



**THE 2ND ANNUAL REVIEW OF
THE IMPLEMENTATION STATUS OF**

**TUVALU'S INTEGRATED WASTE POLICY
AND ACTION PLAN 2017- 2026**

MAY 2019

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1.0. INTRODUCTION

1.1. Background Information

This report presents the outcome of the 2nd Review of Tuvalu's Integrated Waste Policy Action Plan 2017-2026, providing the updates on the implementation status of the Policy during the period January 2018 – March 2019. This Review follows the 1st Review conducted in 2018 for the period June 2016 to December 2017¹.

The Tuvalu Integrated Waste Policy and Action Plan 2017 – 2026 was endorsed by the Government in 2016 as the main national policy framework to guide the management of waste in Tuvalu. It sets down the Long-term Vision of having “A Cleaner and Healthier Tuvalu for today and future generations” with the following objectives and goals:

- Goal 1: Strengthened institutional systems to address gaps in waste management
- Goal 2: The stakeholders fully understand the merits of proper waste management and co-share the responsibility of managing waste
- Goal 3: Establish strong partnerships between the public and the private sector in the delivery of waste services
- Goal 4: Delivered waste services follow best practice and cost-effective approach tailored to local conditions with continuous improvement.
- Goal 5: Enhanced capacity of waste practitioners
- Goal 6: Waste activity outcomes are reported and disseminated to relevant stakeholders

The Policy goals are aligned with the National Strategy for Sustainable Development (TK III) goals in relation to United National Sustainable Development Goals. A five years` Action Plan 2017 - 2021 was developed to guide the implementation of the policy during the first five years of the 10 years Policy. With the funding support of 6.8 million Euro from the European Union under the European Development Fund (EDF) 11 cycle and support from the Tuvalu government, the policy received the financial backing to translate into actions the scheduled activities under the Action Plan 2017 - 2021.

Under the Policy monitoring and reporting mechanisms in place², the progress of the policy implementation must be reported on a monthly basis for the Department of Waste Management's record. The monthly progresses are documented and reported on a quarterly basis during the Waste Management Monitoring Committee meetings³. These quarterly reports are reflected in the annual reports to be presented to the government through the National Development Coordination Committee (DCC), which consists of government agencies Permanent Secretaries. In satisfying the reporting obligations in

¹ Performance Review of the Waste Sector in Tuvalu, 2018

² Tuvalu Integrated Waste Management Policy and Action Plan 2017-2026. Summarized in Figure 1.

³ Currently known as the Waste Management Levy Committee

line with European Union requirement under the EFDII, an annual review of the progress in implementing the Tuvalu National Waste Policy and Action Plan has to be conducted and presented to the Government Development Coordination Committee (DCC), which consists of all the government Permanent Secretaries from line ministries. Any comments and inputs by DCC members must be incorporated in the final report before sending to EFDII Office in Suva, Fiji. This 2nd Review Report for the period January 2018 - March 2019, follows the same process.

1.2. Purpose and objectives of the Review

The primary purpose of this review is to monitor and check the progress of the Policy implementation with special focus on the achievements of the Policy Goals. As part of this review, it is crucial to identify and recognize any new issues and challenges that may have implications to the implementation of the Policy due to changing social, economic, political, regional and international environment. This is important in ensuring that the policy goals are still relevant for any real future impact as well as the designed measures will still be effective and sustainable in the long term. Lastly, in line with the progress made, some goals may have already achieved, while others are not progressing well due to some constraints and challenges that necessitate appropriate mitigation measures. These circumstances may demand for appropriate adjustments to set the base for the policy implementation in the remaining years of the policy.

1.3. Review Approaches and Methodologies

This review task follows the established review process as summarized and illustrated below.

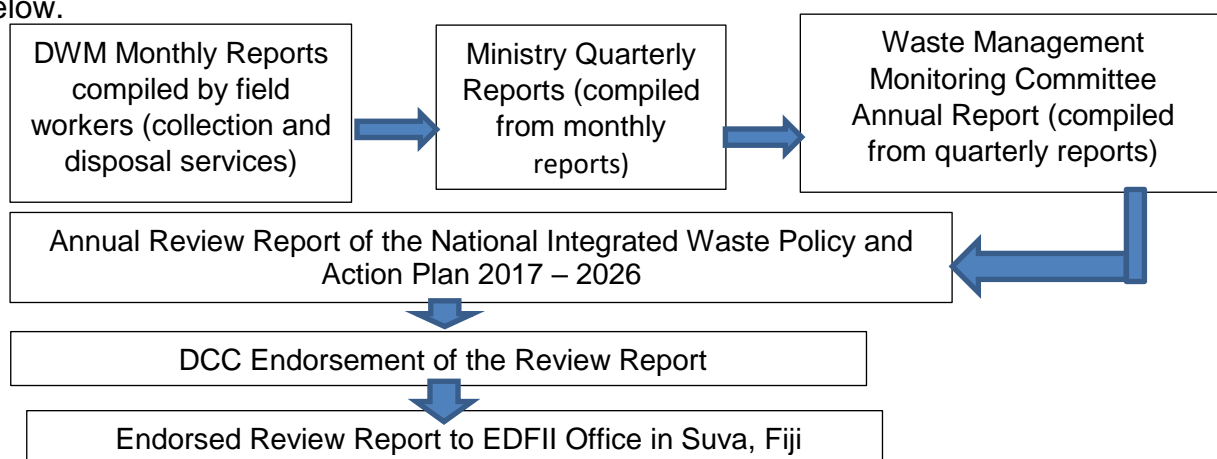


Figure 1. Current Monitoring and Review Process of the Policy Implementation

The collection of information to verify and confirm the progress made with the policy goals and activities necessitated the implementation of the following undertakings.

a). Desktop Review

- The 1st Review Report was studied to identify and establish the base of this 2nd Review in line with the amendments and changes made to the Original Policy and Action Plan 2017 – 2026 document.
- The reporting process as summarized in Figure 1 was verified and confirmed with the Department of Waste Management. The reports were obtained and analysed to identify the progress and achievements made, including associated issues and challenges.

b). Consultation Focus and Objectives

As an important aspect of this review, a number of consultation workshops and meetings were conducted with the different stakeholders of the Policy focussing on the following key points:

- Status of the Policy activities they are responsible for based on the Action Plan 2017- 2021 with specific focus on the activities scheduled for the 2nd year (January 2018 – March 2019).
- Challenges and constraints affecting their progress.
- Any change to the political, social and economic environment at the local, national, regional and international levels, which may have implications to their activities.
- Are the Policy goals and activities still relevant to the country?
- Any emerging or existing waste issue under the policy which require immediate attention and priority mitigation measures.
- Are there any indications of any impact of the Policy since its enforcement?

c). Consulted Stakeholders during the Review Process

- **Key Government Implementing Agencies - DWM and Kaupule (29/4/19 – 2/5/19)⁴**

DWM and Kaupule are the official designated waste management agencies under the Waste Management Act 2017 and consequently have legal obligations to the implementation of the Act and the Policy. Apart from the points highlighted above, the progress of the activities was verified and confirmed from DWM staff who are directly responsible with the implementation of scheduled policy activities.

⁴ Refer Annex 3 for the Names of Staff.

- **Supporting Government Agencies – 3 / 5/ 2019⁵ (9am – 2pm).**

A separate consultation workshop was conducted for the supporting government and non-government agencies. The same points highlighted above were discussed. These government agencies are involved directly or indirectly in the implementation of the Policy and thus their inputs are very important for the purposes of this review.

- **Communities: Leaders of the Communities - 7/5/2019 (9am – 1pm).⁶**

The inputs from the communities are indispensable in confirming the policy relevance, effectiveness and impact on the people. They know well about the impacts of this Policy at the community level including some emerging waste issues that are affecting the communities, which are not captured or reflected well in the policy.

- **Private Sector: Businesses, companies and individuals - 7/5/2019: 2pm – 5pm).⁷**

Lastly are the members of the private sector and non-government agencies. Their supports are vital for the implementation of many proposed government initiatives and developments for the improvement of waste management in the country. The partnership between the private and public sectors are vital for any country's economic development.

c). Information Analysis

The provided inputs and comments from the consultation meetings were analysed under the following key areas as further discussed in section 2:

- **Current Progresses and Achievements**

This refers to the progress of the policy goals with special focus on the scheduled activities for implementation during the review period January 2018 – March 2019 (2nd Year), including activities deferred from the first 1st year period June 2017 – Dec 2018 in line with the first review outcome.

- **Challenges and Mitigation Measures**

These are the issues and problems that had affected or continue to have future implications to the progress of the Policy implementation. This requires the refinement of the Policy Action Plan.

⁵ Refer Annex 4 for the List of Participants to this Group Consultation.

⁶ Refer Annex 5 for the List of Participants to this Group Consultation.

⁷ Refer Annex 6 for the List of Participants to this Group Consultation.

- **Current Priority Waste Issues.**

This refers to waste issues raised during public consultation, which require immediate actions and recognition due to the current conditions and changing political, economic and social environment and priorities at the national, regional and international levels. These may have implications to the implementation of the Policy and must be considered. These waste issues may have already covered in the Policy, but not adequately captured with the nature of the activities planned under the Policy. These issues are presented and further discussed in section 2.3.

2.0. OUTCOME OF THE REVIEW

2.1. Current Progresses and Achievements.

This section summarizes the progresses and achievements made based on the provided information and inputs from DWM and key supporting stakeholders.

Table 1: Progress of Goal 1.

ACTIVITY	SCHEDULE					STATUS	PROGRESS MADE UP TO MARCH 2019
Goal 1: Strengthened institutional systems to address gaps in waste management							
1. Develop and implement new organisational structure and review remunerations including external technical assistance to provide support and build the capacity of DWM						Achieved	a). Organizational structure developed b). 21 New Positions in the process of recruitment Positions include officers and workers in the outer islands. (refer list of new positions and status of recruitment. A regular two weeks advertisement following by interview, assess and selection
2. Review existing waste-related legislation and merge into one Act, to include non-acceptable practices that are harmful to the environment and human health.						Achieved	a). The Waste Management Act 2017 is now enforced. The Act is the main principal waste management law and legal framework governing all waste related developments in Tuvalu.
3. Develop specific regulations to support strict enforcement of the legislation						Achieved	a). Litter and Waste Control Regulations 2017 endorsed by cabinet b). Developed two Draft Regulations <ul style="list-style-type: none"> • Banning of Single Use Plastics • Waste Levy Deposit. Completed public consultations for inputs from key stakeholders and members of the public.
4. Investigate impacts of WWII wrecks and explore measures for its removal						In progress.	The Department of Environment has submitted to the US Embassy in Fiji a request to assist on this activity. This activity has been rescheduled to be implemented

							in the 5 th year and thus should have more time to make some positive progress
5. Lease of land for extension of the Funafuti Landfill and undertake impact assessments for land reclamation, if required.						Partly achieved	<p>a). MHARD and Funafuti Native Land Trust Board met to discuss the Funafuti dumpsite extension</p> <p>b). AG's and members of the FNLB were assigned to develop a LoA in relation to the extension</p> <p>c). Cabinet approved a New lease rate (3,000 to 3,500 AUD). The landowners have been advised and yet to receive a confirmation from individual landowners as the Department pressing towards an agreement with individual landowners.</p>
6. Impose charges/levy for certain types of hazardous wastes and imported materials through a regulation and based on recommendations by the Import Waste Levy Committee.						Partly Achieved	<p>a). The Draft Waste Levy Deposit Regulation covers the potential goods with potential hazardous materials and substances:</p> <ul style="list-style-type: none"> • Refrigerators • Washing machines • TVs • Computers / Laptops • Printers • Vehicles • Motorbikes • Lead and Acid Batteries
7. Regulate importation of goods to ensure reasonable length of lifespan						In Progress	<p>a) Discussion with the Department of Health and Custom through the Waste Management Committee for enforcing the available provision under their Acts to prolong the lifespan of goods.</p> <p>b) Discussion also with Price control and trade office for meeting with shops for options to consider when their products are within a month from the expiry dates. E.g. Special sale at reduced price or donation.</p>

8. Investigate and implement options for sustainable financing mechanisms to sustain delivery of proper waste services including cost benefit analysis, e.g. CDL, pre-paid bag system, etc.						Partly achieved	<p>a). A Feasibility Study was conducted and options were identified as potential user pay systems for Tuvalu. E.g. Prepaid Bag system, Bin Hire system and Waste tipping fee.</p> <p>b). A Feasibility Study was conducted, which provided the basis for the development of the Draft Waste Levy Regulation</p>
9. Allocate reasonable budget for waste services by relevant departments.						Achieved	DWM annual budget has increased every year with a forecast 100% increase by 2020 (Tuvalu Government National Budget 2018).

EVALUATION OF GOAL 1 ACHIEVEMENT (based on the set KPIs)

1. New organisational structure for the whole sector including the outer islands are endorsed and implemented: **partly achieved**
 - Have a new organizational structure.
 - 21 new positions with confirmed salaries and wages confirmed,
 - Recruitment process is currently underway.
2. At least 1 waste regulation and 1 waste policy passed and enforced – **partly achieved**
 - Litter Control Regulation endorsed.
 - Waste Levy Deposit Regulation is in the final process for cabinet approval
 - Single Use Plastic Import Prohibition Regulation is in the process for Cabinet review
3. Each outer island to pass and enforce waste by-laws based on the waste regulation – **partly achieved**
 - 6 out of 8 islands including Funafuti already have waste by-laws. Nukufetau and Funafuti have developed Draft By-Law but waiting for settling of some outstanding issues.
4. At least 5 agreements on land lease -partly **achieved**
 - All land lease extensions for outer island have been surveyed and yet to finalise through a signing agreement with landowners. The cabinet has endorsed a new land lease rate of \$3,000 - \$3,500, but the different landowners have yet to agree on the new lease rate.
5. At least 1 sustainable financing mechanism successfully implemented – **not achieved**.
6. 1 regulation on import waste levy passed and enforced – **partly achieved**
 - Draft Regulation almost finalized for cabinet approval
7. Increased budget allocation of at least 2.5% secured every year for waste management from the 2016 baseline – **achieved**.

- The Department of Waste Management (DWM) budget for 2018 and 2019 increased by more than 2.5%

Table 2: Current Progress of Goal 2.

Goal 2: The stakeholders fully understand the merits of proper waste management and co-share the responsibility of managing waste						
10. Public Awareness Program involving communities and schools through radio, workshops, posters, training, website, etc. on all waste service areas in Tuvaluan language						<p><u>Achieved</u> and on going</p> <p>a). Produced and conducted numerous programmes targeting schools, communities, prison, cleaners, etc.</p> <ul style="list-style-type: none"> • Posters and pamphlets printed and distributed. • Fortnight radio programmes constantly conducted • Facebook regular update with information
11. Integrate waste management in the school's curriculum – Clean Schools Programme						<p><u>Achieved</u> This activity is on going</p> <p>it's part of the School curriculum of pre-schools and primary schools</p>
12. Provide incentives for recycling, e.g. handicraft, junkyard business, etc. to women and youth groups and other community groups						<p>No progress</p> <p>Yet to develop some ideas on some what to do on this particular activity.</p>
13. Conduct activities or events which are co-implemented with stakeholders.						<p>Achieved and on going</p> <ul style="list-style-type: none"> • On-going cleaning up campaign on a weekly and monthly basis where all agencies involved. • Daily litter cleaning by the Prisoners of the main government administration area. • Women groups in the country are supporting the government single use plastic initiative by producing alternatives products.

EVALUATION OF GOAL 2 ACHIEVEMENT (based on set KPIs)

1. Top three bad public behaviours identified (e.g. burning of wastes, public littering, dumping in lagoon), and a gender sensitive public awareness programme to change behaviour planned – **not achieved.**
 - List of offenders have been recorded by DWM based on the investigations by the New Enforcement Officer for prosecution.
 - The outcome of the first court cases may serve as a warning to the members of the public and this can have an impact for some real long-term change of attitude towards
 - littering, illegal dumping and burning.
2. Key sites presenting examples of poor community behaviour audited to provide measurable baseline data – **partly achieved** (captured during the waste baseline assessment in 2016 and follow up Waste Surveys in 2017);
3. At least 1 gender sensitive public awareness programme weekly – **Achieved.**
 - On-going awareness campaigns have been conducted by the Awareness Officer in Funafuti and the Outer Islands focussing at schools and the communities.
4. At least 5 recipients of incentives in a year – **not achieved**
5. At least 2 national activities co-implemented successfully with stakeholders in a year –**achieved and is an ongoing commitment;**
6. Regular monitoring of key sites to assess effectiveness of the awareness programmes on community awareness and behaviour – **not achieved.**

Table 3: Current Progress of Goal 3

Goal 3: Establish strong partnerships between the public and the private sector in the delivery of waste services Implementation							
14. Establish waste industry schemes which will involve private businesses heavily – privatisation of some waste services.						In progress. This activity is scheduled for the 5 th year of the Action Plan	a). Meetings conducted with businesses and individuals discussing the formation of a Waste Management Association with the goal of exploring future opportunities for engaging in recycling operations and the delivery of waste collection and disposal services.
15. Develop recycling networks.						In Progress	a). The Waste Management and Recyclers Association will be part of the Regional Network of recyclers. It will collaborate with the Recyclers and Waste Management Associations in Samoa, Vanuatu and Solomon Islands.
16. Incorporate waste management plan in						In progress	a). Discussions had been made with the Department of

<p>the permitting process for businesses, projects and international contracts with emphasis on management of bulky wastes and hazardous wastes.</p>							<p>Environment for the enforcement of appropriate provisions under the Environment Impact Assessment Regulation, which require any new businesses or development projects to make arrangement for the management of its generated waste</p>
<p>17. Acquire handling and storage equipment to facilitate shipping of recycled materials</p>						<p>Partly achieved</p>	<p>a). A total of 24 Intermediate Bulk containers (IBC)⁸ containers were procured for Used Lubricating Oil (ULO) in 2017 & 2018. b). Co-financing the procurement of 1 empty container currently used for e-waste storage. c). Submitted Tenders from Overseas Companies for the Supplying of Equipment will be closed on the 29th May. These equipment and machineries are for the rehabilitation of all dumpsites including Funafuti main disposal site.</p>
<p>18. Develop and implement a system with importers and transporters on the back loading of recycled materials off the island.</p>						<p>In progress</p>	<p>a). Negotiations with Marine Department concerning the possibility towards the shipping of recycled materials from outer islands still undertaking b). This will be one of the tasks of the New Waste Management and Recyclers Association, which consists of importers, the Shipping Agent, the new recycler and other businesses. c) The Marine development is planning to import a barge for the shipment of construction materials to the outer islands, which can also be used to transport recyclable waste from the outer islands.</p>

⁸ Size of 1000+Litres capacity

EVALUATION OF GOAL 3 ACHIEVEMENTS (based on set KPIs).

1. Roadmap of improved PPP developed – **partly achieved** (A Waste Management and Recyclers Association is going through the legal setup process). Acting Executive Members (President, Deputy President and Secretary) are working with DWM to finalize the Draft Association`s Constitution. The Association will develop a strategic plan to promote the private sectors involvement in the future.
2. At least 1 business proposal approved and maintained in a year –**achieved**.
 - One recycling operation application was submitted and just approved.
3. At least 1 recycling business established and maintained. – **achieved**.
 - One Recycler licence business has been issued and commenced operations
4. Tuvalu has access to a functioning recycling regional network – **partly achieved**
 - The new Waste Management and Recyclers Association is in the process of joining Samoa, Solomon and Vanuatu for sharing of information.
5. System of back loading of recycled wastes is established and operating well – **not achieved**
6. Waste management planning is incorporated in infrastructure project approval system – **partly achieved**.
 - Incorporated in the Waste Management Act 2017
 - Also incorporate in the Environment Impact Assessment procedures under the Department of Environment for all development projects including major constructions involving overseas companies.

Table 4: Current Progress of Goal 4

Goal 4: Delivered waste services follow best practice and cost-effective approach tailored to local conditions with continuous improvement						
19. Investigate and implement options of efficient waste containment and collection of wastes						Partly achieved and on going a). As part of the Waste User Pay Feasibility Study, investigation was made on the different methods of containing waste – prepaid bags, new plastic bins. b). Reviewed recommendations on the waste storage and collection improvement from the Waste Survey 2017 for options to consider. c). Transfer Station to ensure the facilitation of recycled materials. d). Revised collection Timetable for Funafuti.
20. Undertake a time and motion study to update existing collection service.						Achieved a). Already conducted Time and Motion Study during the Waste Survey 2017. Another survey is scheduled in the 5 th year of the Action Plan

21. Maintain an inventory and develop and implement waste infrastructure and maintenance plan for all waste facilities and equipment.						Achieved and on going	<p>a). Constant equipment maintenance for all DWM equipment on Funafuti and Outer Islands</p> <p>b). Inventory of equipment and spare parts</p>
22. Develop a waste asset management plan						In Progress	<p>a). This task is part of the recruited Procurement Officer TORs to develop.</p>
23. Acquire well-designed equipment and facility appropriate for particular waste activity and type of wastes.						In Progress	<p>a). The Transfer Station in Funafuti is yet to be fully completed for recyclable waste processing to commence. Electricity is connected, but water supply is yet to be provided.</p> <p>b). Supporting equipment and machineries are still under the procurement process including the construction of the needed DWM Office to oversee the daily operation of this facility. Submitted tenders for heavy equipment and machineries are evaluated for the selection of the successful bidders.</p> <p>b). 24 IBC Plastic containers already procured under the GEFPAS ULO Project coordinated by SPREP for Used Lubricating Oil storage and shipment to Fiji.</p> <p>c). Identifying under EFD (French Funded Project) and PACWASTE PLUS Projects the supporting equipment and resources for healthcare waste, Disaster Waste, etc.</p>
24. Provide and enforce use of PPEs.						In Progress and on going	<p>a). Regular procurement of DWM PPE's annually</p> <p>b). Re-echo training on the basic use of PPEs procured.</p> <p>c). Workers are enforced to use during the performance of their duties</p>

25. Set up a transfer station and recycling facility – trash palace in Funafuti and Vaitupu and adopt new recycling and waste minimisation technologies					Partly achieved	<p>a), Transfer Facility building in Funafuti is completed with water connection works to be completed.</p> <p>b). Transfer Facility for Vaitupu is proposed under the PRIF Recycling Hub Report.</p>
26. Actively implement the 3R + return programme for inorganic and dry wastes such as cans, glass, and plastic as well as paper including segregation of wastes at source and in the transfer stations and designated area in the disposal sites					Partly achieved	<p>a). Separate collection of bulky and hazardous waste is on-going once a week for Funafuti. They are stored in containers for future shipment and treatment.</p> <p>b). Finalising the Waste Levy Deposit Regulation, which covers the recovery, collection, processing of cans, PET bottles, white goods, cars, etc.</p> <p>c). Finalising the Single Use Plastic Import Prohibition, which will prevent the entry of shopping bags and other plastic items.</p>
27. Actively implement the 3R + return programme for organic and wet wastes such as green wastes and piggery wastes either through community-based (using traditional means) or larger-scale composting programme in Funafuti and in the outer islands.					Partly achieved and ongoing	<p>a). Separate collection of green waste is on-going for two times a week. The collected green waste is shredded and the generated materials are sold to the Taiwan Vegetable garden in Funafuti. This is also gradually introduced to the outer islands.</p>
28. Implement composting of mulch with piggery waste in conjunction with pig growers					In progress	<p>a). A Dry litter pilot project for Funafuti under the Reef to Ridge Project looks at the use of piggery and green waste to produce the black soil for gardening</p>
29. Rehabilitate and operate the existing Funafuti dumpsite or construct new engineered landfill with proper operational procedures (manual).					In progress	<p>a). A Conceptual Rehabilitation Plan is developed with detailed design to be finalized later.</p> <p>b). A Training was conducted for the workers on the proposed rehabilitation method.</p>

						<p>c). A Draft Waste Landfill Operation Manual is developed based on the proposed Waste Landfill System.</p> <p>d). The construction works will begin once the proper heavy equipment arrive. The same equipment will be used for the maintenance of the site in the long term.</p>
30. Investigate suitability of existing disposal sites in the outer islands					Achieved	<p>a). Already conducted for all the outer islands. Based on the outcome of the study, all the sites are not suitable for waste disposal sites because of their close location to the sea and porous sand. A conceptual design was developed for all the outer islands to follow to improve the current situation.</p>
31. Improve the operation and security of the outer island dumpsites (fencing, burying, pushing and compacting)					In progress	<p>a). Four islands completed their dumpsite fences</p> <p>b). Delivery of fence materials for the remaining three islands is completed.</p> <p>c). Procurement of Outer Island security house materials have been tendered for suppliers</p>
32. Provide equipment sheds, storage facilities and workers' washing facilities in the outer islands					In progress	<p>a). Four Outer Island Tractor sheds materials have been finalised for tendering</p> <p>b). Approved budget for DWM 2019 reflected that hazardous waste shed will be built for all islands. Proposals for procurement of materials have been submitted to CPU.</p>
33. Prepare a disaster waste management plan based on the Vulnerability Reduction Plan and endorse its incorporation in the overall Disaster Response Plan, including acquisition of proper equipment and funding allocation.					In Progress	<p>a). Discussions had been made between DWM and National Disaster Management Agency in Tuvalu for the development of a National Disaster Waste Management Plan.</p> <p>b). DWM Acting Director attended a Training on the development of the Regional DWM Guideline conducted in Samoa in October 2018. This</p>

							will be launched during the SPREP Meeting in September 2019. It will provide guidance to the development of countries DWM Plans
34. Design and implement a public ant-littering programme (clean-ups and provision of public litter bins as options)						Achieved and on going	<p>a). Ongoing public and ministries cleaning campaigns</p> <p>b). Assigned plot to each ministry and youth, religious groups</p> <p>c). New collection bins have been set up alongside the main road on Funafuti</p>
35. Undertake assessments of stockpiles of hazardous wastes in all the islands						In Progress	<p>a). Chemical Training completed</p> <p>b). PacWaste Project survey for asbestos and healthcare waste completed for Funafuti only.</p> <p>c). Used Lubricating Oil is regularly shipped to Fiji and the information are recorded.</p>
36. Develop and implement systems and provide infrastructure and facilities to properly manage hazardous wastes (chemicals, healthcare, asbestos, e-wastes, etc.), i.e. handling, storage, treatment and disposal						In Progress	<p>a). Received 16 new storage containers for Used Lubricant Oil under the (GEFPAS) Project</p> <p>b). New Hazardous waste storage facility materials for all Islands have been tendered for suppliers,</p> <p>c). A 22-foot container procured under the co-finance of the DWM and IT Department specifically for e-waste storage. Now already filled with E-waste.</p>
37. Investigate the feasibility of a liquid waste management programme including collection, storage and disposal.						In Progress	<p>a). Collection service is provided by the Department of Public Works.</p> <p>b). Building code covers specifications for the construction of septic tanks.</p> <p>c). Exploring some disposal and treatment systems.</p>
<u>EVALUATION OF GOAL 4 ACHIEVEMENTS</u> (based on the set KPIs)							
1. Waste facilities and equipment are functioning well 70% of the time – achieved							

2. 1 Detailed infrastructure management and maintenance plan developed and implemented –**achieved** (developed by the Mechanic Engineer).
3. Occupational and Public Health and Safety incidents are reduced by 50% - **achieved**
4. 100% coverage of collection in the main island and at least 80% coverage of collection in the outer islands – **achieved**
 - Based on the waste assessment in 2016 to check the status of waste management and improvements made lately based on recommendations from the outcome of that assessment.
5. Waste generation rate is controlled – **not achieved**.
 - Need a follow up households and commercial waste survey to assess any latest change.
6. 20% recycling rate is achieved after 5 years – **to be evaluated at the end of the Policy and Action Plan 2017 – 2021**.
7. Compost sold increased by at least 5% each year – **achieved**
8. 1 national landfill rehabilitated – **partly achieved** (construction works were put on hold because of heavy equipment breakdown. Works will continue once the new heavy equipment arrive).
9. All outer island disposal sites improved – **partly achieved** (Fencing works for more than 3 sites had been completed. Nanumea disposal site has been improved).
10. 1 national transfer station in Funafuti and 1 transfer station in the biggest island of Vaitupu established – **partly achieved** (one for Funafuti is yet to be completed)
11. Collection, storage and transport of hazardous wastes comply with international protocols – **partly achieved**
 - Used Oil is collected and shipped to Fiji in line with the Waigani and Basel Convention on the Transboundary movement of Hazardous Waste.
 - Department of Environment is also leading national effort for Tuvalu to sign other Waste Conventions – Basel Convention, Minamata Convention, etc.
12. At least one hazardous waste storage facility established – **not achieved**
13. At least 1 container of hazardous wastes exported overseas –**not achieved**
14. At least 1 pilot project on piggery waste implemented - **achieved** (Under the Reef to Ridge Project).
15. Liquid waste management plan developed –**not achieved**

Table 5: Current Progress of Goal 5.						
Goal 5: Enhanced capacity of waste practitioners						
38. Assess training needs for the waste and relevant sectors for all the islands.						Achieved and on going a). Training need for all islands have been identified
39. Implement national learning programmes through trainings, peer tutoring and other informal mentoring approaches such as re-echo training programmes after attendance to regional and international trainings.						In progress a). Re-echo trainings conducted for DWM administration and field officers quarterly
40. Explore and participate in information exchange programmes with other countries within and outside the region, i.e. South-south cooperation, twinning arrangements, et						Achieved and on going a). Waste Staff attended training and workshops in the region and other countries. Also attended important international meetings and conference overseas. b). Staff regularly engaged in Regional Consultation workshops and meetings including Steering Committees meetings for various Waste Projects.

EVALUATION OF GOAL 5 ACHIEVEMENTS (based on the set KPIs)

- At least 2 current technical staff have undergone long-term training on waste management or relevant field – **partly achieved**
 - DWM Director is undertaking a Postgraduate Programme in Environment Management 2018 – 2020 at the University of the South Pacific in Fiji.
- All technical staff has undergone short-term training on various aspects of waste management – **partly achieved**
 - 4 out of the current 8 technical staff have undergone short term trainings.
 - In line with the government policy, the other current 4 staff are not entitled for overseas training since they are contracted staff. Only full or temporary staff are entitled.
- All field workers and relevant Kaupule staff have undergone in-country trainings and refresher courses conducted at least once a year – **not achieved.**
 - Has not been any in-country training during this period for all the workers.
- At least 1 participant in regional cooperation and exchange programmes in a year – **achieved.**
 - The Acting Director attended a Regional Workshop and Training in Samoa in October on Disaster Waste Management.

5. At least one national training is conducted in a year – **not achieved**
6. A capacity development plan is developed – **not achieved**
7. Established system on proper handover of responsibilities of departing staff– **achieved**.
 - As observed in the past until the time of this review, this has been an on-going practice by DWM.
8. Staff in management positions receives training in program and business management to assist their capacity to make appropriate HR and fiscal decisions – **not achieved** (trainings to be recommended in the Capacity Building Plan).

Table 6: Current Progress of Goal 6.

Goal 6: Waste activity outcomes are reported and disseminated to relevant stakeholders						
41. Undertake a baseline survey of existing waste conditions and services including inventory of imported goods.					Achieved	a) Baseline survey completed covering all the eight islands of Tuvalu ⁹
42. Regular collection of data through standard methods.					Achieved and on going	b) Daily collection for Funafuti (Mon – Fri) and 15 hours weekly collection for all outer islands. c) Basic excel system data to store all collected data from waste collection d) New revised collection Timetable
43. Update country waste profiles					In Progress and on going	a) Discussed a Waste Management Profile Template to be used to provide brief information on Tuvalu Waste Management key information based on the results of recent waste assessment and surveys in Tuvalu.

⁹ Tuvalu Waste Survey, 2017

44. Create a multi-stakeholder steering committee and establish internal procedures for running the committee						Achieved and on going	<p>a). A Waste Levy Committee is in place consisting of all the key government agencies and non-government agencies for the development of waste levies to support waste management.</p> <p>b). There is also a Used Lubricating Oil Committee specifically for the management of Used Oil.</p> <p>Both committees meet on a regular basis.</p>
45. Create Waste Sub-Committees in the Outer Island						In progress	<p>a). Consultations with Island Kaupules is planned to discuss the proposed Sub-committees.</p> <p>b). Draft Terms of Reference for the Sub-Committees is developed.</p>
46. Dissemination of outcomes through media and government channel to ensure wider coverage of information						In progress	<p>a). Constant news feed to Tuvalu Media Corporation and Government of Tuvalu Media outlet</p>
47. Undertake regular reporting to the Cabinet and stakeholders						Achieved and ongoing	<p>a). Cabinet papers for waste related issues and matters are provided.</p> <p>b). Quarterly and Annual Reports are developed and shared with key stakeholders.</p> <p>c). Information are also provided through the established waste committees.</p>

EVALUATION OF GOAL 6 ACHIEVEMENTS (based on the set KPIs)

1. A data management system is established with proper training on data collection, processing and reporting – **achieved**
 - A Data management system known as Tuvalu Waste Information System (TuWIS) has been developed and used to input, store and process waste information.
2. Waste data collected and recorded daily – **achieved.**
 - Fieldworkers (collection and disposal operations) in all the islands use the standard waste recording forms to fill on a daily basis to monitor the collected and disposal waste operations.

3. Daily data reported monthly – **not achieved**.
 - While the daily data is recorded, any monthly reporting is only required when needed for a specific purpose but not on a monthly basis.
4. Quarterly data compiled - **achieved**;
 - Quality reports are provided in line with the requirements of the Policy reporting mechanisms. This includes any gathered waste information and data.
5. Annual report completed -**achieved**;
6. Established monitoring committee is operational - **achieved**
7. Quarterly meetings conducted – **achieved**
8. Reporting framework developed and implemented –**achieved**
9. DWM report on waste revenue versus expenditure prepared annually –**achieved**.

2.2. Discussions and Key Observations of the Policy`s Implementation

Goal 1: Strengthened institutional systems to address gaps in waste Management

This goal is still valid and relevant. With the current progress made on the schedule activities implementation, there is a high probability of achieving this goal in the absence of future major political, social and economic changes in Tuvalu. The following are some of the key achievements and progress noted during this review.

a). Supporting Organizational Structure

DWM`s capacity is strengthened with the recruitment of 21 new positions to support the national implementation of the policy. During the time of this review, four new technical waste staff had already been recruited or appointed (Procurement Officer, Database Staff, Enforcement Officer, Convention Officer). The interview processes for the other positions are completed and the successful candidates will be commencing soon - Recycling Facility Supervisor, 7 Assistant Operations Officer for the outer islands, 7 Disposal Sites Security Officers for the outer islands.

b). Legal Supporting Arrangements

The official procedures for the development of waste regulations are challenging and unavoidable depending on the nature of the legal activity. Some of the legal arrangements require pre-assessments to be conducted to provide the technical framework, which guide the development of the supporting legal mechanisms and arrangements. The needed public consultations as part of the process is also challenging given the isolated location of the eight islands and transportation difficulties. While the overall process is time consuming, it gives some positive indications of the level of compliance in maintaining accountability and transparency by the government. This is in accordance with the Policy`s guiding principles.

(i). Endorsed Waste Management (Litter and Waste Control) Regulations

2018.

This regulation has been endorsed by cabinet in 2018 and DWM has commenced preparations for its enforcement. Warning letters have been issued to a number of offenders for corrective actions to take within a specified number of days. Failure to respond as requested will result to court actions. Given the challenging nature of the enforcement responsibilities under DWM, there is a need for special training for DWM staff by the Attorney General Office on the prosecution process.

(ii). Draft Waste Management Levy Deposit Regulation 2018.

This regulation is in its final preparation stage following a series of public consultation workshops and meetings. The development process encountered some delays due to the required Feasibility Study to confirm the technical and economic aspects of the proposed system. As an outcome of the Feasibility Study, a conceptual and technical framework of the system was developed to guide the development of the necessary supporting legal mechanisms and arrangements.

(iii). Draft Single Use Plastics Import Prohibition Regulation 2018

This regulation is a special directive from Cabinet and it is in its final preparation stage after intensive public consultations in the country. The regulation prohibits the importation of any PET bottle below 1.5L size, single use plastic shopping bags, straws, plastic and styrofoams food packing containers and cups and other plastic items. Tuvalu will join other Pacific Islands like the Republic of Marshall Islands, Vanuatu and Samoa in taking concrete actions to control plastics impacts to the marine and terrestrial environment. With the upcoming Pacific Island Forum (PIF) Leaders meeting in Tuvalu in August 2019, the government will make effort to endorse this regulation before the PIF Leaders meeting as a symbol of Tuvalu's support to the Pacific Island Forum Leaders vision of a Blue Pacific. This includes the protection of the Pacific Ocean and its marine resources from plastics pollution.

(iv). Six Outer Islands Waste By-Laws

At the local and island level, there are six out of eight Islands' Waste By-Laws already approved, providing legal power to the Islands Kaupule to introduce waste collection and disposal fees, fines for littering and illegal dumping and other waste management aspects. Nukufetau and Funafuti islands have some remaining issues to be settled before their by-laws are finalized.

(v). Waigani Convention for the management of Hazardous Waste

Tuvalu has now ratified the Waigani Convention as a regional version of the Basel Convention for the Transboundary movement of hazardous waste. This is a crucial and timely development for the continuation of the Used Lubricating Oil shipment to Fiji for treatment and final disposal. This is also important for Used Lead and Acid Batteries for future shipment under the proposed recycling development to be supported by the Waste Levy system once it is approved.

c). Assessing and exploring future waste financing options

A number of waste assessments were conducted to identify future options for the sustainable management of waste in Tuvalu. While two studies had already been completed, the others are still under on-going discussion with the other supporting agencies and partners.

(i). Waste Levy Deposit Feasibility Study

This study is completed and the outcome has been used as the basis of the Waste Levy Deposit Regulation. The findings confirm the practical and economic feasibility of the proposed waste levy system for implementation. The system is aligned with the existing custom processes for import duties, but the collected waste levies have to be channelled directly to a special recycling fund, but not under the usual consolidated public fund. This ensures the continuing availability of the funds to support the proposed recycling system. The fund should only be utilized for the approved uses, which form the main basis of the system. However, after some follow up on-going discussions between DWM and the Ministry of Finance, it was decided for the collected waste levies to be paid under DWM's annual budget. Based on past experiences of similar waste levy system in other Pacific islands, there may be some problems in keeping the system running undisturbed as well as keeping the records of deposits made with the proposed arrangements. However, DWM has indicated potential review in the future if such situation arises. There is also concern on the requirement under the EU budget support (variable tranche disbursement), where a dedicated waste levy budget line should be created in the sector budget.

The system promotes the recovery, collection and proper treatment including recycling of end of life vehicles, end of life motorbikes, used white goods and electrical appliances, used lead and acid batteries, empty cans and plastic bottles, used lubricating oil, etc. The proposed Tuvalu waste levy system is a combination of the Container Deposit System (CDS)¹⁰, the Advanced Recycling Fee (ARF)¹¹ and special Product Tax for waste management purposes.

(ii). User-pay Options Feasibility Study

This study is completed and it assessed the different user-pay options for charging households, businesses and organizations. The different systems being investigated include the prepaid rubbish bag, bin hire, waste sticker, flat rate households and businesses monthly fee through electricity or property rates and tipping fees at the waste disposal sites. The outcome of the study recommends the use of the prepaid bag system as the most affordable and convenient way for people. This system has been operated in the neighbouring country of Kiribati for more than 10 years. Tuvalu and Kiribati have similar economic, social and environmental conditions. For this reason, similar result is highly anticipated in Tuvalu if the system is approved and implemented. Under this prepaid bag system, the costs of the collection and disposal of waste are embedded in the cost of the rubbish bags.

¹⁰ This system is supported by special Container Deposit Legislations (CDL). Currently operating in Palau, FSM, Kiribati and Fiji.

¹¹ ARF is more suitable for electronic appliances, vehicles and other non-container packed goods.

(iii). Piggery Waste to Energy

Discussions are on-going among DWM, Funafuti Kaupule and the University of Newcastle on a proposal to put in place a system for the piggery waste in Funafuti. The system will improve the management of many small piggery farms at one central location for the collection of the piggery waste for the generation of energy. Because of the technical aspects of the proposed system and its application to Tuvalu, it requires a Feasibility Study to confirm the technical and economic viability of the system.

d). Existing Coordination Mechanisms and Arrangements

The review noted the following existing mechanisms and arrangements, which maintain the good overall coordination of the Policy implementation. These mechanisms effectively promote collaboration between DWM and other government agencies as key stakeholders of the Policy.

(i). Waste Levy Committee

This special waste committee was established specially to explore potential waste levies that can be introduced and applied to Tuvalu conditions. The current proposed Waste Levy Regulation is an initiative of this special committee. This special committee has representatives of DWM, Treasury, Customs, Department of Environment, etc.). The committee has been meeting regularly to review the Draft Waste Regulation and the outcome of the Waste Levy Feasibility Study for needed refinement of the Draft Waste Levy Deposit Regulation.

(ii). Used Lubricating Oil Committee

This committee was set up as a requirement of the past Used Lubricating Oil Regional Project that was implemented and coordinated by SPREP. DWM has maintained the existence of this committee although this regional initiative ended some years ago. The committee meets regularly to discuss all matters pertaining to Used Lubricating Oil.

(iii). Waste Management Coordinating Committee (WMCC).

This is the overall coordinating committee, which is required under the Policy review and monitoring mechanisms and it consists almost all of the government and non-government agencies.

(iv). Development Coordinating Committee (DCC)

DCC which consists of all government agencies Permanent Secretaries is the main government committee that reviews and approves any proposed waste management initiatives including annual reports. Any further approval beyond the DCC authority is referred to cabinet for approval. The Waste Regulations for the proposed waste management initiatives including this Review Report all follow the same process.

e). Financial Support

The government's commitment to improve waste management in the country is shown with the increasing allocation of supporting budget to DWM and the inclusion of a special budget for the Department of Health to support waste related activities. While other key

agencies have yet to provide specific budget allocations for key waste streams, they are responsible for, there are indications of the provided support as discussed below:

(i). Department of Waste Management (DWM).

Based on the 2018 Government Budget Report, the annual budget allocation for DWM has been increasing for the past two years and will continue until 2020. Table 1, shows an increase from Aus\$264,17 in 2016 to Aus\$306,151 in 2017 and to Aus\$482,780 in 2018. By the year 2020, the budget will increase by 100%.

Table 7: DWM`s Annual Budget 2016 - 2020¹²

2016	2017	2018	2019	2020
\$264,17	\$306,151	\$482,780	\$493,844	\$504, 685

(ii). Department of Health (DoH).

The new budget line has been included under the Department of Health`s budget in 2018 about \$10,000 for the operation of the Healthcare Incineration Facility. This is a great commitment by the Department of Health to gradually absorb the operational costs needed to properly manage the generated healthcare waste in line with appropriate international practices.

(iii). Department of Works (DoW).

While no specific waste budget line is specified under DoW`s annual budget 2018, the Department is providing a collection service for sewage and sludge from septic tanks. With the new building codes, which will require proper septic tanks construction, the demand for this service will increase in the future. DoW has contributed in the clearing of the bulky waste along the Funafuti roadsides and their disposal at the Funafuti landfill during preparations for some high-level visits from the Pacific island countries. DoW heavy equipment has also provided the needed maintenance at the waste landfill at the time since DWM heavy equipment and machineries are smaller and cannot cope with the sizes of the bulky waste. DoW and DWM have been always collaborating on this area when DWM needs such support.

(iv). Department of Environment (DoE).

The Department of Environment also does not have a specified waste budget line but has been sharing with DWM the costs of the following activities:

- Public consultation costs for the Single Use Plastic Bags Prohibition Draft Regulation.
- Educational materials and public awareness costs for the Single Use Plastic Bags Prohibition Draft Regulation. E.g. Posters, etc.
- Coastal waters monitoring including the testing of the surrounding lagoon at the Funafuti Waste Landfill under the Reef to Ridge Project.

¹² Government of Tuvalu National Budget, 2018.

(v). Other Government Agencies

There are good indications of the contribution from all the government agencies in the maintenance of cleanliness in the country through on-going special public servants waste clearing activities (6-8 events conducted a year). During these official special campaigns, all government agencies have to share the cost by releasing all their employees to participate in a full day campaign including the use of their equipment if needed (vehicles and heavy equipment). These coordinated waste management related operations have contributed a lot not only in maintaining cleanliness in Funafuti island, but also an effective approach in promoting public awareness, support and active participation. The budget support for these events are not highlighted under the government agencies annual budgets.

Goal 2: The stakeholders fully understand the merits of proper waste Management and co- share the responsibility of managing waste

This goal is still relevant to the achievement of the overall vision of the Policy and is likely to achieve at the end of this Policy implementation period. Changing people`s attitude is a challenge and can take time to realize a real impact. Having the appropriate waste management systems and practices for waste storage, collection, recycling and final disposal can influence changes to people`s attitude. This can go along with public awareness and enforcement to facilitate the needed change of behaviour. The following key developments and progresses are noted under Goal 2:

a). Community educational workshops and seminars

There has been an on-going series of community educational programmes and activities implemented by DWM. The designated Waste Education and Awareness Officer is responsible for the planning, coordinating and implementing of educational and awareness programmes including workshops and seminars at the community level. At the time of this review, this officer was in the outer islands since April as part of his on-going community public awareness activities.

b). On-going radio programmes by DWM in collaboration with the Media.

This is one of the educational and public awareness tools used by DWM to deliver its messages to members of the public. A weekly to fortnightly radio programmes are implemented on different waste management areas. The discussion and explanation of the endorsed Waste Management Regulation (Litter and Waste Control), 2018, the proposed new Single Use Plastics Import Prohibition Regulation and the Waste Levy Deposit Regulation seem to dominate the radio programmes in recent months.

c). On-going production of educational materials

This review mission noted some colourful posters for the Single use plastics ban awareness produced by the Department of Environment. DWM is also planning to

produce educational materials including posters for the promotion of awareness and enforcement of the Waste Management (Litter and Waste Control) Regulations 2018, knowledge and understanding on hazardous waste (Asbestos, etc.) and the proposed Waste Levy System once it is approved.

d). Integrating waste management in the School curriculum.

The primary school curriculum has included waste management in its curriculum and improvements are in progress since it is a new programme. On-going preparations are made for extending the programme to the secondary school curriculum.

e). Co-shared Activities and Events with other groups and agencies.

Under the current government initiative to ban the importation of single use plastics, DWM and DoE are collaborating with the Women`s groups in exploring and providing alternative items for people to use such as clothing shopping bags, coconut woven packing baskets and other locally made products.

The Police Department has a daily programme for the prisoners to every morning to conduct litter collection within the main Funafuti Government administration and residential area. This helps to maintain this important government central administration area`s cleanliness.

The coordinated waste cleaning activity for all government agencies on a weekly or monthly basis is a great example of a collective and multi-sectoral approach in dealing with the waste problems in Tuvalu and must be maintained in the future.

Goal 3: Establish strong partnership between the public and private sector in the delivery of waste services implementation

This goal is still valid, relevant and likely to achieve at the end of the 10 years duration of the Policy. Tuvalu is a small country and therefore has a small private sector, which is mostly driven by few shops and supermarkets. The achievement of this goal for PPP¹³ in the area of waste management depends on the availability of supporting systems and mechanisms that create a business-friendly environment for PPP to exist. The following progresses are noted during this review, which form the basis for PPP in waste management in Tuvalu in the future.

a). Framework for Waste Management PPP

The promotion of the Private Sector is one of the underlined objectives of the government under the National Development Strategic Plan ¹⁴ and the creation of the appropriate platforms with supporting systems and mechanisms are necessary for future

¹³ Public Private Partnership

progress. The review noted the commencement of good initiatives by DWM in promoting PPP as discussed below:

(i). Waste Recyclers and Waste Management Association in Tuvalu

Under the coordination and initiative of DWM, a Waste Management and Recyclers association consisting of shops, supermarkets, mechanic workshops, importers and a recycler is currently through the legal setup process. An Acting Executive Team has been appointed and a draft constitution was developed for the members to finalize. The main objectives of the association are to promote and create opportunities for the private sector's participation in waste management; explore financial support for potential successful initiatives driven by the private sector; equip the members with the appropriate skills and knowledge on waste management and promote appropriate waste management practices for the management of waste at their businesses activities in line with the Policy. The Association members as businesses should walk the talk by demonstrating appropriate waste management practices at their own businesses through appropriate storage, collection and disposal practices. Tuvalu's Recyclers and Waste Management Association (TRWMA) is the 4th association in the Pacific Island Countries following Samoa, Solomon Islands and Vanuatu and will receive similar regional and international benefits to what other associations received on - specialized training opportunities, exposure to international related waste management meetings and conferences, funding opportunities and future partnership with the government waste management initiatives, programmes, etc.

(ii). Potential Partnership opportunities with the Government through DWM Initiatives.

• ***Waste Levy Deposit – Recycling Scheme***

DWM has already explored options through feasibility studies for a recycling system to be supported by a waste levy deposit system. If the regulation is endorsed soon, this system will require the support of the private sector through the participation of existing shops, supermarkets as well as importers and local suppliers. For the efficient and on-going recovery and collection of empty cans, glass and plastic bottles on a daily basis, these businesses can become authorized collection points for people to bring these waste items and get paid with the regulated refund amount. At the end of the month when DWM Transfer Station is opened, DWM can collect the recovered piles of waste items from these businesses and reimbursed these businesses based on the number of waste items recovered. The actual arrangements will be finalized when the draft regulation is endorsed by Cabinet. The system operates like the existing system for empty beer glass bottles in Fiji and Samoa, where customers can return their glass bottles to the shops and get the refund or a good of the same value in return. The use of existing businesses reduces operational costs to the system making it viable in the long run. It also keeps the system running on a daily basis although the DWM Transfer station is proposed to open only at the end of the month to receive the recovered waste for processing, packing and export.

- ***Operation of the DWM Recycling Facility***

There is potential for the private sector to run DWM's Recycling Facility in the future if there is proven capacity. DWM under current plan will operate the facility for few years to fully understand the system and at the same time making the necessary improvement before handing over to the private sector.

- ***Waste Collection initiatives***

Based on the outcome of the User-pay Options Feasibility Study conducted by DWM, there is potential for the participation of the private sector in the future if the proposed Prepaid Bag system is considered and approved. For the system to sustainably run, a local supplier for the rubbish bags has to be assigned under the Tendering System. The local supplier will sell the bags (with the incorporated waste fees and profit margin) at its shops as well as distributing the bags to other shops for easier access by members of the public.

Secondly, there is also chance for the private sector to be involved in the collection of waste in the long run. This will effectively reduce collection costs to DWM and improves competitiveness if a number of local operators are involved in the delivery of the waste collection services.

b). Existing Public Private Partnership.

There are few current PPP initiatives in Tuvalu with hope to improve under the new platform established with the setup of the Waste Management and Recycles Association.

- ***Production of Alternative Products to Proposed Banned Plastic Items.***

Businesses, non-government organizations and individuals under the Single Use Plastics Ban initiative are working together to provide alternative products like clothing bags, paper bags and straws, cardboard food containers, coconut or pandanus baskets, etc. Women groups in the country are actively playing an important role through their woven handicrafts to support this government initiative.

- ***Shipment of Used Lubricating Oil to Fiji***

This important partnership between DWM and the Pacific Energy Company provides the on-going management of Used Lubricating Oil in Tuvalu. About 40 Litres of Used Lubricating Oil are shipped to Fiji for use in a Cement Factory on an annual basis. This type of Extended Producers Responsibility (EPR) scheme is crucial for Tuvalu in the management of the problematic waste and all effort must be made to maintain it and create similar initiatives in the future.

Goal 4: Delivered waste services follow best practice and cost effective approach tailored to local conditions with continuous improvement

This goal is still valid and relevant and likely to achieve at the end of the Policy implementation stage. The following key progresses are briefly highlighted in the earlier section.

a). Waste Assessment and Studied Conducted.

The following waste assessments were implemented in the country to identify areas for improvement.

- Waste assessments and studies had been conducted to identify areas for improving collection efficiency and improve waste disposal sites in all the islands as also reported in the 1st Review Report.
- Viable options had been studied as future potential ways of managing waste in the country as outcomes of two Feasibility Studies – Waste Levy Deposit and User-pay Options.
- Assessments had been conducted on asbestos and healthcare waste providing key recommendations for implementation.

b). Solid Waste Storage, Collection and Disposal

The following waste collection and disposal services are ongoing and supported by the government.

- The free delivery of waste collection services continues
- Wheelie bins for families without bins were procured and distributed with more to arrive.
- Separate collection of green waste for shredding and gardening purposes (only Funafuti).
- Separate bulky and hazardous waste collection for storage for recycling and appropriate disposal (only Funafuti).
- Separate collection of the general solid waste for disposal at the disposal Sites (only Funafuti).
- Separate collection of nappies for disposal at the disposal site (Funafuti only).
- On- going improvement are progressing for the disposal sites in the country by implementing the measures recommended in earlier assessments (the Tuvalu Waste Baseline Assessment Report 2016 and the follow up detailed Waste Survey in 2017).
 - Fencing of all the sites.
 - Relocation of some sites
 - Clearance, digging and lining of disposal sites if possible, for the disposal of waste.
 - Regular cover of the disposed waste with sand.
 - Rehabilitation of the Funafuti Waste Landfill based on a Developed Construction Plan and Design (put on hold until the new heavy equipment arrives).

- A Waste Landfill Operational and Maintenance Plan is developed for the Funafuti Waste Landfill based on the proposed improvement and developments.

c). Hazardous Waste Storage, Collection and Disposal

Some key progress in the area of hazardous waste management:

- Healthcare waste has an incineration facility for the effective treatment of healthcare waste at the Funafuti hospital. However, there is an on-going issue with the incinerator based on the information provided by DWM and stakeholders during the public consultation. This will require a Technical Assistance to identify the problems and mitigation measures.
- Used Lubricating Oil is continually collected and shipped to Fiji under partnership with Pacific Energy Company.
- New IBC Plastic Containers purchased for the storage of Used Lubricating Oil and Chemical funded under the GEFPAS project coordinated by SPREP.
- Storage facilities for hazardous waste in the outer islands in progress (covered under the 2019 budget).
- A National Implementation Plan for Persistent Organic Pollutants 2018 -2022. This is yet to be endorsed by DCC for consideration.

c). Recycling Practices

- **Scrap Metals**
 - The Transfer Station for Recyclable Waste is near completion once the water connections are all completed and will be the main base for DWM recycling operations. The supporting office and facilities construction are now in the preparation status.
 - The Draft Waste Levy Deposit Regulation if approved will support the recovery and collection of the targeted waste.
 - Negotiations are underway and on-going for recycling markets between DWM and other regional recyclers. Two overseas recyclers have shown interest for future partnership with DWM for the shipment of Used Lead and Acid Batteries.
 - One local scrap metal proposed recycling operation is under review for license approval to operate.
 - A Waste Management and Recyclers Association is established.
 - Tuvalu is in the process of signing the Basel Convention and other international waste conventions and this will allow Tuvalu to ship overseas any hazardous waste for recycling or disposal.
- **Green Waste**
 - On-going collection, shredding and composting in partnership with the Taiwan Gardening vegetable garden in Funafuti producing 100tonnes of the required compost to support the on-going gardening activities.

- **Sewage and Sludge Waste**

- Collection service for sewage and sludge has commenced.
- Construction of proper septic tanks is part of the proposed National Building Codes for Tuvalu to control seepage of sewage to the underground water.
- Biogas pilot projects had been established by the Department of Works at a number of schools using the generated piggery waste.
- There are also 42 bio digesters that will be installed and commissioned under the ACSE project EDF 10, implemented by GIZ-SPC.
- A proposal was developed by the University of Newcastle for the management of piggery waste to generate biogas and it requires a proper Feasibility Study.

Goal 5: Enhanced capacity of waste practitioners

This goal is still valid and relevant with potential to achieve within the Policy timeframe. Based on the progress made, there is a need to improve on the activity's implementation.

With the recruitment of more staff and field workers, more training opportunities must be arranged and developed to equip DWM staff and workers with the waste management skills and knowledge needed to adequately perform their responsibilities to the best. This is further discussed in the recommendation section. The following are some progress made;

a). Long term Educational and Training Opportunities

- One staff is currently undertaking her Master in Environmental Studies and she is doing a Master Thesis on Waste Recycling in Tuvalu base on the proposed Waste Levy Concept.

b). Short Term Training Opportunities.

- The Acting Director of DWM has attended a Sub-regional Disaster Waste Management Training in Samoa on the Guidelines for Disaster Waste Management.
- One staff of DWM attended a training in Japan on Solid Waste Management under JICA Training Programme.
- DWM workers in Funafuti and the outer islands attended a 2 weeks landfill training in Funafuti on the management of waste disposal sites and rehabilitation of open dumpsites.
- DWM Staff attended a training on Asbestos Identification and Management conducted by a Technical Assistance.
- DWM Staff conducted a training on water analysis conducted under the Reef to Ridge Project under the Department of Environment.

Goal 6: Waste activity outcomes are reported and disseminated to relevant Stakeholders

This Goal is partly achieved but still valid and relevant for the rest of the policy implementation for further improvement. The following reporting and dissemination mechanisms are in place and verified during this review:

a). Quarterly Reports, which provide update every three months on an annual basis. These quarterly reports provide the main basis of the activity’s assessment during this review.

b). Annual Reports, which provide the annual updates of the activities progress. These reports form the main basis of reports to be submitted to the Development Coordinating Committee (DCC) for endorsement before sending to EDFII’s Office in Suva, Fiji.

c). Waste Management Committee Meetings

This is the supporting coordination mechanism in place to the Project Steering Committee, which foresees the good progress of the Policy implementation and waste management in general in the country. This mechanism is very effective in maintaining the coordinated and multi-sectoral approaches needed for the successful of this Policy implementation. This committee meets on a regular basis to discuss all matters pertaining to waste management. There are also supporting sub-committees, which are specialized in different waste management areas like Waste Levy, Used Lubricating Oil, etc. This is the main platform used by DWM to share information on waste management.

2.3. Current Emerging Waste Issues of Importance.

The following waste issues have been strongly emphasized during public consultations for priority attention and actions. The participants felt that the emphasis on these areas is inadequate in the current Action Plan 2017 – 2021 and thus necessitate immediate attention and actions because of the current situation and potential impacts to people’s health and the environment.

Table 8: Current Waste Issues and Priorities.

Waste Issue	Effect	Causes	Mitigation Measures
1. Marine Litter	Marine pollution	Illegal dumping along coastline	Enforcement of law on illegal dumping along the coastline Women groups to take lead in addressing the problem
		Waste disposal from ships	Improvement of Ships Waste Management

			Regular monitoring on ships compliance with regards to waste management
		Other land sources	Enforcement of law on littering Women groups to take lead in addressing the problem
2. Healthcare waste	Health risk to patients, staff and workers of the hospitals	Absence of proper system to safely manage healthcare waste at the main hospital	Proper healthcare waste management system to put in place. Hiring of a TA to identify the problems and provide mitigation measures and recommendations.
3. Asbestos	Health risk to people who reside near the unknown sources	Lack of information on their location if the sites had already been identified during past studies.	Public awareness on asbestos whereabouts. Information materials on the appearance and characteristics on posters for people to understand
4. Sewage and Sludge	Health risk and marine pollution from seepage	Absence of a proper disposal facility	Installation of a proper treatment system

a). Marine Litter

In recent months, there is a growing regional emphasis placed by Pacific Leaders to Marine Litter, which has resulted in a number of plastics ban initiatives in the region including Tuvalu. This policy must therefore recognize the current regional environmental emphasis for supporting activities.

b). Healthcare Waste

With the on-going issues with the Healthcare Waste Incineration Facility at the Funafuti hospital, there is a growing concern and worries from the nearby communities on the impact to them. There are on-going sighting of bags of needles being disposed inappropriately at the waste disposal site, putting high risk to the landfill workers. There was a strong suggestion for immediate assistance and mitigation measures to the problem.

c). Asbestos

The issue on asbestos was raised because of the concern on potential asbestos presence in a number of old buildings in the country, but without the knowledge and awareness of the communities and members of the public. The suggestion is for more

awareness and educational programmes to educate and inform the public on the potential sites and locations of asbestos in the country based on the Asbestos Survey conducted by SPREP in the past. People must be also educated on the features and appearances of asbestos materials for people`s safety. Lastly, suggestions were made for staff of DWM to have the knowledge and skills to identify asbestos and take appropriate responses especially during cyclones, which can potentially damage the existing old structures with asbestos materials.

d). Sewage and Sludge

With the introduction of the special collection for sewage and sludge by the Department of Public Works, there is a concern on the absence of a proper disposal facility for the disposal of this waste. The proposed improvement to the construction of toilet septic tanks under the National Building Codes, will increase the demand for this collections service. This will require a special and proper disposal facility for the generated sewage and sludge waste. There was a strong suggestion for the development of a proper disposal facility to avoid adverse impacts to the environment.

e). Refinement of the Policy Medium Action Plan 2017-2021 (refer Annex 1).

Based on the above emerging current waste issues of importance raised during public consultation, the following mitigation measures are incorporated under relevant areas in the refined action plan 2017-2021.

- Enforcement of law on illegal dumping along the coastline.
- Regular monitoring on ships compliance with regards to waste management
- Enforcement of law on littering
- Proper healthcare waste management system to put in place.
- Hiring of a Technical Assistance to identify the problem and provide recommendations of way forward.
- Public awareness and education on asbestos features and their locations in Tuvalu.
- Installation of a proper treatment system for sewage and sludge.
- For women groups to take lead in addressing of illegal dumping and littering problems.

2.4. Key Challenges and Mitigations

This review noted the following challenges including some areas that were also reported in the 1st Policy Review Report in 2018, where improvements are needed to avoid delays in the implementation of the Policy Action Plan 2017 – 2021 in the remaining 3years.

2.4.1. Weak Enforcement of Laws

The enforcement of existing government waste management related legislations, regulations and policies is generally weak. For several reasons, this is the most common problem to most legislations and laws. With the endorsement of the Waste Management (Litter and Waste Control) Regulations 2018 and two upcoming regulations for the Waste Levy Deposit and Single Use Plastics, it will be a great challenge for DWM to enforce these laws:

Mitigation Measures

(i). Special Prosecution Training for DWM Staff and other Supporting Agencies.

DWM with support from the Attorney General Office must conduct training for DWM staff and other supporting agencies on the prosecution process and procedures for enforcement of the Waste Management (Litter and Waste Control) Regulations 2018. This should be done for the other new upcoming waste regulations when they are approved by cabinet.

(ii). Close Collaboration between DWM and Police

The support of Police is highly needed in the enforcement of waste laws for positive responses and attention from members of the public. DWM enforcement staff must follow the prosecution procedures based on the guidance provided by the Attorney General Office and may request the support of Police when needed.

2.4.2. Inadequate Supporting Resources.

While there is an improvement in the number of supporting staff and workers as well as budgets for DWM, the situation in other stakeholders with waste related roles is challenging. This can have greater implications to the achievement of their contribution to the National Waste Management Policy 2017 – 2026. As discussed during the public consultations, there is a need for the key stakeholders of this Policy to work together for the betterment of the people. Working together as a team regardless of what aspects of waste they are responsible for can achieve more than working in silo. This will also facilitate the share of information, skills and knowledge, equipment and other limited resources to achieve better outcomes for this country.

Mitigation Measures

(i). Creating Long Term Partnership.

DWM as the coordinating agency can establish long term partnerships with the other key agencies responsible for the other waste streams for a collective effort in addressing the challenges and issues they encountered in the performance of their duties. This partnership approach and concept will benefit all the agencies as they share the common interest for environment and health protection. These partnerships can be formalized through Memorandum of Understanding or an appropriate form of agreement.

Table 9: Proposed Partnerships for the Management of Challenging Waste

Waste	Responsible Agency	Proposed Potential Partnership		
		Areas of focus	Contributing partners ¹⁵	Potential Assistance
1. Healthcare Waste	DoH	Improving the storage, collection and disposal facilities	DWM DoE	SPREP (PACWASTE plus / ILO)
		Training of workers		
2. Marine Litter	DoM	Improvement of ship waste management / Marine Litter Management plan	DWM-DoE	SPREP
		Enforcement of coastal Illegal dumping practices		
3. Asbestos	DWM	Educational materials	DoE	SPREP (PACWASTE/A FD/GEFPAS)
		Training		
4. Expired Goods	DoH	Enforcement and awareness	DWM, Customs	Industry
5. Sewage and Sludge	PWD	Development of Management Plan	DWM-DoE- DoH	Donor-TA
		Proper Disposal Facility Plan and development	DWM-DoE- DoH	Donor
6. Disaster Waste	DWM	Development of a DWM Contingency Plan	NDMO-Fire Emergency- PWD	SPREP (PACWASTE / AFD)
		Temporary Disposal Site	PWD-Kaupule	

The proposed partnerships can strengthen the working relationship among the stakeholders and facilitate progress in the highlighted areas, which require future actions. The form of assistance from the contributing partners can be technical, financial,

¹⁵ Advice, participation in visits, provision of materials or equipment, share of information and data, technical or financial assistance, etc.

capital or anything that can contribute to the achievement of the proposed improvement. Including providing advices and participating in field monitoring visits.

2.4.3. Difficulties with Land for Waste Development in Funafuti

There is still a challenge with the securing of land for waste disposal developments. While a new lease rate has been approved by cabinet, there is no confirmed agreement from the landowners. This will affect future developments for the needed land areas for future disposal of waste. The government is now working through the individual landowners rather than through the Native Land Board.

Mitigation Measure

(i). Implementation of the Proposed Waste Levy Deposit to Reduce Future Waste

The proposed waste levy deposit as part of this Policy will effectively reduce the future volume of the waste. The waste levy system will divert the end of life vehicles, motorbikes, electrical and electronic goods and several other bulky and solid waste items from ending up at the waste disposal site. With the generated funds from the deposit levy, these items can be processed, packed and shipped overseas for recycling.

(ii). Introduction of a User-pay System to enforce waste reduction at source

Introducing the appropriate waste charging system like the prepaid bag system will motivate people to reduce their waste. It is the most effective way to enforce waste reduction at home, as people will make effort to reduce the cost for collecting their waste by removing green waste for their mulching or home composting.

(iii). Consideration of the Proposed Landowners Lease Rate.

Considering the associated operational costs to avoid waste not ending up at the disposal sites in the future by exporting overseas and implementing other local treatments¹⁶, an annual lease rate of around \$5,000 per acre is reasonable and cheaper¹⁷. This was also highlighted in the economic analysis conducted by an Economist during a combined Waste Baseline Assessment in 2017, which was coordinated by SPREP. The study team consist of an Economist¹⁸ and Waste Management Experts. While the land committed for waste disposal sites can be closed down and reused in the future, its uses are restricted to parks development and agriculture surface root crops gardening purposes only, without any use for permanent infrastructure including housing development. For this reason, any future reuses of the land by landowners for housing developments are not recommended for safety reasons. The land consisting of buried waste will not be stable and will keep moving and sinking as organic and inorganic waste begin to degrade in the future.

¹⁶ Solidification by converting other non-recyclable waste into concrete blocks,

¹⁷ Tuvalu Waste Baseline Assessment Report, 2017 (with technical assistances by SPREP)

¹⁸ Mainstream Company – also conducted the Green Waste CBA.

2.4.4. Inadequate information and understanding on special waste.

People seem to lack understanding on asbestos, healthcare wastes and other hazardous waste with serious implications to human health and the environment.

Mitigation Measure.

(i). Develop educational materials (posters, calendars and brochures) with images of asbestos and the location of the sources based on the assessments conducted in Tuvalu by SPREP for people to be aware of it. Must include information about the dangers of asbestos to people`s health and what to do to protect them,

(ii). Conduct public awareness at communities with close location to the old structures with asbestos for their information.

2.4.5. Limited technical waste management capability

None of DWM`s current staff has undertaken any long-term specialised training programme on waste management. New staff members are joining under the current institutional reform and this may affect and limit the performance of their duties, because of the limited technical capability, especially on hazardous waste.

Mitigating Measures

(1). For DWM to organize specialized in-country training workshops for staff and workers based on the Pacific Islands Solid Waste Management Guidebook. This will equip current and new staff with the needed level of knowledge and skills to perform their lawful duties under the Policy and the Waste Management Act 2017.

(ii). For DWM to support the participation of its staff on some of the specialized online international accredited short- and long-term waste management training and educational programme. This is a flexible distance educational programme, which can offer certificate, diploma and postgraduate qualification including Masters on waste management, while continue to perform their duties at work.

- IHE-UNESCO Postgraduate Diploma Programme with the University of Delft in Netherlands with several short-term certificate courses on waste management.
- University of Griffith, Australia – 2 years online Master Programme.

(iii). For DWM to use the available regional and donor training schemes as well as south to south exchange arrangement to improve its staff specialized knowledge and skills on waste management.

- Staff attachment and exchange schemes where staff can work at SPREP or another country of interest in the region for a month to learn on specific waste management areas.

- JICA Specialized Waste Management Training in Japan, which can be requested through the JICA Fiji Office.

(iv). For DWM staff who attend specialized training and waste management meetings overseas to conduct presentations to DWM staff on their return to share learnt information to the rest of the staff. This will benefit DWM staff a lot and broaden their knowledge and understanding on different areas of waste management.

3.0. CONCLUSION

The outcome of this review is summarized under the following key areas, which reflect the overall findings of this 2nd review of Tuvalu Integrated Waste Management Policy and Action Plan 2017- 2026 implementation:

a). Policy Change

It is confirmed that there is no major change to the political, social and economic environment in the country, region or at the international level that will have major implications to the current Integrated Waste Management Policy and Action Plan 2017 – 2026 implementation. For this reason, no policy change is recommended at this stage.

b). Effectiveness:

The implementation of the Integrated Waste Management Policy and Action Plan 2017 - 2021 has been challenging. However, the evidences show that significant progresses have been made in several areas. DWM as the leading agency with the Ministry of Home Affairs and Rural Developments guidance and support has been very effective in leading the policy implementation with continuing financial support from the government`s annual budgets. The coordination mechanisms in place have shown positive indications of effectiveness in maintaining the cohesiveness and collaboration of the stakeholders.

c). Relevance:

With no major political, social and economic change encountered during this review at the national, regional and international level with implications to Tuvalu, the current Integrated Waste Management Policy and Action Plan 2017- 2026 remains relevant at this stage until further future review. There is still relevant linkage to the *Te Kakeega III National Strategy for Sustainable Development 2016 to 2020 (TKIII)* and the Cleaner Pacific Regional Strategy 2016 – 2025.

d). Sustainability:

DWM institutional reform is in progress and it is gradually shaping the future of waste management in the country for the sustainable provision of waste management services in an acceptable level. The current recruitment status of new staff in line with DWM`s institutional structure reform is a huge progress and is essential mean through which to institutionalise approaches to policy implementation. The development of waste

financing mechanisms and systems to control waste generation within the country's capacity is in the right direction. These are essential if proper waste management for the protection of people's health and the country's environment is to be sustainably delivered in the future.

e). Impact:

The nature of the policy goals will take time to realize some impacts particularly on the change of people's attitude to waste. The combination of public awareness along with the simultaneous application of appropriate waste management systems and practices will facilitate the needed impacts. There remains a shortcoming in terms of the availability of information on impact at this stage of the project implementation. With the current progress of institutional capacity reform and the needed waste legal and financing mechanisms, these will gradually influence and shape the future of waste management in the country for the better.

4.0. RECOMMENDATIONS

In line with the presented findings and outcome of the review as outlined in the different sections of this report, the following recommendations are made to reiterate and stress the importance of some follow up interventions and support for future progress of the Policy implementation.

a). Findings and outcome of the progresses made.

Highly recommend for the confirmation of the overall findings of the implementation progress status of the Policy, based on the period of this review task, January 2018 - March 2019. This report is based on the outcome of public consultations conducted in the country with key implementation agencies, supporting stakeholders and members of the public including the islands' representatives.

b). Support of the Proposed Mitigation Measures

Highly recommend the consideration of the proposed mitigation measures at section 2.3 of the report for addressing of the highlighted challenges and issues that are and will continue to affect the implementation and achievement of this important national policy.

c). Regional Protocols and International Conventions.

Highly recommend the consideration for Tuvalu to become party to the Basel Convention for the Transboundary movement of Hazardous Waste. This is needed for the shipment of recyclable waste materials out of the Pacific region, under the proposed recycling scheme. This gives Tuvalu the flexibility needed to decide on the overseas recycling markets for better returns.

d). Revised Medium Action Plan 2017 – 2021

Highly recommend for the confirmation and approval of the revised attached plan. Minor adjustments have been made to reflect the current status of the implementation status by rescheduling some activities and to incorporate the emerging current waste issues of importance based on the outcome of this review.

e). Adjustments to the Revised Medium Action Plan 2017 - 2021

e). For DWM to make appropriate adjustments to for the implementation of the Revised Action Plan 2017 – 2021.

5.0. ANNEX: Annex 1: REVISED ACTION PLAN 2017 – 2021

A. INSTITUTIONAL DEVELOPMENT

Goal #1: Strengthened institutional systems to address gaps in waste management										
Implementation Activity	Who is responsible	Timing					Budget (AUD)			Potential Dev't. Assistance
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	GoT Committed	Financing Gap	
1. Develop and implement new organisational structure and review remunerations including external technical assistance to provide support and build the capacity of DWM	DWM, Finance, (Planning & Budget), Personnel & Training						3,100,000	1,100,000	2,000,000	
2. Review existing waste-related legislation and merge into one Act, to include non-acceptable practices that are harmful to the environment and human health.	DWM Kaupule Environment AG's Office Marine Agriculture Health						36,000	36,000		
3. Develop specific regulations to support strict enforcement of the legislation	AGs Office DWM Kaupule Health Environment Agriculture Marine Fisheries						120,000	40,000	80,000	
4. Investigate impacts of WWII wrecks and explore measures for its removal	DWM Environment Police Health						170,000	6,000	164,000	
5. Lease of land for extension of the Funafuti Landfill and undertake impact assessments for land reclamation, if required.	DWM Environment Department						500,000	300,000	200,000	

Goal #1: Strengthened institutional systems to address gaps in waste management										
Implementation Activity	Who is responsible	Timing					Budget (AUD)			Potential Dev't. Assistance
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	GoT Committed	Financing Gap	
	Lands Department									
6. Impose charges/levy for certain types of hazardous wastes and imported materials through a regulation and based on recommendations by the Import Waste Levy Committee.	DWM Department Customs Department Trade Department Marine Department						20,000	5,000	15,000	
7. Regulate importation of goods to ensure reasonable length of lifespan.	DWM Department Customs Department Business Department (Finance) Health Inspector						60,000		60,000	
8. Investigate and implement options for sustainable financing mechanisms to sustain delivery of proper waste services including cost benefit analysis, e.g. CDL, pre-paid bag system, etc.	DWM Department						100,000	45,500	54,500	
9. Allocate reasonable budget for waste services by relevant departments.	Ministry of Health Climate Change Department (Project) Ministry of Transport & Communication Public Works Department						As per work programmes			

B. STAKEHOLDER AWARENESS

Goal #2: The stakeholders fully understand the merits of proper waste management and co-share the responsibility of managing wastes.											
Implementation Activity	Who is responsible	Timing					Budget		Potential Dev't. Assistance		
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	Committed	Financing Gap		
10. Public Awareness Program involving communities and schools through radio, workshops, posters, training, website, etc. on all waste service areas in Tuvaluan language	DWM Department TANGO Media Department Kaupule Department of Rural Development (DRD)						120,000	21,100	98,900		
11. Integrate waste management in the school's curriculum – Clean Schools Programme	Ministry of Education, Youth and Sports (MEYS) DWM						65,000	20,000	45,000		
12. Provide incentives for recycling, e.g. handicraft, junkyard business, etc. to women and youth groups and other community groups	DWM Kaupule TNPSO PWD TNCW						400,000		400,000		
13. Conduct activities or events which are co-implemented with stakeholders.	DWM Department plus DWM key stakeholders						100,000	20,000	80,000		

C. PUBLIC-PRIVATE PARTNERSHIPS

Goal #3: Establish strong partnerships between the public and the private sector in the delivery of waste services										
Implementation Activity	Who is responsible	Timing					Budget			Potential Dev't. Assistance
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	Committed	Financing Gap	
14. Establish waste industry schemes which will involve private businesses heavily – privatisation of some waste services.	DWM Department Kaupule Public Enterprise Planning & Budget Department STAT Department						500,000	100,000	400,000	
15. Develop recycling networks.	DWM Kaupule Local Recycler Buyers (Abroad)						50,000		50,000	
16. Incorporate waste management plan in the permitting process for businesses, projects and international contracts with emphasis on management of bulky wastes and hazardous wastes.	Ministry of Foreign Affairs, Tourism, Environment & Labour Public Enterprise						15,000		15,000	
17. Acquire handling and storage equipment to facilitate shipping of recycled materials	DWM Department PDL Shipping Agent Private Recycler						150,000	10,000	140,000	
18. Develop and implement a system with importers and transporters on the back loading of recycled materials off the island.	DWM PDL Shipping Agent						100,000	10,000	90,000	

D. BEST PRACTICE AND COST-EFFECTIVE APPROACHES

Goal #4: Delivered waste services follow best practice and cost-effective approach tailored to local conditions with continuous improvement										Potential Dev't. Assistance
Implementation Activity	Who is responsible	Timing					Budget			
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	Committed	Financing Gap	
19. Investigate and implement options of efficient waste containment and collection of wastes	DWM Department 8 Kaupule						1,300,000	250,000	1,050,000	
20. Undertake a time and motion study to update existing collection service.	DWM, Kaupule						50,000	10,000	40,000	
21. Maintain an inventory and develop and implement waste infrastructure and maintenance plan for all waste facilities and equipment.	DWM Department PWD Finance DRD 8 Kaupule						300,000	10,000	290,000	
22. Develop a waste asset management plan	DWM, Public Works Department						50,000		50,000	
23. Acquire well-designed equipment and facility appropriate for particular waste activity and type of wastes.	DWM Department Finance (Procurement Unit) Department of Rural Development (DRD)						2,000,000	100,000	1,900,000	
24. Provide and enforce use of PPEs.	DWM Department						50,000	10,000	40,000	
25. Set up a transfer station and recycling facility – trash palace in Funafuti and Vaitupu and adopt new recycling and waste minimisation technologies	DWM Department PWD Finance Lands Department Agriculture Dept Environment Dept DRD 8 Kaupule						1,200,000	900,000	300,000	

Goal #4: Delivered waste services follow best practice and cost-effective approach tailored to local conditions with continuous improvement										
Implementation Activity	Who is responsible	Timing					Budget			Potential Dev't. Assistance
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	Committed	Financing Gap	
26. Actively implement the 3R + return programme for inorganic and dry wastes such as cans, glass, and plastic as well as paper including segregation of wastes at source and in the transfer stations and designated area in the disposal sites.	DWM Department Media PWD Finance AGs Office 8 Kaupule DRD						575,000		575,000	
27. Actively implement the 3R + return programme for organic and wet wastes such as green wastes and piggery wastes either through community-based (using traditional means) or larger-scale composting programme in Funafuti and in the outer islands.	Kaupule DWM Department						150,000	20,000	130,000	
28. Implement composting of mulch with piggery waste in conjunction with pig growers	DWM, Agriculture, Regional R2R Project						700,000	108,000	592,000	
29. Rehabilitate and operate the existing Funafuti dumpsite or construct new engineered landfill with proper operational procedures (manual).	DWM Department DRD 8 Kaupule Lands Department Finance Environment Department Public Works Department						1,000,000		1,000,000	
30. Investigate suitability of existing disposal sites in the outer islands	DWM, Public Works Department, Planning Office,						30,000		30,000	

Goal #4: Delivered waste services follow best practice and cost-effective approach tailored to local conditions with continuous improvement										
Implementation Activity	Who is responsible	Timing					Budget			Potential Dev't. Assistance
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	Committed	Financing Gap	
	Lands Department									
31. Improve the operation and security of the outer island dumpsites (fencing, burying, pushing and compacting)	DWM, Kaupule						1,435,000	82,000	1,353,000	
32. Provide equipment sheds, storage facilities and workers' washing facilities in the outer islands	DWM Department						1,365,000	1,000,000	365,000	
33. Prepare a disaster waste management plan based on the Vulnerability Reduction Plan and endorse its incorporation in the overall Disaster Response Plan, including acquisition of proper equipment and funding allocation.	DWM Department Disaster Unit DRD Environment Department Finance						170,000	40,000	130,000	
34. Design and implement a public anti-littering programme (clean-ups and provision of public litter bins as options)	DWM, Kaupule, PWD						240,000	20,000	220,000	
35. Undertake assessments of stockpiles of hazardous wastes in all the islands	DWM, Department of Environment						100,000		100,000	
36. Develop and implement systems and provide infrastructure and facilities to properly manage hazardous wastes (chemicals, healthcare, asbestos, e-wastes, etc.), i.e. handling, storage, treatment and disposal	DWM Department Health Department ICT Tuvalu Electricity Cooperation Media 8 Kaupule DRD Pacific Energy Marine Finance						500,000	80,000	420,000	

Goal #4: Delivered waste services follow best practice and cost-effective approach tailored to local conditions with continuous improvement										
Implementation Activity	Who is responsible	Timing					Budget			Potential Dev't. Assistance
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	Committed	Financing Gap	
37. Investigate the feasibility of a liquid waste management programme including collection, storage and disposal.	DWM Department PWD DRD 8 Kaupule						200,000		200,000	

E. HUMAN CAPACITY DEVELOPMENT

Goal #5: Enhanced capacity of waste practitioners										
Implementation Activity	Who is responsible	Timing					Budget			Potential Dev't. Assistance
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	Committed	Financing Gap	
38. Assess training needs for the waste and relevant sectors for all the islands.	DWM Department Personnel & Training PWD Health DRD 8 Kaupule TNPSO						10,000		10,000	
39. Implement national learning programmes through trainings, peer tutoring and other informal mentoring approaches such as re-echo training programmes after attendance to regional and international trainings.	DWM Department Education Department Media TNPSO TANGO Personnel & Training						150,000	30,000	120,000	
40. Explore and participate in information exchange programmes with other countries within and outside the region, i.e. South-	DWM Department Personnel & Training Labour						150,000	60,000	90,000	

Goal #5: Enhanced capacity of waste practitioners										
Implementation Activity	Who is responsible	Timing					Budget			Potential Dev't. Assistance
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	Committed	Financing Gap	
south cooperation, twinning arrangements, etc.										

F. DISSEMINATION OF OUTCOMES AND EXPERIENCES

Goal #6: Waste activity outcomes are reported and disseminated to relevant stakeholders										
Implementation Activity	Who is responsible	Timing					Budget			Potential Dev't. Assistance
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	Committed	Financing Gap	
41. Undertake a baseline survey of existing waste conditions and services including inventory of imported goods.	DWM Department STATs Unit DRD 8 Kaupule Health Department Environment Department						90,000	30,000	60,000	
42. Regular collection of data through standard methods.	DWM Department STAT Unit DRD 8 Kaupule						75,000	33,000	42,000	
43. Update country waste profiles	DWM Department DRD 8 Kaupule						30,000		30,000	
44. Create a multi-stakeholder steering committee and establish internal procedures for running the committee	DWM						50,000	32,600	17,400	
45. Create Waste Sub- Committees in the Outer Island	DWM						35,000	15,000	20,000	
46. Dissemination of outcomes through media and government channel to ensure wider coverage of information.	DWM Department Media ICT TANGO						50,000	5,000	45,000	

Goal #6: Waste activity outcomes are reported and disseminated to relevant stakeholders										
Implementation Activity	Who is responsible	Timing					Budget			Potential Dev't. Assistance
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Estimated	Committed	Financing Gap	
	SC									
47. Undertake regular reporting to the Cabinet and stakeholders	DWM Department SC						No cost			

ANNEX II: REFINED KEY PERFORMANCE INDICATORS TO REFLECT THE NEW EMERGING WASTE ISSUES

Thematic Area	Goals	Actions	• KPIs
INSTITUTIONAL DEVELOPMENT	Goal #1: Strengthen institutional systems to address gaps in waste management	<ol style="list-style-type: none"> 1. The government shall ensure that institutional and organisational structure of the waste sector in all the islands is properly set up, i.e. well-trained and qualified staff are delivering waste services and are properly compensated for the hazards involved in the discharge of their functions according to the Employment Bill. 2. The government shall create, amend and update laws, regulations and policies as required to ensure the orderly delivery of waste services in both the main island of Funafuti and the outer islands, and take measures to ensure that such laws, regulations and policies are well enforced. 3. The government shall undertake negotiations with landowners in the allocation of land for the purpose of siting waste facilities in all the islands. 4. The government shall pass legislation that will impose levies and ban certain imported items that are likely to produce significant volumes of waste (levies will fund waste management activities). 5. The central and local governments shall allocate reasonable and sustainable budget to ensure that the delivery of waste services are kept to standard and desired coverage. 	<ul style="list-style-type: none"> • New organisational structure for the whole sector including the outer islands are endorsed and implemented; • At least 1 waste law, 1 waste policy and 3 specific regulations passed and enforced; • Each outer island to pass and enforce waste by-laws based on the national waste law; • At least 5 court cases conducted for illegal dumping and littering. • At least 5 agreements on land lease successfully achieved; • 1 regulation on import waste levy passed and enforced; • At least 1 sustainable financing mechanism successfully implemented; • Increased budget allocation of at least 2.5% secured every year for waste management.
STAKEHOLDER AWARENESS	Goal #2: The stakeholders fully understand the merits of proper waste management and co-share the	<ol style="list-style-type: none"> 6. The DWM and relevant stakeholders (e.g. women, youth, etc. as focal groups), shall implement public awareness programmes on proper waste management, focusing on waste minimisation through 3R + return approach. These public awareness programmes will follow gender sensitive approaches. 	<ul style="list-style-type: none"> • A poster or calendar containing images of asbestos and current location in Tuvalu is printed and copies are distributed to the communities and schools. • At least 1 workshop is conducted per island (Funafuti or outer islands) discussing marine debris, asbestos, disaster waste and healthcare

	responsibility of managing wastes.	<p>7. The DWM, in coordination with the Ministry of Finance, shall implement incentive mechanisms that will provide business and livelihood opportunities for certain accredited community-based institutions and individuals using the cooperative approach.</p> <p>8. The DWM shall strengthen stakeholder involvement in awareness activities.</p>	<p>waste. At least 2 workshops must focus on women groups.</p> <ul style="list-style-type: none"> • Key sites presenting examples of poor community behaviour audited to provide measurable baseline data; • At least 1 public awareness programme fortnightly on littering and illegal dumping. • At least 5 recipients of incentives in every 2 years; • At least 2 national activities co-implemented successfully with stakeholders in a year.
PUBLIC – PRIVATE PARTNERSHIPS	Goal #3: Establish strong partnerships between the public and the private sector in the delivery of waste services	<p>9. The SWAT, through coordination with the Ministry of Finance and the Department of Trade, shall develop waste business opportunities to ensure sustainable waste systems, including financial mechanisms to support efficient delivery of waste services.</p> <p>10. The DWM, in coordination with the Marine Department, shall explore measures to improve shipping services to allow back loading of recycled waste items (e.g. scrap metal, cans, plastics, etc.) to potential markets.</p> <p>11. The DWM shall incorporate obligations under its waste management plan into all international contracts.</p>	<ul style="list-style-type: none"> • 1 association or society is established and officially registered under TUNGO to promote private sector partnership with the government. • At least one business proposal approved; • At least 1 recycling business established and maintained; • Tuvalu has access to a functioning recycling regional network; • System of back loading of recycled wastes is established and operating well; • Waste management planning is incorporated in infrastructure project approval system.
	Goal #4: Delivered waste services follow best practice and cost-effective approach tailored to local conditions with continuous improvement	<p>12. The DWM, through cooperation of the Department of Public Works and private contractors,, shall undertake detailed infrastructure (including maintenance) planning and develop an asset management programme ensuring that waste facilities and equipment are properly designed and operated within reasonable standard for effective and efficient waste services, with due consideration to the occupational health and safety of the waste workers and the health and well-being of the community and their environment.</p> <p>13. The DWM shall implement waste reduction and resource recovery programmes.</p>	<ul style="list-style-type: none"> • Waste facilities and equipment are functioning well 70% of the time; • HCW management is reviewed with recommendations provided for improvement. • 1 detailed infrastructure and maintenance plan developed and implemented; • 1 asset management plan developed; • Occupational and public health and safety incidents are reduced by 50%; • 100% coverage of collection in the main island and at least 80% coverage of collection in the outer islands; • Waste generation rate is controlled;

		<p>14. The DWM shall promote the recovery of green wastes from the waste stream, implement composting programmes and encourage stakeholders to utilise compost produced from processing of green wastes.</p> <p>15. The DWM, the Ministry of Health and the Department of Environment, shall cooperate in the handling, storage and disposal of hazardous wastes (chemicals, asbestos, healthcare wastes, used oil, e-wastes, etc.) according to international convention regulations and best practice management approaches that will minimise health and environmental impacts.</p>	<ul style="list-style-type: none"> • 20% recycling rate is achieved after 5 years; • Compost sold increased by at least 5% each year; • At least 3 composting programmes implemented; • 1 national landfill rehabilitated; • All outer island disposal sites improved; • 1 national transfer station and 1 transfer station in the biggest island of Vaitupu established; • Collection, storage and transport of healthcare waste improved based on international accepted practices. • At least one hazardous waste storage facility established; • At least 1 container of hazardous wastes exported overseas; • At least 1 pilot project on piggery waste implemented; • Liquid waste management plan developed.
	<p>Goal #5: Enhanced capacity of waste practitioners</p>	<p>16. The government shall provide short-term and long-term training opportunities for DWM and other relevant waste workers and stakeholders to improve their skills and capacity to deliver waste services.</p> <p>17. The government shall participate in regional cooperation and exchange programmes guided by the principle of regionalism.</p>	<ul style="list-style-type: none"> • At least 2 of the current DWM staff has undergone long-term training on waste management or relevant field; • DoH undergone two special training on HCW management. • DWM Technical staff has undergone short-term training on Asbestos and other hazardous waste management. • All field workers have undergone in-country trainings and refresher courses conducted at least once a year; • At least 1 participant in regional cooperation and exchange programmes in a year; • At least 1 re-echo national training conducted in a year; • A capacity development plan is developed;

			<ul style="list-style-type: none"> • Established system on proper handover of responsibilities of departing staff; • Staff in management positions receive training in program and business management to assist their capacity to make appropriate HR and fiscal decisions.
	Goal #6: Waste activity outcomes are reported and disseminated to relevant stakeholders	<p>18. The DWM shall undertake regular waste data collection and analysis.</p> <p>19. The DWM shall implement monitoring and reporting programmes to ensure more informed decisions in the waste sector.</p> <p>20. The government shall establish a multi-stakeholders monitoring committee and DWM will act as the Secretariat.</p>	<ul style="list-style-type: none"> • A data management system is established with proper training on data collection, processing and reporting; • Waste data collected and recorded daily; • Daily data reported monthly; • Quarterly data compiled; • Annual report completed; • Established monitoring committee is operational; • Quarterly meetings of monitoring committee conducted.

Name	Agency
1. Mr Walter	Department of Waste Management
2. Ms Miriama	Department of Waste Management
3. Ms Emily	Department of Waste Management
4. Ms Mamele	Department of Waste Management

ANNEX 4: SUPPORTING GOVERNMENT AGENCIES

1. Hilary	Environment
2. Reuben Kausea	Environment
3. Lily Saaga	Tuvalu Media Corporation
4. Peneueta Moealofa	Budget & Planning
5. Setima Piita	Human Resource Management
6. Alisa Taukave	Tuvalu Association of Non-Governmental Organization (TANGO)
7. Iosia Fakavae	Climate Change
8. Elika Pepeuga	Education Department
9. Agape Seu	Statistic Department
10. Reena Mataio	Central Procurement Unit
11. Dolores Leneuoti	Land Department
12. Leota Patiale	Pacific Energy Tuvalu Depot

ANNEX 5: COMMUNITY LEADERS AND INDIVIDUALS

1. Faiatea Latasi	Kaupule Funafuti
2. Penehulo Hauma	Nanumaga Island Community
3. Timuani Selu	Jehovah Witness
4. Aaron Moeaga	Ekalesia Kelisiano Tuvalu (EKT)
5. Afasene Iosefa	Nukufetau Island Community

6. Launiu	Nanumea Island Community
7. Elisa K	Funafuti Women Association

ANNEX 6: PRIVATE SECTOR

1. Alisa Taukave	TANGO
2. Timuani Selu	Fatuloa Company (Daelim)
3. Suliasi	Apelamo Recycling Company
4. Leota Pasiale	Asivai Company & Pacific Energy
5. Toaki Kokea	Uota's Garage Services
6. Johnny M	Uota' Garage Services
7. Pele Polau	Sulani Trading Ltd
8. Suliasi M	Tuvalu Recycling Association
9. Fa'ailoilo Saaga	Sulani Trading Ltd
10. Andrea Ionatana	Shongzhen Motor Ltd