

United Nations Development Programme Country: Fiji Project Document

Project Title

Preparatory Assistance Phase for the Introduction of Container Deposit Legislation and Sustainable Solid Waste Management in Suva, Fiji

UNDAF Outcome(s):

The mainstreaming of environmental sustainability and sustainable energy into regional and national policies, planning frameworks and programmes; and Pacific communities sustainably using their environment, natural resources and cultural heritage. Environmental sustainability and sustainable energy are mainstreamed into regional and national policies, planning frameworks, and programmes; and

Expected CP Outcome(s):

(Those linked to the project and extracted from the CPAP)

Fiji communities effectively manage and sustainably use their environment, as well as natural and cultural resources.

Expected Output(s):

(Those that will result from the project and extracted from the CPAP)

Policy, legislative and management frameworks developed and strengthened capacity at all levels improves implementation of environment programmes, conservation, sustainable use and equitable sharing of benefits from natural resources, including biodiversity, fisheries (marine and freshwater), and the promotion of sustainable renewable energy.

Implementing Partner:

Fiji Department of Environment Ministry of Local Government

Ministry of Health

UNDP Fiji Multi Country Office (MCO)

Responsible Parties:

Legislative and Recycling Expert Consultant

Litter Survey Consultant

Suva City Council
Fiji School of Medicine
University of South Pacific

A.

Brief Description

The aim of the Project is to establish a sustainable recycling system in Fiji. The objective of the Preparatory Assistance Phase (Phase I) of the Project is to evaluate the logistics, costs and feasibility of introducing Container Deposit Legislation and establishing a solid waste management facility in the Suva City Council area of Fiji. The project would be used as a pilot study for implementation in other municipalities of Fiji. The objectives of Phase II of the Project are: to have a Container Deposit Legislation, which puts in place a system of deposits and refunds to give a financial incentive to consumers and industries to recycle containers and that complements the existing regulations, passed by Cabinet; to establish a solid waste management facility, if not already in existence, and associated collection arrangement within Suva; to increase public awareness of the environmental degradation due to waste; to prevent further degradation of the environment within the Suva City Council area; to reduce the volume of waste being disposed of, and hence extend the life of the Naboro Landfill; to generate employment, inclusive of women; and to increase the capacity of the local City Council to handle solid waste management issues. Phase II of the Project will only be undertaken should the findings of the Preparatory Assistance Phase indicate that it is feasible to progress to Phase II.

Programme Period:

2008 to 2012

Key Result Area

Environment and

(Strategic Plan):

Sustainable Development

Atlas Award ID:

TBA

Start date: End Date

May 2008 September 2008

LPAC Meeting Date

14 May 2008

Management

Implementing Partner:

Arrangements:

Fiji Department of Environment

2008 AWP budget:

USD 54,000

Total resources required

Total allocated resources:

USD 54,000

UNDP TRAC

USD 54,000

Agreed by Department of Foreign Affairs:

(Ross Ligairi

Agreed by Department of Environment:

F Naconia

23/6/08

Agreed by UNDP:

(Toily Kurbanov)

I. SITUATION ANALYSIS

Background

National Solid Waste Management Strategy for Fiji

The Fiji Government has identified in their National Solid Waste Management Strategy for Fiji (Waste Management Strategy, 2006) that there is an urgent need to find new, more effective ways to deal with waste produced in Fiji. It is the Department of Environment's intention to move Fiji from an over-reliance on dumping wastes and littering to a position where it will be a model for sustainable waste management. Up until the development of the Waste Management Strategy, waste policies provided end of pipe solutions by focusing mainly on disposal rather than prevention. However, the Fiji Government recognised that there is a need to develop a new vision for minimising waste and managing it in a more sustainable manner. The Fiji Government has recognised the economic opportunity to use unavoidable waste as a resource that can generate, on a local basis, wealth and employment, opportunities for social enhancement and environmental benefit. The Fiji Government is currently emphasising the use of the 4Rs in relation to solid waste management:

- Reduce: reduce the amount of waste you produce;
- Reuse: reuse those materials that can be used again for the same or different purposes;
- Recycle: recycle those materials that can be made into different products; and
- Refuse: refuse excess packaging.

The Waste Management Strategy states that rapid urbanisation and population growth, as well as the consumerist lifestyle of Fijians, which is heavily based on imported food, continues to rise. These factors result in an increase of waste outputs, which in turn causes adverse effects on the Fijian economy. The generation and disposal of waste has direct and indirect linkages to economic development. The Fiji Government has identified that waste represents mismanaged money in terms of both the original cost of the materials and the costs of disposal, as well as the potential value of the material as a reusable resource. Poor solid waste management has serious consequences on human health and environmental integrity. At present in many places in Fiji, waste is dumped wherever it is convenient to do so. Through natural forces, this waste predominantly migrates into Fiji's waterways. Therefore, Fiji's inshore fisheries, supplying both local and export markets, and tourism in Fiji, which is dependent upon the presentation of pristine beaches, lagoons and reefs, are negatively impacted. There is the potential for contamination of water and food supplies, which can have impacts on local human health and economic markets and / or revenue from export crops. Dumping of waste can also lead to the outbreak of infectious diseases as mosquito breeding grounds are formed close to places of residence. Conversely, the benefits from good waste management can include reduced raw material costs, enhancement of the tourism experience, an increase in fisheries productiveness and reduced health care costs. Effective waste management measures will also avoid the need for expensive clean-up operations in the future.

The key objectives of the Waste Management Strategy are to:

- Reduce the amount of waste that each community produces:
- Make best use of the waste that is produced;
- Develop and implement incentives to change wasteful behaviour;
- Improve and upgrade existing waste management and disposal systems; and
- Choose waste management practices which minimise the environmental risks and harm to human health.

Previous Waste Studies

In Fiji, local municipalities are responsible for the collection and disposal of solid waste in their municipal boundaries. The collection and disposal of solid waste is paid for by urban ratepayers In some cases, there are more rural dwellers than urban ratepayers within the municipal boundary,

which results in inadequate waste collection in rural areas by the Rural Local Authorities. For example: Nadi and Lautoka rural areas have more than 60,000 people where as Lautoka city and Nadi town has 36,000 and 9,000 citizens respectively (a total of 45,000). The municipalities constantly face problems with illegal dumping, misuse or non-use of receptacles, damaging and stealing communal containers and resistance to service charges. In rural areas, solid waste is generally dumped. A Sinclair Knight Merz study conducted in 2000 highlighted approximately 405, 260 kg of waste per year is produced in rural areas in Fiji that does not get collected or properly disposed.

Waste produced by households in Fiji is mainly composed of biodegradable (more than 65% of the weight), paper (10-15%), plastic (less than 10%), textiles and glass. According to the SKM study (2000), the average waste generation rate per person per day is 0.94 kg which amounts to 343kg/person/yr. It is likely that this value has increased since 2000.

A litter survey (Fijian Department of Environment, 2004) was carried out along 1.8 km of Edinburgh Drive and along 1.5 km of Queen Elizabeth Drive in Suva. The predominant pollutants identified along both transects were snack packets followed by PET bottles and plastic bags. A separate study was conducted in 1999 for the Department of Environment (B. Thaman & E. Lovell, 1999) on the environmental and economic aspects of plastic bag pollution in Fiji. The study found that that the minimum number of plastic bags used annually in Fiji is 50 to 60 million, and it is likely that the number has increased since the study was undertaken.

Past and Current Recycling Initiatives

Small scale PET bottle recycling is already being undertaken in Fiji. The Coca Cola Company and Waste Recyclers (Fiji) are the main two players in the PET bottle recycling industry, with a number of smaller companies also in operation. The Training and Productivity Authority of Fiji (TPAF) runs a Waste Recycling Competition in schools throughout Fiji. The competition encourages children to collect PET bottles and aluminium cans to raise money for their schools. There are also some Non Government Organisations (NGOs) who have similar initiatives. However, the collection of recyclable materials is limited to a small geographic area and most individuals / community groups would need to deliver the recyclable materials themselves to the recycling facility. At present with rising fuel costs and the low financial gain from returning recyclable materials, it is often uneconomical to return the recyclable items.

The UNDP and Fiji Government have previously run a "Get Cash for Your Trash" campaign in 2005. However this was a short term campaign and not a sustainable venture, due to the lack of legislative backing and sufficient financial reward.

Waste Disposal and Recycling Regulations

New regulations pertaining to waste disposal and recycling were introduced into Fiji in late 2007. The Environment Management (Waste Disposal and Recycling) Regulations 2007 stipulate that facilities that import or manufacture plastic bottles must hold a plastic bottle permit. It is a condition of every plastic bottle permit that the permit holder will, separately or jointly with other holders of plastic bottle permits, maintain one or more plastic bottle collection centres for collection of used plastic bottles from consumers or retailers. Therefore, it is now a legal requirement that importers and manufacturers of plastic bottles collect their plastic bottles after they have been used.

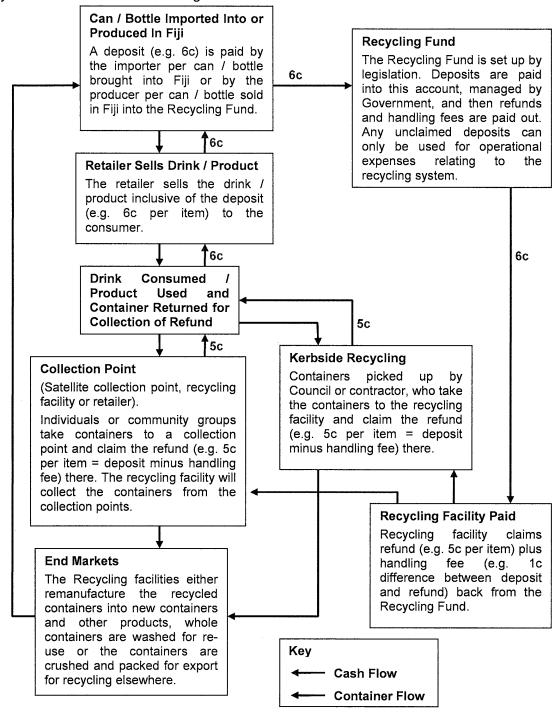
Regulation 31 (4) of the Waste Disposal and Recycling Regulations states that holders of plastic bottle permits should, in conjunction with the Waste and Pollution Control (WPC) Administrator, endeavour to establish a system of cash payments for the return of bottles for recycling.

Container Deposit Legislation

One possible option for establishing a system of cash payments, as stated in regulation 31 (4) of the Waste Disposal and Recycling Regulations, is the introduction of a Container Deposit

Legislation (CDL). The CDL is a recognised tool for managing solid waste, which incorporates the principles of Extended Producer Responsibility (EPR) and Product Stewardship. The leverage occurs from capturing the high value of recovery of most of the aluminium and PET component through giving the beverage containers a value using a deposit system. This approach is used in many countries as a waste management strategy and has proved very successful. A sustainable recycling system has been made economically viable in both Kiribati and Kosrae, one state of the Federated States of Micronesia, through the development of a CDL.

The recycling system works through a process of deposits and refunds, as explained below and presented in the following diagram. A deposit, paid by the importer or manufacturer, is collected by the Federal / State Treasury for each bottle / can brought into, or manufactured and sold in, the country / state. This deposit is then placed into a separate 'Recycling Fund' account, which is set up by the relevant Federal / State legislation.



The importer / manufacturer has now paid a 6 cents (c) deposit per item (or whatever the deposit value as stated in the legislation dictates), which is passed on to the stores, who pass it on to the customer. The customer drinks their beverage / uses the product and then takes the bottle / can to a collection point run by the recycling system operator, and receives a 5c refund per item (or whatever the refund value as stated in the legislation dictates). It may be stated in the legislation that a minimum number of items are required to be returned at any one time to save on administration time (e.g. a minimum requirement of 20c for 4 cans / bottles).

The rate of the refund is determined in the regulations pursuant to the CDL. It only needs to be large enough to encourage a high return rate of containers.

The recycling system operator must keep accurate records of refunds paid out and can then claim back 6c from the Recycling Fund administrator for every item refunded. Thus the operator receives a 1c handling fee that the operator keeps as a contribution toward operational costs. The refund is claimed by completing a specified claim form.

The recycling system operator then crushes and packs the materials, then sells them for export to an overseas recycling facility and receives payment for the value of the materials exported.

The handling fee component is essential to create a system that recycles items other than aluminium cans, as it is usually only economically viable to collect and recycle aluminium cans in small Pacific Islands if there are no handling fees in place. In Kosrae, PET bottles are crushed, packed and exported for sale. The value of the PET bottles for export is not sufficient to maintain the PET recycling operation, hence the need for the supplement from the handling fee. Glass is also recycled in Kosrae, but this is crushed and used as a concrete filler within Kosrae as there is currently no international company that will purchase the used glass from this location. Material flows should be estimated prior to establishing the CDL to ensure that the handling fee component is sufficient enough to enable a sustainable operation.

Unredeemed deposits are those deposits paid into the Recycling Fund for items that are never returned. That money will build up over time, once the system has settled down. Legislation should specify that money in the Recycling Fund is only available for refunds for items which have had a deposit paid or for capital equipment replacement.

There is the problem that there may be existing stockpiles of existing recyclable materials that people want to claim the refund from even though no deposit was paid on the item. This was the case in Kosrae, where a refund system did exist, but failed, however residents were hopeful that the system would come back and had saved their cans since the termination of the refund payments. The CDL must include the provision that refunds are only payable on beverage containers that had the deposit paid on them. In Kosrae, an initial 'buy back' scheme was put in place, where cans were purchased first at 1c each and later, closer to the full deposit / refund implementation date, at 2c each to encourage people to return their stockpiled items. The provision that refunds are only payable on cans / bottles that had the deposit paid on them needs to be well advertised prior to the CDL coming into force to persuade people to sell their cans during the 'buy back' period.

In Kosrae, cans / bottles purchased during the 'buy back' scheme were used to test the collection process and MRF equipment to limit potential problems that may have arisen during the full implementation phase.

Close co-ordination is required between passing the legislation and creating the physical systems required to collect the beverage containers, collect the deposits, pay the refunds and pack and export the materials.

Once the recycling system has been operational for a period of time and any pre-legislature aluminium cans and PET bottles have been bought back, operational costs should be able to be covered through the handling fee and the sale of the aluminium cans and PET bottles for export. The self-sustaining nature of the system can be attributed to the following:

- 1. Individuals and fundraising groups will be encouraged to recycle given the financial incentive, resulting in a high rate of return for items that have had a deposit paid on them;
- 2. Legislation requires that a handling fee be provided to the recycling operator, providing a predetermined source of income to the recycling operator;
- 3. Value of PET will increase since PET is oil based and the cost of oil is increasing, providing a potentially increasing source of income for the recycling operator; and
- 4. Value of aluminium will increase since the mining and processing of virgin aluminium have high energy requirements and the cost of energy is increasing, providing a potentially increasing source of income for the recycling operator.

Sound financial monitoring and budgeting systems are essential to successfully manage the project. Auditing should be implemented to assess the compliance of operations with the regulations and contractual obligations.

Another key to success is the implementation of public awareness campaigns. In Kosrae, radio spots and monthly newsletters were distributed to inform the public of the recycling system and how they can become involved. The most cost effective mechanism of advertising the recycling system in Fiji would need to be determined (radio, t.v., newspaper, billboards, bus, leaflets, etc.) to inform people of the benefits of participating in the system and where their local collection point would be.

Key Observation

The proposed project is fully in line with Fiji's national development objectives, its national strategy for the implementation of the Pacific Regional Waste Action Plan and the Waste Management Strategy, and its pursuit of improving natural resource management and promoting environmental sustainability. CDL could be implemented in parallel with the recently introduced Environment Management (Waste Disposal and Recycling) Regulations 2007 and would complement, and potentially strengthen, the existing regulations by providing an incentive for the consumer to participate in the recycling and not place all of the onus for collection of containers on the importer or manufacturer of those containers.

UNDP's Experience with Solid Waste Management

As one of Fiji's development partners, UNDP is guided by programmatic interventions contained in the United Nations Development Assistance Framework (UNDAF) and the Multi-Country Programme Document 2008-2012. This resulted from in-country consultations that identified four thematic outcomes that could be supported by UNDP. In the fourth outcome of Sustainable Environmental Management, supporting capacity of environmental services for protection of marine, land and water resources was identified as one of the key outputs. One of the corresponding indicators was that self-sustaining solid waste management systems be established and operational.

UNDP has assisted Kiribati and FSM to establish recycling operations financed through the CDL system during the previous programming cycle. The project that created the Kiribati system was financed through its implementation stage by UNDP and part of the project specification was to produce a model that could be used in other Pacific Island Countries (PICs). To date, this model has been replicated in Kosrae, FSM. Interest has also been expressed from the governments and/or private sectors in Yap (another state of the Federated States of Micronesia), Vanuatu and the Republic of Marshall Islands.

Association with the UNDAF

The United Nations Development Assistance Framework (UNDAF) for the Pacific Subregion 2008 – 2012 documents a Key Outcome for the Pacific as being "the mainstreaming of environmental sustainability and sustainable energy into regional and national policies, planning frameworks and programmes; and Pacific communities sustainably using their environment, natural resources and cultural heritage". The introduction of the CDL is inline with mainstreaming environmental sustainability into national policies. Once the recycling operations begin, this activity will be a key example of how Fijian communities can sustainably use natural resources and will open the minds of Fijians to other options to allow the communities to live sustainable lives.

II. STRATEGY

In compliance with its obligation as a Party to the various international and regional waste agreements (such as the Waigani Convention and the Pacific Regional Waste Strategy), the Fiji Government is actively working towards waste minimisation. The proposed Preparatory Assistance (PA) project will assist with current efforts by raising the profile of solid waste management at the community level.

Location for Pilot Study

Suva City Council (SCC) has been nominated as the location for the pilot study. Ideally a feasibility study would have been undertaken to determine the most suitable location for the pilot study, however due to limited funds being available, the requirement for a detailed assessment, and the desire to undertake the PA phase in a short period of time, this was not possible.

SCC has proven its' commitment to addressing solid waste management issues by hosting a Japan International Cooperation Agency (JICA) volunteer who is specifically working in the solid waste management area. They also have a team of health inspectors who work over the entire SCC area and have indicated that would be able to assist in undertaking a litter survey in the SCC area for this project. SCC is already working with the local community in raising awareness of solid waste management issues and there are a number of youth projects in place for Suva which can be utilised in the project.

It is also noted that JICA is currently conducting a project focussing on the 3Rs (Reduce, Reuse, Return) in the Western Division, primarily in Lautoka City and Nadi Town. Therefore, a decision was made that the Department of Environment / UNDP Project should not be located in these areas to avoid any possible interferences. The information collected during the JICA project may be able to be utilised if the pilot study for this project is successful and the CDL recycling system is expanded to the Western Division.

Strategy

The strategy for the PA project is to evaluate the logistics, costs and feasibility of establishing a recycling project in the Suva City Council area of Fiji. The intention is to propose to the Fiji Government that the CDL would provide the financial and material flows required to operate a comprehensive and sustainable recycling system for Suva and would complement and strengthen the recently introduced Waste Disposal and Recycling Regulations by providing the importers and manufacturers of plastic bottles a financial incentive, as well as being legally bound, to collect their used plastic bottles. The recycling system requires no external financing once established and can be operated as a business under contract to the Government. The project can be used as a pilot study to evaluate the possibility of extending the application of the CDL to other municipalities within Fiji.

The purpose of the PA project is to develop a project document and project implementation / resource mobilisation plan to introduce CDL to Fiji and establish a sustainable recycling system in Suva, Fiji. The project document and implementation / mobilisation plan will be developed based

on the results of an evaluation of the logistics, costs and feasibility of such a project and based on discussions with key partners.

The establishment of a solid waste recycling facility in Suva, Fiji involves the following approach:

- Develop a financially sustainable recycling operation, which in turn provides employment to Fijians, inclusive of women;
- Recover resources from the waste stream and reduce the effort required by Fiji Government to collect and landfill wastes;
- Through privatisation, produce an example of the Private Sector providing public services under contract to the Fiji Government; and
- Reverse the ongoing accumulation of waste in the reefs, sea, beaches and other land areas of the islands of Fiji.

III. ANNUAL WORK PLAN

Year: 2008

EXPECTED OUTPUTS	PLANNED ACTIVITIES		TIMEFRAME	RAME			a	PLANNED BUDGET	
And baseline, indicators including annual targets	List activity results and associated actions	Q1 2008	Q2 2008	Q3 2008	Q4 2008	RESPONSIBLE PARTY	Funding Source	Budget Description	Amount (USD)
Output 1: Container Deposit Legislation project document and project implementation	Container Deposit Legislation project document developed for managing solid waste in Suva, Fiji.								
developed and agreed to by key									
stakenoluers for managing solid waste in Suva, Fiji. Baseline: Profile of solid waste	Recruit a litter survey consultant (Consultant #1) to analyse data from previous waste		×			UNDP Fiji MCO, Department of Environment, Consultant #1 Stiva City	TRAC 1	71300 Local Consultant	14,000
management is very low at the community level but recognised as an	characterisation studies in Fiji and conduct a survey and report on					Council, Fiji School of Medicine, University of			
important issue by Town Councils and Government. Government has	current recyclable material flows in the Suva City Council;					South Pacific			
recently produced Waste Disposal	- Consultant #1 to train Fiji School		×						
requirement for Plastic Bottle Permits	or Medicine students and Suva City Council Health Inspectors to								
and collection and recycling of plastic bottles. Partners and resources exist	assist in conducting litter survey.		>						
ite a solid waste managem	survey which assesses recyclable		<						
project, nowever mere is no coordination of resources to date.	material flows (aluminium cans, PET bottles and containers glass								
Indicator: One project brief, one	bottles and jars, tin cans, lead-acid								
round table to present outcomes of feasibility study to civil society, two	batteries) to existing recycling facilities, landfill or disposed of								
Government	otherwise from residential and								
discuss logistics related to implementation of project, two round	the Suva City Council area;								
tables to identify resource partners	- Consultant #1 to estimate		×	×					
and resources committed in writing by partners by August 2008 in a project	quantities and types of recyclable materials likely available within the								
implementation / resource	Suva municipality, inclusive of litter								
document.	survey results and imports and manufacturing data.								
Targets: Logistics, costs and feasibility of establishing a recycling	- Consultant #1 to report on methodology and results of the		×	×					
project in Suva assessed, based on the Container Deposit Legislation	survey.								
						The state of the s			

PLAN	PLANNED ACTIVITIES		TIMEFRAME	RAME			d	PLANNED BUDGET	
results ar actions	List activity results and associated actions	Q1 2008	Q2 2008	Q3 2008	Q4 2008	RESPONSIBLE PARTY	Funding Source	Budget Description	Amount (USD)
1.2 Design Suitable System - Recruit Solid Waste Manag and Legislation Expert (Cor #2) to research issu establishment of suitable C Fiji and develop a document for the impleme stage;	1.2 Design Suitable System - Recruit Solid Waste Management and Legislation Expert (Consultant #2) to research issues on establishment of suitable CDL for Fiji and develop a project document for the implementation stage;	,	×			UNDP Fiji MCO, Department of Environment, Consultant #2	TRAC 1	71200 International Consultant 71600 Travel 72500 Miscellaneous	17,000
- Consultant #2 to in studies in the Pac relevant for estal recycling system in Fiji; the litter survey being concurrently in Suva;	- Consultant #2 to identify past studies in the Pacific region relevant for establishing a recycling system in Fiji, inclusive of the litter survey being conducted concurrently in Suva;		×					Supplies	
- Consultant #2 to identification can complement strengthen the existing regularining to plastic bottle rand whether a new legisland whether regulations under elegislation is feasible;	- Consultant #2 to identify how CDL can complement and strengthen the existing regulations pertaining to plastic bottle permits and whether a new legislation is regulations under existing legislation is feasible;		×	×					
- Consultant #2 to identify waste materials that can be re-used locally as separate from waste materials to be collected for export and identify possible markets for these materials and shipping and other costs involved;	entify waste be re-used rom waste d for export markets for nipping and		×	×					
- Consultant #2 to identify key partners with existing resources available to utilise for the project;	entify key resources project;	,	×	×					
- Consultant #2 to design recycling collection points for collection of recyclables from communities / businesses, a recycling facility and equipment required (if not already available), and transport from the recycling centre to the port for export;	in recycling ollection of munities / facility and not already it from the e port for		×	×					
- Consultant #2 to determine most manageable process to have a pilot study restricted to one council area.	nine most have a ne council		×	×					

EXPECTED OUTPUTS	PLANNED ACTIVITIES		TIMEFRAME	RAME			<u></u>	PLANNED BUDGET	
And baseline, indicators including annual	List activity results and associated	Q	02	Q3	Q4	RESPONSIBLE PARTY	Funding Source	Budget Description	Amount (USD)
targets	actions	2008	2008	2008	2008				/
	1.3 Develop a Project Proposal Consultant #2 to develop a project brief for the introduction of CDL and establishment of the pilot study system in Suva, if the PA			×		UNDP Fiji MCO, Department of Environment, Consultant #2	TRAC 1	71200 International Consultant 72500 Round	4,000
	inds that the system is feasible; - Consultant #2 to liaise with civil society and Government on the project brief before finalisation;			×				lable Expenses	
	 UNDP to develop project document after PAC and LPAC of project brief. 			×					
	2. Project Implementation / Resource Mobilisation Plan Agreed to by Key Stakeholders								
	2.1 Capacity Building - Consultant #2 to identify the areas in which Suva City Council requires capacity building to ensure effective operation of the system;		×	×		UNDP Fiji MCO, Department of Environment, Consultant #2	TRAC 1	71200 International Consultant	2,000
	- Consultant #2 to assess the resources available to the Department of Environment to determine whether additional resources would be required during Phase II of the project;		×	×					
	- Consultant #2 to identify which Government Department would be responsible for the administration of the 'Recycling Fund';			×					
	2.2 Collaborate with Partners and Develop Project Implementation / Resource Mobilisation Plan					UNDP Fiji MCO, Department of Environment,			
	 Consultant #2 to identify and collaborate with ongoing initiatives on solid waste management and current recycling activities within Fiji. 			×		Consultant #2	TRAC 1	71200 International Consultant 72500 Round Table Expenses	5,000
	 Consultant #2 to identify possible partnerships with local groups for a successful recycling operation; 			×					

	Amount (USD)				1,000	54,000
PLANNED BUDGET	Budget Description				71200 International Consultant	
Ь	Funding Source				TRAC 1	
	RESPONSIBLE PARTY					
	Q4 2008					
TIMEFRAME	Q3 2008	×	×	×	×	
TIME	Q2 2008					
	Q1 2008					
PLANNED ACTIVITIES	List activity results and associated actions	- Consultant #2 to identify types of media available for public awareness program associated with recycling, elements of public awareness campaign, cost of relevant media campaign activities and possible partners for raising public awareness;	- Consultant #2 to identify key partners and convene dialogue to reach an agreement on a resource mobilisation strategy.	- Consultant #2 to develop a Project Implementation / Resource Mobilisation Plan for practical and logistical elements of recycling program, and include feedback from civil society and relevant Fill Government authority in the final proposed strategy, presented to UNDP in their standard format.	2.3 Prepare a Cabinet Paper - Consultant #2 to prepare a Cabinet Paper to brief Parliament on activities being undertaken on the lead up to the introduction of CDL.	
EXPECTED OUTPUTS	And baseline, indicators including annual targets					TOTAL

IV. MANAGEMENT ARRANGEMENTS

Roles and Responsibilities

Establishing an effective project management structure is crucial for the project's success. The project has need for direction, management, control and communication and has been designed according to the following project organisation structure.

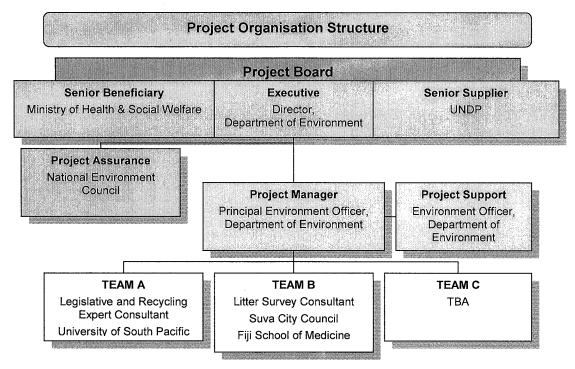


Figure 1: Project Organisation Structure

As explained in Annex 3 and illustrated in Figure 1 above, a Project Board will be responsible for making executive management decisions for the project and will comprise of the Director of the Department of Environment as the Executive to chair the group, the UNDP as Senior Supplier to provide guidance on the technical feasibility of the project, and representatives from the Ministry of Health & Social Welfare as the Senior Beneficiary to ensure the realisation of project benefits from the beneficiaries' viewpoint. This group shall provide guidance to the Project Manager, a Principal Environment Officer of the Department of Environment when needed, including project revisions. Reviews by this group to ensure quality programming is undertaken are to be made at designated decision points during the running of the project, or as necessary when raised by the Project Manager. This group is consulted by the Project Manager for decisions when project tolerances have been exceeded.

The Department of Environment will be the implementing partner for the project and will have responsibility for facilitating project coordination with other relevant departments, associations and organisations in Fiji. The Department of Environment will ensure the timely and effective delivery of project outputs and the proper use of project resources.

The Project Manager will be responsible to the UNDP for the effective implementation of the project. As far as possible, consideration of previous and ongoing projects, studies and reports relating to solid waste management will be considered. Two Consultants will report to the Project Manager, and it is expected that the Legislative and Recycling Expert Consultant will be utilising resources provided by the University of the South Pacific, and the Litter Survey Consultant will be

utilising resources provided by Suva City Council and the Fiji School of Medicine to fulfil their Terms of Reference (ToR). The ToRs for the Consultants are presented in Annex 3.

Financial Arrangements

The Preparatory Assistance (PA) Phase of the Project will be Nationally Executed (NEX) by the National Government of Fiji through the Department of Environment, where the focal point of contact will be the Principal Environment Officer for the Department of Environment. The Department of Environment will:

- Be responsible for the financial control of the project through the NEX modality of UNDP. UNDP will administer the budgetary requirements for the National Government of Fiji;
- Sign-off on all budget and work-plan revisions;
- Work with the project and assume responsibility for entering into necessary work arrangements with other national, state and regional organisations for efficient and effective project implementation;
- Support the project by providing guidance and authority to engage services consistent with the objectives of the project; and
- Receive advances equivalent to the financial needs of the project as indicated in the quarterly work plans provided.

Funds will be released to the Fiji Ministry of Finance at the same time that the Department of Environment will write a memo to the Ministry of Finance advising them of the project that the funds are for. The Ministry of Finance will then issue a Department Warrant and release the funds to the Department of Environment. The Ministry of Finance will be responsible for the initial warrant and disbursement of funds in accordance with the work plan and project document. Further cash advances will be contingent upon timely reporting of expenditure by the Department of Environment to the UNDP Fiji MCO.

V. MONITORING FRAMEWORK AND EVALUATION

In accordance with the programming policies and procedures outlined in the UNDP User Guide, the project will be monitored through the following:

Within the Annual Cycle

- On a quarterly basis, a quality assessment shall record progress towards the completion of key results, based on quality criteria and methods captured in the Quality Management table below.
- An Issue Log shall be activated in Atlas and updated by the Project Manager to facilitate tracking and resolution of potential problems or requests for change.
- Based on the initial risk analysis submitted (see Annex 1), a risk log shall be activated in Atlas and regularly updated by reviewing the external environment that may affect the project implementation.
- Based on the above information recorded in Atlas, a Project Progress Reports (PPR) shall be submitted by the Project Manager to the Project Board through Project Assurance, using the standard report format available in the Executive Snapshot.
- A project lesson-learned log shall be activated and regularly updated to ensure on-going learning and adaptation within the organisation, and to facilitate the preparation of the lessons-learned report at the end of the project.
- A Monitoring Schedule Plan shall be activated in Atlas and updated to track key management actions/events

Annually

- Annual Review Report. An Annual Review Report shall be prepared by the Project Manager and shared with the Project Board and the Outcome Board. As minimum requirement, the Annual Review Report shall consist of the Atlas standard format for the QPR covering the whole year with updated information for each above element of the QPR as well as a summary of results achieved against pre-defined annual targets at the output level.
- Annual Project Review. Based on the above report, an annual project review shall be conducted during the fourth quarter of the year or soon after, to assess the performance of the project and appraise the Annual Work Plan (AWP) for the following year. In the last year, this review will be a final assessment. This review is driven by the Project Board and may involve other stakeholders as required. It shall focus on the extent to which progress is being made towards outputs, and that these remain aligned to appropriate outcomes.

Quality Management for Project Activity Results

OUTPUT 1: Conta	iner Deposit Legis	lation project document and project i to by key stakeholders for managing soli	mplementation / resource d waste in Suva, Fiji
Activity Result 1 (Atlas Activity ID)	CDL Project Docume Suva	ent Developed for Managing Solid Waste in	Start Date: June 2008 End Date: September 2008
Purpose	to design a recycling	tanding of the current situation relating to recy system that would be sustainable in Fiji and on of the recycling system.	yclable material flows in Suva, to develop a project document
Description	Planned actions are collecting backgroun project proposal.	e outlined in the AWP and include conducted information, designing a suitable recyclin	cting a litter survey in Suva, ng system and developing a
Quality Criteria		Quality Method	Date of Assessment
How / with what indica the activity result be m		Means of verification. What method will be used to determine if quality criteria has been met?	When will the assessment of quality be performed?
Representative estin quantities and typ materials likely to recycling.	es of recyclable	Survey size should be shown to be statistically large enough to be representative and imports data should be collected from at least the last year to show seasonal variation.	September 2008
Options for retur assessed to determ achieve highest rate	nine most likely to	Economic feasibility and ease to consumer of each option compared to each other.	September 2008
Equipment recomm and available.	ended is suitable	Equipment information sheets are provided for the recommended equipment that show they can crush and pack the types and volume of containers estimated to be collected. Preference for equipment already being used in Fiji, otherwise transport to Fiji should be shown to be available.	September 2008
Markets identified materials ensure operation.	for export of es sustainable	Calculations to be shown that the value of the packed beverage containers, plus the handling fee, is greater than all associated labour and expense costs to collect, pack and ship the containers.	September 2008
Civil society and go the opportunity to project brief.		A register of people asked to provide feedback should be compiled. Feedback forms should be compiled and filed with project documents.	September 2008
Project Document requirements.	meets UNDP	UNDP to review project brief and provide written comment, also to be filed with the project documents.	September 2008

OUTPUT 1: Cont	tainer Deposit Legis	slation project document and project i	mplementation / resource
Activity Result 2 (Atlas Activity ID)		to by key stakeholders for managing soli- tation / Resource Mobilisation Plan Stakeholders	Start Date: June 2008 End Date: September 2008
Purpose	legislatively managin	vernment of Fiji to recognise areas where c g solid waste, to build the Government's rela currently managing solid waste and to utilise	tions with organisations in the
Description	Planned actions are Suva City Council, resource mobilisation	outlined in the AWP and include capacity bu collaborating with partners and developing plan.	ilding within the Government /g a project implementation /
Quality Criteria		Quality Method	Date of Assessment
How / with what indica the activity result be m		Means of verification. What method will be used to determine if quality criteria has been met?	When will the assessment of quality be performed?
Area for capacity b phase of the proj Government staff id their understanding of solid waste mana and networking skills	ect for Council / lentified to improve of the importance gement, legislation	Project Document outlines capacity building strategy for Council / Government staff.	September 2008
Suggested public av will reach the majori in the areas id encourage them to p	ty of the population entified and will	Research is referred to in the project brief that gives examples of previous campaigns that have been successful and rationale provided why proposed campaign will be effective. Includes using simple local language (preference for Fijian, Hindi, English or all three) with a memorable message and a method to reach the greatest proportion of the population — whether it be radio, newspaper, tv, billboards, Church groups, school education, etc.	September 2008
Mobilisation plan to key partners.	be agreed upon by	Register of key players compiled who receive mobilisation plan for comment. Written feedback to be compiled and filed with project documents. Final plan to be signed by all key partners.	September 2008

VI. LEGAL CONTEXT

The project document shall be the instrument envisaged in the <u>Supplemental Provisions</u> to the Project Document (Standard Agreement on Operational Assistance between The United Nations and the Government of Fiji, dated 30 October 1970), attached hereto.

Consistent with the above Supplemental Provisions, the responsibility for the safety and security of the executing agency and its personnel and property, and of UNDP's property in the executing agency's custody, rests with the executing agency.

The executing agency shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the executing agency's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The executing agency agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

VII. ANNEXES

Annex 1: Risk Analysis

Owner	Government	0
ð	Fiji Gover	ON D
Status Change Date		28 / 05 / 08 Fiji AWP approved and TRAC 1 funding committed to project.
Status	Preparation of project documents and appraisal of the project has been highlighted as a priority to allow the PA project to commence.	Sufficient funding provided for PA project in Fiji AWP. Close monitoring of activities required to avoid cost overruns. Work plan designates costs associated with each activity.
Comments (Impact, Probability, Frequency, Counter Measures)	Impact: Delay in delivery of PA conclusions and resultant delay in commencement of Phase II, if found to be feasible. Possible loss of capital funds if delayed significantly. Probability: At present, Fiji is moving into dry season. Rated 2. Counter Measures: Project should be started ASAP to allow sufficient 'dry season' time to undertake the survey.	Impact: Alternate / additional source of funding will need to be sourced, resulting in a delay in commencement / delivery. Probability: Dependent upon resources committed to by Government and cost of a consultant. Rated 2. Counter Measures: Conservative estimates to be used to prepare budget. Government to commit resources to project and tendering process to determine 'value for money' consultant. Monitor project closely to avoid cost overnuns.
Description	- Inclement weather delays Suva City Council Litter Survey	- UNDP's allocated TRAC funding is insufficient to fund PA project
Date Identified; Author	Project Brief Stage: 21 / 04 / 08	Project Brief Stage: 21 / 04 / 08
Туре	Environmental	Financial
Ω		

QI	Туре	Date Identified; Author	Description	Comments (Impact, Probability, Frequency, Counter Measures)	Status	Status Change Date	Owner
	Operational	Project Brief Stage: 21 / 04 / 08	- Insufficient personnel available within the Department of Environment to implement project	Impact: Delay in delivery of PA project. Probability: Highly likely due to underresourcing within Department. Rated 4. Counter Measures: UNDP to provide sufficient support to Department where appropriate to enable on time delivery of project.	Department is underresourced, however view this as an important project and are willing to commit time to the execution of the project.		Department of Environment UNDP
		Project Brief Stage: 21 / 04 / 08	- Suitable consultant not available to execute project	Impact: Project will have to be delayed to accommodate suitable consultant OR quality of project delivered is compromised. Probability: Would be determined during tendering process, but project execution may differ from that proposed if approval process takes longer than anticipated. Rated 2. Counter Measures: Choose a consultant that is available to execute project when proposed and aid efficient approval of project.	Tenders for consultants have not yet been advertised. Tenders will be finalised once the Project Document has been signed.	28 / 05 / 08 Project brief has been LPAC'd and commented on by Government.	Consultant Department of Environment UNDP
	Organisational	Project Brief Stage: 21 / 04 / 08	- Project not aligned with UNDP requirements for TRAC allocation	Impact: Project does not receive funding to go ahead. Probability: Highly unlikely given that funding has already been designated for project in Action Work Plan (AWP). Rated 1. Counter Measures: Discussions during project formulation with those in authority to designate funds prior to discussions with local organisations.	No longer a risk.	28 / 05 / 08 Project has been PAC'd and Fiji AWP approved.	UNDP

Annex 2: Standard Agreement on Operational Assistance between The United Nations and The Government of Fiji

Annex 3:

Terms of Reference (ToR) <u>Litter Survey Consultant (Consultant #1)</u> <u>"Recyclable Materials Litter Survey in Suva City Council"</u>

Objective:

Establish an understanding of waste material flows in the Suva City Council.

Responsibilities:

- Analyse data from previous waste characterisation studies in Fiji. Collaborate with studies undertaken by University of South Pacific;
- Design and undertake a solid waste characterisation survey in the Suva City Council in order to obtain representative current data on material flows for recyclable materials. The solid waste characterisation shall be limited to recyclable materials comprising aluminium cans, PET bottles and containers, glass bottles and jars, tin cans, and lead-acid batteries. The survey should include estimating the quantities of each type of recyclable material (including subsets of each type of material e.g. the different PET codes) that could be recycled within the Suva City Council area;
- Identify the quantity of recyclable material currently going to landfill versus the quantity being disposed of otherwise (e.g. to recycling centres, as litter, etc) for a specified period of time;
- Ensure the survey includes both residential and commercial / industrial premises;
- Instruct and supervise students from the Fiji School of Medicine and Health Inspectors from the Suva City Council who are available to assist in the collection of information as part of the survey. This may include a one half to full day training workshop. Approximately 10 students from the Fiji School of Medicine and two health inspectors will be available to assist in undertaking the survey;
- Collect import and manufacturing data for the different recyclable materials and analyse for an indication on material flows for recycling. Seasonal variations should be considered;
- Write a report in English outlining the methodology employed during the survey and the
 results of the survey, specifying the quantity of each recyclable material that is disposed of
 per unit of time, which can be extrapolated to estimate quantities disposed of per year.

Duration: Four weeks (20 working days). This allows one week for designing the survey, two weeks for data collection and one week for compiling the report. The consultant should specify if they anticipate that the ToR would be undertaken in less or more time.

Requirement:

- The study involves the consultant being situated in Fiji. If the consultant is based overseas, the consultancy costs should include only one mobilisation cost;
- 5 years of proven practical experience in the field of conducting data collection surveys, with experience in conducting at least two litter surveys:
- Good communication skills and supervisory skills;
- · Fluency in spoken and written English; and
- Consultancy costs to be broken down for tendering process.

Terms of Reference (ToR)

Solid Waste Management and Legislation Expert Consultant (Consultant #2) "Feasibility Study on Managing Solid Waste in Fiji using the Container Deposit Legislation (CDL) System"

Objective:

Evaluate the logistics, costs and feasibility of establishing a recycling project in Fiji, based on CDL, which would:

- Reverse the ongoing accumulation of waste in the reefs, sea, beaches and other land areas of the main islands of Fiji.
- Develop a financially sustainable recycling project that provides employment to the people of Fiji, inclusive of women; and
- Through privatisation, produce a model of the Private Sector providing public services to Fiji.

Responsibilities:

- Identify past studies in the Pacific region relevant for establishing a recycling system in Fiji;
- Identify how CDL can complement and strengthen the existing regulations pertaining to plastic bottle permits, namely the *Environment Management (Waste Disposal and Recycling) Regulations 2007*;
- Determine whether a new legislation is required or whether new regulations under existing legislation is feasible;
- Determine how to restrict the pilot study to the Suva City Council area when beverages can be purchased outside of the Council area and disposed of in the Suva City Council area, or vice versa;
- Identify and collaborate with ongoing initiatives on solid waste management and current recycling activities within Fiji;
- Identify waste materials that can be re-used locally as separate from waste materials to be collected for export;
- Identify possible partnerships with local groups for a successful recycling operation, such as schools, youth and Church groups;
- Identify suitable equipment required for the system and whether it is already available in Fiji
 (i.e. the property of current recycling operators) or whether it would need to be imported.
 Liaise with current recycling operators to determine possibility for partnerships and utilising
 their resources in the system and / or design a new recycling facility;
- Design recycling collection points for collection of recyclables from communities / businesses in close collaboration with the Suva City Council;
- Determine most practicable location for recycling facility to allow transport of crushed and packed recyclable materials to the port for export;
- Identify possible markets for materials collected for recycling and shipping costs to markets identified;
- Look at current recyclable material flows (results of litter survey being conducted concurrently), possible markets for recyclable materials and the costs of operating a recycling system to determine the values for the deposits, refunds and holding fees to make the system sustainable and whether it is indeed feasible;
- Identify types of media available for public awareness program associated with recycling, and cost of relevant media campaign activities;
- Outline elements of public awareness campaign to compliment establishment of recycling operation. Liaise with Government, Councils, Educational Institutions and Non Government Organisations for possible partnerships in raising public awareness;

- Identify the areas in which Suva City Council requires capacity building to ensure effective operation of the system;
- Assess the resources available to the Department of Environment to determine whether additional resources would be required during Phase II of the project;
- Identify which Government Department would administer the Recycling Fund and how this
 position would be funded;
- Develop a Project Implementation / Resource Mobilisation Plan for practical and logistical elements of recycling program. Identify key partners and convene dialogue to reach an agreement on resource mobilisation;
- Develop a Project Brief for the introduction of CDL and establishment of the pilot study system in Suva, if the PA finds that the system is feasible;
- Present outcomes to civil society and relevant Government authority for feedback on proposed strategy as presented in the Project Brief;
- Finalise Project Document for Phase II of the project after receiving comments from the Project Appraisal Committee (PAC) and Local Project Appraisal Committee (LPAC) using UNDP format and inform UNDP on appropriate / possible resource mobilisation strategy (once approved by Fiji Government); and
- Prepare a Cabinet Paper to brief Parliament on activities being undertaken on the lead up to the introduction of the CDL.

Duration: Nine weeks (45 working days). The consultant should specify if they anticipate that the ToR would be undertaken in less or more time.

Requirement:

- Parts of the study involve the consultant being situated in Fiji. If the consultant is based overseas, the consultancy costs should include only one mobilisation cost;
- 10-20 years of proven practical experience in the field of solid waste management, preferably in the Pacific Island Countries;
- Proven practical experience in working with regulations and legislation;
- Good communication skills;
- Fluency in spoken and written English; and
- Consultancy costs to be broken down for tendering process.

Annex 4: Capacity Assessment <u>Definitions for Management Arrangements</u>

Roles and Responsibilities

Establishing an effective project management structure is crucial for the project's success. The project has need for direction, management, control and communication and has been designed according to the following project organisation structure.

<u>Project Board</u>: The Project Board is the group responsible for making, by consensus, management decisions for a project when guidance is required by the Project Manager, including recommendation for UNDP / Implementing Partner approval of project plans and revisions. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance to standards that shall ensure:

- · Development indicators are met;
- Best value for money;
- Fairness;
- Integrity;
- Transparency; and
- Effective international competition.

In case a consensus cannot be reached within the Board, final decision shall rest with the UNDP Programme Manager. In addition, the Project Board plays a critical role in UNDP commissioned project evaluations by quality assuring the evaluation process and products, and using evaluations for performance improvement, accountability and learning. Project reviews by this group are made at designated decision points during the running of the project, or as necessary when raised by the Project Manager. This group is consulted by the Project Manager for decisions when Project Manager's tolerances (normally in terms of time and budget) have been exceeded (flexibility). Based on the approved Annual Work Plan (AWP), the Project Board may review and approve project quarterly plans when required and authorises any major deviation from these agreed quarterly plans. It is the authority that signs off the completion of each quarterly plan as well as authorises the start of the next quarterly plan. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems between the projects and external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities.

This group contains three roles:

<u>Executive</u>: An individual to chair the group, who represents the Government Cooperating Agency, in this case the Director of the Department of Environment. As the Executing Agency, the Department of Environment will have the overall responsibility for project execution and is responsible for project deliverables and accountable to Government and UNDP.

<u>Senior Supplier</u>: An individual or group representing the interests of the parties concerned which provide funding and/or technical expertise to the project. The Senior Supplier's primary function within the Project Board is to provide guidance regarding the technical feasibility of the project and for this project is the UNDP.

<u>Senior Beneficiary</u>: An individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realisation of project results from the perspective of project beneficiaries. The Senior Beneficiary for this project will be representatives from the Ministry of Health & Social Welfare.

The Project Board supports the following roles:

<u>Project Assurance</u>: Project Assurance is the responsibility of each Project Board member; however the Project Assurance role supports the Project Board by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. Project Assurance has to be independent of the Project Manager; therefore, the Project Board cannot delegate any of its assurance responsibilities to the Project Manager. The National Environment Council will provide Project Assurance for this project.

Project Manager: The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Implementing Partner, which for this project will be a Principal Environment Officer with the Department of Environment, within the constraints laid down by the Project Board. The Department of Environment is the government agency responsible for providing technical advice on environmental matters to the National Government of Fiji and is directly responsible for the Government's participation in this project. The Department of Environment is responsible to the Minister of Local Government, Housing, Urban Development and Environment. The Project Manager's prime responsibility is to ensure that the project produces the results (outputs) specified in the project document, to the required standard of quality and within the specified constraints of time and cost. The Department of Environment will be the entity responsible and accountable for managing the project, including the monitoring and evaluation of project interventions, achieving project outputs, and for the effective use of UNDP resources. The Department of Environment may enter into agreements with other organisations or entities to assist in successfully delivering project outputs. The Implementing Partner appoints the Project Manager, who should be different from the Implementing Partner's representative in the Outcome Board. The Implementing Partner may enter into agreements with other organisations or entities to assist in successfully delivering project outputs. Possible Implementing Partners include government institutions, other eligible UN agencies and Inter-governmental organisations (IGOs), UNDP, and eligible NGOs. Eligible NGOs are those that are legally registered in the country where they will be operating. Implementing Partners must be identified based on an assessment of their legal, technical, financial, managerial and administrative capacities that will be needed for the project. In addition, their ability to manage cash must be assessed in accordance with the Harmonised Approach for Cash Transfers (HACT). The most recent capacity assessment (04/06/08) had a total rating of 85%, indicating a high capacity of the Department of Environment to successfully implement the project.

<u>Project Support</u>: The Project Support role provides project administration, management and technical support to the Project Manager as required by the needs of the individual project or Project Manager. It is necessary to keep Project Support and Project Assurance roles separate in order to maintain the independence of Project Assurance. An Environment Officer within the Department of Environment will provide the project support for this project.

<u>Teams</u>: Different teams will be formed during the project to work on and deliver different activities identified above on the Project Annual Work Plan Budget Sheet. The Terms of Reference (TOR) for the two Consultants are included as Annex 3 and these consultants may work in close collaboration with representatives from other organisations such as Suva City Council, the Fiji School of Medicine and the University of the South Pacific.