



***REGIONAL INITIATIVE  
FOR SOLID WASTE MANAGEMENT  
IN THE PACIFIC REGION***

***- Definition study -***

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## **Executive Summary**

This study presents the first elements of an initiative on solid waste management, endorsed by France under the framework of reinforcing regional cooperation in the Pacific region and identified jointly by the Agence Française de Développement (AFD) and the United Nations Environment Programme (UNEP).

The initiative will be based on the strategy adopted by the Secretariat of the Pacific Regional Environment Programme (SPREP) and will be coordinated with existing or future projects in the region.

This report gives an overview of the context of waste management in the Pacific region and highlights the related problems encountered and opportunities identified to improve the current situation. The information obtained in the Pacific region by AFD and UNEP during two fact-finding missions is presented.

Depending on the results of the feasibility studies to be carried out, the initiative might be made up of three components:

- a regional component, supporting the implementation of the SPREP strategy
- a sub-regional component, with the aim of organising, in groups of countries to be defined, to set up the collection of hazardous waste and waste which has a commercial value, using the private sector as much as possible
- national projects.

AFD's financial contribution would be 5 million euros. Other public and private contributions are expected or anticipated. Funding details remain to be finalized.

This report will be widely distributed to the organizations and the individuals consulted during the fact-finding missions, and to any partners interested in the initiative. Any feedback or input would be welcome.

The initiative will be further developed in the course of 2006 by feasibility studies and meetings with relevant organizations, with the aim of putting the principal funding in place by the end of 2006 and launching the first activities in 2007.

## **Note**

This report is a working technical document and does not constitute a commitment on the part of any of the partners involved in the development of the initiative.

## **I. Framework and objectives of the fact-finding mission**

The solid waste management initiative that is the subject of this report is supported by France with the aim of strengthening regional cooperation in the Pacific region. The initiative will reinforce exchanges, partnerships and joint activities between French Overseas Territories (French Polynesia, New Caledonia, Wallis and Futuna), developing countries and the small island states in the Pacific and the other countries in the region (Australia, New Zealand, Japan and the USA).

Solid waste was chosen as the subject for the initiative, as it was retained as a priority issue by the countries in the region, as one of the SPREP strategies and brings about a strong mobilisation (cf II.2 hereafter).

To develop the initiative, the Agence Française de Développement (AFD), which is specialized in setting up funding and carrying out projects, and the United Nations Environment Programme (UNEP), which brings in its technical experience on waste management strategies and guidelines, joined forces. Since the adoption of the Bali Strategic Plan for Technology Support and Capacity-building by its Governing Council in 2005, UNEP wants to be involved in implementing strategies through projects. The initiative fits into this and will have a demonstration value.

The fact-finding mission aimed to start developing the initiative by consulting the main stakeholders involved in waste management and obtaining from them the relevant information on the current situation, the priorities and any existing or future programmes. The mission was also set up to initiate collaboration with SPREP and to study the potential opportunities for the French Overseas Territories to participate in the initiative.

It was also expected that the mission comes up with tentative proposals and areas for future action to be discussed with all the partners involved, so as to develop the initiative, by targeted studies as a next step.

The detailed Terms of Reference for the mission, along with a short description of the AFD and UNEP, can be found in Annex III.

A first fact-finding mission took place in New Caledonia, from 9 to 16 June 2005 around a meeting held on 10 June in Nouméa with Australian Global Foundation, which was attended by AFD's Director General.

The joint AFD-UNEP mission covered French Polynesia, Fiji, Samoa, Vanuatu and New Caledonia, again, from 19 September to 8 October 2005.

This first preparatory stage focused on meetings with multilateral financial and technical partners (SPREP, European Union, Asian Development Bank) along with bilateral ones (Japan, Australia, New Zealand). In addition, the visit of the mission team to Fiji, Vanuatu and Samoa gave the opportunity to report on the current waste management situations in those three countries.

The detailed schedules of the two missions can be found in Annex IV.

## **II. Current situation: waste management in the Pacific Island Countries and Territories**

### **II.1. The threats to ecosystems essential for the development of the region**

The Pacific has fragile ecosystems (corals reefs, mangroves, lagoons, forests) which represent the basis for any future development of the Pacific Island Countries and Territories (PICTs) by fishing, aquaculture and tourism. These ecosystems play an important part in the protection of the coastline and the water cycle.

These ecosystems are also biodiversity “hotspots”, which are heritage sites in their own right.

However, as a result of demographic growth, urbanization, changing consumption patterns and the development of tourism, the PICTs have been experiencing an ever-increasing waste problem, over the past twenty years.

The consequence of this is a considerable change in the marine ecosystem, the coastline, the land (catchments areas), surface water and groundwater , especially in islands with a karstic relief, and also the atolls and low islands where the sandy soil is extremely permeable and where the waterlens are close to the surface and are therefore vulnerable to any pollution by wastewater, leachate and other types of emissions. These changes are taking on such a proportion that they represent a risk to human health, for the well-being of the inhabitants and for any future development in the PICTs.

### **II.2. Particularities of the Pacific Island Countries and Territories**

Among the challenges facing the Pacific Island Countries and Territories (PICTs) are their geographic isolation, their small size and a small but highly dispersed population. Their economies are as a whole undiversified and reliant on sea and air transportation, and thus on the fluctuations in the price of oil. State and local government resources are limited. Capital and human resources are lacking. The level of technology is low and the infrastructure not well developed.

On the whole, the regulations on waste management in the PICTs are insufficient. Waste management is not high on the political and civil society agenda, because the various problems are only partially understood. There is still little effort to limit the production of waste and encourage selective sorting, reuse and recycling.

The critical volumes which would enable economically viable solutions to be applied are rarely reached. This is particularly the case for incineration and for the handling of hazardous waste. Furthermore, the lack of physical space to build waste treatment plants is an obvious problem, and the land laws can also become a real obstacle.

Even more so than elsewhere, the emphasis has to be put on mechanisms further upstream in the product life cycle of waste; limiting waste production and re-exporting the waste for reuse and recycling, before final treatment.

### **II.3. Existing international and regional strategies**

The problems faced by the PICTs are well known. They were discussed during the meeting which reviewed the Programme of Action for the sustainable development of the Small Island Developing States (SIDS), held in Mauritius, 10-14 January 2005.

The 3R Initiative (Reduce, Reuse, Recycle) initiated by Japan, with the G8 countries, to promote more efficient resource use and to control waste, is also an important feature of international action. The aim of this initiative is to promote a minimisation in the consumption of natural resources and to reduce pollution over the whole product life cycle. The initiative is wide-ranging, covering the legal and institutional framework, education and awareness-raising and the development of technologies. It is supported by project subsidies.

Regionally, waste management is one of the five components of the “Pacific Futures” programme in SPREP’s 2004-2013 strategy, of which the aim is to enable countries and territories in the Pacific region to respond to the threats facing the islands and the marine environment.

2005 was the “Year of Action against Waste” in the Pacific and SPREP took the opportunity to adopt its regional solid waste management strategy in the island countries and territories during its 16<sup>th</sup> Meeting held in Apia, in September 2005(cf.

[http://www.sprep.org.ws/documents/16SMPapers/French/WP\\_7\\_2\\_2\\_Att\\_1\\_Strategy%20for%20Solid%20Waste\\_Fre.pdf](http://www.sprep.org.ws/documents/16SMPapers/French/WP_7_2_2_Att_1_Strategy%20for%20Solid%20Waste_Fre.pdf), which is summarized in Annex V). SPREP now needs support to implement this regional strategy.

The 3<sup>rd</sup> ‘Country Training Program on Municipal Solid Waste Management’ in Apia, Samoa, from 7-9 November 2006 determined the priority actions required to implement the Regional Waste Strategy. Key issues identified were the need for National Waste Strategies, the problems of managing waste on atolls, regional opportunities for managing difficult wastes, the need for minimizing organic waste and ensuring waste systems are cost-effective as well as environmentally responsible.

For the PICTs, it is obvious that the priorities are prevention and reduction of waste production, as well as the reuse and recycling of products throughout their life cycle. Any initiatives in favour of this must be studied and encouraged.

A Summary of information obtained during the missions and observations by the mission team can be found in Annex VI.

### **III. Proposals for the content and the organisation of the initiative**

#### **III.1. Vision, overall objectives, activities**

This initiative fits in with the vision of SPREP for the PICTs, as stated in its two main programmes:

- in the “Pacific Futures” Programme “Pacific island countries and territories able to plan and respond to threats and pressures on island and ocean systems”

- in the “Island Ecosystems” Programme “Pacific island countries and territories able to manage island resources and ocean ecosystems in a sustainable manner and that supports life and livelihoods”.

It will also be in line with other projects and activities carried out by the partners involved in waste management in the Pacific.

The overall aim of the initiative is to contribute to improvements in how solid waste is managed and treated in the PICTs.

The course of action of the initiative will be to implement the technical principles and strategies in the PICTs, through cooperation on a regional level and in partnership with AFD and UNEP.

All the various components of an adequate solid waste management system should be covered:

- technical issues: reduction in the quantity of waste produced, sorting, reuse and recycling, collection and transportation, landfilling, handling of special wastes;
- social and institutional issues: regulations, training and capacity building;
- financial and economic questions: tax systems, economic environment providing incentives (or not).

### **III.2. Content**

The initiative should support the existing strategies and contribute to the implementation of projects on the ground.

In the light of the information and contacts collected by the mission, 3 components are envisaged:

#### **a) regional component**

This component should contribute to the financing of the implementation of SPREP’s regional strategy for solid waste management and the action plan developed at the 3<sup>rd</sup> ‘Country Training Program on Municipal Solid Waste Management’ (November 2006) that can be found in Annex VII.

The prioritisation of activities was worked out by AFD and UNEP, together with SPREP, based on the items proposed in the regional strategy shown in Table 1 as a simple first step in focusing an on-going dialogue, to develop the initiative

Issue	No priority	Priority	To be considered
Cross-cutting	A1	A2*	
Capacity building	B1	B4*	B2, B3*, B5, B6
Laws and legislation	C1		
Waste minimisation	D4	D3	D1*, D2*, D5
Waste management	E1	E3*, E4*	E2, E5*
Waste collection		F1*	
Waste disposal		G1*, G5	G2*, G3*, G4*, G6
Planning and Monitoring	H1, H3	H2*	
Env. Impact Monitoring			I1*
Waste Industry		J1*, J2*	
Funding mechanism		K1*, K2*	

\* activities considered for future implementation projects on the national level, ie those that correspond to component c).

The acronyms used stand for the following activities:

A1: Pacific Regional Year of Action against Waste (follow-up)

A2: Integrated Communication programmes

B1: Annual training Course in Municipal Waste Management

B2: Training for Atoll countries

B3: Assessment of National Capacities in Waste Management

B4: National Capacity Building Activities

B5: Country Attachments

B6: Maintenance of a Waste Information Network

C1: Review of Laws and Regulations

D1: Development of National Waste Minimisation Strategies

D2: Development of National Waste Recycling Strategies

D3: Enhancing of Existing Recycling Programmes

D4: Assessment and Demonstration of New Recycling Methods

D5: Promotion of Community Composting Activities

E1: Sub-regional Waste Forums and Finalisation of the Pacific Strategy

E2: Establishment of a Regional Coordination Mechanism

E3: Establishment of a National Coordination Mechanism

E4: Development and preparation of a National Waste Management Strategy

E5: Development of National Management Plan for Disaster Debris

F1: Incremental Improvements of Existing Collection Systems

G1: Incremental Improvements at Existing Disposal Sites

G2: Development of landfill and other appropriate waste disposal techniques for Atoll Environments

G3: Development of New sanitary landfill

G4: Closure and post-closure of existing disposal sites



G5: Assessment of Regional Options for Managing Difficult wastes  
G6: Regional and sub-regional clean-up of difficult wastes

H1: Establishment of Planning and Monitoring Systems  
H2: Collection and Analysis of Waste data  
H3: Long-term planning

I1: Routine Landfill and disposal site monitoring programmes

J1: Establishment of local “recycling” system  
J2: Assessment and Development of partnerships with the recycling industries

K1: Review of Funding and Resources Requirements and Possible Mechanisms  
K2: Assessment of Financial Mechanisms to Assist Recycling or Disposal costs.

More detailed descriptions of these activities can be found in SPREP’s strategy document.

The training will be carried out in partnership with the University of the South Pacific (USP).

The implementation of this component, for the regional activities, will be led by SPREP.

#### **b) sub-regional component**

This component should in a set of countries carefully chosen with regard to the quantity of waste produced and the transportation costs support the implementation of the application of the 3Rs and encourage the collection, sorting and re-exporting of waste, at the level of this set of countries.

The approach should be to involve the private sector and encourage private initiatives as much as possible, while at the same time undertaking activities and making small-scale investments to ensure the satisfactory running of the market mechanisms and to make the waste treatment systems sustainable in a long-term.

The focus would be primarily on hazardous wastes (batteries, lead batteries, oil, paint, chemical and electronic waste, car bodies and car parts) to be managed as a priority, given their toxicity and their impact on the ecosystems, and wastes with a commercial value (metals, glass, papers, plastics, etc.).

To develop this component, the experiment carried out in Micronesia by a private sector company from Korea, about which the mission learnt from SPREP, along with the POPS in PICs project experiment, will provide valuable information.

The decision to go ahead or not with this component will depend on the results of the feasibility study. The way the component will be co-ordinated and implemented will also be determined depending on these results.

Furthermore, the results of the current research being undertaken in New Caledonia on the use of banana starch for making plastics bags could be applied in a co-operation between countries in the region for the production of stabilized starch composition and New Caledonia for the production of bags.

### **c) national projects**

This component will consist of concrete actions with direct impacts on the well-being of the local populations and the health of the ecosystems. In principle, all solid waste handling activities could be covered.

The choice of countries for national projects will be based upon a certain number of criteria, such as their vulnerability, the level of waste management problems (impacts of badly managed waste and the difficulties in applying conventional solutions, given local conditions), as well as the legal, political and social situation with regard to waste management. The idea is to support first and foremost those countries which have put in place the conditions for a good management of the wastes or have made efforts to improve these conditions.

The choice of activities will also be decided taking into account the work carried out by the various sponsors and NGOs, the opportunities for regional cooperation and especially the involvement of the French Overseas Territories in the Pacific, as well as the intrinsic value of the projects, their demonstration value and the potential of the projects to be replicated elsewhere, along with the implementation capacities of the organisations on the ground.

For the implementation of this component, it is foreseen to set up a fund, in the framework of this initiative, which can be used for proposals that candidate countries will transmit to a dedicated secretariat responsible for assessing and selecting the proposals according to pre-determined eligibility criteria. In addition, financing agreements should be developed and assistance provided by the secretariat to the organizations in charge of the project implementation.

The responsibilities for the implementation of the various projects will be decided on a case-by-case basis.

### **III.3. Work plan**

The financial resources required for the feasibility studies will be provided mainly by the AFD and the economic, social and cultural cooperation fund for the Pacific, with the participation of UNEP.

The further development and the implementation of the initiative are expected to become easier by the recruitment of a UNEP programme officer at SPREP in 2006.

#### **a) regional component**

The regional component will be further developed through direct contacts between SPREP, AFD and UNEP along the lines of the first meetings during the mission and the results of the seminar held in Apia from 7-9 November 2005 for the implementation of the regional waste strategy on the national level and for which AFD and UNEP sent an information document to the initiative to SPREP.

The cost of this component will be assessed at the end of the discussions.

## **b) sub-regional component**

This component will be developed by a feasibility study, of which the Terms of Reference will be shared with SPREP, donor agencies and any interested stakeholders. The tasks to be carried out in the feasibility study are to:

- identify a coherent set of countries,
- characterise the types of waste that could be taken in account in this activity,
- define waste handling activities and study their technical, economic, financial, institutional and operational feasibility,
- determine the pre-conditions for implementing the proposed activities,
- define the relevant stakeholders and their respective roles (most of the activities should be carried out by the private sector),
- define types of viable activities for regional management for the priority waste categories,
- define which activities could be targeted for raising funds from AFD and the other donors of the initiative,
- define the organisation of the project and how to put the funding into place.

Furthermore, if the research on banana starch being undertaken in New Caledonia proves to be of interest, a feasibility study may be carried out on this issue.

## **c) national projects**

This component on investment projects will be developed by means of a feasibility study which will specify the eligibility criteria for the applications put forward by the candidate countries, the procedures for assessing the proposals and decision-making and the conditions for implementing and monitoring the projects.

This study should result in a procedures manual which will be the working tool of the secretariat in charge of handling the proposals.

## **III.4. Costs and funding**

At the current preparatory stage, the costs and funding of the initiative cannot be determined precisely.

Regarding the costing, the sub-regional component is dependent on the results of the feasibility study, and a balance between the various components will have to be found.

As for resources, only AFD's contribution has been estimated so far.

The indications given hereafter are given as a rough indication:

- the Agence Française de Développement (AFD) may contribute up to 5 million Euros as a subsidy for the whole initiative, and also depending on the economic situation in the receiving countries, on the type of the project and the lead organization, other funding through loans might be identified,

- other contributions may be made by the following stakeholders and organisations:
  - o French Global Environment Facility (as from 2007)
  - o UNEP
  - o The economic, social and cultural cooperation fund for the Pacific of France
  - o Other French resources (French Ministry of Foreign Affairs, French Ministry of Overseas Territories, the Pacific Overseas Territories governments, the French Environment and Energy Management Agency ADEME...)
  - o Other public donor agencies, in particular the European Commission
  - o NGOs
  - o Private sector: waste management companies or companies in the tourism industry (hoteliers, service providers, travel agencies...)

#### **IV. Next steps - Timetable**

The next steps for the development of the initiative are as follows:

- distribution of the definition study to all persons who were in contact with AFD and UNP during the mission for comments and input - January 2006;
- information to be obtained from the European Union (it is planned that AFD and UNEP will go to Brussels for this purpose), from the Asian Development Bank, from AusAID - first quarter 2006;
- further fund-raising - first six months 2006;
- recruitment of UNEP programme officer at SPREP in the course of 2006;
- contacts with SPREP to develop the regional component of the initiative and the feasibility studies for the two other components - first six months 2006;
- workshop «Governance and Applied Research» (AGORA) to be held by the French Institut de Recherche sur le Développement (French Research Institute for Development) in April 2006 in Nouméa, which will be an opportunity to inform about the initiative and gain the support of the scientific community;
- outline of the project to be defined – June 2006;
- project assessment mission - third quarter 2006;
- possibility of organising a back-to-back event with SPREP's meeting scheduled for November 2006 in Nouméa, to present the initiative, to be confirmed;
- funding decisions by the end of 2006 prior to the signing of the funding agreements and the launch of activities in 2007.

Unless otherwise indicated, the overall management of the whole process will be the responsibility of AFD and UNEP.

**Annexes:**

- I. Map of the Pacific
- II. List of abbreviations and acronyms
- III. Terms of Reference for the fact-finding mission
- IV. Meeting agendas of the missions in June and September-October, including the list of people met and contact details
- V. Executive summary of SPREP's regional strategy for solid waste management (September 2005)
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Annex I: Map of the Pacific



**Annex II:** List of abbreviations and acronyms

ADB	Asian Development Bank
AFD	Agence Française de Développement (French Development Agency)
AUSAID	Australian Agency for International Development
EDF	European Development Fund
EU	European Union
GEF	Global Environment Facility
IRD	Institut de Recherche pour le Développement (French Research Institute for Development)
IWP	International Waters Project
JICA	Japanese International Cooperation Agency
NGO	Nongovernmental Organisations
NZAID	New Zealander Agency for International Development
ODS	Ozone Depleting Substances
PET	Polyethylene terephthalate (a form of plastic)
PICs	Pacific Island Countries
PICTs	Pacific Island Countries and Territories
POPs	Persistent Organic Pollutants
SIDS	Small Island Developing States
SOPAC	South Pacific Applied Geoscience Commission
SPREP	Secretariat of the Pacific Regional Environment Programme
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
USP	University of the South Pacific

## **Annex III: Terms of Reference for the fact-finding mission**

### **French regional initiative on waste management in the South Pacific**

#### **Terms of Reference for identification mission**

##### **I. Background**

The Small Island Development States (SIDS) in the South Pacific face many problems caused by their isolation, remoteness, vulnerability, small population and economies. These problems have been well documented and are internationally recognised. One of the major problems that these SIDS are confronted with is the ever-increasing amount of waste. The implementation of adequate waste management systems has become a priority for the political leaders in that region. The international community is preparing solutions. The regional agenda and the recommendations adopted in a multilateral framework call for action. This includes the conclusions from the Mauritius conference on SIDS, the G8 programme and ministerial Tokyo conference in April 2005 on 3R (reduce, reuse, recycle) and the Pacific Year of Action Against Waste. Therefore, it is the right moment to launch a regional initiative on waste management in the South Pacific.

The French bilateral donor agency, the Agence Française de Développement (AFD), together with the United Nations Environment Programme are preparing a program that could be financed in 2006. The French Ministry of Foreign Affairs provided funds to this purpose. AFD will lead a joint AFD-UNEP identification mission to make the most of the respective expertise and networks of the two organisations.

##### **II. Presentation of AFD**

The AFD Group is made up of AFD, Proparco and the French GEF Secretariat:

- AFD provides Governments and Parastatals with credits in the form of long term loans at concessionnal interest rates. AFD activities cover various sectors including rural development and environment; health; education; infrastructure and urban development; water; transport; etc.
- Proparco is dedicated to private sector financing in emerging and developing economies by offering long term loans (up to twelve years), equity capital or guarantees mostly on commercial terms.
- The French Global Environment Facility (FGEF or *FFEM*) operates along the same lines as the GEF by providing matching grants to cover incremental project costs necessary for environmental protection, thus encouraging developing countries to incorporate protection of the global environment in their development programmes. The FGEF Secretariat is operated by AFD.



AFD has been mandated to enhance regional cooperation between the developed countries of the Pacific area, the French Overseas Territories of New Caledonia and French Polynesia and the SIDS.

### **III. Presentation of 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).
- Through its network of partners in regional and international organizations and bodies, as well as with the private sector, UNEP aims at creating synergies through the involvement of various stakeholders, both from the public sector and the civil society, including the private sector.
- Through the International Environmental Technology Centre (IETC) of UNEP-DTIE, located in Japan, UNEP has the technical know how to promote the application of Environmentally Sound Technologies to address urban environmental problems, such as sewage, air pollution, solid waste and noise, and the management of freshwater resources;
- UNEP has recently worked on environmental sound technologies for the integrated management of solid, liquid and hazardous waste for Small Island Development States in the Caribbean, as well as on developing some guidance on municipal wastewater management in coastal cities which could be adapted to the particular circumstances of the Pacific islands and used to their benefit. UNEP has also developed a global action programme on marine litter.
- Globally, UNEP has extensive experience with life cycle/circular economies, including the generation of energy from waste; and supports Multilateral Environmental Agreements, several of which address the waste issue.

### **IV. Objectives and tasks of the mission**

The overall objective of the mission is to identify a programme that could be financed by AFD, the FGEF and other partners. For that purpose, the mission will look at the issues and related activities on waste management that correspond to the strategies and needs of the South Pacific SIDS and are feasible with the available knowledge base and financial resources.

This includes:

- To meet the stakeholders concerned by the waste problem at regional level (Forum, SPC, SPREP, SOPAC) as well as in the French Overseas Territories and the Pacific SIDS.
- To ensure that the identified issues and activities are complementary to existing operations in the region.
- To coordinate and harmonize with other funding agencies (GEF, World Bank, Asian Development Bank, European Union, AUSAid, NZAid and JICA).

- To prepare the basis for a programme on waste management in the South Pacific, including network activities and in-the-field projects and focusing on regional cooperation.

The identification mission shall implement the following tasks, the results of which should be detailed in the mission report:

1. Analyse the waste sector in the South Pacific region and in particular in the SIDS for implementation activities, including the economic situation, legal framework, social conditions, etc. Analysis includes, but not limited to, the countries' waste balances, collection systems, landfill sites, a breakdown of recycling facilities in the countries by technology, exports/imports of waste, etc.
2. Identify the key individuals, institutions, NGOs, R&D entities, etc. currently active in the waste management area. Describe the specific roles and responsibilities that each of these parties play in these areas and progress made so far.
3. Assess the inter-agency and/or inter-ministerial work and communication among waste management related entities and its impact on waste implementation projects in the countries.
4. Identify and describe current or upcoming waste management capacity building or implementation projects by other donor agencies.
5. Assess the investment options from the private sector for waste management related infrastructure activities.
6. Identify and describe waste project ideas for concrete activities that may be existing in relevant institutions and/or organisations.
7. Identify potential waste management activities and prepare a project identification form for each of them.
8. For each project identified, the team shall identify parties that would be expected to play a role in the various steps of the domestic portion of the waste project cycle. Assess the technical capacities of these individuals/institutions and their ability to engage in the role expected from them in the respective step of the waste project cycle. Such assessment would also include proposing specific capacity building interventions that could be implemented through the program with the objective of securing a smooth implementation of waste management projects.
9. For each project identified, the team shall assess the potential and extent to which local banks/financial intermediaries are able/willing to finance the underlying infrastructure activities.
10. Outline the expected challenges that a French regional initiative on waste management will face in the South Pacific.
11. Design the overall architecture of the programme in terms of broad components, main players and fund channelling.

12. Draft the terms of reference for further complementary studies needed for the preparation of the programme.

## **V. Organisations to be involved**

AFD will lead the initiative and UNEP will provide technical and institutional support. The Coral Reef Initiative for the South Pacific (CRISP), jointly funded by AFD and the French GEF, among others, will serve as a reference for the structure of the regional programme on waste management. UNEP will bring in its experience on wastewater and marine litter as well as life cycle economy and solid waste management.

The identification mission will be composed of:

- Dominique Rojat, Task Team Leader, Department of Rural Development, Natural Resources and Environment, AFD
- Pierre-Alain Pacaud, Project Officer, Department of Infrastructure and Urban Development, AFD
- Guido Sonnemann, Associate Programme Officer, Division of Technology, Industry and Economics, UNEP.

## **VI. Key destinations and organisations to meet**

The mission will travel to: French Polynesia; Samoa Islands; Fiji Islands; Vanuatu; New Caledonia.

Contacts will be established with and meetings requested from the following organizations:

- Papeete, Tahiti, French Polynesia
  1. Agence Gouvernementale de l'environnement et de la Maîtrise de l'Energie (ADEME)
  2. Polynesian Government
  3. French High Commissioner
  4. R&D Institutions
  5. Private companies
  6. NGOs
- Noumea, New Caledonia
  1. ADEME, C.T.M.E., B.P. 465 98845 Noumea Cedex, Tel: +687 27 02 33, Fax: +687 27 23 45, Email: [ademe.nouvelle-caledonie@ademe.fr](mailto:ademe.nouvelle-caledonie@ademe.fr), Website: <http://www.ademe.fr/htdocs/presentation/Actionregionale/Nouvelle-Caledonie.htm>
  2. Caledonian government, 8, Route des Artifices, BP M2 - 98849 Noumea Cedex, Tel: +687 24 65 65, Fax: +687 24 65 80, Email: [cellule.communication@gouv.nc](mailto:cellule.communication@gouv.nc), Website: <http://www.gouv.nc/index.jsp>
  3. CPS, Secretariat of the Pacific Community, BP D5, 98848 Nouméa Cedex, Tel: +687 26.20.00, Fax: +687 26.38.18, Email: [spc@spc.int](mailto:spc@spc.int), Website: <http://www.spc.int/> and <http://www.sidsnet.org/mir/pacific/spc/Fr/>

4. Haut-Commissariat de la République, Jean-Marie Auzende, Chargé de mission recherche et technologie, 1, avenue du Maréchal Foch, B.P. C5, 98844 Noumea Cedex, Tel: +687 24 67 82, Fax: +687 24 67 08, Email: [drdt@hc.etat.nc](mailto:drdt@hc.etat.nc), Website: <http://www.etat.nc/index.htm>
5. R&D Institutions
6. The EU Office in charge of Overseas Countries and Territories
7. Institut Pasteur, B.P. 61, 98845 Noumea, Tel. : 687 27 26 66, Fax : 687 27 33 90, Email: [direction@pasteur.nc](mailto:direction@pasteur.nc), Website: <http://www.pasteur-international.org/instituts.html#ncaledonie>
8. Private companies
9. NGOs

- Suva, Fiji

1. Fiji Islands Ministry of Urban Development, Housing & Environment/ UNEP focal point, Mr. Bhaskaran Nair, Permanent Secretary, P.O. Box 2131, Government Buildings, Suva, Tel: +679 309 918, 304 364, Fax: +679 303 515, 387 511, E-mail: [bnair@is.com.fj](mailto:bnair@is.com.fj), Website: <http://www.roap.unep.org/region/spacific/Fiji.doc>
2. French embassy to Fiji Islands, Dominion House - Scott Street - 7eme étage, Suva, Tel: +679 312 233, Fax:+679 301 894
3. The Asian Development Bank Regional Office
4. JICA Fiji Office, 7th Floor, Dominion House, Suva, Private Mailbag, Suva, Tel +679-3302522, Fax +679-3302452
5. The EU Office in charge of ACP Programmes and Projects
6. Pacific Islands Forum Secretariat, Private Mail Bag, Suva, Fiji, Tel : +679-3312 600, Fax : +679-3305 573, Email: [info@forumsec.org.fj](mailto:info@forumsec.org.fj), Website: <http://www.forumsec.org.fj/>
7. SOPAC Secretariat, Private Mail Bag, Suva, Tel: +679 338 1377, Fax: +679 337 0040, Email: [director@sopac.org](mailto:director@sopac.org), Website: <http://www.sprep.org.ws/>
8. University of the South Pacific, The University of the South Pacific, Laucala Campus, Suva, Tel: +679 331 3900, Email: [volau\\_m@usp.ac.fj](mailto:volau_m@usp.ac.fj), Website: <http://www.usp.ac.fj/>
9. Private Companies or Chamber of Commerce
10. NGOs

- Port Vila, Vanuatu

1. ADB's South Pacific Regional Mission office, La Casa di Andrea et Luciano, Lini Highway, P.O. Box 127, Port Vila, Tel: + 678 2 3300, Fax: + 678 2 3183, Email: [adbsprm@adb.org](mailto:adbsprm@adb.org), Website: <http://www.adb.org/SPRM/>
2. French embassy for Republic of Vanuatu, Kumul Highway - BP 60, Port Vila, Tel: +678 223 53 - 226 27 - 228 16, Fax:+678 226 95
3. JICA Vanuatu Office, Pierre Lamy Street, Private Mail Bag 9005, Port Vila, Tel: +678-23546, Fax: +678-22818, Webpage: <http://www.jica.go.jp/vanuatu/english/index.html>
4. Vanuatu Ministry of Lands, Survey, Environment, Energy, Minerals and Water Affairs/ UNEP Focal Point, Mr. Ernest Bani, Head Environment Unit, Private Mail Bag 063, Port Vila, Tel: +678 25302, Fax: +678 23565, Website: [http://www.rrcap.unep.org/country/cp/spacific/cp\\_Vanuatu.cfm](http://www.rrcap.unep.org/country/cp/spacific/cp_Vanuatu.cfm)
5. Private Companies or Chamber of Commerce
6. NGOs

- Apia, Samoa

1. SPREP, Asterio Takesi, Director
  2. SPREP, Shiro Amano, JICA seconded Solid waste and landfill management officer, or Dr Frank Griffin, Co-ordinator Pollution Prevention, Apia, Western Samoa, Tel: +685 21 929, Email: shiro@sprep.org.ws or FrankG@sprep.org.ws , Website: <http://www.sprep.org.ws/>
  3. Samoa Department of Lands, Surveys and Environment/ UNEP Focal Point, Mr. Tu'uu Ieti Taulealo, Director for Lands, Surveys & Environment, P.O. Private Bag, Apia, Samoa, Tel: +685 22481-22486, Fax: +685 23176, E-mail: envdlse@samoanet.net
  4. JICA Samoa Office, Mulivai, P.O.Box No.1625, Apia, Samoa, Tel: +685-22572, Fax +685-22194
  5. French Consulate
  6. Private Companies or Chamber of Commerce
  7. NGOs
- Other development aid organisations (depending on previous contacts and travel options)
    1. AUSAid, Head Office, 62 Northbourne Avenue, GPO Box 887, Canberra ACT 2601, Australia, Tel: +61 2 6206 4000, Fax: +61 2 6206 4880, Website: <http://www.usaid.gov.au/>
    2. JICA headquarter, 6-13F, Shinjuku Maynds Tower, 1-1, Yoyogi 2-chome, Shibuya-ku, Tokyo 151-8558, Tel: 03-5352-5311/5312/5313/5314, Website: <http://www.jica.go.jp/>
    3. NZAID headquarter, 95 Lambton Quay, Private Bag 18-901, Wellington, New Zealand, Tel: +64 4 439 8200, Fax: +64 4 439 8515, Website: <http://www.nzaid.govt.nz/>

**Annex IV:** Meeting agendas of the missions in June and September-October 2005, including the list of people met and contacts details

Mission in June 2005 in New Caledonia:

INSTITUTION	FUNCTIONS	NAME	TEL
<b>Gouvernement</b>	Gouvernement Coopération Régionale	<b>M. Cameron DIVER</b>	24.65.65
<b>Province Sud - Elus</b>	Secteur économie + Aménagement et urbanisme	<b>M. DESCOMBEL</b>	25.81.45 (Sec.) Christine
	Environnement	<b>Mme OLHEN</b>	25.80.53 (Sec.)
<b>Province Sud - DRN</b>	Directeur Adjoint	<b>M. FARMAN</b>	24.32.55
	Inspecteur des installations classées Technicien	<b>Didier Louis ZELLNER</b> <b>Marc DAGUZAN</b>	
<b>Province Nord</b>	Directeur de la Direction de l'Aménagement du Nord (DAN)	<b>M.MAPERI</b>	47.72.10 (Sec. Mme CARRON)
<b>Province Iles</b>		<b>M. HOUMBOUY</b>	79.95.15
<b>CPS</b>	La CPS a abandonné son programme de santé publique mais la personne la plus au courant est Tony LOWER	<b>Tony LOWER</b> <b>+ Richard MAN</b>	26.20.00 (secrétaire : Mme ROBERTS Poste 255)
<b>GIE</b>	Présidente de l'association Coordinatrice	<b>Odile GUENTHER</b> <b>Stella LE VAN HAO</b>	27.40.39
<b>IRD</b>	Directeur	<b>M. COLLIN</b>	26.07.02
<b>PROMED</b> 17, rue Ampère - Ducos	Dir Commercial Intermed et Créateur Société PROMED Gérant de la société PROMED	<b>M. MORELLI</b> <b>M. COURTE</b>	24.61.40
<b>ONYX-CSP</b> 12, Rte Anse-Vata	Directeur régional	<b>M. GUILLET</b>	26.93.64
	Chef de projet filière de valorisation	<b>M. PROVOST</b>	
<b>EMC</b> 12, Av. B.Koutio Z.I.Ducos BP 3292 - 98846 Nouméa	Directeur	<b>M. MATTALJANO Iro</b>	26.02.60
<b>Entreprise réunie</b>	Pilote l'opération de centre d'enfouissement (dossier défiscalisation, chiffrage de l'opération, montage financier)	<b>M. PRESTI</b>	28.56.06
<b>Bureau d'étude CAPSE</b>	Ingénieur chargé d'affaires	<b>M. EL MAHHARI</b>	25.07.95

Mission to the region in September-October 2005 :

1) French Polynesia

Lundi 19 septembre			
	5h 30	Arrivée par vol AF 070 de MM. ROJAT et SONNEMANN Accueil à l'aéroport et transfert à l'hôtel Beachcomber par Nicolas BRUN	
	8h 30	Réunion <i>lieu : agence</i>	
NB	9h 15	M. Jacques MICHAUT - Secrétaire Général <i>lieu : avenue Bruat - hall du HC à gauche - tél. : 46 85 11</i>	confirmé
LF/NB	10h 00	M. Patrick LÉBOUCHER <i>Lieu : Présidence - tél. : 47.21.20</i>	confirmé
	après-midi		
LF/NB	14h 30	M. Georges HANDERSON - Ministre de l'Environnement Mlle Vanessa KLAINGUER - Conseillère technique <i>lieu :</i>	confirmé
NB	15h 30	M. Rémy BONNET - Directeur et Représentant de l'ADEME <i>lieu : rue Dumont d'Urville - anciens locaux de RFO - tél. : 46 84 50</i>	confirmé
Mardi 20 septembre			
NB	8h 00	CRT de MOTU UTA / M. Karl MEUEL <i>lieu : Papeete</i>	confirmé
NB	à 12h 00	CET de PAIHORO / M. Karl MEUEL <i>lieu : Taravao</i> <i>Visites suivies d'un déjeuner offert par SEP</i>	confirmé
	après-midi		
	16h 30	M. Jean PELLISSIER - Directeur de CAREX POLYNESIE (environnement et aménagement) <i>lieu : place de la cathédrale - immeuble AIKI - 2<sup>e</sup> étage, entre la papeterie KLIMA et la Brasserie de Tahiti : sonnez ou taper code 4108 tél. : 42 54 34</i>	confirmé

<b>Mercredi 21 septembre</b>			
NB	8h 00	M. Yannick CHUNG SAO - Directeur de la SPEED (Sté Polynésienne de l'eau, de l'électricité et des déchets) M. Eric GOMPEL - Directeur Département Aménagement et Environnement <i>lieu : Puurai à côté d'Electra - tél. : 50 81 81</i>	confirmé
	9h 00	M. Petra CABELL International Help Fund Australia <i>lieu : SEP Papeete</i>	
NB	11H 00	Commune de Punaauia M. Antonio TAPUTUARAI - Secrétaire Général <i>lieu : Mairie de Punaauia - tél. : 86 56 56 LD 86.56.03</i>	confirmé
	après-midi		
NB	14h 00	M. Jacques ILTIS - Directeur de l'IRD (Institut de Recherche pour le Développement) <i>lieu : Pirae - tél. : 50 62 00</i>	confirmé
<b>Jeudi 22 septembre</b>			
NB	8h 00	Commune de PAPEETE M. Max DESTANG - 10è adjoint au Maire - responsable de l'Environnement Tél : 77.12.48 <i>lieu : Mairie de Papeete - Bureau de la BPU - tél. : 41 57 00</i>	confirmé
NB	9h 30	Mme Glenda MELIX - Directrice de la SHSP (Service d'hygiène et de salubrité publique) <i>lieu : Mamao - 3è étage - tél. : 45 41 53</i>	confirmé
NB	10h 30	M. Xavier BARROIS - Administrateur des Iles du Vent <i>Haussariat - tél : 46.86.11</i>	confirmé
LF/NB	12h 15	Déjeuner - Mme Louise PELTZER (Université PF) - M. Xavier BARROIS (HC) - M. Rémy BONNET (DAT) - M. Bruno PEAUCELLIER (Présidence) - M. Yannick CHUNG SAO (SPEED) - M. Pierre COISSAC (Ministère environnement) - M. Pierre BAUDRY (ONYX) <i>lieu : villa de direction</i>	
	après-midi		
	15 h 00	Commune de Papeete Directeur technique : M. Materii MAIRE <i>lieu : Mairie de Papeete - tél.41.57.00</i>	confirmé
	15 h 30	M. Bruno JOUVIN et Ch. EGRETAUD - Directeurs associés de PAE TAI PAE UTA <i>lieu : bd Pomare - im.m. Radford - tél. : 42 29 80 - 41 09 79</i>	confirmé
NB	17h 30	M. Jean SYLVESTRO - Directeur du SPCPF (Syndicat pour la Promotion des Communes de la PF) <i>servitude Tepihaa II - Patutoa - tél : 50.63.63</i>	confirmé
<b>vendredi 23 septembre</b>			
NB	8h 30	M. Robert IGOULEN - DG de la SAGEP <i>lieu : Pirae</i>	confirmé
LF/NB	14h 30	Réunion de synthèse <i>lieu : agence</i>	



2) Fiji, Samoa and Vanuatu

<b>Date, Place</b>	<b>Time</b>	<b>Organisation</b>	<b>Contact person(s)</b>	<b>E-mail</b>
26 Sep (Mo), Suva/ Fiji	9.30	French embassy	Edith BOUTHERIN	Edith.BOUTHERIN@diplomatie.gouv.fr
	11.00	Gov: Ministry of Housing, Settlement and Environment	Cama Tuiloma Sandeep Singh	Tel: + 679 3 309 918
	15.00	USP - Pacific Centre for Environ. & SD - Planning and Development Office - Institute of Applied Science	Melchior Mataki Kanayathu Koshy Mark Lewis Aileen Savu	mataki_m@usp.ac.fj savu_a@usp.ac.fj
	18.00	International Waters Project (IWP)	Steve Menzies (Communication) Sue Le Mesurier (Assessment)	stevem@sprep.org
27 Sep (Tu), Suva/ Fiji	9.30	JICA	Ayami Susuki (Environment) Hisashi Suzuki (Ass. Representative)	Suzuki.Ayami@jica.go.jp
27 Sep (Tu), Apia/ Samoa	10.00	SPREP (1 <sup>st</sup> visit) - Pollution prevention/ waste - Information and training centre - Ozone action - IWP - Basel/Waigani centre	Asterio Takesy (Director) Bruce Chapman (Pacific Futures) Stuart Chape (Islands Ecosystems) Taito John Roache (Services) Frank Griffin (Pollution Prevention) Mark Ricketts (Solid Waste) Takeo Tashiro (Landfill) Tamara Logan (Communication) Frank Wickham (Training) Emma Mario-Sale (Ozone) Jacques Mougeot (Basel/ Waigani centre)	asteriot@sprep.org frankg@sprep.org jacquesm@sprep.org
28 Sep (We), Apia/ Samoa	10.00	EC delegation Samoa	Stephen Rogers Nigel Walmsley (Technical Assistant)	Stephen.ROGERS@cec.eu.int
	14.00	Gov: Ministry of Natural Resources, Environment and Meteorology	Faafetai Sagapolutele	faafetai.sagapolutele@mnre.gov.ws, faafetai.sagapolutele@mnrem.gov.ws or faafetais@hotmail.com
	15.00	Tafaigata landfill (Fukuoka method)	Tashiro (SPREP Landfill officer/ JICA) Mark Ricketts (SPREP Waste officer) Faafetai Sagapolutele (Gov. Samoa)	takeot@sprep.org

<b>Date, Place</b>	<b>Time</b>	<b>Organisation</b>	<b>Contact person(s)</b>	<b>E-mail</b>
29 Sep (Th), Apia/ Samoa	10.00	UNDP	Easter Galuvao (Ass. Representative) Meapelo Mai'ai (Environment)	easter.galuvao@undp.org
	12.00	SPREP (individual meetings)	Mark Ricketts (Solid Waste) Takeo Tashiro (Landfill) Tamara Logan (Communication) Frank Wickham (Training) Emma Mario-Sale (Ozone) Jacques Mougeot (Basel/ Waigani centre)	jacquesm@sprep.org
30 Sep (Fr), Apia/ Samoa	9.00	SPREP (debriefing)	Bruce Chapman (Pacific Futures) Stuart Chape (Islands Ecosystems) Taito John Roache (Services) Mark Ricketts (Solid Waste)	asteriot@sprep.org
03 Oct (Mo), Suva/ Fiji	9.30	SOPAC	Kamal Khatri (Water Sanitation) Marc Overmars (Water Adviser) Sarah Davies (Water Supply)	Kamal@sopac.org
	11.00	EC delegation Fiji	Horst M. Pilger Xavier Pinsolle Michel Gauché	Horst.Pilger@cec.eu.int Xavier.PINSOLLE@cec.eu.int
	13.30	Pacific Islands Forum Secretariat	Padma Narsey Lal (SD Adviser)	PadmaL@forumsec.org.fj
	16.00	ADB	Ms Sophia Ho (Ms)	ssyho@adb.org
04 Oct (Tu), Port Vila/ Vanuatu	10.30	EC delegation Vanuatu	Adrien Mourgues	Tam.Mainguy@cec.eu.int
	13.30	Gov: Environment Unit, Lands Department	Ernest Bani	environ@vanuatu.com.vu
	14.30	French embassy		
	16.00	Municipality of Port-Vila		
	17.00	Unelco (electricity company)		

3) New Caledonia

	<b>Mercredi 05 octobre</b>		<b>Jeudi 06 octobre</b>		<b>Vendredi 07 octobre</b>
7h00		7h00		7h00	
7h30		7h30		7h30	
8h00		8h00		8h00	
8h30		<b>8h30</b>		<b>8h30</b>	<b>Golder &amp; Associés : réunion téléphonique</b> M. Rebatel
9h00		9h00	<b>Réunion commune recherche scientifique,</b> <b>bureau d'études, société civile</b>	9h00	
9h30		9h30	à l'IRD (26.07.01)	<b>9h30</b>	<b>Réunion commune secteur privé en</b> <b>charge collecte et traitement déchet +</b> <b>agences maritimes de transport</b> Bout du Monde
<b>10h00</b>	<b>Briefing mission déchets</b> à l'AFD	10h00		10h00	
10h30		10h30		10h30	
<b>11h00</b>	<b>CRISP</b>	<b>11h00</b>	<b>M. Josselin Mérot</b>	<b>11h00</b>	<b>Province Sud (I. Olhen) Contact :</b> 25.81.45
11h30	Brice Herrenschmidt à la CPS	11h30	(vétérinaire dans l'administration - projet de valorisation de déchets provenant de l'agriculture) à l'AFD Contact :93.90.93	11h30	
12h00		12h00		12h00	
<b>12h30</b>	<b>Déjeuner</b>	12h30		12h30	
13h00	avec Ch. OBLED (ADEME)	13h00		13h00	
13h30	à l'Astrolabe	13h30		13h30	
<b>14h00</b>		14h00		<b>14h00</b>	<b>Débriefing mission déchets</b> à l'AFD
14h30	<b>CPS (Y. Corbel DG)</b> CPS : 26.20.00	<b>14h30</b>	<b>Institutionnels (Provinces + GVT +</b> <b>Affaires maritimes)</b>	14h30	
15h00		15h00	au Gouvernement Salle de Délibération 1er étage (Contact : Stéphanie 24.65.65)	15h00	
		15h30		15h30	
<b>16h00</b>	<b>Consul d'Australie (J. Urqhart Consule</b> <b>Générale)</b>	<b>16h00</b>	<b>Union Européenne (J-P. Pierard)</b>	16h00	
16h30	Immeuble Foch 27.01.35	16h30	à l'AFD (Contact : Mme Raynaud 27.70.02)	16h30	
17h00		17h00		17h00	

**Annex V:** Executive summary of SPREP's regional strategy for solid waste management (September 2005)

Waste Management is widely recognised as a major concern for Pacific Island countries (PICs) with the potential to cause negative impacts on national development activities, including tourism and trade, food supplies, public health and the environment. This Waste Management Strategy sets out a long-term programme for addressing waste management issues in the region, so as to avoid these adverse effects.

The strategy has been prepared in response to requests to the Government of Japan to provide assistance to Pacific Island countries and territories in this area. A key element of the strategy allows for consultations with stakeholders in the region, including national governments, donors, inter-governmental and non-governmental organisations, with the aim of producing a final agreed strategy. The proposed programme should then be implemented at both national and regional levels. It is also intended that the Strategy should provide a mechanism for coordination of the future activities of donor agencies with interests in this area.

Foreign aid is one of the limited resources available to the Pacific and there are obvious benefits in ensuring the integration of any efforts to get the maximum possible benefit from this resource.

***The need for effective waste management***

The generation and disposal of wastes has direct and indirect linkages to economic development. Waste materials represent wasted money, in terms of the original cost of the materials, the costs of disposal, and also the potential value of the material as a recyclable and reusable resource. Poorly managed wastes can have negative effects on tourism, by detracting from the "Pacific Paradise" image promoted by most PICTs, and by association with health warnings about infectious and vector-borne diseases.

There is the potential for contamination of food supplies, which can have impacts on local markets or revenue from export crops. And there are numerous health and environmental hazards that arise when wastes are poorly managed and disposed.

Conversely, the benefits from good waste management can include reduced raw material costs, enhancement of the tourism experience, reduced health care costs.

Effective measures now will also avoid the need for expensive clean-up operations in the future.

***Key elements of the strategy***

The strategy is based around the following three major strategies:

- Institutional activities by all key stakeholders, including policy development, capacity building, information exchange, public education and awareness.
- Improvement and upgrading of existing waste management and disposal systems
- Development and/or enhancement of waste minimisation activities such as recycling, so as to reduce the quantities of wastes being produced at the national level

The proposed activities are intended to assist PICs in moving towards the development of effective waste management systems within their countries, and in accordance with their specific needs. The programme is intended to be implemented over a period of ten or more years, in recognition of the fact that many of the required changes will only be achieved through gradual improvements over long periods of time. In addition, emphasis has been given to the development of activities embodying some of the key requirements for sustainability, including the use of appropriate technologies and management systems, and with a strong focus on self-help and in-country capacity building.

### ***Coordination Mechanism***

It is proposed that the implementation of this Strategy be coordinated through the Secretariat of the Pacific Regional Environment Programme (SPREP). The key elements of the coordination mechanism will include the provision of technical advice and support, information exchange, and the facilitation of communications between the various stakeholders, including governments, donors and intergovernmental organisations. All of these activities are consistent with the SPREP mandate and its established roles within the region.

### ***Recommendations***

Pacific Island governments have all recognised the importance of waste management as an issue for the region, and the need for positive action has been noted on numerous occasions. However, little progress will be made until the issue is acknowledged and actions endorsed at the highest political levels. It is recommended that governments demonstrate their commitment to action through endorsement of the following policy:

*Pacific Island governments recognise the importance of sound waste management practices to their environmental, economic and social development, and undertake to address current problems through implementation of the proposed Waste Management Strategy for Pacific Island Countries and Territories. In doing so, PICTs undertake to:*

- 1. provide the necessary resources and incentives for development and implementation of national waste management policies and activities;*
- 2. encourage and support appropriate waste minimisation activities so as to achieve measurable reductions in the quantities of waste that need to be disposed; and*
- 3. establish or upgrade waste disposal facilities within their countries that comply with minimum agreed regional–performance standard, guidelines and international commitments*

## **Annex VI: Summary of the information obtained during the mission and observations**

### **1. French Polynesia and New Caledonia**

In French Polynesia, the mission has stated the existence of various initiatives in the area of waste management:

- an import tax of 2% for all goods, allowing to finance activities in favour of the environment and the agriculture;
- comprehensive waste management system through a public-private partnership in the form of a company with shared capital in which are involved the vast majority of municipalities in Tahiti and operators who ensure the collection and the sorting of the waste as well as the management of the sanitary landfill of Paihoro;
- transfer and sorting centre in Motu Uta, at the harbour of Papeete, for the export of the metal, plastics, paper and hazardous waste fractions;
- efforts to promote the sorting of the waste upstream, by making available of waste containers for separated collection, although the tariffs system in place does not provide incentives for sorting; this holds true for both the municipalities (responsible for the collection of municipal waste) and the operator of the transfer and sorting centre in Motu Uta and of the sanitary landfill in Paihoro;
- multi-stakeholder agreement to ban the proliferation of plastics bags;
- composting unit providing its production to a local market demand, with a part of the remaining costs at the charge of the municipality for the transport of the green waste until the production unit;
- treatment of chemical, medical and other hazardous wastes by the construction of a new special sanitary landfill for this type of wastes in Nivee that will be put in operation soon;
- efforts to integrate the neighbour islands into the management system put in place in Tahiti and to invest also in island groups that are far away from Tahiti like the Marqueses;
- experiences made in the isolated atolls of Tuamotu to provide adapted solutions to their particular context;
- examples of excellent behaviour shown by certain tour operators.

However, improvements are still clearly necessary with regard to the sorting of the waste at the collection stage, the integration of all municipalities in the management system put in place in Tahiti and the improvement of the management of the islands and in particular the atolls that are far away from Tahiti.

In New Caledonia, the mission has also stated the existence of interesting initiatives:

- tax anti-pollution for certain imported products;
- company with public-private capital in the South Province and an inter-municipality agency for the management of the new sanitary landfill in Gadji;
- private operators, in the contrary to French Polynesia for the export of metal and hazardous wastes and the treatment of medical waste, and moreover operators for the collection and the sorting;
- potential involvement of the University of New Caledonia and the IRD, in relationship with the USP, for the education on environmental sciences;

- *a priori* interesting research carried out on the application of banana starch for the fabrication of supermarket bags as a substitute to the plastics bags that are currently used.

New Caledonia is still confronted with pressing challenges, among which the following are to be mentioned: dealing with the strong regional disparities; filling the shortages in the regulations at the territory and province level that nowadays does not provide an adequate framework for the necessary obligations and incentives to put in place a complete and consisting waste management system.

In general, it became evident during the mission that the French overseas territories present a sample of diverse situations encountered in the region; actually they do not escape to the common problems to the PICTs, although the fiscal resources and those stemming from state transfers allow largely the necessary investments required to keep up with the French national standards and regulations; and in spite of the few partnerships that are undertaken, they have available references that are worth to be communicated and represent an important potential for the regional cooperation due to their achievements in the area of waste management and the expertise of the private sector (consulting companies, operators) and the NGOs.

## **2. Secretariat of the Pacific Regional Environment Programme / SPREP**

The Secretariat of the Pacific Regional Environment Programme (SPREP) deals with the waste question in the framework of the “Pacific Futures Programme”; the second programme of SPREP is on “Islands Ecosystems”. The programme’s goal is that the Pacific Island countries and territories are able to plan and respond to threats and pressures on islands and ocean systems.

In the marine pollution area SPREP is assisting countries to effectively manage marine pollution through the development and improvement of regulatory frameworks, management systems and operational procedures. This includes for example to improve the environmental management of the ports by providing technical advice.

SPREP is assisting countries to manage their hazardous waste by assessing and enhancing members’ capacities to comply with international convention requirements and eliminating hazards posed by existing waste stockpiles (Persistent Organic Pollutants POPs and Ozone Depleting Substances ODS). SPREP supports the development of National Implementation Plans for some PICs as part of the requirements for the Stockholm Convention on POPs and their implementation by a survey in 13 Pacific Island Countries to identify stockpiles of the POPs chemicals and other pollutants. AUSAID is financing an ongoing project for the elaboration of this inventory of stockpiles and their removal as hazardous wastes called POPs in PICs.

SPREP is also assisting countries to manage their solid waste by building and enhancing members’ capacities to manage land-based pollution sources, especially solid waste and sewage, by training and technical assistance in improving the landfill facilities and their management.

The themes discussed with SPREP focused on the local or regional recycling of resources recovered in the PICTs. This coincided with requests for assistance from SPREP made by many of the SPREP members at the meeting in September 2005. The resources to be

recovered include organic wastes, scrap metals, packaging wastes such as PET but also some difficult wastes such as car bodies, e-wastes, etc.

In general, the mission agreed with SPREP to consider that there are considerable synergies and possible economies of scale across the region in:

- incentives for residents, companies and governments to sort their wastes,
- economic instruments to fund the on-going repatriation of these goods or internalize the costs of waste management into the purchase price,
- legal or regulative instruments or also voluntary agreements to ensure the application of the extended producer responsibility principle,
- collection and sorting issues as well as their transport to the recycling industries,
- institutional capacity building and personnel training,
- community involvement, awareness-raising and social marketing to gain widespread participation by residents and the community,
- engagement of the private sector to support the initiatives.

Moreover, the waste recycling does not only provide an environmental gain in terms of minimizing resource use and energy consumption, but it has also significant potential for local employment in collecting and sorting and would help prolong the very valuable investments many PICTs have made or will make in up-graded landfills.

It is also possible that an operating collection system attracts private sector investments. Such programs need to be self-funding over time, through product sales and/or levies on goods that cannot be recovered and exported with benefits at current market prices. It is necessary to work with both the private and the public sector.

It should be stressed that possibilities of partnerships exist also on other aspects such as landfill up-grades and collection system optimisations.

Discussions were also held with SPREP on awareness-raising and education. Environmental topics are included in the curricular of schools and other institutions of education. There is an educators' network in the PICs that could endorse and promote a complementary programme for young professional in the waste area throughout the region.

A campaign on 3R should be carried out on the household, school and office level. For changing the behaviour of households with regard to waste it is important to work with the traditional communities. Recommended ways to reach households are TV and radio. Decision-makers can best be reached by print media, while the best way to reach out to the youth is through the schools. For the awareness-raising and education of young people the YouthXchange brochure and related material developed by UNEP and UNESCO could be used.

Education and awareness-raising should be an integrated part of any waste project rather than an additional element.

For activities on the national and on the ground level adaptation of general and preparation of new material is needed. The material has to respond to key topics of the countries and on topics of real interest such as for example plastics bags. SPREP uses an external consultant



for material development. Also the private advertising sector could be engaged to sponsor a 3R campaign.

Four training sessions were organised by JICA for professionals from PICTs on municipal waste (given by a Japanese university) and on medical waste (by WHO). In the framework of the second phase, shorter training sessions on more practical topics are foreseen.

The training of JICA provided the opportunity for South-South experience sharing. In this perspective, the identification of regional best practice is needed. It can be developed based on the existing UNEP/ SPREP guidelines and manuals. Hands-on and on-the-job training should be part of any waste management implementation project, especially on the national or community level.

Other partner agencies that have provided training are the EU as part of the waste characterisation studies as well as AUSAID, especially for the POPs in PICs project.

SPREP can take over any co-ordinating and sourcing tasks for training on waste management. SPREP has worked in the past with USP (in Fiji) on biodiversity conservation and climate change. They are willing to continue this collaboration through their involvement from the design stage in a course on waste management for USP students and external stakeholders. For dangerous waste streams like chemicals, batteries, paints, detergents and e-waste sector specific competency based training is needed, i.e. A chemist could for example take a course on hazardous waste. Composting requires collaboration with experts in agriculture. USP can offer a variety of training approaches: train the young new professionals, train working professionals and training the trainer through presence learning as well as distance learning by means of videos and e-learning.

### **3. European Union**

At the end of the 90-ies, the EU paid studies on waste awareness and characterisation on the national level for setting up waste plans in 8 Pacific countries (Fiji, Kiribati, Papua New Guinea, Samoa, Salomon, Tonga, Tuvalu and Vanuatu). Though often limited to urban or densely populated areas, these reports are a good basis to get a general overview of the waste management situation on the country level.

More recently, in the framework of the 8<sup>th</sup> Environment Development Fund (EDF), the EU funded the sanitary landfill for the Great Suva area in Fiji for a total cost of € 8.5 million of which € 4.5 million were used for the construction itself. The project includes the provision of a technical assistant. The priority of the 9<sup>th</sup> EDF in Fiji is on education.

In the current country programmes in the region, the only project that has a waste component is located in Tonga. However, it is rather probably that the 10<sup>th</sup> EDF will include a focus on environment. Environment is seen as a good vehicle for integration in the Pacific region and an area for particular interest by European stakeholders.

The EDF also finances regional activities for which the General Secretary of the Forum is the main contact person of the EU. The EU provides funds to the Forum that then establishes further agreements with any regional agency for implementation.

The EC regional office in Fiji highlighted that particular problems for a modern waste management in Fiji and also the whole Pacific region are land owner issues, which become relevant not only for landfills, but any small infrastructure projects like transfer stations.

A different EDF financial framework with a separated programme managed from the office in Nouméa, depending on the office in Fiji, is applying for the funding of projects in overseas countries and territories belonging to EU member countries. Since the funding is depending on the GDP of a territory it might be that both French Polynesia and New Caledonia might get out of this funding scheme in the next period after 2007. Then, they can only receive EDF support through regional co-operation. Other options, to be explored, are environmental, research or NGO projects supported by the annual budget of the European Commission.

It was agreed that AFD and UNEP would go to Brussels to study directly with the corresponding units of the Commission the current or future possibilities for financing from EDF (especially during the development of the programmes for the 10<sup>th</sup> EDF) and other EC resources in the framework of the initiative.

#### **4. Asian Development Bank**

The strategy of the Asian Development Bank (ADB) for the Pacific is focused on reducing poverty by increasing cash incomes, improving living conditions and supporting the development processes through triggering reforms. Since AusAid is dealing with health and education ADB is not focusing on these issues anymore.

The activities ADB is involved in or that are under preparations related to waste management are the following:

- Fiji: water supply/ sewage project ongoing.
- Tuvalu: waste management project under preparation with a funding of 150,000 USD to fund a technical assistance to help in the preparation.
- Cook Islands and Tonga: due to typhoons, emergency assistance has been agreed upon to decrease the vulnerability of the considered islands; waste management and disaster prevention are included in this package.
- Tonga: funding of 700,000 USD for a technical assistance for a feasibility study to prepare a project on integrated urban development; sewage treatment and waste management. The project is to start from 2007 onwards.
- Kiribati: waste management project ongoing with a NGO and project on closing of landfill due to dysfunctional leachate drainage system and replacement by another landfill – work executed by a Japanese company.
- Samoa: ADB is not active due to the strong presence of AusAid and NZAid.

ADB's Loan conditions for Tonga, Kiribati and Tuvalu are 1% for 32 years of duration and 8 years of grace. Emergency loan conditions are changed to 40 years and 10 years. The currency of the loan can be chosen by the country.

ADB considers that SPREP and the South Pacific Applied Geoscience Commission (SOPAC, cf. below) are highly regarded in the region for their technical expertise and knowledge networks. ADB's interest is triggering institutional changes when giving loans. Therefore, political will in the target country is needed.

## **5. United Nations Development Programme**

The mission visited the United Nations Development Programme (UNDP) office in Apia/Samoa where five people deal with environment questions. UNDP is supporting the implementation of the International Waters Project (IWP, cf. below). Moreover, UNDP is involved in the implementation of the Stockholm convention and the small grants programme run by the Global Environment Facility (GEF, cf. below). Finally, they are currently preparing a part of a sustainable land management project where waste is also an issue due to land degradation and linkages to composting. In 2005 UNEP has signed a new memorandum of understanding on cooperation with UNDP to accompany the implementation of the Bali Strategic Plan for Technology Support and Capacity-building.

The UNDP team highlighted the fact that the Samoan recycling company would be interested in getting recyclables, especially aluminium cans, out of Tuvalu. Knowledge on composting is to be looked for at FAO.

In general, capacity building should be integrated part of all projects and training should be hands-on. The involvement of business and the engagement of women are important factors in the Pacific context to make a project successful.

## **6. Global Environment Facility**

The main activity financed by the GEF in the Pacific region that deals with waste is the International Waters Project (IWP) implemented by SPREP. IWP is embedded within the project 'Implementation of the Strategic Action Programme (SAP) of Pacific SIDS', a 20 million USD project with GEF financing of \$US11.5 million. The GEF focal area is 'International Waters' and the programming framework is 'Integrated Land' and 'Water'.

IWP is a seven-year project to help strengthen management of waste, freshwater and coastal fisheries in 14 countries, which each have their national coordinator. It is funded with 8.5 million USD through GEF and UNDP. The focus is on community participation, resource economics and strategic communications.

The project approach is to work both together with pilot communities to understand root causes of their problems and on the national level. It also aims at identifying appropriate behaviour change tools like economic incentives, infrastructure, local rules and social marketing.

The chronology of this project that started in 1999 and will end in December 2006 is the following:

- Determination of national Task Force, Lead agency and Coordinator
- Selection of focal area/pilot site
- Community engagement
- Root cause analysis
- Baseline data collection – socioeconomic, waste stream, ecological
- Pilot local solutions
- Legislative/institutional reviews
- Economic valuations
- National Campaigns

- Elaboration of national waste strategies and establishment of competent authorities
- Regional Master plan
- Replication/Transition Strategy
- Funding applications for future small scale projects

In each country a pilot project of around 300,000 USD is carried out on the basis of a selection made by the national governments among expressions of interest submitted for pilot projects by communities. Several countries decided to focus on waste in their national implementation study:

- In Tonga, Fiji and Palau economic valuations studies are carried out to calculate losses from poor waste management and the impacts on tourism, fisheries, health, lost earnings etc. The information is used for awareness raising, lobbying, and resource planning.
- In the Marshall Islands a socio-economic survey revealed a community lacking access to basic services such as clean water and housing. 2000 people lived in 0.4 square km. The waste stream analysis found more than 50% organics, 16% disposable nappies. This is vital information for national waste management planning. A centralised recycling and composting facility is built in Jenrok.
- In Fiji, where 50% of the population is rural, the project focused on community-based solutions for Liquid & Solid Waste Management in rural areas. The project includes legislative review, economic valuation and the preparation of the rural components for the National Solid Waste Strategy.
- In Tonga a project on household/village composting of organics was carried out. The project was supported by the Tonga Trust and the Canada Fund. In addition, in co-operation with AusAid a Solid Waste Management Project on diversion at source and legislative review, economic valuation and willingness to pay plus national media campaign has been realised.

The IWP supported the 2005 Year of Action Against Waste campaign in direct partnership with the SPREP waste team. The campaign has a strong media focus and builds on the success of existing initiatives. Community “champions” and best practices are highlighted, and the adoption of national waste strategies is promoted.

The economic assessment studies carried out in the framework of the project and for which results are expected in due course of 2006 are of high interest for the AFD and UNEP for the preparation of the initiative. The cost of non-action is crucial information for decision-makers.

For the follow-up of the IWP, a new GEF project called ‘Implementing Sustainable Integrated Water Resource and Wastewater Management in the Pacific Island Countries’ is under preparation where the GEF agencies are UNDP and UNEP and the executing agency SOPAC.

### ***7. SOPAC - South Pacific Applied Geoscience Commission***

The activities of SOPAC, specialised in the water sector, shows links with those of SPREP in the areas of climate change, management of solid, liquid and hazardous wastes, awareness-raising and the International Waters Project.

The mandate for the action of SOPAC stems from the document ‘Pacific Wastewater – Framework for Action’ that has been agreed upon at a meeting in Majuro, Marshall Islands,

15 October 2001. First actions are undertaken together with UNEP's Global Programme of Action (GPA) by setting up trainings.

With regard to solid waste management, SOPAC has participated in the preparation of the UNEP publication 'Directory of environmentally sound technologies for the integrated management of solid, liquid and hazardous waste for SIDS in the Pacific region'. Together with the University of the South Pacific (USP) a common course could be prepared on solid, liquid and hazardous waste. Another activity in which SOPAC is involved on waste management is the waste from pig farms, which is a serious problem in various parts of the Pacific region.

## **8. University of the South Pacific**

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.

The meeting with USP has been carried out with the Planning and Development Office, very interested in enhancing the training offers on waste management at the USP, and two university institutes: Pacific Centre for Environment and Sustainable Development (PACE-SD), more interested in carrying out a research in the area of waste treatment, and the Institute for Applied Sciences that is engaging communities in reaching out for solutions.

The USP programmes include environmental sciences. Specialisation courses are given on climate change and biodiversity thanks to financial resources initially provided by GEF. A similar course could be set up on waste management. Support is not only needed for teaching, but also for scholarships of publicly sponsored students.

In Fiji, PACE-SD has supported the government in drafting the national waste strategy. Now, it is foreseen to provide a revised legislation while the current legal framework is outdated with five pieces of legislation that deal with the waste question (dating in the case of the public health act back to 1944). PACE-SD has carried out projects on waste characterisation and for Coca-Cola on problems related to PET recycling (the current rate is 35-40%).

The centre has also worked on projects on bio-waste (methanisation and composting), used oil (burning in furnaces) and the 'zero-emissions' initiative with the United Nations University.

## **9. Pacific Islands Forum Secretariat**

The Pacific Islands Forum Secretariat is the organisation of the political leaders of the PICs. Their working areas are policy analysis, economics and governance. Being engaged actively in the World Summit on Sustainable Development (Johannesburg, 2002) they are now working with the PICs in the formulation on national strategies on sustainable development.

The work and the political position of the Forum could help to get a much better political endorsement at the level of the decision-makers of the waste strategy developed by SPREP, with its rather technical character. In addition, the Forum has a good relationship with the private sector; there might be opportunities for getting this sector involved in the waste work.

## **10. Secretariat of the Pacific Community**

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 is with 300 employees (thereof 120 people in Suva) much bigger than SPREP or SOPAC that each has less than 100 persons employed. SPC's biggest donor is the EU through programme funding.

SPC has got an excellent working relationship with SPREP, which was earlier a part of SPC. SPC has established an environmental health plan; waste is part of it. From this standpoint SPC highlights that there is an urgent need for action on the small islands states Tuvalu and Kiribati. Cases of diarrhoea are clearly linked to the badly managed solid and liquid wastes. The SPC could contribute to basic studies or monitoring in the area of epidemiology.

## **11. Japanese International Cooperation Agency**

The Japanese International Cooperation Agency (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 through financing two SPREP officers (for landfill/ solid waste management and awareness-raising).
2. Annual training of waste experts from each of the 14 countries through 3-weeks training per year in Japan and development of action plans, from which promising ones will be implemented in the near future; this action will be continued within the second phase starting in November 2005 through short institutional trainings (3-days) organised in the region and with changing topics every year.
3. Technical assistance for governments on collection systems, 3R and hazardous waste fractions through volunteers who have received a special education.
4. Implementation of further pilot projects in several countries and finalisation of demonstration project in Samoa, consisting of model landfill and recycling installation.

In Samoa, JICA has funded with around 300,000 USD the transformation of the Tafaigata landfill using the Fukuoka method (semi-aerobic fermentation and biological treatment of leachate with a very good relationship between the costs and the environmental effectiveness). This site will be used as demonstration project in order to diffuse the technology in the region. The installation of leachate and fermentation gas collection pipes and of recuperation ponds is finalised; the construction of leachate treatment facilities (filters, ponds with plant cultures for the biological treatment) is ongoing.

The upcoming implementation projects include the upgrade in line with the Fukuoka method of the landfill in Port Vila/ Vanuatu that was installed by the World Bank in 1995 and a similar project in Palau. Other projects in Micronesia and especially the Marshall Islands will look at the specific question how to treat waste on an atoll. In addition, JICA buys incinerators for hospital waste, compactors/ trucks and gives grass-roots grants for waste

management. Without the cost for grass-roots grants and volunteers, the total expenses of Japan in the region for waste management have been of around 7 million USD.

Annex VIII presents a complete list of activities carried out by JICA and the corresponding countries. The document includes also potential areas of co-operation among donors within the region; the gap areas identified are promotion of 3R initiatives and treatment of medical waste.

A close collaboration with JICA is to be maintained for the preparation and the implementation of the initiative.

## **12. Australian and New Zealander Agencies for International Development**

The mission did not meet directly with AusAid and NZAid representatives. However, the meetings at SPREP where professional staff is employed through funds provided by Australia and New Zealand and the information provided by JICA gave a picture of their activities. The coordination will be continued; the Australian Consul in Nouméa is willing to act as focal point for relations with the Australian government.

AusAid is financing the removal of the POPs stockpiles in the PICs for final destruction to Australia and the strategy how to deal with these chemicals in the future. The POPs in PICs project is directly carried out by the Australian company GHD. SPREP and USP are sub-contractors in this project for supportive work on informing and communicating to the national governments and arranging training courses. USP is giving this training in the case of Fiji. In addition, Australia supports landfill and integrated waste management orientated waste projects in Tonga and Tuvalu.

The company Golders Associates has carried out studies and projects for AusAid from its offices in Australia. Golder Associates also runs an Office in Noumea. Some activities were done in Tuvalu including the clean-up of scrap and some dangerous waste like batteries, now the focus is on Tonga.

NZAid supported financially the awareness-raising campaign of the year of action against waste 2005 and, in addition, they are funding a recycling project in the Cook Islands and can crushers on Tuvalu. Finally, they pay the SPREP 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.

## **13. The situation in Fiji**

The Ministry of Housing, Settlement and the Environment attended the SPREP Annual Meeting in September 2005. The national waste management strategy was to be presented to the cabinet the week after the mission took place.

The new sanitary landfill, funded by the EU (10 million USD) and the government of Fiji (3 million USD) was designed by the German engineering group Hydroplan according to European standards and has started its operation recently, one year after finalisation of the construction. The formerly used landfill Lamy suited next to the sea was an important source of pollution for the lagoon. Moreover, the landfill was burning in the last year so heavily that pregnant women living nearby were recommended to leave the area.

Due to the lack of agreement among the four municipalities served by the new landfill on its management, the operation of the landfill was given away as a 5-years service by the central government in a bidding process tender to the New Zealander company HG Leach. This enterprise reserves 3% of the gate fees (Fiji\$ 25 per ton) for the local community that once owned the land. The waste collection rates will increase from 21 Fiji \$ to 25 Fiji \$ over the next 4 years. This tariff should allow paying the professional operator on the base of the volume treated; this implies that there is no financial incentive for promoting the 3R.

The next important step for Fiji is to get a similar sanitary landfill for the Northern part of the main island Viti Levu for six other municipalities. A feasibility study is foreseen.

For the promotion of recycling, which will help to minimise the waste volume, it is necessary to install transfer stations and recycling centres and raise the awareness of the public. The campaign “cash for trash” is ongoing with quite a success. Recycling is a business and is carried out entirely by the private sector, which is collecting aluminium products, PET bottles, paper, scrap metal and electronic waste.

With regard to hazardous waste, the POPs have been taken out by the AUSAID supported POPs in PICs project. However, the future management of chemicals, including Ozone Depleting Substances (ODS), remains an open question of concern. It is especially a transportation issue.

The International Waters Project installed a composting facility in a rural area in Fiji. For outbound islands an economic evaluation will be carried out to understand which collection and treatment options are most suitable for these areas. The results are expected in March 2006.

Finally also the topic of deposit systems and plastics bags was discussed. Fiji aims rather at introducing biodegradable bags than bans. Deposit systems were not endorsed by Coca Cola and Pepsi. However, the Fiji government is aware of the experience in Kiribati, where legislation for a deposit system was decided upon after the discussions at a national workshop on permits and rates as well as eco-taxes for importations.

#### **14. The situation in Samoa**

According to the Ministry of Natural Resources, Environment and Meteorology, on the Upolu Island, where the capital Apia is situated the collected waste amounts to 30,000 tons per year, corresponding to a population of 100,000 people. The waste is collected twice a week and everyday in commercial areas of Apia.

The Tafaigata landfill does not receive any waste from other islands. In the framework of a pilot project, efforts are ongoing at household level to put in place a payment system for the waste collection with 5 Tala per month, in exchange of a waste bin.

JICA supports Samoa in the improvement of the landfill, recycling, composting and training.

The Tafaigata landfill was upgraded using the Fukuoka method (see above under the description of JICA’s activities). The design and control of the works is done by the JICA person in SPREP who also provides technical assistance for the other topic areas.



As a pilot to enhance the recycling system in Samoa JICA has funded a recycling centre with a pressing machine for metals at the entrance of the landfill site. It was originally only planned to facilitate the recycling of aluminium, but now it is used for all metal types and also batteries. Until now no PET bottles and paperboard recycling system is established. The recyclables are exported to Singapore and then go to China for final treatment. Recycling companies can obtain a licence to use the centre as basis for their operations. The recycling companies get the waste from people or companies who let them their waste for free or sell them the waste and by scavengers from the landfill. Advertising on bringing recyclables to the centre has started.

Glass bottles for beer are the only ones that are being reused directly in the local brewery. Studies are undertaken to ban thin plastics bags on Samoa.

In the area of composting, 4-5 community projects have been carried out. Since organic waste accounts for more than 50% of the total waste in Samoa and in lot of PICTs, this method is of particular interest. However, the information obtained during the mission to Samoa and elsewhere shows that the experiences at village level may have success, but the projects at bigger scale often do not work due to questions related to the production costs and the market.

It seems that in Samoa the number of employees and the level of technical capacity, especially on landfills, are too low. It was recommended to set up a technical education course on landfill management and composting. However, it became also clear that it is not only the training itself that is a problem, but also the social image of a waste-job that needs to be improved.

## **15. The situation in Vanuatu**

Vanuatu is characterised by very diverse situations with two urban centres (Port-Vila, 30 000 inhabitants and Luganville, 11 000 inhabitants) encompassing in this way around 20 % of the population of this group of islands that for the rest is much dispersed.

A national waste management strategy was elaborated and a synthesis study was requested by the EU in 2004.

The management system of leachates of the sanitary landfill of Bouffa, financed by the World Bank in 1995, is not operational; JICA envisages to update it using the Fukuoka method.

After the first contacts made by the mission, it seems that an investment into a sanitary landfill for Luganville is also to consider, in the same way as the support of the collection systems run by the municipalities.

With regard to the initiatives in the area of 3R, UNELCO, the electricity producer of the country (who consumes half of the fuel and produces half of the used oil in the country), is studying the possibility of a partial substitution of the fossil fuels by the coconut oil; an initiative is ongoing with a NGO for the recovery of green waste; the local brewery has put in place a take-back system for the beer bottles; a private operator occasionally carries out the export of scrap; and the substitution of the supermarket bags by biodegradable bags is currently being studied. However, it seems that the hazardous and toxic wastes are not particularly treated.

**Annex VII:** Action Plan developed at the 3<sup>rd</sup> ‘Country Training Program on Municipal Solid Waste Management’ (November 2006)

## **Action Plan**

### **Regional Strategy for Solid Waste Management in the Pacific Island Countries and Territories**

*NB: these actions often cover many activities agreed to in the Strategy eg establishing sustainable waste system financing has relevance to most activities. They are in no particular order.*

**1. Completion or Updating of the National Waste Strategy is the most urgent and important task for all. It will assist SPREP, its members and donors in all subsequent work. (Strategy Activities: E4, E5)**

Members	SPREP
Update to include: <ul style="list-style-type: none"> <li>• Strengthened financial data</li> <li>• Analysis of waste stream</li> <li>• Reference to economic instruments</li> <li>• Training needs</li> </ul>	Provide assistance and templates on appropriate costing of waste system components, update template on waste stream analysis with WHO’s work

**2. Economic instruments will assist in financing waste management and changing behaviour. (Strategy Activities: K1,K2)**

Members	SPREP
To prepare for use of economic instruments: <ul style="list-style-type: none"> <li>• Get information on legal issues and policies that might be in conflict</li> <li>• Begin to consult with business and community on addressing automobile waste and plastic bags</li> </ul>	Distribute guidelines on: <ul style="list-style-type: none"> <li>• Policy package (incl. economic instruments) to address the priorities of automobile wastes and plastic bags</li> <li>• Successful examples from other countries</li> <li>• Provide legal &amp; economic advice</li> </ul>

**3. SPREP and its members must try to reduce the very high costs of waste management. (Strategy Activities: cross-cutting issue, B3,B4,F1,G1,G2,G3,K1)**

Members	SPREP
Reduce the costs of the waste management system by: <ul style="list-style-type: none"> <li>• Establishing costs of assets and</li> </ul>	Assist and facilitate by: <ul style="list-style-type: none"> <li>• Providing template and methodology</li> <li>• Providing advice, template and train the</li> </ul>

<p>maintenance plan</p> <ul style="list-style-type: none"> <li>Identifying opportunities for savings – route design, standard equipment, public participation</li> <li>Identifying opportunities for private sector involvement</li> <li>Providing data on landfill costs (capital and operate)</li> <li>Consult donors on appropriate equipment</li> </ul>	<p>trainer (Memorandum of Understanding)</p> <ul style="list-style-type: none"> <li>Provide guidelines and training on outsourcing and contract specifications</li> <li>Distribute analysis and guide for atolls and islands</li> <li>Facilitate adoption of semi-aerobic landfilling</li> <li>Assist members with negotiations with donors</li> </ul>
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**4. Waste minimisation is the most environmentally and cheap option and organic waste is the majority of our wastes. (Strategy Activities: A2,D1,D2,D3,D4,D5,G2)**

Members	SPREP
<p>To minimise waste, particularly organic and green wastes:</p> <ul style="list-style-type: none"> <li>Find best motivators for rural &amp; urban people in own country</li> <li>Run home composting programme using country-specific campaign materials</li> <li>Identify national and village “champions” to drive campaign</li> </ul>	<p>SPREP will:</p> <ul style="list-style-type: none"> <li>Work with WHO and FAO on joint home composting programmes</li> <li>Find funding for regional programme</li> <li>Develop core materials, train the trainer programmes</li> <li>Distribute information on new technologies and trials (nappies/diapers, bio-bins, medical waste incinerators)</li> </ul>

**5. It is important that information and lessons learned are available to assist us all. (Strategy Activities: B1,B2,B3,B4,B5,B6,E2,H2,H3)**

Members	SPREP
<p>To develop better information networks and engage with the community:</p> <ul style="list-style-type: none"> <li>Regular supply of information to SPREP and each other (waste practitioners)</li> <li>Lead agent get info from SPREP and distribute to public, Non-Government Organisations and Governments</li> <li>Consultation and Communication Plan to</li> </ul>	<p>SPREP will:</p> <ul style="list-style-type: none"> <li>Develop a “hub” to co-ordinate and distribute information on its website</li> <li>Distribute hard copy or CDs</li> <li>Pacific Environment Information Network (PEIN) to fund members’ equipment</li> <li>Distribute lessons from members and</li> </ul>

<p>be part of National Strategy using research, and involving other sectors (health, environment)</p> <ul style="list-style-type: none"> <li>• Use existing strategies and include clear outcomes and monitoring</li> </ul>	<p>International Waters Programme</p> <ul style="list-style-type: none"> <li>• Assist with consultation and social marketing</li> </ul>
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**6. “Difficult” wastes consume disproportionate amounts of our resources. A regional approach may reduce those costs. The first difficult wastes to be addressed are car bodies, asbestos and plastic. (Strategy Activities: B6,D1,D2,D3,D4,F1,G5,G6,H2,J1,J2K2)**

Members	SPREP
<p>To address the car body problem, members will:</p> <ul style="list-style-type: none"> <li>• Survey to determine existing volumes of scrap metal in the country</li> <li>• Identify and assess collection systems/companies and costs associated with the collection</li> <li>• Identify storage or other needs</li> <li>• Implement activities as appropriate</li> </ul>	<p>SPREP will:</p> <ul style="list-style-type: none"> <li>• Develop lists of wastes and locations</li> <li>• Identify potential sponsors and providers of shipping services, to design specific activities and confirm costs and budgets</li> <li>• Publicize activities, preferably in conjunction with Year of Action Against Waste and existing communication initiatives at the regional and national levels</li> </ul>

**7. “Difficult” wastes (continued): asbestos.**

Members	SPREP
<p>Asbestos material will be managed by:</p> <ul style="list-style-type: none"> <li>• Undertaking surveys of volumes and type (bonded or fibrous) of asbestos at the national level</li> <li>• Determining the most appropriate option for them and the cost involved</li> <li>• Implementing the chosen option based on the advice provided</li> </ul>	<p>SPREP will:</p> <ul style="list-style-type: none"> <li>• Develop and provide technical advise on options on how to deal with the asbestos problem at the national level</li> <li>• Acquire and distribute asbestos related awareness raising and Occupational Heath &amp; Safety materials</li> </ul>

**8. “Difficult” wastes (continued): plastic.**

Members	SPREP
<p>Plastics will be managed by:</p> <ul style="list-style-type: none"> <li>• Developing target lists of the different types of non-biodegradable and biodegradable plastics</li> <li>• Surveys to determine the volumes and types of plastics in the country</li> <li>• Identifying and assessing collection systems/companies and costs associated with the collection</li> <li>• Implementing and publicising system and activities as appropriate</li> </ul>	<p>SPREP will:</p> <ul style="list-style-type: none"> <li>• Compile a directory of companies who are in the recycling business and also of what they are recycling (ferrous &amp; non-ferrous, PolyEthylene Terphthalate (PET, a plastic), cardboards etc.)</li> <li>• Assess regional recycling systems using the PIRRIC [in full] model [explain]</li> <li>• Identify potential sponsors and providers of disposal services, to design specific activities and confirm costs and budgets</li> <li>• Facilitate the implementation of regional recycling</li> </ul>

**9. Capacity assessment and training is vital for making our waste management sustainable. (Strategy Activities: B1,B2,B3,B4,B5,B6,E2,)**

Members	SPREP
<p>National capacity assessment (including provincial/state and local governments) and appropriate training will be addressed by:</p> <ul style="list-style-type: none"> <li>• Undertaking needs assessment to using Human Resources and Development (HRD) divisions within the government, chamber of commerce or equivalent organizations and national Non-Government Organisations (NGOs)</li> <li>• Undertaking an inventory of trained people in the country</li> <li>• Developing HRD plan based needs and gaps identified in the NCA [spell]</li> <li>• National governments facilitating specific training for the local govt personnel</li> </ul>	<p>SPREP will:</p> <ul style="list-style-type: none"> <li>• Establish association of Solid Waste Management experts/personnel</li> <li>• Gain support from donors and technical organizations such as SPREP, JICA, WHO and other relevant organisations</li> <li>• Extend regional and national training to include personnel from the private sector and NGOs</li> <li>• Use the contracts to identify the capacities requirements</li> <li>• Private sector operators trained to meet the government and other specified requirements for their operations.</li> </ul>

**10. Most countries have either atolls or very small islands. They have very particular problems in managing wastes. (Strategy Activities: B1,B2,B6,D1,D2,D4,D5,E2,G2,G6J2,K1,K2)**

Members	SPREP
<p>Their special needs will be addressed by:</p> <ul style="list-style-type: none"> <li>• Engaging the community to minimise, recycle, compost and safely dispose of waste using church, community leaders and youth</li> <li>• Focus on composting as it helps soil fertility, water loss, leachate contamination and is cheap</li> <li>• Assess legal and enforcement tools needed to control waste management</li> <li>• Assess financing mechanisms such as container or difficult waste deposit / refunds and departure tax</li> </ul>	<p>SPREP will:</p> <ul style="list-style-type: none"> <li>• Develop a guideline for best practice management of waste on atolls including import controls, landfill management, collection / sorting systems and bulky wastes</li> <li>• Work with donors to pilot appropriate disposal methods</li> <li>• Distribute information on successful incentives for business and public to minimise wastes</li> <li>• Distribute educational materials for local adaptation</li> <li>• Identify opportunities for regional co-operation</li> </ul>

**11. Legal instruments provide an important back-stop and fairness for business. (Strategy Activities: B6,C1,E4,G2,G5,G6,H2,J1,J2,K2)**

Members	SPREP
<p>Members will</p> <ul style="list-style-type: none"> <li>• Assess non-legal, cheap ways such as community involvement, Memorandums of Understanding, voluntary agreements to gain co-operation</li> <li>• Identify what laws need creating or amending from existing ones</li> <li>• Consider their resources and willingness of police and courts to enforce</li> <li>• Identify focal points to facilitate easy legal liaison with SPREP etc. for technical assistance</li> </ul>	<p>SPREP will:</p> <ul style="list-style-type: none"> <li>• Distribute checklists for drafting</li> <li>• Assist with drafting or identify partners to help</li> <li>• Facilitate information exchange on new laws, successful non-legal methods</li> <li>• Assist with “codes of practice”, Environmental Management Plans, self-audit mechanisms</li> <li>• Provide multi-disciplinary team for technical assistance</li> </ul>

## Japan's Aid Programs & Projects related to Waste Management in the Pacific Region and Fiji

### *Waste Management Improvement Program*

This is a technical assistance program targeting the wide area. The program consists of the following main components.

1. Systematic development of good management methods of wastes
2. Demonstration project for control of waste generation
3. Phased improvement of landfill sites
4. Wide-area Training courses

Under this program, the following have been completed so far or are on-going currently.

- Dispatch of a technical advisor to SPREP since 2000;
- Landfill improvement using Fukuoka Method at Tafaigata site (Samoa) was undertaken in 2003, and the phase II work is planned for 2005.
- The landfill improvement work by Fukuoka Method will be expanded into Palau and Vanuatu (planned for a start in FY 2005/6);
- A pilot project using Sea Landfill is planned in Marshall Islands (FY 2006/7);
- Training courses on waste management for PIF counties were conducted annually from 2000 to 2004, receiving participants from all 14 countries that are eligible for Japanese aid<sup>1</sup>. A 5-year Phase II courses will start later this year. This year's program is expected to be held in November at SPREP in Samoa.
- The program will consider more activities on promotion of waste separation at source/recycling from now on.

JICA has also been dispatching young and senior volunteer workers who are often working in close relation with the above mentioned program.

- Total of 19 volunteers now active in the environmental field in 8 countries
- Fields of work include environmental education, composting, waste management, city planning

### *Studies related to Waste Management*

- **Basic study on Large-scale Waste Management in the Pacific Region**
  - > Conducted in Fiji, Samoa, Palau and Marshall in April 2004.
  - > The study targeted detailed investigation of current situation in waste management in these countries with special focus on end-of-life vehicles and electric home appliances, but also included solid wastes to updates the EU waste study<sup>2</sup> to match with more recent conditions.
  - > Recommendation included establishment of a recycling fund, certification

<sup>1</sup> Fiji, PNG, Samoa, Vanuatu, Palau, FSM, Tonga, Solomon Islands, Marshall, Nauru, Tuvalu, Kiribati, Cook Islands, and Niue

<sup>2</sup> EU waste study was conducted in 8 countries in 1998-2001.

system for good recycling companies, appropriate final disposal of residues, appropriate landfill options for large-scale wastes, establishment of monitoring systems, and other measures that should be taken by the governments including clearly defining the role of players involved, improvement of public transportation systems, and securing the stockyard for recycling companies, etc.

**Solid Waste Management and Recycling in the Fiji Islands: Preliminary analysis of the situation in the Western Region of Fiji and the handling of some difficult solid waste**

- > Conducted in Fiji, final report produced in March 2004
- > The study covered a detailed waste survey in six urban areas (Ba, Lautoka, Nadi, Ra, Singatoka, and Tavua on Viti Lev Island)
- > Another component of the study was to investigate situations related to the end-of-life electric and electronic equipment

**A Review of the Standard of Wastewater Treatment in Fiji's Tourism Industry**

- > covered 18 resorts (report out in June 2004).
- > The study found that none of the resorts met all international standards, and many of them did not even meet half of the standards.
- > The results was presented to tourism industry at a workshop and a booklet "Improving Wastewater Management in Fiji's Tourism Industry" was distributed to participants.



### Potential Area of Cooperation Among Donors Within The Region

Waste management is one of the environmental issues that is receiving high interests from many donors in the region. The table below indicates the activities/projects conducted by different donors regarding waste management in the past. The gap areas identified are promotion of 3R (reduce, reuse, and recycle) initiatives and treatment of medical wastes.

Donor matrix in the field of waste management

	waste study	workshop	landfill sites	community initiative	POPs	medical wastes	recycling
Fiji	EU	JP	EU • (JP)	SPREP	Aus	JP	
Tonga	EU	JP	Aus	SPREP	Aus		
Tuvalu	EU	JP	Aus	SPREP	Aus	JP	
Nauru		JP		SPREP	Aus		
Kiribati	EU	JP	ADB	SPREP	Aus	JP	
PNG	EU	JP		SPREP			
Solomon	EU	JP			Aus	JP	
Vanuatu	EU	JP	JP		Aus	JP	
Pelau	(JP)	JP	JP	SPREP	Aus		(O)
FSM	(JP)	JP	(JP)		Aus		(O)
Marshall	(JP)	JP	(JP)	SPREP	Aus		(O)
Samoa	EU	JP	JP		Aus	JP	JP
Niue		JP			Aus		
Cook Island		JP	ADB		Aus		NZ

Notes:

1. Abbreviations in the table (except donor names): M/P=master plan, POPs=Persistent Organic Pollutants
2. Donor names with parentheses indicate that the project is either planned, under consideration, or available from unofficial or other activities. (O) indicates voluntary (non-aid) initiatives of the respective countries.
3. "Community initiatives" indicate International Water Program which is implemented by SPREP and funded by UNDP and GEF.

In addition to the activities in the table, different donors have been involved in drafting regional strategies and guidelines related to waste management.

- Master plan for municipal solid waste management: Japan<sup>2</sup>
- Guidelines for municipal solid waste management: UNEP
- Hazardous waste (POPs): AusAID
- Asbestos containing materials, waste oil, scrap metals, and glasses: NZAID

Activities of each donor agency have not been overlapped (i.e. it has been demarcated) but this is not the result of planned coordination. There is, thus, a good potential for donor cooperation to be achieved in the future.

<sup>2</sup> The draft master plan is now being revised by SPREP and is expected for its approval at the Annual meeting in September 2005.

Solid Waste Management Cooperation of JICA in the Pacific Islands: the Regional Programme (Concept Chart)

