

Tokelau Waste Composition Stock-take

Trip Report

August 2006



The Waste Stock-take Assessment of Tokelau

Introduction:

One of the three pillars for acquiring sustainable development at any national level is the *environment* – more specifically a healthy environment. It is widely recognized that pollution of the environment is one of the major threats to sustainable development in the Pacific islands and has a direct influence on the quality of people's lives. It has the potential to cause negative impacts on national development activities, including tourism and trade, food supplies, public health and the environment. 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 reusable resource.

Poorly managed wastes can have negative effects on tourism, by detracting from the “Pacific Paradise” image promoted by most PICs, 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.

In addition to land-based activities, the region's coastal and marine resources are threatened by introduced marine species, shipwrecks, marine accidents and spills, ships' waste and antifouling paints on vessels. The trans-boundary nature of much marine pollution requires a coordinated and comprehensive approach to both assessment and control.

Conversely, the benefits from good waste management can include a healthy environment, 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.

Tokelau and waste management

Tokelau is a non-governing territory under the administration of New Zealand and consists of three small coral atolls that lie between latitudes 8 and 10 degrees south and 171 and 173 degrees west in a sea area of some 300,000 square kilometers. These three atolls – *Atafu*, *Nukunonu* and *Fakaofu* – have a combined landmass of about 12 square kilometers and are home to about 1700 people. The central atoll, Nukunonu, lies southeast 92 kilometres from Atafu and 64 kilometres northwest from Fakaofu. Swains Island (Olohega), 200 kilometers south of Fakaofu, traditionally belongs to Tokelau but it is now part of American Samoa. Samoa, the nearest sizeable neighbour, is 480 kilometres to the south.

Each atoll consists of a ribbon of coral *motu* (islets), which vary in length from 90 metres to 6 kilometres, and in width from a few metres to 200 metres. They cover a total land area of 12.7 km² and at no point do they rise higher than five metres above sea level. Therefore, the physical features in Tokelau are very limited indeed, and makes the territory vulnerable to sea level rising caused by the greenhouse effect.

The atolls are composed of calcium carbonate coral reefs, sands and rock. Generally the soil is highly porous and nutrient poor; they have a low humus content and high surface salinity and are highly alkaline. These porous soils have prevented agricultural development beyond a subsistence economy.

Only a few food crops are supported by this infertile and confined to the supply of domestic needs only.

Although a small group of only four atolls with relatively few inhabitants, Tokelau is being subjected to increasing environmental pollution through the unsound management of its waste that continues to see an increase in the non-organic constituent, such as glass bottles, metallic waste and plastics. The unique social, economic and environmental characteristics of Tokelau, such as relative isolation, very limited availability of land space and paucity of human and financial resources, limit the range of possible options for the sound management of waste. Conversely, these same characteristics also allow the country to manage its waste efficiently and effectively if the appropriate management systems and mechanisms are put into place.

Waste management is a serious environmental problem for Tokelau, arguably, more significant than for many other Pacific Island countries and is therefore highlighted as a major issue that needs addressing in the Tokelau Environmental Management Strategy (TEMS, 1995). The areas covered by the TEMS include the pollution of the freshwater lens, pollution of coastal water, solid waste accumulation and hazardous waste and chemicals as well as oil spillage in Tokelauan waters. It is not limited to the disposal of litter.

The Tokelau Environmental Legislation Review of 1993 also highlights the lack of and need for legislation in environmental matters and in particular the need to regulate the importation of non-biodegradable products and packaging.

Purpose of the trip

In 2004, as part of the NZAID-funded Tokelau Waste Management project, a *Framework for Improving the Waste Management System in the Tokelau Islands* was developed in Apia, Samoa by the Tokelau Waste Champions in collaboration with SPREP and was endorsed by the Council for the On-going Government of Tokelau. This Framework was then taken to the three atolls for implementation at the island level.

The aim of the Framework was to assist Tokelau in addressing its current solid waste management issues with a key aspect of the proposal being that the programme is community based, and that most activities are managed at the community level through the establishment of a Community Resource Centre.

This stock-take assessment exercise was designed to undertake an assessment of waste management situation in the country and was undertaken by a team consisting of the following personnel:

- **Mr. Mose Pelasio** – Acting Director of Economic Development, Natural Resources and Environment and Team Leader
- **Dr. Frank Griffin** – Waste Management and Pollution Prevention Adviser, SPREP
- **Mr. Meapelo Maiiai** – Programme Officer, Environment, UNDP, Samoa
- **Mr. Orlando ‘Gecko’ Keil** – West End Company Managing Director, Samoa

The main task of the team was to carry out an assessment of the composition of waste in Tokelau and to further assess the impact of solid waste (including shipwrecks) and then to recommend practical and

sustainable initiatives for waste management on the atolls. The specific duties that were performed during the trip are contained in the Terms of Reference in Annex I.

The atoll visitation programme that was followed is contained in the MV Tokelau Voyage 206 in Annex II.

Result of the stock-take assessment exercise

Tokelau does not have manufacturing economy and as such has to import nearly all of its consumable commodities from overseas, especially through Samoa where the islands only accessible shipping route is available. The commodities that are brought into Tokelau range from farm products such as vegetables and fruits to rice, flour, canned food and drinks to electrical and electronic goods. Most of these items are brought to the atolls in packaging materials such as cardboard boxes, aluminium and metallic tins and plastics, which eventually end up as waste material that the atolls have to deal with.

Waste reduction programme

Currently there are very limited waste reduction programmes in place and/or implemented in Tokelau. There are currently no data available on waste generation rates on each of the three atolls nor are there any data on the quantities of the different types of waste that are generated. The islanders by virtue of their small population sizes and isolation in location and their subsequent limited accessibility to wider range of goods and commodities do not generate waste in big quantities. However, this does not mean that the problem of dealing with waste is not there; there is still a need to put in place a programme that looks at the various aspects of waste reduction on the atolls including the concept of green-purchasing and the importation of the various types of goods that eventually contribute to the waste stream that is generated in Tokelau.

Waste segregation and collection

Although no official waste stream analysis has been conducted, information gathered from the team's discussions with the waste champions and relevant authorities on the three atolls indicate that range of waste material that are being dealt with is not that great. This is probably a contributing factor to why waste is not segregated at source in Fakaoko and Nukunonu where all household waste is placed in drums (Figures 1a, 1b and 1c) provided for by the Village Councils.



Figure 1a



Figure 1b

The pictures (Figures 1a and 1b) show the typical waste collection drums that are used for households to place their waste in Fale and Fenua Fala respectively on Fakaofu. The drums serve a number of households generally number 2 or 3 houses.

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Figure 1c

A typical collection drum used in Nukunonu – generally serving a group of 3 or 4 houses

In Atafu however, waste segregation at source and at the general collection point is happening. Each household has 2 or 3 bags in which segregated waste is placed as shown below in Figure 2a. In the example below, aluminium cans are placed in one bag (Figure 1b) while steel or metallic cans are placed in another (Figure 2c). These bags are then collected by the waste collectors and waste consolidated at a designated place on the island from where they are processed.



Figure 2a



Figure 2b



Figure 2c

Tokelau, like most PICTs has organized collection systems in all three atolls but the frequencies of the collections vary from atoll to atoll.

In Atafu and Fakaofu, the waste is collected twice a week but on different days on each atoll with the collection times varying from day to day due mainly to the availability of the only vehicle on the two atolls. This is because the vehicle is also used by the Village Council (*Taupulega*) for all its other programmed activities on the atoll.

In Nukunonu, the waste collection is not very well coordinated and is happening intermittently and sometimes is done only once a month, usually on a voluntary basis. As with the other two atolls, the collection is carried out using the only vehicle on the atoll and this again competes with all the other programmes of the *Taupulega*.

In Atafu and Nukunonu, the team also visited the hospital to examine how the general and hazardous healthcare wastes were being dealt with. In both cases, it was deduced from discussions with the hospital staff that burning or incineration of the wastes was the most common practice but the effectiveness of the incineration process was questionable. All of the three atolls do not have a proper incinerator and as such, all the burning is done in open-top 200L drums and then the remains placed in

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a hole in the ground (Nukunonu – Figures 3a and 3b) or taken out to sea and dumped there (Atafu – Figure 3c).



Figure 3a



Figure 3b



Figure 3c

In both cases, the hazardous wastes such as used sharps, wound dressings etc are placed in appropriately marked containers or bags and collected separately. However, the general hospital wastes such as paper, used pens, cardboards etc from hospital administrative processes are also burned together with the hazardous waste.

Composting and organic waste

As stated earlier, the atolls are composed of calcium carbonate coral reefs, sands and rock. The soil is highly porous and nutrient poor. The innovative composting programme that is in place on the atolls is somewhat assisting the islanders to grow a few food crops but is generally confined to the supply of domestic needs only.

Although appearing to be uncoordinated, the composting programmes in place on all of the atolls are working well. All organic matter is generally removed from the waste stream and dealt with separately. All waste food peelings, food scraps and other edible materials are generally used as feedstock for the pigs that are housed in pigpens in designated areas on the islands. These are usually located at the end of the islands as shown below in Figures 4a and 4b.



Figure 4a – pigpens in Nukunonu



Figure 4b – pigpens in Fale, Fakaofu

The other organic materials such as leaves, coconut husks etc are collected and placed in private or family banana patches as shown below. This has not only keeps the islands clean but the compost

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resulting from the decaying process is valuable nutrients for the banana plant and is bearing great dividend as shown in Figure 5b.



Figure 5a – Composting activities in Fakaofu



Figure 5b – The result of composting



Figure 5c – Composting in Nukunonu



Figure 5d – Composting in Atafu

Waste Recycling

Waste recycling is a long established practice where waste is converted back to reusable material. In Tokelau, as in many other PICTs, this practice is limited only to a few waste materials, largely driven by the economic value of the recyclable material and other social and technical factors. These materials include aluminium cans and waste (Figures 6a and 6b), glass bottles (Figure 6c) and scrap metal (Figures 6d and 6e).



Figure 6a



Figure 6b



Figure 6c



Figure 6d



Figure 6e

In Tokelau, there are no recycling and re-processing facilities and as such, arrangements have to be put into place and agreements established with the Government of Samoa and the recycling companies in Samoa to assist with the recyclable material. The relative high cost of shipping recyclable materials elsewhere due to the geographical isolation of Tokelau will always be an issue that will need to be taken into account when addressing this issue. Compounding these problems is the small population of Tokelau. Most conventional recycling and processing operations are only viable with a much larger population base. Tokelau's total population of around 1500 people means that it would take quite a long time for any sizeable amount of these recyclable materials to be collected and shipped off to Samoa or elsewhere for the profitable return to be made. This means proper and adequate storage facilities have to be put into place to accumulate these materials.

With the exception of Atafu, all these materials are currently collected but are not properly stored. In the absence of a coordinated support system to deal with these recyclable materials, they are being treated as waste materials and are ending up at the disposal facilities or are being dumped out at sea. In fact a visual inspection of the disposal facilities on Nukunonu and Fakaofu revealed that over 90% of the material that is placed there are aluminium cans and waste, glass bottles, metallic cans, plastics and paper.

Disposal systems and facilities

All the three atolls have designated areas on the islands where the wastes are either assembled and processed for disposal or dumped. In all three atolls also, the packing of waste into 200L drums and taking them out to sea and dumping is still being practised.

In Atafu, the collection and disposal of waste is done in a coordinated manner with the waste being collected regularly and take care of in an efficient manner. As the waste materials are already separated at source, the job of the waste champions is to bring them to the designated collection area and processed.

Most of the recyclable materials like aluminium cans and glass bottles are placed in their respective storage area and kept while the non-biodegradable non-recyclable material are packed into 200L drums, sealed and then take out to sea where they are dumped.

In addition to the communally collected recyclable material, private homes also do their own collecting and storing as shown below in Figures 7a and 7b.

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Figure 7a – Communally collected bottles



Figure 7b – Private bottle collection

In Fakaofu, the waste is collected regularly but it is not separated and all of the waste is ending up at one of four disposal sites: one on Fenua Fala, two on Nukumatau and one on Nukulakia as shown below.



Figure 8a – Fenua Fala



Figure 8b – Site 1 (Nukumatau)

Figure 8c – Site 2 (Nukumatau)



Figure 8d – Nukulakia

As in Atafu, there are some households on Fakaofu and Nukunonu who have taken the initiative to divert some of the recyclable materials from the waste stream by collecting the glass bottles and storing them near their houses. However, aluminium and metallic cans, and plastics still not being stored and are all ending up in the disposal sites around the islands.

In Nukunonu, there are a number of disposal sites on one end of the main island, none of which are managed properly. As the collection is done intermittently and on a voluntary basis, it appears that the disposal of the waste is done in an uncoordinated and unregulated manner as well. There appears to be a common disposal site at the end of the islands where the majority of the waste is disposed of but there are also smaller disposal sites at various places in the same part of the island as shown below in Figures 9a–9f.

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Figure 9a



Figure 9b



Figure 9c



Figure 9d



Figure 9e



Figure 9f

In addition to the six different disposal sites on the island, the *Taupulega* has also commissioned the building of a waste disposal facility on the lagoon side of the island next to the Council building using a sea wall to separate the waste from the sea. It is going to be used to reclaim land from the sea. This facility however is unlined and will have to be managed carefully if it is not to have a negative impact on the lagoon environment and the water lens below the island. The types of waste that are currently being placed in there is a cause of concern as all kinds of waste, including some hazardous waste are being disposed in there as shown below in Figures 9g–9i.



Figure 9g



Figure 9h



Figure 9i

Community Resource Centres

When the Tokelau Community Waste Management proposal was developed for submission to NZAID for consideration in early 2000, one of the major outputs that were highlighted was the establishment of Community Resource Centres (CRCs) on each on the atoll. It was also one of the major foci of the *Framework for Improving the Waste Management System in the Tokelau Islands* when it was put together in 2004.

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The establishment of these centers was seen an integral part for the successful implementation of the Action Plans contained in the Waste Management Framework which included:

- Measures to set up the Community Resource Center (CRC)
- Measures to establish the Community Waste Management Committee and the appointment of membership of the various activity groups on the Island
- Measures to undertake overall awareness-raising activities of the waste issue
- Measures to improve the overall management of waste
- Measures to increase and sustain recycling activities

The main purposes for these centers were that they would become the central focal point on the islands from which the Waste Champions would plan, design, implement and manage their work relating to the waste management activities. They would also serve as the central waste segregating areas (a very similar function to that played by transfer stations in more developed waste management systems) as well as the center where recycling activities would be concentrated. Furthermore, these centers would represent the center for community based education and awareness raising activities.

The CRCs were to be established in designated fenced-off area, preferably with a small office space and a larger education and display area for use by the Waste Champions where their work records would be kept as well as the computers, printers and other important items belonging to the project. A covered area would also be required for baling equipment and would also be desirable for some of the reusable waste materials.

It was very important that these centers were erected or set up as soon as possible so that the Waste Champions could commence conducting their work from there.

It was therefore saddening and disappointing for the team to learn that these CRCs, although erected in two atolls are not operational. This is really affecting the effective implementation of the Action Plans that were developed as part of the 2004 Waste Management Framework.

Nukunonu was the first atoll to complete the CRC building in 2004/2005 (see Figure 10a) and thus were given the can crusher as a result of this but the CRC has not been operational since it was built due mainly to the electricity not been connected to the building to allow the waste champions to carry out their work. After the building was erected, the waste champions did commence their recycling programme by collecting some of the recyclable materials such as aluminium cans (Figure 10b) but due to the non-operation of the can crusher, these have been stored at the CRC. The can crusher, which operates electrically, was brought in to assist with the islands recycling programme to deal with aluminium cans, steel cans and some types of plastics.



Figure 10a



Figure 10b

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A major consequence of the non-operation of the can crusher is that the waste champions have stopped collecting these aluminium cans and these are now ending up in the disposal sites around the islands including the sites next to the Council building. Since the CRC does not have electricity flowing to it, the waste champions have had very little to do in terms of implementing the other Action Plans contained in the Framework and hence the Framework is not being implemented properly in Nukunonu.

The team was informed during its debriefing meeting with the Nukunonu *Taupulega* that they had not supported the waste champions in executing the action plans. It was further advised a waste management team has been put together to look after waste management efforts on the atoll and that the can crusher was going to be relocated to an area near the Council building where there was electricity. The team does not know what will become of the waste champions or the functions of the CRC and thus the fate of the Framework developed in 2004.

In Fakaofu, the CRC is located in a secluded area on Fenua Fale and was completed last year (Figure 11a) but has not been used by the waste champions since. The electricity to the building is connected but it does not have the computers, printers and other important items belonging to the waste management project. A small covered area has also been built outside the CRC and the area around the CRC has been cleared but no recycling activities are being conducted and no recyclable materials are stored there. In fact no waste management activity is being carried out there. All the waste is currently being collected and taken to one of four disposal sites described above.



Figure 11a

The team was not too clear as to the reason why the waste champions were not using the CRC to carry out the activities contained in the waste management Framework.

In Atafu, there is no CRC in place but the team was advised that a designated area has already been identified and the CRC will be built over the next two years to support the waste management activities on the atoll. In the meantime, the waste management activities as outlined earlier will be still carried out as normal.

In the absence of a functional CRC, it is quite difficult to assess how different sectors of waste management activities are being implemented and managed on each of the atolls. This is because the atolls do not have dedicated lead agencies for waste management activities. In the absence of such agencies, the *Taupulegas* do not have a monitoring system to check on how effective or ineffective their waste management plans are being implemented. If the CRCs is operational and supported properly then the *Taupulega* would have a mechanism to monitor the waste situation on the islands.

Education and Awareness programmes

An effective education and awareness programme is one that not only raises the awareness of the issue that is being relayed but also fosters changes in attitude and behaviour in the target audience. Education and awareness activities undertaken as part of regional waste management programmes in the past 5-10 years have largely resulted in the production of numerous resources for formal and non-formal education. In most of these cases, these materials have not reached the target audience and in cases where they have, it has resulted in raising community awareness and understanding of issues related to sustainability. However, these activities were limited in their ability to foster attitude and behaviour change. Many of these education programmes are diversified enough to cover or target the different people involved in the different stages of the waste management cycle.

In Tokelau, there are currently no coordinated education and awareness programmes on any of the three atolls. This is largely due to the fact that there is no island specific waste management plan. The 2004 waste management framework has not been implemented effectively. In that framework, Action Plan 3 was dedicated to *Measures to undertake overall awareness-raising activities of the waste issue* but the planned activities have not been undertaken and as such the state of communication work on the atolls are not known.

This is mainly due to the non-operation of the CRCs as the activities outlined in this particular Action Plan were to have been developed and designed by the waste champions in their offices in the CRCs and using the computers and printers, prepare all the awareness-raising materials.

Capacity Building

Tokelau has a waste management system in place but at the moment most of the components of this system are not operating or managed effectively. These are in a large part due to the capabilities of the personnel in these countries. There is a very limited pool of qualified or appropriately trained people looking after these systems and consequently they are not being effectively operated or managed. This problem is compounded by the regular turnover or removal of trained staff within the relevant agencies at the island level.

In recent times, the issue of Solid Waste Management has been accorded greater attention and recognition regionally by governments of PICTs, but one of the more prominent barriers to realizing effective, efficient and sustainable solid waste management in the region is the limited or lack of capacity existing within national systems, institutions, communities and individuals. Various studies, assessments and reviews have highlighted the different areas of capacity needs and a range of government and donor-funded interventions have been designed and implemented to address these needs.

Due to its political status, Tokelau has not participated in the JICA-SPREP Training Course on Municipal Solid Waste Management (Miyazaki Initiative, 2001-2005). The programme was designed to allow PIC participants to undergo an intensive training course in waste management, demonstration projects (e.g. composting) and the development of guidelines for landfill design, operation and management, and the incremental improvement at existing landfills.

It is hoped that in future training courses, Tokelau would be invited but the funding of their participants would be made through some national capacity building initiative funds.

Policy and legislation

The enormity of proper waste management has been recognised by Government of Tokelau for over a decade now but subsequent policy makers have not been able to put together a coherent working programme or policy to incrementally improve the system on the atolls. Even when a working plan such as the Framework was put together, it has not received the necessary support from the island authorities for its full implementation.

Waste management was highlighted as a major issue that needs addressing in the Tokelau Environmental Management Strategy (TEMS, 1995) with the pollution of the freshwater lens, pollution of coastal water, solid waste accumulation and hazardous waste and chemicals as well as oil spillage in Tokelauan waters highlighted as major areas of concern. The Tokelau Environmental Legislation Review of 1993 also highlighted the lack of and need for legislation in environmental matters and in particular the need to regulate the importation of non-biodegradable products and packaging. To date the recommendations have not been acted upon and the territory remains without appropriate legislation that deal specifically with waste.

Funding requirements and mechanisms

Waste management in the Pacific should ideally be self-sustaining both economically and financially. However, waste management is a costly affair and many countries struggle to sustainably finance their waste management systems. It involves the funding of:

- Physical waste management – collection of waste, conversion of waste (recovery, reuse, recycling) and ultimately, disposal of waste and its oversight;
- Institutional waste management – establishment and implementation of rules and processes by which to manage waste – creation and enforcement of legislation, monitoring, coordination by different agencies, education and so on.

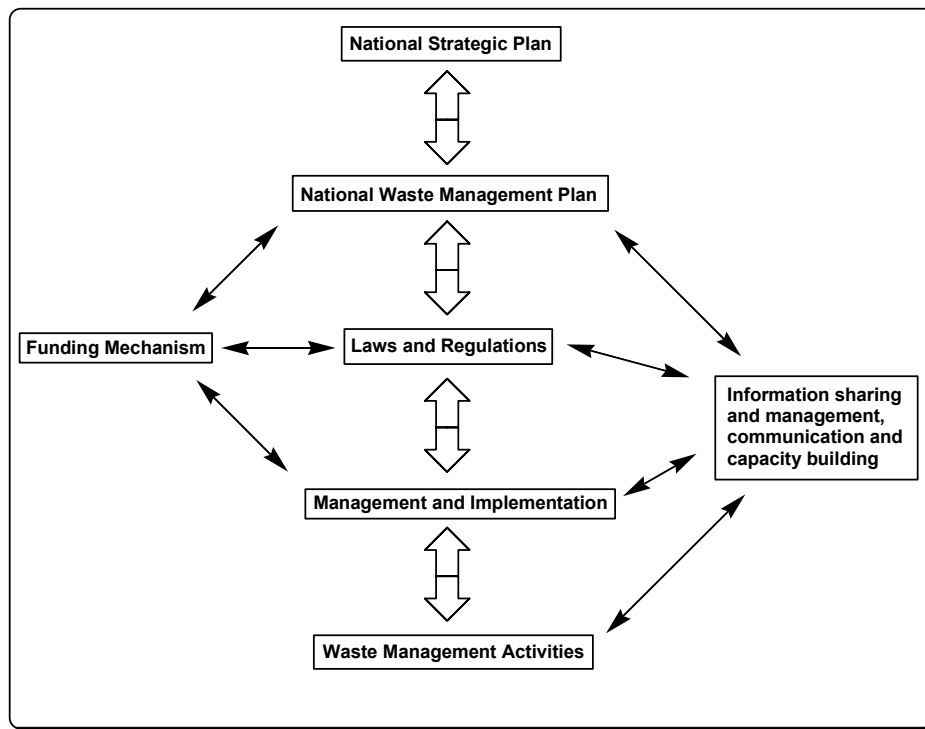
Tokelau like many other countries in the region do not have all the resources to have a high tech system to take care of its waste but the smallness of the population and the islands allow them to manage their waste better than others, even with the limited amount of resource that it has. The current system is heavily subsidised by the Government and due to the limited amount of resources that need to be shared among the development activities, is not equipped very well.

It is therefore important that an appropriate funding system or mechanism for Tokelau is put in place to allow all the various aspects of waste management on the islands to be operating properly. A way forward would be to study what other countries in the region are doing and then to adapt to the Tokelau situation and implement the funding policy.

Recently in Kiribati, for example, the national government introduced new legislation to impose tariffs on the import of containers for soft drinks and used lead acid batteries. The revenue raised is financially maintaining recycling systems while at the same time acting as a deterrent or disincentive for the demand of plastic packaging. Similarly there have been a number of moves to enable local communities to better manage their own waste. For instance, the community-based waste management projects that are implemented under the International Waters Project at SPREP works in a number of countries to establish processes for local communities to learn to minimise waste through composting including composting toilets and recycling.

Recommendations:

Tokelau's national waste management plan should be developed from and be consistent with the national strategic or development plan. As shown below, the starting point is a national strategic plan out of which the national waste management plan is developed, which in turn is supported by relevant laws and regulations. The policy should then be implemented through an appropriate management system. Depending on the policy, supported by appropriate legislation, implementation will include waste segregation and minimization activities, collection and disposal, planning and performance monitoring, impact monitoring programmes, and cross cutting issues such as funding mechanisms, integrated communication and capacity building. In all the components cross cutting issues should be considered and incorporated where appropriate.



Future Work:

Waste management has been considered one of the main environmental issues of concern in Tokelau for over a decade now and if this issue is going to be effectively addressed, then all the various levels of Government in the country and at the island level have to recognise the role they play in addressing it. This also includes the issue of ownership of the national waste management plan that needs to be implemented both at the national and island level. In order for this to happen, the national waste management plan needs to be properly understood by everyone in the country.

While there is an existing *Framework for Improving the Waste Management System in the Tokelau Islands* in place, its implementation at both the national and island level has not been executed as planned. The outcomes of this trip have shown that the *Framework* is not well known by the authorities at both the national and island levels and as such, it is not “owned” by the locals and the roles that each individual and group is not well understood. If Tokelau is going to properly address

this most pressing of environmental issues, then all levels of the society have to be part of the implementation of the *Framework*. The steps would include:

- The development and implementation of an integrated communication strategy country wide to outline the purpose of the waste management plan and the roles of all concerned in the implementation of the plan
- The Government needs to take the national waste management plan across the country and work closely with the authorities at the island level in developing an implementation plan for the activities contained in the plan
- The islands need to take ownership of the plan and make the activities contained in the plan relevant or specific to their needs on the islands with respect to waste management.
- There is a great need for a lead entity at the island level for waste management and this should be established quickly. In the *Framework* that was developed in 2004, the Community Resource Centres (CRCs) were seen as these entities but these have not been adequately supported in any of the islands. Consequently, part of the Government's challenge would be to build on what is already in place and establish such an entity at the island level with the support of the island level authorities. An operational CRC or something similar is seen as a critical instrument in the proper implementation of the waste management plan and a step forward in dealing with the waste that is generated in the country in an environmentally sound manner.
- Recycling is a critical component of the waste management system in Tokelau but this component needs the support of external players including the recycling companies in Samoa and ultimately the Government of Samoa. The Government of Tokelau will need to establish a mutually beneficial agreement with the Government of Samoa to help this component of the waste management system.

Annex I

**DEPARTMENT OF ECONOMIC DEVELOPMENT, NATURAL RESOURCES AND
ENVIRONMENT**

Waste Management Stock-take team visit to Tokelau

TERMS OF REFERENCE

The Waste Management Stock-take will be undertaken by the team as appointed by Tokelau and will be led by the (Acting) Director of Economic Development, Natural Resources and Environment (EDNR&E).

The main task of the team will be to carry out an assessment of the composition of waste in Tokelau and the impact of solid waste (including ship wrecks) and recommend practical and sustainable initiatives for waste management.

In particular, the team will:

1. Assess the situation/composition of waste on each atoll of Tokelau

- 1.1 In consultation with the Village General Managers the team will establish a schedule for assessment programme for each atoll
- 1.2 In close collaboration with the Village General Managers and the village ‘waste champions’ carry out waste assessment of each atoll
- 1.3 Give verbal summary of situation to each *Taupulega* before departure from that atoll
- 1.4 Analyse the shipping manifests to Tokelau
- 1.5 Refer to various reports of waste management systems in Tokelau and around the region; and
- 1.6 Write a report of the waste situation for Tokelau, giving the category of waste and recommendations for management

2. Provide full report on waste situation for Tokelau

- 2.1 Draft report on waste situation based on assessment, giving the categories of waste, options for management, analysis of financial/environmental, costs of each option and recommend the most practical and sustainable systems for management including the possibility of exporting recyclable solid waste and other waste to Samoa
- 2.2 Present and discuss draft report with (Acting) Director of EDNR&E and agree on amendments and additions for final report
- 2.3 Prepare and present final report to (Acting) Director of EDNR&E
- 2.4 Provide assistance in implementing the recommendations made in the final report.

3. Assist in implementation of recommendations taken up for elimination of solid waste

- 3.1 The report is to include clear and practical steps for implementation of the recommendations.

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Annex II

Scheduled travel plan for MV Tokelau Voyage 206

To: All Hon. Faipule
Captain MV Tokelau
All Pulemuku
All Directors
All Village GMs

Village Transport Officer's
Manager's Co-op Stores
GM TeleTok
All Village Clerks
GM PowerTok

Date: 27th July 2006

Subject: **SAILING SCHEDULE MV TOKELAU, VOYAGE 206**

Date	Time	Depart	Arrive
Wed 02/08	0900hrs	Apia	
Thur 03/08	1300hrs 1800hrs	Fakaofu	Fakaofu
Fri 04/08	0700hrs 180hrs	Nukunonu	Nukunonu
Sat 05/08	0700hrs		Atafu
Sun 06/08	1800hrs	Atafu	
Mon 07/08	0700hrs <i>1800hrs</i>	<i>Fakaofu</i>	Fakaofu
<i>Tue 08/08</i>	<i>0700hrs</i> <i>1000hrs</i> <i>1600hrs</i> <i>1800hrs</i>	<i>Atafu</i> <i>Nukunonu</i>	<i>Atafu</i> <i>Nukunonu</i>
Wed 09/08	0700hrs 1000hrs	Fakaofu	Fakaofu
Thur 10/08	1200hrs		Apia

Department of Transport