaiting priority project	High
	Scrap Metal	No None			Not budgeted for		High
	Used Tyres	Recycle					Low

		No					
Organization Consulted	Recyclable items of interest	Currently recycled? If yes, is it exported?	What equipment is used for recycling? If none, what is needed?	Provide details of Private sectors involved in recycling process (NGOs)	Provide details Government D or entities invo in recycling pro	List technical or financial constraints towards the recycling activities	Priority level High/Med/Low
RONPHOS	Scrap Metal	No No	Nil Nil	Nil	Nauru Rehabili Corporation	An upgraded machine	High
	Used Tyres	No No	Nil Nil	Nil	As above		High
Transport	Scrap Metal	No	None	Nil	Nil	nil	Low
	Used Tyres	No	none	Nil	nil	Nil	Low

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The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by Niue. We understand Niue completed a waste characterization study already. This survey is being transmitted to you to provide Niue with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in Niue to ensure we gather all available information. All responses received will be collated:

- John Talagi	Ministry of Environment	Solid Waste Manager
-Natasha Tohovaka	Former POPs Officer, now working on SPC Ag Project	

Instructions for completing the survey:

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2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
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6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Natasha Toeono-Tohovaka
Position	Crop Research Officer/DSAP GREA
Department	Dept of Agriculture, Forestry & Fisheries
Email address	crop_research@mail.gov.nu
Phone number	(00683) 3644

Other Key Contact People :

Haden Talagi
Research & Development Officer
Environment Department
h_talagi@mail.nu
(683) 4021

John Talagi
Environment Officer
environment.ca@mail.gov.nu
Environment Department

John Hetutu
Chief Public Health Officer
Health Department
environ.health@mail.gov.nu
(683) 4100

Sauni Tongatule
Director
Environment Dept
tongatules@niue.nu
(683) 4021

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes or no**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and companies involved**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government is actively trying to address)**	**Does your government think this waste is a high, medium, low, or not a priority for assistance**
Lead acid batteries	Yes	Approx 5 tonnes	Stockpiling to make volume before exporting to Dominion Scrap Ltd, NZ. This stockpile is located at Huihui.	Not applicable	Lack of funding for safety gear and other resources for the safe handling of battery chemicals.	High but less to no funding available.
Used engine oil	Yes	No official data but approximately 1 tonne a year	Each Department manages and stores their own engine oil eg. Niue Power Station, Bulk fuel, Private Businesses/ Service Stations for Vehicles manage and store their own engine. No centralized storage location due to lack of financial resources.	Not applicable.	There was a collection port for used engine oil located behind the old Public Works Dept. but this was destroyed during Cyc Heta iin 2004. Since then no proper facility is in place for this. Holding Capacity of the storage containers was more than 5,000L.	High. There needs to be a centralized storage facility.
Expired pharmaceuticals	Yes	40-50kgs of expired medicine in a year.	Expired medicine are collected and incinerated in the Health incinerator.	None to date	Many pharmaceuticals were imported	Low - control import

					after the cyclone but most disposed of because Health staff were unable to read labels and use them and most were disposed at the Rubbish Dump.	
Disused pesticides	No.	The majority of these were taken off island by the AUSAid POPs in PICs project. However there is still a Methyl Bromide cylinder and other pesticides that were not taken that are still in storage and need to be proper ly disposed of.	There is limited importation of Pestcides under the Pesticides Act especially given the fact that Niue is moving to organic.	None to date	Only one local retailer currently brings in pesticides and this is by special permit through the Dept of Ag. Forestry and Fisheries, under the Pesticides Act. Need technical assistance with the removal and safe disposal Methyl Bromide Cylinder.	Medium- It is a major supporter of organic farming practices which promotes organic alternatives to synthetic pesticides and herbicides
Disused school laboratory chemicals	No.	Expired Lab chemicals from Niue High School and the old Health Dept. are still in storage. Approx 3 X 40gallon drums left behind after the POPs in PICs Project	Normally thrown out so they can be taken to the rubbish dump.	None to date	No proper management of school and medical lab chemicals as there is no proper disposal or storage facilities.	Medium

Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to process recyclable wastes**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now** **Please note the figures below are based on the goods imported into Niue on an annual basis which potentially end up as waste. Figures acquired from the Niue Customs Office.**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your government think this is a High, medium, low, or not a priority for assistance**
Plastic	No – needs to have a multi-used bailer	None.	Currently there is no recycling of plastics and everything goes to the landfill.	Quantity: Plastic Bottles: 1.5L 90,000 bottles per year Approx 900 tonnes of food imported a year.	Funding commitments	High
Paper/cardboard	No – Most paper and cardboard end up at the Rubbish dump	No. Private Sector are responsible for disposing of their own paper and cardboard.	This is of high priority in the Waste Management Plan however there is slow implementation of this.	Quantity: Approx 900 tonnes of food 1/3 of this end up as waste.	Funding to set up system for collection, recycling etc.	High
Aluminum cans	Yes – needs a lager capacity bailer	NGO - Catholic Mission Youth, Alofi, Niue	Provide and secure funding to help maintain this recycling centre.	Quantity: Beer Cans 350,000 cans imported in a year Soft Drinks: 150,000 cans imported in a year	Not fully operated by NGO. They still look for assistance from Govt.	High
Glass	No – prefer to have proper crushing	No.	Government does not allow the importation of drink bottles made out of	Spirit Bottles imported Approx 3,000 1L bottles.	Funding Commitments	Medium

	equipment so it could be mixed with concrete for floors, paving etc..		glass which is why drinks are only imported in cans and plastic bottles. There is the exception of 2L alcoholic spirit bottles.			
Scrap metal	No – but scrap metal is currently stockpiled. Proper cutting equipments is needed i.e. gas n' electric	Private Contractor normally collects scrap metal along with household rubbish and takes this to the landfill.	Government has assisted in exporting scrap metal to NZ under a project in March 2005- under the clean up efforts after Cyc. Heta: Approx 400 tonnes of scrap metal to a recycling firm in NZ.	Approx. more than 600tonnes located at different sites around the island.	Scrap Metal is a major problem, need centralized storing location, needs a lot of resources, transportation costs, manpower etc to prepare scrap metal for export to overseas recycling plants eg NZ.	High
Used tyres	No ! Tyres are distrubted to locals for beautification of homes /gardens etc. Needs to be shredded into fine bits to add to compost, retains moisture in soil but no equipment to do so.	No.Private Businesses normally deal with their own used tyres, give them away to the public for beautification and other purposes.	Currently there is a centralized storage location for used tyres but not many people are aware of this.	Approximate 5 tonnes stockpiled at this site and around the island.	Lack of funding	Medium

*** The key areas for recycling stated above were also identified under the recently reviewed Waste Management Action Plan n 2007 but due to lack of funding, manpower, safety gear and other resources they are unable to implement most of the activities in this plan. The idea behind the review was to source funding to implement some of these activities especially those for recycling and management of waste on Niue.**

Further Comments:
The Waste Management action plan reviewed in 2007 with assistance from SPREP Waste Officer Frank Griffin and other Govt and NGO stakeholders showed that the priority area they wanted to source funding for was the development of a transfer station for the purpose of waste segregation to ensure the recycled materials will be separated from those that can't be recycled. This would also ensure a centralized storage point for the different types of hazardous and recycled waste on the island.

Another major activity was to explore recycling options overseas for wastes to be shipped off for recycling to these overseas facilities.

A major concern in regard to Hazardous waste for Niue is that of Asbestos. There is a huge stockpile at the moment but unfortunately no proper disposal option has been identified for this hazardous waste.

Department of Environment and Health play a key role in the implementation of the key activities for recycling and management of waste under the Waste management action plan.

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey?: GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information:

1..Name of any Niue NGO's working on the environment (and contact details if you have them)
a. NIOFA- Niue Island Organic Farmers Association
– Responsible for Organic Certification of Vanilla and Noni Plantations
- Responsible for providing organic alternatives to agricultural farming practices
b. Catholic Mission- Responsible for Recycling of cans

2. Name of any private companies working in waste management and recycling (name and contact details)
Ricky Makani
Contractor
Rubbish Collector
Address: Tamakautonga, Niue Island
Phone No: Not stated

Richard Hipa
Catholic Mission Recycling
Alofi
Niue Island

3. Any policies actually in place or taxes in place that favour recycling and waste management or do you have none at all?
A legislative review was conducted in June 2004 into Chemical Management in Niue for the Niue POPs project at the time. It gives a summary of legislations involving chemical management on Niue at the time. The main policy which governs waste on Niue are the following
a. Waste Management Plan & Action Plan (Reviewed in 2007) I am still waiting on the copy for this from Environment as only one person has a copy and he doesn't seem to be inside his office.
b. Environment Act 2003- The Dept of Environment acts as the over riding authority for dealing with environment concerns. It is newly formed department that is yet to mature in its roles and responsibilities.
c. Niue Public Health Act 1965
d. Customs Act 1966- An Act to consolidate and amend certain enactments of the General Assembly relating to Customs and exercise and importation and exportation of Goods- Controls importation of goods into the country.
e. Niue Act 1966- The Act contains the general laws for Niue. There is a repeat provision for the offence of laying poison and polluting water.
f. Pesticides Act 1991- Controls importation of Pesticides into Niue.
g. Water Resources Act 1996- Any underground disposal of wastes can only be allowed upon the application for a permit to the Director of Public Works. In practice persons have been dumping and buring wastes without permits. There is also no means of detecting persons committing this offence.

PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

The AFD (French) Pacific Solid Waste Management Initiative is a significant opportunity to improve your country's waste management. Assistance will be allocated to both multi-country and single country initiatives and this survey will assist in choosing who gets what assistance. Please check with others to make sure your answers are as accurate as possible.

IT IS EXTREMELY IMPORTANT THAT YOU AND YOUR COLLEAGUES COMPLETE THIS SURVEY EVEN IF YOU CANNOT FILL IN ALL THE SPACES.

Introduction: GHD Pty Ltd has been appointed by the Agence Française Développement (AFD) to complete a feasibility study for the preparation of Components 2 and 3 of the Solid Waste Management Initiative. Component 2 will address various potential sub-regional initiatives on hazardous waste and wastes of commercial value.

Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by Nauru. We understand Nauru completed a waste characterization study already. This survey is being transmitted to you, to provide Nauru with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in Nauru to ensure we gather all available information. All responses received will be collated:

- Elkoga Gadabu, Department of Environment
- Mary Thoma, Department of Environment

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Nauru" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by NEW CALEDONIA TRANSLATION	
Name	PIERRE
Position	Marie-Françoise
Department	Direction de l'environnement de la province Sud. Environment Department. Southern Province
Email address	marie-francoise.pierre@province-sud.nc
Phone number	00 687 24 35 07

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government**	**Does your government think this waste is a high, medium, low, or not a**

	or no		**companies involved**		**is actively trying to address)**	**priority for assistance**
Lead acid batteries	Stored by professionals (distributers and garages). Since the beginning of 2008 a campaign was launched to collect batteries from private individuals with collection centers at petrol stations of the PS)	Around 700 tonnes a year	They are dealt with locally with the aim of being exported.	Currently studying the quantities being imported.	The management of these wastes has been legislated since April 2008 and to start on November 1, requiring import	Low

					ers and local producers of Batteries to finance the collection and treatment of batteries	
Used engine oil	Stored on site at mechanical shops, garages, repair and spare parts shops	3000 tonnes a year	Are co-incinerated at the thermal power station of Le Nickel company.	Currently studying import quantities	The management of these wastes has been legislated since	Low

					April 2008 and to start on November 1, requiring importers and local producers of oil to finance the collection and treatment of oil	
Expired pharmaceuticals	Mixed with household wastes	No data	Buried mixed with household waste either at the Gadgi installation	Not that we know of		High

			(according to European Norms) or in unauthorized dumpsites.			
Disused pesticides	No organized national storage	Study underway	Local operators export their waste to be treated ad hoc	Study underway	Identified as priority	High
Disused school laboratory chemicals	No organized national storage. In some schools, those responsible for the laboratories recover the dangerous wastes to store anticipating treatment	Study underway	Local operators export their waste to be treated ad hoc	Study underway	Identified as priority	High
Waste of	**1.**	**Private**	**Government**	**Approximate**	**Difficulties**	**Your**

commercial value (recyclables)	**Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to process recyclable wastes**	**sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**volume of waste generated annually, volume of waste available for recycling now**	**experienced in recycling (e.g. no market for waste, no budget, limited human resources)**	**government think this is a High, medium, low, or not a priority for assistance**
Plastic	No collection except in the	No export market	No	According to the characterisation of household	According to the collectors:	There is a project to legislate

	commune of Mont Dore (voluntary drop off points in containers)			wastes by ADEME the urban ratio is 78Kg/per year for person	no market	packaging rapidly. Medium
Paper/cardboard	No collection except in the commune of Mont Dore (voluntary drop off points in containers)	No export market	No	According to the characterisation of household wastes by ADEME the urban ratio is 126Kg/per year for person	According to the collectors: no market	There is a project to legislate packaging rapidly. Medium
Aluminum cans	Collection point "Recyclos" have been put in place in NC by WWF in partnership with the GBNC (the Grande	Private operators buy them to export	No	According to the characterisation of household wastes has been programmed. The producers say around 50 000 000 per year		There is a project to legislate packaging rapidly. Medium

	Brasserie of NC)					
Glass	No collection except in the commune of Mont Dore (voluntary drop off points in containers)	No export market	No	According to the characterisation of household wastes by ADEME the urban ratio is 42Kg/per year for person	According to the collectors: no market	There is a project to legislate packaging rapidly. Medium
Scrap metal	Selective collection and exported for recycling	See the CCI guide for the names of recycling companies.	No	No Info	Lack of information	Low
Used tyres	Used as drainage material at the Gadgi Landfill	See the CCI guide for the names of recycling companies.	The management of these wastes has been legislated since April 2008 and to start on November 1, requiring	Around 3000 tonnes a year	We are putting everything in place to apply the new laws on Nov 1.	Low

			importers and local producers of oil to finance the collection and treatment of oil			

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey?: GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information:
1 Batteries: We go through local operators who decide on the destination of the batteries. The south province works with EMC to deal with historical stocks of batteries. EMC said the batteries go to QLD.

2 Oil: It is possible but I don't have the power to confirm or not. I know that some steps have been taken in this direction (especially for oil service companies) to take oil from Vanuatu and our government appears to be willing to find a solution. But the problem concerning international conventions is an obstacle to advancing this project.

3 Pharmaceutiques: Not that I know of (ie we don't incinerate them),we haven't really started to address the problems associated with this type of problem waste

4. Pesticides : We don't have anything yet, to do the study has only just been decided. We will have something in 6 months from now.

5 Chemicals. Idem

STEVE HINEY CONSULTING
PO# 7177, SVRB, SAIPAN, MP 96950
(670) 484-0954

Hi Petra,

The form wasn't the best tool, so I'll provide a synopsis of the info here:

We currently collect household hazardous waste (HHW) at our transfer station. It is primarily used oil and paints with a few auto batteries. We just moved 5,000 gallons of used oil transported by a private, South Pacific Environmental, to a used oil burner on Guam. Oil based paints are mixed and we're going to use them on site. We're going to dry the rest of the paint and dispose of it at our landfill.

On average, we see about 7,000 to 10,000 gallons a year of used oil, about 500 gallons of paint and minimal batteries. Batteries have been being accepted by Huang Zheng Co. and shipped to China. I believe that they have all the necessary permits and seem to have been preparing them right. Three high stacked on a pallet, plastic wrapped.

There is no permitted facility on island for acceptance of hazardous waste. In most instances commercial properties secure the services of a licensed hazardous waste firm. We have three either in Guam or the CNMI that have HAZWOPR training, and EPA ID #, and are insured.

We have not conducted a pesticides inventory. We are sure that there is hazardous waste being generated in the CNMI. Our regulator, DEQ, may or may not have conducted hazard identification. I'll check today and let you know, but I doubt it has been done.

Hope this helps, sorry it is so brief I'm just buried in work now.

Cheers

PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

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Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by Papua New Guinea. We understand Papua New Guinea completed a waste characterization study already. This survey is being transmitted to you, to provide Papua New Guinea with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in Papua New Guinea to ensure we gather all available information. All responses received will be collated:

- Katrina Solien Department of Environment and Conservation Acting Manager - EIA
- Michael Wau Department of Environment and Conservation Senior Environment/Technical Officer
- Kelly Gawi Department of Environment and Conservation Senior Environment Officer
- Joel Kolam Department of Health

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Papua New Guinea" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	KATRINA SOLIEN
Position	ACTING MANAGER-ENVIRONMENT IMPACT ASSESSMENT BRANCH
Department	DEPARTMENT OF ENVIRONMENT & CONSERVATION
Email address	ksolien@dec.gov.pg; ksolien@yahoo.com
Phone number	675 325 0194

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes or no**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and companies involved**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government is actively trying to address)**	**Does your government think this waste is a high, medium, low, or not a priority for assistance**
Lead acid batteries	No	No data avaiblable	Some recycling, est dumped indicrimately	**Not applicable**	New Scheme for Rural Solar Lighting for teachers-Code of Practice being developed	Medium
Used engine oil	No	PCB->68.7 tons Data on other egine oil types not immediately available	Some used for marking sports fields Some held in storage at sites; some dumped-dumping at NCDC	**Not applicable**	Not much activity at present but seeking opportunities to	High

			municipal dumpsite stopped		address the issue	
Expired pharmaceuticals	No	Data not immediately available	Open burning	No inventory	Seeking opportunities to address issue	Medium
Disused pesticides	No	Data not immediately available (DDT 20000 kg)	Dumping	Only DDT (**44 kg);** no inventory on other pesticides	Seeking opportunities to address issue	High
Disused school laboratory chemicals	No	Data not immediately available	No information available	No inventory	Seeking opportunities to address issue	High

Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to process recyclable wastes**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your government think this is a High, medium, low, or not a priority for assistance**
Plastic	No info-plastic drinking containers – some reuse in informal markets for packing drinks for street sales; other plastics to dumps or burned	No information available	Nil	No data	Possibly no market; funding difficulties	High
Paper/cardboard	No info-dump or burned	No information available	Nil	No data	Possibly no market; e.g SP Breweries used	Low

					to sell to an Australian buryer but stopped as quality dropped and buyer refused to continue importing	
Aluminum cans	Yes-Info not available at present	PNG Recylers Ltd; information on other operators not available	Nil	Data not immediately available	No problems	High
Glass	No information	No information available	Nil	No data	Possibly no market; no budget	Medium
Scrap metal	Yes-Info not available at present	Number of companies to be identified	Nil	Data not immediately available	Not much problem	Low
Used tyres	No info-most burned, some dumped; some reef building/fencing	No information available	Nil	No info & data	Possibly no market	High

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

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Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information:
I just learnt that there is some buy-back and reuse of beer bottles (only) which I did not indicate earlier because the info was not available at the time I filled in the table.

For the COP on the PNG Teachers Solar Lighting Project, we are still in the initial stages of the project. Battery disposal issues will also be included-this is the reason why the Sustainable Energy project has ensured that DEC takes the lead role in its development.

PCB contaminated oils- while the oil is stored in PNG power sites (backyards)-the storage conditions are no appropriate and so there is likelihood of leakages to the environment & possible human exposure.

The data on the pesticides under the NIP is not complete as the funding and time limitations did not allow full inventories/coverage of the whole country. We were hoping to do this in the followup projects.

PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

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Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by Tuvalu. We understand Tuvalu completed a waste characterization study already. This survey is being transmitted to you to provide Tuvalu with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in Tuvalu to ensure we gather all available information. All responses received will be collated:

- Pepetua Latasi	Department of Environment	Climate Change Coordinator
- Susan Tupulaga	Department of Environment	Waste Management
- Melton Tauetia	Department of Environment	Climate Change and Chemicals Coordinator

Melanie Ashton, Team Leader for the Solid Waste Management Feasibility Study, has also informed Mateio Tekinene, of this survey and its importance to developing regional waste management initiatives for the Pacific.

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Tuvalu" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Melton Tauetia
Position	POPs Coordinator and SNC Coordinator
Department	Department of Environment
Email address	mtauetia@gov.tv
Phone number	688 20189

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported,**	**Has an inventory been undertaken (for pesticides, pharmaceutical**	**Other information you wish to provide (e.g. this is something your**	**Does your government think this waste is a high,**

	answer yes or no		**provide details of export destination and companies involved**	**and lab chemicals only)**	**government is actively trying to address)**	**medium, low, or not a priority for assistance**
Lead acid batteries	Yes, but not effective as there is not enough space for storage	Tuvalu was engaged in photovoltaic project b4 the electrification project in the outer island and also currently, there is an enomous amount of these batterie lying around (approx 2400 including the use with vehicle)	None yet for these items and looking forward for financial support for this	There was a preliminary inventory by the POPs project	There is a great concern on these waste after consultation during POPs project, and it has prioritise for possible action	High since the # of cars and solar system in the outer island increased
Used engine oil	**No**	Approx 10m3 or more	None, but they are lying everywhere	Not applicable	Government impose a A$4000 flat rate custom duty on second hand cars or truck with cost below A10,000 to discourage dumping of these in Tuvalu	Yes it is a priority, as there is a limited land area to dump these waste as well as financial

						capacity
Expired pharmaceuticals	NO	See attachment of health sector inventory	None	Yes, see attachment	see attachment	Yes, safe disposal is needed to do away from unknown effect
Disused pesticides	Yes	5 cubic metre	None	yes	The government is concern with these chemical and their consequence	It is a priority but there is funding constrain and lack of understanding
Disused school laboratory chemicals	No	2 cubic metre	None	No	Yes, the vulnerability of student to these	It is a priority in terms of the danger to student
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your government think this is a High, medium, low, or not a priority for assistance**

	you would like to have to process recyclable wastes					
Plastic	Plastic	1.None in storage all collected to dump site 2. none 3. perhaps a shredder for plastics	none	Local Government (Kaupule) provide collection service for all waste to the dump site	Based from 2002 survey, plastic waste (including containers, shopping bags etc) with an estimate amount of 1.3kg/house/week but it would increase now since a lot of new shops opened this year where they deal with their own importation abroad. This is the same with the other items..below	1. very limited budget for recycling activity in terms of capital cost 2. limited of land for recycling facility and human resources 3.isolation distance from developed countries makes it

						very expensive to export the items
Paper/cardboard	Paper/cardboard	1.some papers used in compost 2. none 3. shredder would be required to shred the papers to use in composting	none	Papers are mostly generated by offices while cardboards are mainly generated by main shops. An idea of using waste paper in composting will be the only option to reduce the amount from dump site	1.5kg/house/week	
Aluminum cans	Aluminum cans	1.Yes by private Bar and export to Australia.	Matagi Gali Bar/TANGO in providing crusher	No collection for these item. People and children bring	0.1kg/house/week	

		2. Crusher 3. New crusher (manual or single phase type)		their own cans to the bar for 30 to 30cents a kg.		
Glass	Glass	1.none in storage at this stage 2. none 3. glass crusher	none		1.5kg/house/week	
Scrap metal	Scrap metal	1.Yes by Local and Private company 2. none at the moment 3. looking to have a cutting machines, collection truck, tools etc.	Unknown (Private company)		0.4kg/house/week Now increased after construction of new road….The new private company has sent 3 containers of mixed scrap metal to Australia and NZ for recycling…another 3 already loaded await shipping.	
Used tyres	Used tyres	1.None	none		Didn't covered in	

		2. None 3. a shredder will be ok to reduce the bulk size of tyres in the dump site			the survey	

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey?: GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

The AFD (French) Pacific Solid Waste Management Initiative is a significant opportunity to improve your country's waste management. Assistance will be allocated to both multi-country and single country initiatives and this survey will assist in choosing who gets what assistance. Please check with others to make sure your answers are as accurate as possible.

IT IS EXTREMELY IMPORTANT THAT YOU AND YOUR COLLEAGUES COMPLETE THIS SURVEY EVEN IF YOU CANNOT FILL IN ALL THE SPACES.

Introduction: GHD Pty Ltd has been appointed by the Agence Française Développement (AFD) to complete a feasibility study for the preparation of Components 2 and 3 of the Solid Waste Management Initiative. Component 2 will address various potential sub-regional initiatives on hazardous waste and wastes of commercial value.

Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by Tonga. We understand that Tonga completed a waste characterization study already. This survey is being transmitted to you to provide Tonga with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in Tonga to ensure we gather all available information. All responses received will be collated:

- Lupe Matoto. Dept of Environment and Natural Resources. Senior Environment Officer
- Mafile'o Masi Department of Environment and Natural Resources Conservation Officer

Melanie Ashton, Team Leader for the Solid Waste Management Feasibility Study, has also informed Asipeli Palaki, of this survey and its importance to developing regional waste management initiatives for the Pacific.

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Tonga" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Ms Mafile'o Masi
Position	Conservation Officer
Department	Department of Environment
Email address	Bo_ongosia@yahoo.com
Phone number	(676)25050

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your**	**Does your government think this waste is a high, medium, low, or**

	answer yes or no		**destination and companies involved**		**government is actively trying to address)**	**not a priority for assistance**
Lead acid batteries	Yes	Not known	N.Z, Aust.	Not applicable	Submit Hazardous Wastes and Chemicals Bill to Cabinet for approval	High
Used engine oil	No	Not known	Tonga, Fiji	Not applicable	Submit Hazardous Wastes and Chemicals Bill to Cabinet for approval	High
Expired pharmaceuticals	Yes	Not known	Tonga	Yes	Sumit Chemical and Hazardous Bill to Cabinet for approval	High

Disused pesticides	No	Not known	Tonga	No	Submit Hazardous Wastes and Chemicals Bill to Cabinet for approval	High
Disused school laboratory chemicals	No	Not known	Tonga	No	Submit Hazardous Wastes and Chemicals Bill to Cabinet for approval	High
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your governme nt think this is a High, medium, low, or not a priority for assistance**

	you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to process recyclable wastes					
Plastic	1.No	-	Assist with awareness programs	PET Plastic-0.441kg/household/week Other Plastic-1.099kg/household/week Total household-10,796 Tt only	-No budget -limited human resources/equipments	High
Paper/cardboard	1.Yes, N.Z 2.Shredder	Private companies: 1.Gio recycling 2.Sunshine	Assist with awareness programs	0.888kg/household/week Total household-10,796 Tt only	-No budget -limited human resources/equipments	High

		Enterprise Ltd 3.Orchard Recycling				
Aluminum cans	1.Yes, N.Z 2.Crusher& Compactor	Private companies: 1.Gio Recycling 2.Sunshine Enterprise Ltd 3.Orchard Recycling	Assist with awareness programs	0.380kg/household/week Total household-10,796 Tt only	-No budget -limited human resources/equipments	High
Glass	1.No	-	Assist with awareness programs	0.715kg/household/week Total household-10,796 Tt only	-No budget -limited human resources/equipments	High
Scrap metal	1.Yes, N.Z 2.Crusher & Compactor	Private companies: 1.Gio Recycling 2.Sunshine Enterprise Ltd 3.Orchard Recycling	Assist with awareness programs	1.585kg.household/week Total household-10,796 Tt only	-No budget -limited human resources/equipments	High
Used tyres	1.No	-	Assist with awareness	Not known	-No budget -limited	High

			programs		human resources/equipments	

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey?: GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

	also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to process recyclable wastes				resources)	for assistance
Plastic	LOCAL	NO				
Paper/cardboard	NO	NO				
Aluminum cans	PENDING	YES	Please refer attached			
Glass	SAMOA	YES				
Scrap metal	PENDING	YES		paper		
Used tyres	PENDING	YES				

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

(2)

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Tokelau" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	LUISA NASERI-SALE
Position	ENVIRONMENT POLICY ADVISOR
Department	ECONOMIC DEVELOPMENT NATURAL RESOURCES & ENVIRON
Email address	lnaseri.sale@tokelau.tk
Phone number	(+690) 2128

Hazardous waste	**Currently collected (i.e. stored in a centralized area)?**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab**	**Other information you wish to provide (e.g. this is something**	**Does your governme nt think this waste is a high, medium,**

(3)

	Please answer yes or no		of export destination and companies involved	chemicals only)	your government is actively trying to address)	low, or not a priority for assistance
Lead acid batteries	YES	100+	ALL HAZARDOUS	Not applicable	GOVERNMENT AS WELL	HIGH
Used engine oil	YES	200 GAL	WASTES	Not applicable	AS	HIGH
Expired pharmaceuticals	YES	100 CTN	ARE BEING	YES	VILLAGES ARE	HIGH
Disused pesticides	NO	—	STORED ON ISLAND	NO	ATTEMPTING TO	HIGH
Disused school laboratory chemicals	YES	100GAL	AWAITING REPATRIATION	NO	ADDRESS THIS PROBLEM	HIGH
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human**	**Your governme nt think this is a High, medium, low, or not a priority**

PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

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The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by the Solomon Islands. We understand that the the Solomon Islands completed a waste characterization study already. This survey is being transmitted to you to provide the Solomon Islands with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in the Solomon Islands to ensure we gather all available information. All responses received will be collated:

- Fred Patison. Environment and Conservation Division. Chief Environment Officer
- Joseph Hurutarau. Ministry of Forests, Environment and Conservation. Principal Conservation Officer
- Tia Masalo. Ministry of Forests, Environment and Conservation. Senior Environment Officer
- Abednigo Maeohu. Waste Management Section. Honiara City Council. Principal Health Officer

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Solomon Islands" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Edward Danitofea
Position	Environment Officer
Department	Environment, Conservation and Meteorology
Email address	edward.danitofea@gmail.com
Phone number	23031

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government**	**Does your government think this waste is a high, medium, low, or not a priority**

	yes or no		**companies involved**		**is actively trying to address)**	**for assistance**
Lead acid batteries	No	At the moment no central locations for storage/disposal of lead acid batteries. Therefore, the amount of the waste lead acid batteries cannot be quantified.	Currently no management activity has been established to address waste lead acid batteries in the country. No recycling initiatives have been done in the country or no initiative to buy and export.	Not applicable	Under the new waste management strategy the government will look at ways to return materials such as lead acid batteries back to the producer for recycling.	At the moment the government has seen this as a high priority since more wastes from lead acid batteries from vehicles and other machines have been laying all over the environment.
Used engine oil	No	Not applicable in the country.	Currently no management activities have taken place in the country for used engine oil.	Not applicable	Solomon Island is at its early stage tries to develop a NATPLAN which going to address any oil spill in the country or a national strategy to address oil wastes.	This has become a priority at the moment since their has not been any proper site for disposal of engine oil in the country.
Expired pharmaceuticals	Yes		Currently the management activities for old expired pharmaceuticals are done by the Health Department. However, some of the provincial clinics located in the rural area still have problem with how to dispose of their expired pharmaceuticals.	Most of the inventories taken for expired pharmaceuticals were done only at the main hospital of the provinces and the national referral hospital in Honiara. However no inventory has been done on the expired medicine from rural area clinic.	At the moment the Government is developing a new waste management strategy which will address all shorts of waste according to their character.	At the moment the government has treated this as a priority since no proper management of expired pharmaceuticals in the country and its wastes are dump at improper location which is not proper for such wastes. Expired pharmaceuticals are hazardous wastes

						which need proper location for disposal which the country do not have.
Disused pesticides	No	At the moment no data is available on the amount of disused pesticides in the country, since no proper recording and central location for storing of such hazardous wastes.	Currently the government under the Ministry of Agriculture is gradually involve in ways of management of the disused pesticides.	Currently no inventory has been under taken in the country by the Agriculture department due to some difficulties faced by the department. (Burning down of their office)	The government under the department of agriculture is trying to address the waste disused pesticides but due to a disaster that occurred to their of it slows down its work.	At the moment the waste from pesticides is still at its minimal level in the country, however, the government has seen it as important to address it at the moment when it still at a minimal level.
Disused school laboratory chemicals	No	At the moment no central location for storage of disused school laboratory chemical in the country. Thus, given difficulties to find the actual amount of disused school laboratory chemicals. However, only the university of the south Pacific centre in Honiara has some approximate volume for disused chemical. The following are amount of disused chemicals in USP centre laboratory ready for Disposal: • Organic solvents & reagent is equivalent 27litres.	At the moment no company is involve in management of such disused school laboratory chemicals in the country. However, only the University of the South Pacific did manage their own waste expired chemicals. Most of the expired chemicals with large volume are usually send to Fiji for proper disposal.	At the moment only the University of The South Pacific centre in Honiara have a good inventory of the disused school laboratory chemicals. The other schools still not have a proper inventory of all the expired chemicals that they have.	At the moment the country does not have any strategy to address liquid hazard waste. Therefore, no proper data can be obtained.	At the moment the government has seen this as it is still at its minimal level. Also there has been no national strategy to address liquid wastes such disused chemicals used in schools.

		• Organic Acids is equivalent to 1350 grams. • Nitric acid; 500 ml • Solids; 229.177 grams				
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies . 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now** **(The amount of waste in the Solomon Islands are presented in mass)**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your government think this is a High, medium, low, or not a priority for assistance**

	would like to have to process recyclable wastes					
Plastic	No	Plastic is an imported product. Furthermore, there was no established agency in the country that involve in sorting out of different plastics that enters the country. Thus, sending of the plastics to the companies that produce it becomes a problem.	At the moment the Solomon Island government still not take the initiative to involve in plastic recycling since no waste management strategy has been established over the past years which can strengthen the existing waste policies in the country. However, the first ever Solomon Islands national waste management strategy just reaches its draft stage at the moment. This new waste management strategy will enforce the existing policies related to wastes in the country. Thus, enforces the Government to involve more in provisions related to waste management in the country. This will assist the government to look at ways to involve in	Approximate mass of waste produce annually is 10 to 13000 tons of waste per annum. However the amount of waste plastic produce annually can't be quantified, since no data was available at the moment. Also at the moment no data is available on the amount of waste plastic available for recycling in the country.	At the moment the country is faced with difficulties in recycling of plastics since no market has been established in the country. Also there was no established relationship between the producer of the plastics overseas and the government over the past years. Thus, found difficulties, to send it back to the producer for recycling.	At the moment the government of the Solomon islands has seen the importance to address the issue associated with waste generated from the plastic bags and its environment impacts. Thus, the government has seen this as a high priority in the country that needs to be address. Plastic has become a national issue in the country at the moment.

			recycling of plastic bag.			
Paper/cardboard	No	At the moment, there is no NGO or organisation that involve in recycling of paper/ cardboard in the Solomon Islands.	The country still has its waste management strategy at its development stage. At the moment it has reached its draft stage. The waste management strategy should give legal strength to the existing waste management policies which covers recycling of solid material waste like paper/cardboard. At the moment there is no paper/ cardboard recycling business in the country.	At the moment no data has been available on the amount of waste paper/ cardboard generated in the country per annum. This has occurred since no waste segregation system has established in the country. Therefore, the amount of waste paper/cardboard cannot be quantified since it was not recycle in the country or exported to market overseas for recycling.	At the moment the government still find it difficult to recycle paper/ cardboard waste in the country. Problem is no market is available locally in the country. Also no budget has been allocated for recycling by the government. However, this can be address if the new waste management strategy of the country has been completed.	The government has high priority given to paper/ cardboard waste in the country at the moment as a national issue. Papers/ Cardboard has been used in schools, offices and public places. Thus, the waste generated from these materials has become a major issue in the country at the moment. From these issue of waste in the country, the government dev eloping a new waste management strategy that can address this.
Aluminium cans	Yes	BJS is the only company that is involve in paying of Aluminium cans for recycling.	At the moment the government does not provide any provision for recycling of aluminium cans or any central point where collection of waste Aluminium cans can be collected. However, only	The amount of waste from aluminium cans cannot be quantified since only the aluminium cans in Honiara are paid by the BJS for recycling and can be quantified.	At the moment the government still find difficulties to assist in Aluminium cans recycling. This has happened	Aluminium cans in the country is medium priority to the Government since only few people involve buying fizzy drink and

			private company is involved in buying of aluminium cans without any assistance from Government. On the other hand, after the waste management strategy has completed the government will start to enforce all waste policies in the country thus, assist in provision for wastes control and recycling in country.	However, aluminium cans in the provinces cannot reach Honiara for recycling by the BJS and are disposed as waste on dumpsite.	since it was not budget for by the government. Thus, less assistance from the government to the private sector who involved in buying of Aluminium cans.	cans of breweries. Also BJS is involved in buying of empty aluminium cans for recycling.
Glass	No	At the moment there was no recycling business or buying of waste glass material available in the country which involve NGO and private sector.	The government still not provide any provision for recycling of waste glass. At the moment wastes are not recycle in the Solomon Islands. Therefore, no central location for collection of glass wastes.	The amount of waste glass produced cannot be quantified since no waste segregation and recycling of waste glass being established in the country. Thus, the amount of waste glass produce at the moment was not available.	The government has faced difficulties in finding markets for recycling of waste glass. The problem associate with this is that, the government has no budget for waste segregation and recycling.	The government has seen this as a priority at the moment since glass waste has now a problem both in urban and rural area most utensils used at the moment are made of glass. Therefore, the amount of glass wastes becomes a hazard to the public.
Scrap metal	**Yes**, only for scrap metals from ship wreckage at the coastal Honiara area. Other	PBS is a local company which involves buying of scrap metals from ship wreckage along the Solomon Islands coast line. I.e.	The government does not involve in scrap metal recycling over the past years even though there was a need in the country to address it. However, private companies in the	Approximate mass of waste produce annually is 10 to 13000 tons of waste per annum. At the moment the amount of the scrap metal left as a waste is more than	The government still found difficulties to address the waste scrap metals in the country. The problem associate	The waste from the scrap metal is a major issue in the country. This has create a problem since in the past years the

	metals scraps on land are still causing waste in the country.	Honiara.	country have shown interest to buy scrap metals for recycling. A local company which involve in buying of scrap metals from ship wreckage is the PBS. In addition the government will start to assist in any ways if the waste management strategy is complete.	it can be quantified since there was no recycling activity has been done on scrap metal waste in the country.	with market overseas are not available. Also the government budget does not include it. However, a local private company is involved in buying of scrap metals from ship wreckage.	Solomon Islands does not have a national waste management strategy to address waste scrap metal in the country. However the new national waste management strategy will address this major waste problem with scrap metal in the country.
Used tyres	No	There was no a private sector or NGO which involve in recycling of used tyres at the moment.	At the moment the government does not involve in providing provision for recycling of used tyres.	At the moment no data is available on approximate amount of used tyres in the country. Most of the used tyres were just disposed all over the country without any proper management.	At the moment there were no used tyres recycling company in the country. Thus, gives a very difficult time for the government to address any waste related to the used tyres.	The problem associate with used tyre waste is still at its minimal level in the country. However, the new national waste management strategy will look at recycling of all material like tyres that come into our country.

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

At the moment no data is available on the various waste types or systems in the country, therefore, all class of wastes are dump at a open dumpsite in Honiara. No proper management of waste has been done in the country over the past years. However, the first draft of the national waste management strategy was just completed and after completion of the final draft, the waste management can be done at an efficient way. Therefore the method of 4Rs, (Refuse, Reduce, Reuse, and Recycle) can be implemented.

What happens as a result of this survey?: GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information (Edward):

I have check with the Solomon Island electricity about the used engine oil and they have provide me with some information with regards to the used engine oil in the generator. The used oils are usually stored in drums and sold to the public to be used in the chainsaw engines. The dirty oil from the generators are usually dump in a pit while waiting to be burned by incinerator.

I just have some information from the PBS which involve in cutting the parts of the ship wreckage along the Honiara coastline. Actually PBS started its activity in April. Since that time 20 containers of scrap metals from the Ship wreckage has been exported to Malaysia. According to the company owner, approximately 500 tonnes have already export since April this year. Inaddition to ship wreckage, they also pay scrap metals where other people bring it to them.

THE Contact Person is Ben Maenu'u
Phone: 677 73049
The other company which also involve in buying of Aluminium cans and other scrap metals in the Solomon Islands is LEKSMETAL.TRADING. This waste metals are export overseas for recycling.
For further information contact. Ken 677 75902
Office Ph. 677 38240.
You can also Contact BJS on 677 23532 for some information aluminium cans recycling.

Actually the National referal Hospital use to has its own incinerator. However, it was not functioning at the moment. But for the Solomon Island power station they have their own incinerator where they burn all their dirty oils in. Also the regional assistant mission to the Solomon Islands (RAMSI) have their own incinerator as well, which is still functioning.

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Introduction: GHD Pty Ltd has been appointed by the Agence Française Développement (AFD) to complete a feasibility study for the preparation of Components 2 and 3 of the Solid Waste Management Initiative. Component 2 will address various potential sub-regional initiatives on hazardous waste and wastes of commercial value.

Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by Tuvalu. We understand Tuvalu completed a waste characterization study already. This survey is being transmitted to you to provide Tuvalu with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in Tuvalu to ensure we gather all available information. All responses received will be collated:

- Pepetua Latasi	Department of Environment	Climate Change Coordinator
- Susan Tupulaga	Department of Environment	Waste Management
- Melton Tauetia	Department of Environment	Climate Change and Chemicals Coordinator

Melanie Ashton, Team Leader for the Solid Waste Management Feasibility Study, has also informed Mateio Tekinene, of this survey and its importance to developing regional waste management initiatives for the Pacific.

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Tuvalu" and add your name.
2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Susan Tupulaga
Position	Waste Management
Department	Environment
Email address	stupulaga@gov.tv
Phone number	

Hazardous waste	**Currently collected (i.e. stored in a centralized area)?**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something**	**Does your government think this waste is a high, medium,**

	Please answer yes or no		**of export destination and companies involved**		**your government is actively trying to address)**	**low, or not a priority for assistance**
Lead acid batteries	Yes	About 70 to 80 of them being collected and stored	These items are currently stored at the storage site with an intention to collect more for exportation	Not applicable	Looking into doing a survey for the outer islands, storage facilities on each island for these wastes	High since the number of cars, solars, motorcycles are increasing
Used engine oil	Yes	About 9,400 litres (given the density of waste oil is 945kg/m3, the total weight shipped is 8.883 tons Currently,	these waste oil were collected to BP depot for shipment to Fiji in 2005. (POPs National chemical profile, 2006) No export at the	Not applicable	Looking into other alternatives to deal with these as waste oil are continually generated Approached	High as well as there is no other way of disposing them in country

		about 12 to 13 * 200L drums of mix waste oil plus 2 * 200 L drums of oil from transformer now stored	moment since BP is now reluctant to collect mix waste oil for exportation.		Tuvalu Electricity Cooperation (TEC) to assist in burning these waste excluding PCB oil	
Expired pharmaceuticals	Yes but already been disposed off at the dump site	Quella lotion, ethambutol, arthritic cream, echnicacea forte 3000, dilantin, erythrocin, vitamin b, benzoin and methnol, ibuprofen tab, vitamin c, atenolol , diltazem, paracetamol and more…	Some of them were incinerated	Inventory with the amount stored at hangar in the past – by POPs project	Cannot continue with the current practice in the long run as it imposed health and environment hazards Looking into storing these waste in a safe place rather than disposing them at the	it is a priority to have a system in place with these types of wastes

					dump site. However storage of these waste is not necessary in the long run.	
Disused pesticides	Yes By POPs project	About 200kg now stored in buckets at the hangar	No	Yes by POPs project	All pesticides issues are included in the NIP for POPs project	
Disused school laboratory chemicals	Have received some chemicals in liquid form from hospital lab Lots of used and expired chemicals	About 60 containers wrapped in boxes plus 4 containers of hydrochloric acid, plus two unlabelled containers Unknown	No, still stored at the storage site Still stored	Not yet No	To seek for assistant on how to dispose these types of wastes The school has requested for	High since we don't have a proper facility for disposal

	are stored at the school lab in Vaitupu.				the disposal of these chemicals… been advised to store them in a safe place.	
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your government think this is a High, medium, low, or not a priority for assistance**

	you would like to have to process recyclable wastes					
Plastic	1.None in storage all collected to dump site 2. none 3. perhaps a shredder for plastics	none	Local Government (Kaupule) provide collection service for all waste to the dump site	Based from 2002 survey, plastic waste (including containers, shopping bags etc) with an estimate amount of 1.3kg/house/week but it would increase now since a lot of new shops opened this year where they deal with their own importation abroad. This is the same with the other items..below	1. very limited budget for recycling activity in terms of capital cost 2. limited of land for recycling facility and human resources 3.isolation distance from developed countries makes it	Recycling in country is very difficult due to very limited land for facility… Government is looking into other alternatives to minimize the amount of waste coming into the country

					very expensive to export the items	
Paper/cardboard	1.some papers used in compost 2. none 3. shredder would be required to shred the papers to use in composting	none	Papers are mostly generated by offices while cardboards are mainly generated by main shops. An idea of using waste paper in composting will be the only option to reduce the amount from dump site	1.5kg/house/week		
Aluminum cans	1.Yes by private Bar and export to Australia. 2. Crusher 3. New	Matagi Gali Bar/TANGO in providing crusher	No collection for these item. People and children bring their own cans to the bar for 30 to	0.1kg/house/week		

	crusher (manual or single phase type)		30cents a kg.			
Glass	1.none in storage at this stage 2. none 3. glass crusher	none		1.5kg/house/week		
Scrap metal	1.Yes by Local and Private company 2. none at the moment 3. looking to have a cutting machines, collection truck, tools etc.	Unknown (Private company)		0.4kg/house/week Now increased after construction of new road….The new private company has sent 3 containers of mixed scrap metal to Australia and NZ for recycling…another 3 already loaded await shipping.		
Used tyres	1.None	none		Didn't covered in		

	2. None 3. a shredder will be ok to reduce the bulk size of tyres in the dump site			the survey		

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey?: GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

PACIFIC ISLAND COUNTRIES AND TERRITORIES WASTE CHARACTERISATION SURVEY, AUGUST 2008

The AFD (French) Pacific Solid Waste Management Initiative is a significant opportunity to improve your country's waste management. Assistance will be allocated to both multi-country and single country initiatives and this survey will assist in choosing who gets what assistance. Please check with others to make sure your answers are as accurate as possible.

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Hazardous wastes likely to be suitable for clean up include lead acid batteries, disused pesticides, school chemicals and used engine oil. Wastes of commercial value likely to be suitable for sub-regional initiatives include, aluminum cans, glass, plastic, scrap metal and used tyres.

The survey below is to help GHD understand the amount and types of hazardous waste and the degree of recycling being undertaken by Vanuatu. We understand that Vanuatu completed a waste characterization study already. This survey is being transmitted to you to provide Vanuatu with the opportunity to update information in the study. When filling out the survey, if the information in the waste characterization study is most relevant, please refer to it.

Please note we have sent this survey to the following people in Vanuatu to ensure we gather all available information. All responses received will be collated:

- Ruben B Markward	Ministry of Agriculture, Forestry and Fisheries	Executive and Planning Officer
- Ernest Bain		Head of Environment

Instructions for completing the survey:

1. Save the document to your hard drive as "AFD Waste Survey Vanuatu" and add your name.

2. Fill in the "Completed by" section.
3. Complete the hazardous waste and wastes of commercial value sections.
4. **Please provide us with as much information as possible – we are looking for your ideas!**
5. If you have any questions on the survey, please send them to Petra Campbell at kpmm@ozemail.com.au.
6. Once the survey is completed please return is to Petra Campbell at kpmm@ozemail.com.au.

Survey Completed by	
Name	Albert Williams
Position	National Coordinator, GPA
Department	Environment Unit
Email address	ncsa@vanuatu.com.vu, environ@vanuatu.com.vu, ehsconsultancy@vanuatu.com,vu
Phone number	+678 25302

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes or no**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and companies involved**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government is actively trying to address)**	**Does your government think this waste is a high, medium, low, or not a priority for assistance**

Lead acid batteries	No-Ken Hutton, a private recycler was doing it but not sure of operations now	Not sure of exact figures	Australia,	Not applicable	Proposed amendment to the EMC Act to have sections of hazardous materials and hazardous wastes incorporated	High priority but no action I being taken except the endorsement of the National Waste Policy in 2001 and the National Implementation Plan (NIP) under POPs
Used engine oil	NO- only oil companies have some storage for shipment to	Not sure!	Exported by oil companies to Fiji for burning BP Oil and Pacific	Not applicable	Proposed amendment to the EMC Act to have sections of	High priority but no action I being

	Fiji for burning at the Fletcher Cement Factory		Petroleoum		hazardous materials and hazardous wastes incorporated	taken except the endorsement of the National Waste Policy in 2001 and the National Implementation Plan (NIP) under POPs
Expired pharmaceuticals	No	Not sure	Not sure	Not sure-some surveys were done by POPs but need validation with VQIS	Proposed amendment to the EMC Act to have sections of hazardous materials and hazardous wastes incorporated	High priority but no action I being taken except the endorsement of the National Waste

						Policy in 2001 and the National Implementation Plan (NIP) under POPs
Disused pesticides	No	Not sure	Not sure	Not sure-some surveys were done by POPs but need validation with VQIS	Proposed amendment to the EMC Act to have sections of hazardous materials and hazardous wastes incorporated	High priority but no action I being taken except the endorsement of the National Waste Policy in 2001 and the National Implementation Plan

						(NIP) under POPs
Disused school laboratory chemicals	No	Not sure	Not sure	Not sure-some surveys were done by POPs but need validation with VQIS	Proposed amendment to the EMC Act to have sections of hazardous materials and hazardous wastes incorporated	High priority but no action I being taken except the endorsement of the National Waste Policy in 2001 and the National Implementation Plan (NIP) under POPs
Waste of commercial value	**1. Currently recycled? If**	**Private sector or NGO**	**Government involvement in recycling? (eg**	**Approximate volume of waste**	**Difficulties experienced in recycling**	**Your governme nt think**

(recyclables)	**yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to process recyclable wastes**	**involvement in recycling? If yes, please list companies or NGOs**	**provision of collection points, paying for collection, providing land for recyclers)**	**generated annually, volume of waste available for recycling now**	**(eg no market for waste, no budget, limited human resources)**	**this is a High, medium, low, or not a priority for assistance**
Plastic	No	Nil	Nil	No sure	Machines, finance, human resources and logistics	High priority but no action is being

					incl. shiping to markets	taken (e.g. funds, human resources etc) except the endorsement of the National Waste Policy in 2001.
Paper/cardboard	No	Nil	Nil	No sure	Machines, finance, human resources and logistics incl. shiping to markets	High priority but no action I being taken except the endorsement of the National Waste Policy in 2001.
Aluminum cans	Yes-	Private sector-	Nil- although CD	20 tonnes per	Machines,	High

	compactor	Ken Hutton	legislation could be developed this year as part of a UNDP funded project	year	finance, human resources and logistics incl. shiping to markets	priority but no action I being taken except the endorsement of the National Waste Policy in 2001.
Glass	No	Nil- some reuse by local private breweries and beverage of own bottles but not imported glass bottles	Nil	No sure	Machines, finance, human resources and logistics incl. shiping to markets No mechanisms to track imported/exported scrap metals	High priority but no action I being taken except the endorsement of the National Waste Policy in 2001.

Scrap metal	Yes-new company but have not got their name The company uses shear cutters to cut and store for shipment	Private sector	Nil	Not sure-	Machines, finance, human resources and logistics incl. shiping to markets No mechanisms to track imported/exported scrap metals	High priority but no action I being taken except the endorsement of the National Waste Policy in 2001.
Used tyres	No	nil	nil	Not sure	Machines, finance, human resources and logistics incl. shiping to markets No mechanisms to track imported/ex	High priority but no action I being taken except the endorsement of the National Waste Policy in

					ported scrap metals	2001.

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

Albert Williams Comments:
There has been numerous initiative to control the pollution of the natural environment from solid and hazardous waste but mostly on project basis and once the projects come to an end, the activities also stops. As such the Environment Unit is trying to develop its pollution control programme so that any projects that are funded meet their objectives as well as ensure there is sustainability after the initial funding stops, or atleast some of the costs are taken up by the government to demonstrate its commitment to reducing environmental pollution.

There is no full time position within the Environment Unit for Waste/Pollution Control as there is no funds, but any project that could fund a position for say 3 years, and then allow the government to take over the funding of that position is most welcomed by the Government. In fact the position has been dropped in next years budget as, there were competing positions that needs filling within the Environment Unit, therefore, the Pollution Control Programme will have to depend on donor projects to keep it going for some time.

What happens as a result of this survey? GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

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Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information received from Albert:
Regarding lead-acid batteries:
1. We'd like to contact No-Ken Hutton to understand the current situation with recycling these. Could you provide his phone number?
phone number is 22604
>
Regarding oil:
1. Is it BP Oil and Pacific Oil doing the exporting to Fiji? If so, could you provide their phone number? We would like to telephone to check if Fletcher's is still accepting their oil. Anecdotal evidence from other PICTs indicates Fletcher's is no longer accepting oil, so we would like to check.
BP SWP: 22073
Pacific Petroleum: 22747

Regarding aluminium cans:
1. You indicate there is a functioning recycling system through Ken Hutton, but also classify this as a high priority for assistance. Can
> you specify what sort of assistance you are looking for?
There is no system in place to collect, store and transport cans from around the islands. The operation is Vila based and most of the other islands are not involved. There is need for some awareness, setting up of recycling centres and of course the Container Deposit Legislation

> Regarding scrap metal:
1. You indicate there is a functioning recycling system, but also classify this as a high priority for assistance. Can you specify what sort of assistance you are looking for? This is similar to aluminum cans- no system for collecting scrap metals in other island locations.
>
> Priorities:

> 1. You list each area as a high priority. Whilst we agree that all forms of waste and recycling are important, we ask that you tell us the three most pressing issues you require assistance with - so that we are able to develop targeted and relevant subregional projects.

1. National Waste (Solid & Hazardous) Strategy & Action Plan 2. Strengthening of the National Agency for Waste and the Pollution Control Programme-Environment Unit 3. Develop and enact/ammend the EMC ACt to incorporate 1)Container Deposit Legislation, 2) solid waste and 3)Hazardous Waste (into the existing Environment Management & Conservation Act)

Additional information (Albert)
While I agree with the team to focus on the survey categories, there is very little effort at the national level in terms of a programme from which the activities of AFD and other partners could complement or fit into. We do not want another project document/project activity. The country needs assistance in developing a programme to sustain these project activities once funding for the activities comes to an end.
Anyway the priorities for the categories would be:
1. Cardboard/paper
2. Lead acid batteries
3. Plastic
4. Used tyres
5. Glass
6.Used engine oli
The others which have not been listed means there is already some work undertaken by the provate sector to address.

Survey Completed by	
Name	Fuatino Matatumua Leota
Position	Acting Waste Management Officer, Principal Chemicals Officer
Department	MNRE
Email address	Fuatino.leota@mnre.gov.ws
Phone number	7515974/ 22267

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes or no**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and companies involved**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government is actively trying to address)**	**Does your government think this waste is a high, medium, low, or not a priority for assistance**
Lead acid batteries	YES. Collected by 6 Private Recycling Companies .Currently they have difficulties with awareness programs to the public on segregation of recyclable items.	50 tonnes p.a based on 2007's estimate. 2008 - present 30+ tonnes	Pacific Recycler West End Bethams Brother Stricklands Others Exported to China & Australia	Not applicable	Legl exportation in line with the Basel Convention. Licencing of exporter. Waste Act in drafting process	LOW
Used engine oil	No	Current volume 18,630 Litres. 90+ Full 44 gallons.	Not exported	Yes. Some information had been collected	Introducing some funding mechanisms to facilitate the recovery of used oil	HIGH

		Details: Mobil Oil -8,280 L EPC – 6,210 L Others: 4,140 L - Workshops - Suppliers			through the local suppliers.	
-Obsolete, Unknown and Used Hospital chemicals waste. Eg (Laboratory, clinicals, X-ray and Pharmacy) - Expired Chemicals in Private Pharmaceutical companies	- There is no actual storage for chemicals at the National Health Compound or even at Tafaigata Disposal Area. - No	-At a quantity of a roughly two-three 20ft containers -They have long been stored with unknown regular records keeping.	Not exported	- Ministry of Health has limited records for the rest of pharmaceutical products - Private Chemist companies should have records	- Addressed in the National Health Care Waste Management Plan and Policy. Still require proper storage and further arrangements to ensure proper environmental disposal, storage and treatment of obsolete and unknown chemicals	HIGH
Unused and expired Agricultural pesticides	Not collected. Unknown quantities	Unknown volume (one 20ft container)	Not exported.	Ministry of Agriculture has some records but not all.	Addressed in the recent Approved National Chemical Management Strategy (2007 – 2017)	MEDIUM
Schools laboratory chemicals	Not collected. Unknown quantities with schools	Unknown volume (roughly one 20ft container)	Not exported	An inventory has not been carried out	Need to develop chemicals inventory in schools & other Research Institute	HIGH
Industrial Chemicals	Not collected	Unknown Volume (approximately two to three 20ft containers)	Not exported	No records	Highly addressed in our National Chemicals Management Strategy – for sustainable management throughout the	HIGH

					chemical life-cycle. - Need more awareness and educational programs on the treatment and other chemicals minimization issues	
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to help process recyclable wastes.**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your governmen t think this is a High, medium, low, or not a priority for assistance**
Plastic	Collected by Yazaki under arrangement with an Australian Company. Collected from set up bins at schools and sent to Australia. No special equipment used. Collected by Pacific Recycler Recyling Company but not exported. Currently stored at Tafaigata.	Yazaki Company – promoting the collection of plastic bottles under pilot project through selected schools. The collected plastic bottles are exported to a Australian Company. And in return some furniture made from plastic bottles are provided for these schools. Pacific Recycler Co.Ltd –promoting recycling of plastic bottles. Recycling cages are located at schools, in town and other places	Providing of free governmet land within the Recycling zone located in the 100acre designated land for waste disposal area.	Based on the Pacific Recycler Co.Ltd collected plastics: 2007 -6.9tonnes 2008- 3.8tonnes	Market Not economical feasible because of freight costs	HIGH

		for the recovery of these plastics. This company has a baler, granulator and other other appropriate equipment. The unavailability of market makes it hard to export these collected plastic bottles.				
Paper/cardboard	No special collection. All dumped at the waste landfill	There is no active operation involved to recycle papers or cardboards	Provision of government land for establishment of any recycling	Cardboards generated from businesses has not been determined	Market Not economical feasible	HIGH
Aluminum cans	Collected and exported by more than 6 recycling companies. Only two recycling companies with proper equipment to press and pack aluminums.	There are more than 6 companies targeting aluminum cans for recycling. Same one doing scrap metals as highlighted below. Pacific Recycler Co.Ltd. West End Co.Ltd Betham Brothers – 2 companies Strickland Peseta Others	Same as above	**Based on Pacific Recycler Co.Ltd Data** 2007- 74.8tonnes 2008- 25.4tonnes **Based on aluminum cans survey in 2005 with 30% recovery rate of imported cans.** = 5.5 container 20ft per year = 49.5 tonnes p.a.	Going Well	LOW
Glass	No recycling of glass. Only beer bottles that are recovered and reused. Need a glass 2 tonnes per hour glass pulverisor	No operation in place	Same as above. Some sort of Funding Mechanisms are proposed under the National Solid Waste Management Strategy.	Information from commercial sources has not been collected	Not economical	HIGH
Scrap metal	Collected by 8-10 scrap metal recycling businesses. Only Pacific Recycler Co.Ltd with the	Too many operations in place Same companies as highlighted above collecting aluminum	Same as above. Only two companies have been issued with licence to operate. Trying to control the number of companies	Based on Pacific Recycler Co.Ltd Data 2007-949,553	Going Well	LOW

	appropriate machineries and equipment. Operations also meet Basel Requirements.	cans.	competing for the limited scrap metals.	tonnes 2008-622,123 tonnes		
Used tyres	Collecte by the Pacific Recycler Co.Ltd. A proper collection point has been established close to the town area for easier collection of tyres.					

THESE INFORMATION WILL DETERMINE THE ACTUAL FUNDING AND EQUIPMENT TO BE PROVIDED UNDER THIS DONOR FUNDED PROJECT

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Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information on chemicals (from Fautino):

No.	Chemical Descriptions	Quantity	Weight per piece	Unit of Measure	Total Weight
1	7154-6376 MK - 20 - Solvent for MK Series	32	450	ml	14,400 ml
2	Corrosive Alpha Flux 201B (Liquids, N.O.S. contains Glutamic Acid Hydro Chloride)	4	1 = 40 2 = 5	liters	50 liters
3	911P3X - 10R LOCTITE (Aronarufar)	84	500	grams	42 kgs
4	AZONIL PH 45	2	20	kgs	40 kgs
5	Araldite Polyol for Polyurethane Resin 8618B	15	16	kgs	240 kgs
6	Araldite Isocyanate for Polyurethane Resin 2023	105	19	kgs	1,995 kgs
7	9000-5005 (CE - T #2) Rubber Housing Grease (Marutenpu)	28	18	kgs	504 kgs
8	9000-5000 (MB - 11) Dangerous Item #3 Polyurethane (Unerubu)	17	18	kgs	306 kgs
9	Forklift Battery 24 / VCD 10 48V	2	862	kgs	1,724 kgs

Survey Completed by	
Name	Faafetai Sagapolutele
Position	Local Waste Management Consultant (Former Principal Waste Officer)
Department	MNRE
Email address	intsiatai@yahoo.com / Faafetai.Sagapolutele@mnre.gov.ws
Phone number	7745668 / 32895

Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes or no**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and companies involved**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government is actively trying to address)**	**Does your government think this waste is a high, medium, low, or not a priority for assistance**
Lead acid batteries	YES. Driven by 6 Private Recycling Companies	50 tonnes p.a based on 2007's estimate. 2008 - present 30+ tonnes	Pacific Recycler West End Bethams Brother Stricklands Others Exported to China & Australia	Not applicable	Legl exportation in line with the Basel Convention. Licencing of exporter. Waste Act in drafting process	LOW
Used engine oil	No national organized collection system. Mobil Oil, EPC, Shipping Company, Hyundai and other workshops have	Current volume 18,630 Litres. 90+ Full 44 gallons.	Not exported	Yes. Some information had been collected	Introducing some funding mechanisms to facilitate the recovery of used oil	HIGH

	stored used oil.	Details: Mobil Oil -8,280 L EPC – 6,210 L Others: 4,140 L - Workshops - Suppliers			through the local suppliers.	
Expired pharmaceuticals	Ministry of Health has storage	To be confirmed	Not exported	Ministries of Health has record	Addressed in the National Health Care Waste Management Plan and Policy	HIGH
Disused pesticides	Not collected. Unknown quantities	Unknown volume	Not exported.	Ministry of Agriculture has record	Addressed in the recent Approved National Chemical Strategy	MEDIUM
Disused school laboratory chemicals	Not collected. Unknown quantities with schools	Unknown volume	Not exported	An inventory has not been carried out		MEDIUM
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to help process recyclable wastes.**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your government think this is a High, medium, low, or not a priority for assistance**
Plastics	Collected by Yazaki under arrangement with an Australian Company. Collected from set up bins at schools and sent to Australia. No special equipment used. Collected by Pacific Recycler Recyling	Yazaki Company – promoting the collection of plastic bottles under pilot project through selected schools. The collected plastic bottles are exported to a Australian Company. And in return some	Providing of free governmet land within the Recycling zone located in the 100acre designated land for waste disposal area.	Based on the Pacific Recycler Co.Ltd collected plastics: 2007 -6.9tonnes 2008- 3.8tonnes	Market Not economical feasible because of freight costs	HIGH

	Company but not exported. Currently stored at Tafaigata.	furniture made from plastic bottles are provided for these schools. Pacific Recycler Co.Ltd –promoting recycling of plastic bottles. Recycling cages are located at schools, in town and other places for the recovery of these plastics. This company has a baler, granulator and other other appropriate equipment. The unavailability of market makes it hard to export these collected plastic bottles.	Government recognizes plastic items as a number one environmetal pollutants. Efforts have been made to reduce the generation of non biodegradable plastic bags. Recycling companies are also encouraged to recycle plastic bottles, and other plastic components of goods and products imported to Samoa. Some funding mechanisms are proposed to effectively recover plastic bottles and implement sustainable recycling operations under the proposed National Solid Waste Management Strategy 2008 – 2013.	Based on imports statistics of plastic bottles. About 20-40 millions plastic bottles enter Samoa annully. An estimate of one million bottles turn into waste on an annual basis.	Waste Generation Surveys also indicate an increasing amount of plastic materials in the domestic waste streams, as the top two to three categories with organic and metals.	
Paper/cardboard	No special collection. All dumped at the waste landfill A cardboard baler is required to effectively pack and store the generated cardboards for future recycling uses. A shredder will also be useful to cut cardboards to appropriate sizes useful for homemade ovens operate locally using charcoals because of the	There is no active operation involved to recycle papers or cardboards	Provision of government land for establishment of any recycling	Cardboards generated from businesses has not been determined, but there is a high quanities of cardboards and papers from businessesk, government organizations and offices. Household generated papers is generally low and	Market Not economical feasible Shredded cardboards can be mixed with charcoal, timber sawdusts to provide continuous fuel source for people locally made ovens.	HIGH

	increasing costs of kerosene, gas and electricity.			contaminated based on 2006/2007 Generation Surveys		
Aluminum cans	Collected and exported by more than 6 recycling companies. Only two recycling companies with proper equipment to press and pack aluminums.	There are more than 6 companies targeting aluminum cans for recycling. Same one doing scrap metals as highlighted below. Pacific Recycler Co.Ltd. West End Co.Ltd Betham Brothers – 2 companies Strickland Peseta Others	Same as above	**Based on Pacific Recycler Co.Ltd Data** 2007- 74.8tonnes 2008- 25.4tonnes **Based on aluminum cans survey in 2005 with 30% recovery rate of imported cans.** = 5.5 container 20ft per year = 49.5 tonnes p.a.	Going Well	LOW
Glass	No recycling of glass. Only beer bottles that are recovered and reused. Need a glass 2 tonnes per hour glass pulverisor to convert the amount stored at Tafaigta landfill into good uses.	No operation in place at the moment. The Vailima Breweries Ltd has an effective mechanism in place to recover their glass bottles for reuse.	Same as above. Some sort of Funding Mechanisms are proposed under the National Solid Waste Management Strategy 2008 -2013	Information from commercial sources has not been collected. But disposed quantities at Tafaigata is about 800 tonnes	Not economical to recycle glasses when taking into account the freight and operation costs. With limited sand, there may be a market for any generated products in the future and should be explored.	HIGH
Scrap metal	Collected by 8-10 scrap metal recycling businesses. Only Pacific Recycler Co.Ltd with the	Too many operations in place Same companies as highlighted above collecting aluminum	Same as above. Only two companies have been issued with licence to operate. Trying to control the number of companies	Based on Pacific Recycler Co.Ltd Data 2007-949,553	Going Well	LOW

	appropriate machineries and equipment. Operations also meet Basel Requirements.	cans.	competing for the limited scrap metals.	tonnes 2008-622,123 tonnes		
Used tyres	Collecte by the Pacific Recycler Co.Ltd. A proper collection point has been established close to the town area for easier collection of tyres.	The Pacific Recycler Company is the only firm involved with the collection and storage of used tyres.	Some sort of funding mechanism is proposed under the Samoa National Solid Waste Management Strategy 2008-2013. Government land is provided free of charge for storage and recycling purposes	2007 - 60 tonnes 2008 – 80 tonnes	Not economical to operate at the moment. Lack of closer overseas market. Absence of appropriate equipment to recycle tyres.	MEDIUM

The government scheme to promote and encourage recycling operations to establish at the Tafaigata landfill by offering government land free of charge or with low lease has a number of advantages:

1. Effective coordination of recycling operations to ensure safe and appropriate practices are applied for environmental protection and public health prevention.
2. Obtaining update records of waste information – collected waste, exported waste and etc.
3. Facilitating the exportation of waste in line with the Basel Convention.
4. For easy monitoring, administration and management of future funding mechanisms proposed to subsidize recycling operations through the volume and quantities of recycled wastes.
5. Easily coordinate the segregation of incoming waste to the waste landfill for recycling operations to be provided by different companies. The delay in implementing waste segregation at source and a special collection of recyclable waste is due to the unavailability of companies committed to implement recycling operations for different types of waste. It is uneconomical to implement such collection if there are no recycling services available to make good use of these collected wastes.

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey?: GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

Melanie Ashton – Team Leader and POPs and Institutional Specialist, Melanie@iisd.org
Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Additional information from Faafetai:

The title of the Waste Plan is " Samoa Solid Waste Strategy & Actions Plan 2008 -2013" (SSWAP).It has not been finalised and endorsed at this time. Main focus areas:

1. Upgrading waste infrastructure, facilities and supporting resources (machineries, buildings, offices and equipments, staff, workers, vehicles and etc)
2. Developing and promoting waste minimization practices (reduction at at source, reusing and recycling).
3. Developing and changing people's behaviour and attitude to foster change, support and participation (public awareness and education, communication and networking and etc)
4. Introducing appropriate, practical and reasonable supporting mechanisms, measures and management tool to facilitate the above three main areas -legislations, regulatory, funding mechanism, communication,

L'étude de la caractérisation des déchets des Iles et des Territoires du Pacifique, Août, 2008.

L'Initiative « Gestion des Déchets Solide » de L'AFD représente une opportunité importante dans le but d'améliorer la gestion des déchets dans votre pays. L'assistance sera fourni aux initiatives sub-régionale et par pays. Ce sondage va nous aidez a identifier qui va bénéficier de quoi. Veuillez vérifier avec les autres afin d'être surs que les informations sont aussi juste que possible.

Il est extrêmement important que vous et vos collègues remplissiez ce sondage même si vous ne pouvez pas répondre à toutes les questions.

Introduction: GHD PTY LTD a été nominé par l'Agence Française Développement (AFD) afin d'écrire une étude de faisabilité sur la préparation du partie 2 et 3 de l'Initiative du Gestion des Déchets Solide. La partie 2, s'adresse aux initiatives subrégionales, sur des déchets toxique et des déchets recyclables avec valeur commerciales. Les déchets toxiques susceptibles d'être collectionnés, sont les batteries, les pesticides usagées, les produits chimiques usagées des écoles, et les huiles usagées. Les déchets avec valeur commerciale susceptibles d'être collectionnés sur une initiative subrégionale incluent, les cannettes d'aluminium, le verre, les plastiques, les métaux, et les pneus de voitures.

Ce sondage va aider GHD a comprendre les volumes et les types de déchets toxiques, et le niveau du recyclage a Wallis et Futuna. Nous comprenons que Wallis et Futuna a peut être déjà fait une étude de caractérisation des déchet. Nous vous transmettrons ce sondage pour vous permettez de mettre a jour les résultats et informations. Quand vous remplirez cette étude, vous pouvez utiliser les résultats de vos études existantes si vous n'avez pas d'informations plus récentes.

Nous avons envoyé cette étude aux personnes suivante en Wallis et Futuna afin d'assurer que nous disposons de toutes des informations possibles disponibles. Toutes les réponses vont être réunies :

Sanele Tauvale

Les Instructions pour remplir ce sondage:

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2. Remplissez la section " Rempli Par".
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6. Un fois que vous avez terminer le sondage veuillez les envoyer a Petra Campbell a kpmm@ozemail.com.au.

Etude Rempli Par:	
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Déchets Toxiques	**Actuellement collectés par (c'est à dire, ou sont ils stockés, dans un location centrale?)**	**Volume approximatif des stocks**	**Gestion actuelle (par exemple est ce que vous exporter les déchets ?)**	**Est-ce qu'un inventaire a été fait (pour les pesticides, les produits pharmaceutiques et les produits**	**Information additionnelle que vous voulez fournir (par exemple, est –ce que votre**	**Est-ce que votre gouvernement pense que ça a un ordre de priorité d'aide par l' AFD :**

				chimiques de laboratoire seulement	**gouvernement essaye de résoudre ces problèmes ?**	**haute, moyenne, basse ou pas du tout. haute**
Les batteries	CET	75 m3 (120T)	stockage		oui	haute
Les huiles usagées	CET	6000 L déc 2007	incinération		oui	Moyenne (traitment en cours)
Medicaments usagéés	CET	35 m3 (2-3 t)	Stockage et incinération	Oui, connu par l'hopital	oui	Moyenne (traitement en cours)
Pesticides usagéés	Pas de stockage centralisé	Non connu	?	Non Inventaire envisagé	oui	haute
Produits chimiques usagéés des écoles (par exemple du laboratoire)	Pas de stockage centralisé	Non connu	?	Non , inventaire envisagé	oui	haute

Les déchets avec valeur commerciale	**1.Est ce qu'il sont actuellement**	**Est ce qu'il y du recyclage**	**Est-ce que le gouvernement fait du**	**Volume approximatif des déchets générés**	**Les Difficultés que vous avez**	**Est-ce que votre gouvernement**

(recyclables	**recycler? Si oui, vers quelles sociétés de recyclage? 2. Equipements de recyclage que vous avez 3. Equipement de recyclage que vous voulez**	**fait par le secteur privé? Si oui, veuillez donner les coordineés des sociétés ou des ONG?**	**recyclage (par exemple, fournit les points de collecte**	**par an et volume des déchets recyclables disponibles a ce jour**	**pour recycler? (Par exemple: pas de marché pour les déchets, pas de budget, ressources humaines limitées)**	**pense que ça a un ordre de priorité d'aide par AFD haut, medium, bas ou pas de tout.**
Plastiques	1 – non, (stockage) 2 - 0 équipement, 3- broyeur	non	Tri et stockage	40 m3	Oui aux 3 exemples	Haut
Papier/Carton	1 – non 2 – 0 équipement 3 - presse	non	Point de collecte bientôt	? mais beaucoup	Oui idem	medium
Boite d'aluminium	1 – non,(stockage) 2 – 0 équipement 3 - presse	non	Oui et stockage	137m3 (4 tonnes)	Oui idem	haut
Verre	1 – non, (stockage) 2 – 0 équipement 3 - broyeur	non	Tri et stockage	12 m3	Oui idem	haut
Métaux	cet	non	Tri et stockage		Oui idem	medium
Pneus usagés	1 – stock 2 – 0 équipement	non	collecte et stockage	15m3	Oui idem	medium

	3 - ?					

<u>Données additionnelles</u> :

WALLIS : CET de Vailepo

Le cuivre, stockage: 18 m3 (poids non connu)
Les déchets hospitaliers : incinération de 12 tonnes/an de DASRI
Les déchets ménagers : enfouissement ,50 à 60 m3/semaine soit environ 2 800m3/an (poids non connu).
Les déchets verts : stockage 4à 5 m3/j. Compostage
Encombrants (carcasses de véhicules…) : environ 500 carcasses non compressées Electroménager : Electronique :
Les produits chimiques dangereux : l'élimination ne peut être envisagée que dans un CET.
Autres produits : saisies de produits alimentaires périmés : 90 t en 2007 (enfouis ou détruits)

FUTUNA DECHARGE de NANU'U
- collecte d'ordures ménagères 2008=780 m3.
CET de MOASA
- collecte d'ordures ménagères 2008=708 m3.
- Incinération déchets hospitaliers : 3450 l par trimestre (282 kg/trimestre).
- 450 batteries en stock.(12 tonnes)

Veuillez noter : Si vous n'avez pas des informations sur les différents types de déchets ou les systèmes, veuillez écrire plusieurs phrases sur leur gestion actuelle, ainsi que sur vos souhaits de gestion future. Il est très important d'identifier les initiatives que vous avez mise en place qui pourraient se réaliser plus vite avec de l'aide.

A part les déchets qui peuvent être incinérés actuellement (huile, DASRI, médicaments périmés,), le stockage des autres déchets recyclables est réalisé dans le but de pouvoir recycler plus tard ou les exporter. Cela dépend des opportunités en ressources et en marchés.
Sur les encombrants (ex : carcasses de véhicules, carcasses d'électroménagers..), l'acquisition d'une presse hydraulique pour compresser est souhaitable pour les commodités de stockage et de transport s'il y a lieu. Un solution est de les compresser après

avoir enlever les parties polluantes et les couler dans l'océan très profond (pensez-vous que ça peut constituer une solution viable ?).
Les éléments toxiques sont enlevés et stockés à part.
Nous disposons de plateformes de tri dans nos CET où nous stockons les divers déchets par catégorie, en attente de traitement (destruction ou recyclage).

Les déchets ménagers vont dans des casiers d'enfouissement. Nous arrivons à la fin de vie du casier actuel et ne pouvons pas en aménager un autre faute de ressources.

Les cadavres et autres déchets du même type sont enfouis avec de la chaux vive dans un endroit prévu à cet effet.

Certains produits chimiques ne sont pas inventoriés. (Inventaire à prévoir sur produits périmés et niveaux importations/catégories).
Il est important d'équiper le CET d'une bascule pour faciliter la pesée des déchets qui y entrent.

Do not hesitate to ask for further information if needed !!!

Qu'allons nous faire avec cette information? GHD va utiliser les résultat des études des Iles du Pacifique et les informations de caractérisations des déchets afin de développer des options pour un système des recyclage sub-régionale et pour une collecte des déchet toxique. Ces options vont être présentées a l'AFD et deux ou trois des options vont être choisies pour une étude plus poussée sur le faisabilité et la façon de gérer des tels programmes. Nous vous tiendrons au courant de l'évolution de l'étude sur les quatre prochains quatre mois. L'étude va être terminée en Décembre 2008. A ce moment la, l'AFD va commencer a travailler sur la phase d'implémentation.

Les Contactes de clefs:

Mélanie Ashton – Chef d'équipe, spécialiste des POPs et des institutions, Melanie@iisd.org
Petra Campbell – Spécialiste du recyclage et des ONG, kpmm@ozemail.com.au
Mark Ricketts – Spécialiste du commerce des déchets et du politique, markelaine@bigpond.com

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Ce sondage va aider GHD a comprendre les volumes et les types de déchets toxiques, et le niveau du recyclage a Wallis et Futuna. Nous comprenons que Wallis et Futuna a peut être déjà fait une étude de caractérisation des déchet. Nous vous transmettrons ce sondage pour vous permettez de mettre a jour les résultats et informations. Quand vous remplirez cette étude, vous pouvez utiliser les résultats de vos études existantes si vous n'avez pas d'informations plus récentes.

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N. de telephone	00681 720351

Déchets Toxiques	**Actuellement collectés par (c'est à dire, ou sont ils stockés, dans un location**	**Volume approximatif des stocks**	**Gestion actuelle (par exemple est ce que vous exporter les**	**Est-ce qu'un inventaire a été fait (pour les pesticides, les produits**	**Information additionnelle que vous voulez fournir (par exemple,**	**Est-ce que votre gouvernement pense que ça a un ordre de**

	centrale?)		**déchets ?)**	**pharmaceutiques et les produits chimiques de laboratoire seulement**	**est –ce que votre gouvernement essaye de résoudre ces problèmes ?**	**priorité d'aide par l' AFD : haute, moyenne, basse ou pas du tout. haute**
Les batteries	CET Sanitary landfill	200 m3	Stockage storage		Oui Yes	Haute high
Les huiles usagées	CET Sanitary landfill	6000 L décembre december 2007	Incinération incineration		Oui Yes	Moyenne (traitment en cours) Looking into treatment methods
Medicaments usagéés	CET Sanitary landfill	35 m3	Stockage et incineration Storage and incineration	Oui, connu par l'hopital Yes, know by the hospital	Oui Yes	Moyenne (traitement en cours) Looking into treatment methods
Pesticides usagéés	Pas de stockage centralize No centralized	Non connu Unknown	?	Non Inventaire envisage	Oui Yes	Haute high

	storage			No inventory foreseen		
Produits chimiques usagéés des écoles (par exemple du laboratoire)	Pas de stockage centralisé No centralized storage	Non connu Unknown	?	Non , inventaire envisagé	Oui yes	Haute high

Les déchets avec valeur commerciale (recyclables	**1.Est ce qu'il sont actuellement recycler? Si oui, vers quelles sociétés de recyclage? 2. Equipements de recyclage que vous avez 3. Equipement de recyclage que vous voulez**	**Est ce qu'il y du recyclage fait par le secteur privé? Si oui, veuillez donner les coordineés des sociétés ou des ONG?**	**Est-ce que le gouvernement fait du recyclage (par exemple, fournit les points de collecte**	**Volume approximatif des déchets générés par an et volume des déchets recyclables disponibles a ce jour**	**Les Difficultés que vous avez pour recycler? (Par exemple: pas de marché pour les déchets, pas de budget, ressources humaines limitées)**	**Est-ce que votre gouvernement pense que ça a un ordre de priorité d'aide par AFD haut, medium, bas ou pas de tout.**

Plastiques	1 – non, (stockage) No, stored 2 - 0 équipement, no equipment 3- broyeur , Need shredder/compactor	Non No	Tri et stockage Sorting and storing	55,5m3	Oui aux 3 exemples Yes to all three examples	Haut high
Papier/Carton	1 – non No 2 – 0 équipement No equipment 3 – presse Need compactor	non	Point de collecte bientôt Soon to have drop off points	? mais beaucoup ? but a lot	Oui idem Yes to all three examples	Medium medium
Boite d'aluminium	1 – non,(stockage) No . Stored 2 – 0 équipement No equipment 3 – presse Need compactor	non	Oui et stockage Yes and stored	336m3	Oui idem Yes to all three examples	Haut high
Verre	1 – non, (stockage) No. Stored 2 – 0 équipement. NO equipment 3 – broyeur. Need a pulveriser.grinder	non	Tri et stockage Sorting and storing	25m3	Oui idem Yes to all three examples	Haut high
Métaux	Cet Sanitary landfill	Non No	Tri et stockage Sorting and storing	8510m3	Oui idem Yes to all three examples	Medium medium

Pneus usagés	1 – stock stored 2 – 0 équipement No equipment 3 - ? what to do with tyres ?????	Non No	collecte et stockage collected and stored	128m3	Oui idem Yes to all three examples	Medium Medium

<u>Données additionnelles</u> : Additionnel data

WALLIS : CET de Vailepo Sanitary Landfill of Vailepo

Le cuivre, stockage:25m x 5m x 1m=125m3
Copper in storage :

Les déchets hospitaliers : incinération de 10 000L/mois de DASRI
Hospital waste : incineration of 10 ooo L / per month of infectious waste

Les déchets ménagers : enfouissement ,50 à 60 m3/semaine soit environ 2 800m3/an.
Household waste : bury 50-60 m3.a week, around 2800 m3.a year

Les déchets verts : stockage 4à 5 m3/j. Compostage
Green waste : storage 4 to 5 m3/day. Composting

Encombrants (carcasses de véhicules…) : 8 350 m3 Electroménager : 160 m3 (i combined these two in the metal table)
Electronique : 50 m3
Bulky waste (car bodies) 8,350 m3. While goods 160 m3. E-waste 50 m3

Les produits chimiques dangereux : l'élimination ne peut être envisagée que dans un CET.
Danderous chemical products : cannot foresee burying them in the sanitary landfill (Petra ;POPS)
Autres produits : saisies de produits alimentaires périmés : 3 500 kg

Other products : Outdated food products

FUTUNA DECHARGE de NANU'U

Nanu'u Landfill

- ***collecte d'ordures ménagères 2008=780 m3.***
- ***Household waste***

CET de MOASA
Sanitary landfill of MOSAS

- collecte d'ordures ménagères 2008=708 m3.

Household waste

- Incinération déchets hospitaliers : 3450 l par trimestre.

Incineration of hospital waste

- ***450 batteries en stock.***
- ***Batteries in storage***

Veuillez noter : Si vous n'avez pas des informations sur les différents types de déchets ou les systèmes, veuillez écrire plusieurs phrases sur leur gestion actuelle, ainsi que sur vos souhaits de gestion future. Il est très important d'identifier les initiatives que vous avez mise en place qui pourraient se réaliser plus vite avec de l'aide.

A part les déchets qui peuvent être incinérés actuellement (huile, DASRI, médicaments périmés,), le stockage des autres déchets recyclables est réalisé dans le but de pouvoir recycler plus tard ou les exporter. Cela dépend des opportunités en ressources et en marchés.

Apart from waste that can be incinerated (oil, infectious waste, outdated pharmaceuticals) the remainder of waste is stored awaiting exportation or recycling This will depend on resources and an market.

.

Sur les encombrants (ex : carcasses de véhicules, carcasses d'électroménagers..), l'acquisition d'une presse hydraulique pour compresser est souhaitable pour les commodités de stockage et de transport s'il y a lieu. Un solution est de les compresser après

avoir enlever les parties polluantes et les couler dans l'océan très profond (pensez-vous que ça peut constituer une solution viable ?).

On bulky wasate (cars, whitegoods) le acquisition of a compactor would be desirbale for existing stockpiles.

Les éléments toxiques sont enlevés et stockés à part.

Toxic elements are stored separately

Nous disposons de plateformes de tri dans nos CET où nous stockons les divers déchets par catégorie, en attente de traitement (destruction ou recyclage).

We having a sorting facility at the sanitary landfill where we store various wastes by category while waiting processing (destruction or recycling)

Les déchets ménagers vont dans des casiers d'enfouissement. Nous arrivons à la fin de vie du casier actuel et ne pouvons pas en aménager un autre faute de ressources.

White goods go into landfill. Our landfills are almost full and we have no-where else to build any more for lack of resources.

Les cadavres et autres déchets du même type sont enfouis avec de la chaux vive dans un endroit prévu à cet effet.
Corpses (dead animals – and probably human) are buried in lime in an special area for this.

Certains produits chimiques ne sont pas inventoriés.

Certain chemical products are not inventoried.

Do not hesitate to ask for further information if needed !!!
Acronymes :
DASRI : Déchets d'activité de soins à risques infectieux : infectious wastes
CET : Centre d'enfouissement technique : sanitary landfill.

Qu'allons nous faire avec cette information? GHD va utiliser les résultat des études des Iles du Pacifique et les informations de caractérisations des déchets afin de développer des options pour un système des recyclage sub-régionale et pour une collecte des déchet toxique. Ces options vont être présentées a l'AFD et deux ou trois des options vont être choisies pour une étude plus poussée sur le faisabilité et la façon de gérer des tels programmes. Nous vous tiendrons au courant de l'évolution de l'étude sur les quatre prochains quatre mois. L'étude va être terminée en Décembre 2008. A ce moment la, l'AFD va commencer a travailler sur la phase d'implémentation.

Les Contactes de clefs:

Mélanie Ashton – Chef d'équipe, spécialiste des POPs et des institutions, Melanie@iisd.org
Petra Campbell – Spécialiste du recyclage et des ONG, kpmm@ozemail.com.au
Mark Ricketts – Spécialiste du commerce des déchets et du politique, markelaine@bigpond.com

Survey Completed by	
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Hazardous waste	**Currently collected (i.e. stored in a centralized area)? Please answer yes or no**	**Approximate volume of stockpile**	**Current management activities (if any exist). If exported, provide details of export destination and companies involved**	**Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)**	**Other information you wish to provide (e.g. this is something your government is actively trying to address)**	**Does your government think this waste is a high, medium, low, or not a priority for assistance**
Lead acid batteries	YES. Collected by 6 Private Recycling Companies .Currently they have difficulty with public awareness programs on segregation of recyclable items.	50 tonnes p.a based on 2007's estimate. 2008 - present 30+ tonnes	Pacific Recycler West End Bethams Brother Stricklands Others Exported to China & Australia	Not applicable	Legal exportation in line with the Basel Convention. Licencing of exporter. Waste Act in drafting process	LOW
Used engine oil	No	Current volume 18,630 Litres. 90+ Full 44 gallons.	Not exported	Yes. Some information had been collected	Introducing some funding mechanisms to facilitate the recovery of used oil	HIGH

		Details: Mobil Oil -8,280 L EPC – 6,210 L Others: 4,140 L - Workshops - Suppliers			through the local suppliers.	
-Obsolete, Unknown and Used Hospital chemicals waste. Eg (Laboratory, clinicals, X-ray and Pharmacy) - Expired Chemicals in Private Pharmaceutical companies	- There is no actual storage for chemicals at the National Health Compound or even at Tafaigata Disposal Area. - No	A rough estimate of 2-3 x 20ft containers.They have long been stored with unknown regular records keeping.	Not exported	- Ministry of Health has limited records for the rest of pharmaceutical products - Private Chemist companies should have records	- Addressed in the National Health Care Waste Management Plan and Policy. Still require proper storage and further arrangements to ensure proper environmental disposal, storage and treatment of obsolete and unknown chemicals	HIGH
Unused and expired Agricultural pesticides	Not collected. Unknown quantities	Unknown volume (roughly 1x20ft container load)	Not exported.	Ministry of Agriculture has some records but not all.	Addressed in the recent Approved National Chemical Management Strategy (2007 – 2017)	MEDIUM
Schools laboratory chemicals	Not collected. Unknown quantities with schools	Unknown volume (an estimate of 1x 20 ft container load)	Not exported	An inventory has not been carried out	Need to develop chemicals inventory in schools & other Research Institutes	HIGH

Industrial Chemicals	Not collected	Unknown Volume (approx. 2-3x 20ft container load)	Not exported	No records	Highly addressed in our National Chemicals Management Strategy – for sustainable management throughout the chemical life-cycle. - Need more awareness and educational programs on the treatment and other chemicals minimization issues	HIGH
Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to help process recyclable wastes.**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your government think this is a High, medium, low, or not a priority for assistance**
Plastic	Collected by Yazaki under arrangement with an Australian Company. Collected from set up bins at schools and sent to Australia. No special equipment used.	Yazaki Company – promoting the collection of plastic bottles under pilot project through selected schools. The collected plastic bottles are exported to a	Providing of free governmet land within the Recycling zone located in the 100acre designated land for waste disposal area.	Based on the Pacific Recycler Co.Ltd collected plastics: 2007 -6.9tonnes 2008- 3.8tonnes	Market Not economical feasible because of freight costs	HIGH

	Collected by Pacific Recycler Recyling Company but not exported. Currently stored at Tafaigata.	Australian Company. And in return some furniture made from plastic bottles are provided for these schools. Pacific Recycler Co.Ltd –promoting recycling of plastic bottles. Recycling cages are located at schools, in town and other places for the recovery of these plastics. This company has a baler, granulator and other other appropriate equipment. The unavailability of market makes it hard to export these collected plastic bottles.				
Paper/cardboard	No special collection. All dumped at the waste landfill	There is no active operation involved to recycle papers or cardboards	Provision of government land for establishment of any recycling	Cardboards generated from businesses has not been determined	Market Not economical feasible	HIGH
Aluminum cans	Collected and exported by more than 6 recycling companies. Only two recycling companies with proper equipment to press and pack aluminums.	There are more than 6 companies targeting aluminum cans for recycling. Same one doing scrap metals as highlighted below. Pacific Recycler Co.Ltd. West End Co.Ltd Betham Brothers – 2 companies Strickland Peseta Others	Same as above	**Based on Pacific Recycler Co.Ltd Data** 2007- 74.8tonnes 2008- 25.4tonnes **Based on aluminum cans survey in 2005 with 30% recovery rate of imported cans.** = 5.5 container 20ft	Going Well	LOW

				per year = 49.5 tonnes p.a.		
Glass	No recycling of glass. Only beer bottles that are recovered and reused. Need a glass 2 tonnes per hour glass pulverisor	No operation in place	Same as above. Some sort of Funding Mechanisms are proposed under the National Solid Waste Management Strategy.	Information from commercial sources has not been collected	Not economical	HIGH
Scrap metal	Collected by 8-10 scrap metal recycling businesses. Only Pacific Recycler Co.Ltd with the appropriate machineries and equipment. Operations also meet Basel Requirements.	Too many operations in place Same companies as highlighted above collecting aluminum cans.	Same as above. Only two companies have been issued with licence to operate. Trying to control the number of companies competing for the limited scrap metals.	Based on Pacific Recycler Co.Ltd Data 2007-949,553 tonnes 2008-622,123 tonnes	Going Well	LOW
Used tyres	Collected by the Pacific Recycler Co.Ltd. A proper collection point has been established close to the town area for easier collection of tyres.					

THESE INFORMATION WILL DETERMINE THE ACTUAL FUNDING AND EQUIPMENT TO BE PROVIDED UNDER THIS DONOR FUNDED PROJECT

Please Note: If you have no data on the various waste types or systems, please write a few sentences on how you manage them currently and how you would see them being managed in future. It is very important to identify initiatives that you have budgeted for that can be made to happen faster or more completely with some assistance.

What happens as a result of this survey?: GHD will use the result of the surveys from PICTs and the information contained in waste characterization activities, to develop several options for sub-regional recycling and hazardous waste collection activities. These options will be presented to AFD for their consideration and two-three of the options will be selected for further feasibility assessment and initial design. We will keep you updated on the status of the study over the next four months. The study will be completed by December 2008, at which stage AFD will begin working on the implementation phase.

Key Project contacts:

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Petra Campbell – Recycling and NGO Specialist, kpmm@ozemail.com.au
Mark Ricketts - Waste Business and Policy Specialist, markelaine@bigpond.com

Survey Completed by	
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Hazardous waste	Currently collected (i.e. stored in a centralized area)? Please answer yes or no	Approximate volume of stockpile	Current management activities (if any exist). If exported, provide details of export destination and companies involved	Has an inventory been undertaken (for pesticides, pharmaceutical and lab chemicals only)	Other information you wish to provide (e.g. this is something your government is actively trying to address)	Does your government think this waste is a high, medium, low, or not a priority for assistance
Lead acid batteries	Yes	5 pallets	Stored in a warehouse			High
Used engine oil	Used engine/waste oil not collected and stored by agency; vendors/shops normally asked to collect waste oil with Yap EPA assisting with disposal means when it becomes available/possible	Estimate as of April 2008 indicates approx 16,039 gallons have accumulated and being stored by vendors over last 2-3 years	Only means of disposal for the last 5 years or so has been annually through collection by MV Thorfinn, steamship that visits FSM States	NA	Assistance is critical and needed with storage and disposal means of waste oil	High
Expired pharmaceuticals	Yes	30 gallons of unidentified hospital waste	Normally, incineration by/at Yap State Hospital/Health Services	NA		Medium
Disused pesticides	Yes	Disused pesticides	Containment and storage while seeking disposal	Yes	Assistance is critical and	High

		collected and stored ie 55 gallons of Methyl Bromide, 5 gallons of Malathion Pesticide	means		needed with storage and disposal means of waste oil	
Disused school laboratory chemicals	Yes	Unknown	Stored in a warehouse as we are unable to locate export destination.	Yes	Same as above.	High

Waste of commercial value (recyclables)	**1. Currently recycled? If yes, to which countries and companies. 2. Please also note the equipment you have available to recycle this waste (e.g. shredder) and 3. Equipment you would like to have to process recyclable wastes**	**Private sector or NGO involvement in recycling? If yes, please list companies or NGOs**	**Government involvement in recycling? (eg provision of collection points, paying for collection, providing land for recyclers)**	**Approximate volume of waste generated annually, volume of waste available for recycling now**	**Difficulties experienced in recycling (eg no market for waste, no budget, limited human resources)**	**Your government think this is a High, medium, low, or not a priority for assistance**
Plastic	1. #1 Plastic PET bottles are collected, but not exported as of yet. 2. crusher and bailer for alum and plastics 3. None	Island Paradise Company (Private company and only State Recycler including Scrap Metal removal)	Agency and government in collaboration with Island Paradise Co (State Recycler) with the assistance of UN Development Programme is currently looking at improvements to State Recycling Program focusing on legislative		Difficulties are necessary equipment (ie baler, scale, etc) for recycling, adequate material recycling facility (MRF), improvement/relocation of disposal	Medium

Paper/cardboard	1. No 2. None 3. ??	None	amendments and recycling program setup		site for all other waste, and market and shipment for less valuable materials (ie plastics, cardboard)	Low
Aluminum cans	1. Yes, Asia 2. Can crusher and bailer.	Island Paradise Recycling (Private Sector)				High
Glass	1. No 2. None 3. Bottle Crusher	None				Medium
Scrap metal	1. No 2. None 3. Baler, Scale	None				High
Used tyres	1. No 2. None 3. Shredder/Crumber	None				Low

*Hazardous Waste/Pesticide Disposal:

In addition to the Methyl Bromide and Malathion Pesticides, Yap EPA is storing 2,000 gallons of Condor SS (or a similar type of asphalt emulsifier), 60 PCB contaminated transformers, 4 gallons of X-ray developing chemicals and 5 gallons of film developing reagents. Proper containment and storage is currently being undertaken to allow for time in seeking assistance for proper disposal/shipping. Location of storage area/warehouse is unsuitable as it is located in town/main business area and next to main harbor/port. Major concern regarding these chemicals/pesticides is the health risks posed to the general public and the marine environment. We are constantly searching for a means of exporting these chemicals/pesticides off island and disposal.

Names of any NGOs working in the environment or in waste management education/awareness?

Yap State Environmental Protection Agency is semi autonomous government agency most heavily involved with education/awareness of recycling and waste management. However for solid waste management activities, works in collaboration with the Recycler, Dept of Public Works, and transportation, private collection companies, etc. It is planned that in the upcoming fiscal year that a Committee for Solid Waste Management be formed to focus specifically on steps and action items in development of a plan and improvements to components of solid waste management for the State.

Names of any private companies operating in recycling in Yap
Island Paradise Company (Only State Recycler and Scrap Metal Removal Co)

Name of Yaps solid waste management plan, if it has one
Efforts leading towards development of Solid Waste Management Plan, previously started with assistance of SPREP. Development of this plan is scheduled to continue and formalized in the upcoming fiscal year.

The laws which govern waste management in Yap
Related law specially deals with management, maintenance, and operations of public disposal site and refuse collection which is indicated in the Yap Sate law that created the Yap State Public Service Corporation (YSPSC), the State's public utilities company. Refuse collection and public disposal site maintenance operations are carried out by the Yap State Department of Public Works and Transportation (DPWT).

Any existing policies which are in place to support recycling
The State Recycling Program was created through passage of State laws. Recent improvements to Recycling Program has focused on amendments to these laws to improve set up of recycling program as well as allow for future inclusion of other recyclable materials.

Any laws or policies you think are needed to support recycling.
Yap State has initiated efforts to improve overall solid waste management, focusing initially on improvement to recycling program and related activities. A committee is envisioned to be created in the upcoming fiscal year to focus on improvements to other components of solid waste management including but not limited to collection, awareness and outreach activities, as well as improvement to the State public disposal site.