



Performance Review of the Waste Sector in Tuvalu

February 2018



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Table of Contents

Introduction	2
Purpose of the Review	2
Review Process.....	2
Stakeholder Consultation.....	2
Data Consolidation and Analysis.....	3
Validation of Priorities	3
Refinement of the Action Plan.....	3
Review Outcomes	3
Prioritised Issues	3
Progress of the Waste Action Plan.....	5
Strategic Goal 1: Institutional Development.....	5
Strategic Goal #2: Stakeholder Awareness	8
Strategic Goal #3: Public-Private Partnerships	9
Strategic Goal #4: Best Practice and Cost Effective Approaches	10
Strategic Goal #5: Human Capacity Development.....	13
Strategic Goal #6: Dissemination of Outcomes and Experiences	15
Challenges and Mitigating Measures.....	16
Cross-cutting Issues	17
Reform of the Waste Sector	18
Communication Plan.....	18
Refined Action Plan.....	18
Programmatic Implementation of Activities.....	18
Proposed Targets	19
Conclusions and Recommendations.....	19

List of Tables and Figures:

Figure 1: Identified priorities by stakeholders.....	4
Table 1: Progress on achieving Strategic Goal 1	5
Table 2: Progress on achieving Strategic Goal 2	8
Table 3: Progress on achieving Strategic Goal 3	9
Table 4: Progress on achieving Strategic Goal 4	10
Table 5: Progress on achieving Strategic Goal 5	13
Table 6: Progress on achieving Strategic Goal 6	15
Table 7: Recommended programmes for the waste sector in Tuvalu.....	19

Introduction

The focus on proper waste management in Tuvalu has been triggered by the extremely limited available land for disposal and the changing consumer patterns in recent years which allowed proliferation of unregulated imported goods. These remain highly challenging issues for Tuvalu.

Through the assistance from European Union (EU), the Tuvalu Integrated Waste Policy and Action Plan 2017 – 2026 was developed and endorsed by the Cabinet in July 2016. This paved the way for the development of a 6.8 million Euro bilateral project funded under the EDF11 cycle which is anticipated to commence in early 2018.

The Tuvalu Integrated Waste Policy and Action Plan 2017 – 2026 supports the aspirations of the Tuvalu Government mainly in the strategic area of Falekaupule and Island Development as reflected and elaborated in the ***Te Kakeega III National Strategy for Sustainable Development 2016 to 2020 (TKIII)***. The linkage to the National Strategy extends to multilateral environmental agreements, urban population growth and oceans and seas which are also addressed in the policy. Through the proper implementation of the waste policy, the government can be assured of a step forward towards achievement of some of its sustainable development goals.

Purpose of the Review

This study covers the review of the implementation of the Waste policy and Action Plan during the period June 2016 until December 2017.

The process will confirm whether the issues raised by the stakeholders during the development of the policy are still relevant and whether new issues have come up. The prioritisation of issues by the same stakeholders will allow the Department of Waste Management (DWM) to program activities through a more refined Action Plan and ensure that the real issues of Tuvalu on wastes will be properly addressed. While the policy with the agreed strategic actions remain the same, the designed action plan designed can be re- assessed to guarantee greater success of achieving these goals.

The policy sets targets for each strategic action. With the recent completion of a baseline assessment and waste survey funded under EDF 10 Technical Cooperation Facility (TCF) and Government own funding, this review will also provide the opportunity to reassess and set more reasonable targets based on a more accurate data received.

The refined action plan will enable greater confidence to deliver waste services and allow DWM to design programmatic approaches to implement set priorities with support from the EU and other donor partners.

Review Process

Stakeholder Consultation

The process involved another round of consultations with the key stakeholders of the waste sector in Tuvalu. Four sessions were conducted (6th to the 8th November 2017) with the non-government organisations, community leaders representing all the islands, relevant government organisations, Kaupule in Funafuti and SWAT. The participants reviewed the issues raised during the policy development, assessed current relevance and prioritised which ones need more immediate attention through a “cause and effect” exercise.

During the same workshop, the participants were gauged on their awareness of waste activities in the action plan which are already progressing. At the same time, they were consulted on activities

which may be challenging to achieve during the 5-year period and any new potential activities which are not in the current plan but will help address the issues. The stakeholders were also requested to provide thoughts on the support they can provide DWM.

Data Consolidation and Analysis

The inputs in the consultation were consolidated and analysed to determine priority rankings of the issues. The selection of participants in the workshop provided a cross-section of the stakeholders as shown in Annex 3. The government is represented by relevant departments such as the Environment, Agriculture, Community Affairs, Marine, Planning, Budget, Trade, Price Control, ICT, Climate Change, and Education. The NGOs are represented by TANGO, recycler, ROC Embassy, UNDP, R2R Project and MFAT. Almost all the island communities are represented by community leaders mostly from the women and youth sectors. There was also a separate session with the waste service providers from DWM and Kaupule. It is, therefore, assumed that the issues were representative of the views of Tuvalu.

Validation of Priorities

The ranked priorities and other outcomes of the consultation were discussed and validated with DWM for consideration in refining the action plan. The issues were aligned with the activities in the plan coupled with the TKIII

Refinement of the Action Plan

The action plan is refined based on the review outcomes with consideration on the progress currently made, the challenges faced and the current views of the stakeholders during the consultations.

Review Outcomes

Prioritised Issues

The following priorities were identified by the participants as relevant to the current situation of the waste sector in Tuvalu (Figure1).

Weak enforcement in waste management and absence of regulation	
Priority 1	<ul style="list-style-type: none"> - Insufficient budget allocation for waste management - Current SWAT organisation is inadequate to meet the demands and improve standard of waste management - Challenging land acquisition for waste disposal - Littering, illegal dumping and burning of wastes
Priority 2	<ul style="list-style-type: none"> - Huge green waste problem - Huge problem on nappies - No formal relevant training of SWAT Office staff to gain qualification - No proper training for handling hazardous wastes - Insufficient field training - Limited stakeholder engagement on waste management - Communication and internet issues in transmitting data from outer islands - Transportation issue to outer islands (shipping schedules) - Lack of awareness on waste issues and difficulty in changing behaviours – very low understanding of proper waste management - Limited space for waste disposal and unsuitability of sites in the outer islands - Huge piggery waste problem - No storage areas for recyclable wastes and hazardous wastes - Inadequacy, inappropriateness and frequent breakdown of existing plant and equipment and unavailability of spare parts and inadequacy of proper fixing and repairing skills
Priority 3	<ul style="list-style-type: none"> - Pay schemes of waste workers - High freight costs for recyclables - Huge amount of wastes generated by contractors - Inefficiencies in systems of delivering waste services, e.g. missed collection - Insufficient data management system - Lack of PPFs
Priority 4	<ul style="list-style-type: none"> - More demand for waste services due to increase in community expectations - Loss of traditional knowledge on composting - No sludge treatment - Improper management of wastes in secondary school
Priority 5	<ul style="list-style-type: none"> - Confusion between the Ministries on managing other wastes, e.g. shoreline, shipping, healthcare, liquid - Limited hours of collection in the outer islands - Preference to livelihood over keeping the island clean - Not having appropriately sized bins - Scattered villages in Vaitupu which makes delivery of waste services difficult - Vulnerability reduction plan not communicated - Insufficient monitoring of waste activities
Priority 6	<ul style="list-style-type: none"> - Only one sole public recycler – no competition

Figure 1: Identified priorities by stakeholders

The weak enforcement and/or absence of proper legislation is identified as an overarching priority which stakeholders believe will likely resolve most of the issues. Littering, illegal dumping and burning of wastes, unregulated imported goods resulting in proliferation of bulky wastes, expired food wastes, plastic wastes, etc. as well as insufficient budget allocation for waste management remain to be the top priorities.

While there is an existing Waste Operations and Services Act 2009, the Act itself needs to be reviewed and there has to be implementing rules and regulations to support its implementation. As of this revision, the Waste Management Act 2017 was endorsed by Cabinet in December 2017 which is a huge progress for Tuvalu's waste sector.

Littering and illegal dumping are still very evident around the island although the cases have been reduced significantly in the recent years. It is worth noting that the stakeholders have started to be aware of the absence of a regulatory framework to address substandard imported goods which potentially generates a lot of wastes in the island. And, for the massive work required in the waste sector, current financial resources are still insufficient despite reported increasing trend of budget allocation over the recent years.

It is interesting to note that the stakeholders are already aware of the programmes on greenwaste management which made them believe that this is already being addressed. Despite this, DWM thinks this is still a priority owing to the huge amount of greenwastes generated. Likewise, the inadequacy of DWM organisation to deal with the mounting waste issues leading to inefficiencies in waste services remain an issue.

Because of challenging land acquisition, waste disposal is seemingly a problem which will be difficult to resolve in the longer term. This is exacerbated by huge problems of generated wastes such as piggery wastes and nappies. The stakeholders believe that having higher level of awareness on waste issues and changing behaviours can partly resolve this lingering limited land issue in the island. In addition, the stakeholders believe that storage areas for recyclables and hazardous wastes need to be prioritised to divert these wastes from the disposal sites. Apart from these, capacity development of DWM and the field workers need to be enhanced in order to properly deliver waste services.

The other intermediate issues such as equipment, high freight costs, large amount of generated wastes by contractors, communication and transport issues in the outer islands are still relevant to date.

The stakeholders think that there is already quite a good stakeholder engagement. The insufficiency of bins no longer emerged as a top priority.

All of the issues raised during the development of the Tuvalu Integrated Waste Policy and Action Plan 2017 – 2026 are still relevant although in varying degrees as shown in Figure 1.

Although not raised as a major issue by the stakeholders, the Development Coordinating Committee (DCC) believes that having a sole private recycler creates an issue on compliance to health and safety practices with bulky wastes stored inappropriately. The DCC sees this as an ongoing issue which needs to be resolved.

Progress of the Waste Action Plan

This section highlights the progress on some of the activities designed to implement the Tuvalu Integrated Waste Policy since its adoption in 2016. Through the guidance from the policy and the strong conviction of DWM to deliver effective waste services, most of the activities have already progressed significantly.

Strategic Goal 1: Institutional Development

Table 1 shows the progress made and challenges faced in achieving strengthened institutional systems to address gaps in Waste Management.

Table 1: Progress on achieving Strategic Goal 1

Implementation Activity	Status	Comments
Goal #1: Strengthened institutional systems to address gaps in waste management		
1. Develop new organisational structure and review remunerations	In progress	- Developed a draft organisational structure to be reviewed and presented to the DCC. - DCC recommended that support from Kaupule be tapped to fill up gaps in required roles.
2. Review existing waste-related policies and merge into one policy and regulation, to include non-	Done	- Reviewed existing waste related Acts - Developed a Waste Management Act with a Waste Management Regulation currently processed for endorsement by Parliament.

Implementation Activity	Status	Comments
Goal #1: Strengthened institutional systems to address gaps in waste management		
burning of wastes, plastic ban and anti-littering among others.		
3. Take measures to uphold the laws and regulations through proper interpretation and development of MOUs with various agencies in the enforcement of the regulations.	In progress	- Recruited a temporary Waste Law Enforcement Officer
4. Establish coordination mechanisms and responsibilities to manage different waste streams including outer island, shoreline and shipping wastes.	Done	- Covered in the Waste Management Act and Regulation - Shoreline wastes are covered through cleaning up campaigns.
5. Investigate impacts of WW wrecks and explore measures for its removal	No progress	- There are no resources to conduct investigation and removal.
6. Develop proper consultation procedures for land use negotiations	In progress	- Already existing but will need to speed up the process of leasing land for waste disposal. An MOU is already signed but the government needs to address certain provisions before approval is granted.
7. Undertake feasibility studies and EIA for land reclamation in close coordination with the Land and Survey Department	Not applicable	- Land is very limited and government does not have site options
8. Strengthen the Import Waste Levy Committee.	In progress	- Awaiting final report of the feasibility study for waste levy for imports and the final draft of the Waste Levy Regulation before progressing to the next level.
9. Impose charges/levy for certain types of hazardous wastes and imported materials through a regulation.	In progress	- Developed a draft regulation which will be aligned the Waste Management Act once endorsed by Parliament. - DCC reiterated the need to regulate importation of motor vehicles. This will be highly considered in the Import Regulation.
10. Investigate and implement options for financing mechanisms to sustain delivery of proper waste services including cost benefit analysis, e.g. CDL, pre-paid bag system, etc.	In progress	- CBA for green waste management was endorsed by Cabinet that will further enhanced the composting programme that will increase revenues generated from mulch and black soil.
11. Regulate importation of goods to ensure reasonable length of lifespan.	No progress yet	- Need to work with AG's office to go through other regulations for imports before commencing with the activity. It is a challenge as other Departments are still trying to review their regulations or develop regulations in regards to importation of goods.
12. Allocate reasonable budget for waste services by relevant departments.	In progress (ongoing)	- Other departments have allocated reasonable budget for clean-up campaigns

Implementation Activity	Status	Comments
Goal #1: Strengthened institutional systems to address gaps in waste management		
		<ul style="list-style-type: none"> - Government provides funding to assist with the cleaning up for state visits, donor visits and forum meetings. - Human resources are provided by various departments during clean-up campaigns, construction and other technical works by DWM.

The new Waste Management Act 2017 superseding the Waste Operations and Services Act 2009 has been adopted by the Cabinet and is currently in force. This new Act integrates all policies relevant to the waste sector covered in the Tuvalu Integrated Waste Policy. Regulations to deal with waste issues in all the islands was also developed to uphold and strengthen enforcement of the Act. This is expected to address significantly the overarching issue raised by the stakeholders on weak enforcement and absence of legislation.

The reform of the organisational structure of DWM is progressing significantly and will be aligned with the refinement of the action plan. This will ensure effective delivery of the planned activities with funding support from the EDF11 bilateral project apart from the government allocation.

The unregulated importation of substandard goods which is identified as a top priority is also progressing with full implementation expected when the new Waste Management Act is adopted. A Waste Levy Regulation is currently being drafted.

Most of the other planned activities to achieve Strategic Goal 1 will be implemented as soon as the new Waste Management Act is passed into law. As of this writing, the Act was already enacted on the 6th of December 2017.

KPI (Key performance Indicator) Achievement:

The following progress has been made on the KPIs for Strategic Goal #1 based on reviewer's judgment noting the progress presented in Table 1:

- a. New organisational structure for the whole sector including the outer islands are endorsed and implemented: **40% achieved** (draft reform prepared for approval) ;
- b. At least 1 waste regulation and 1 waste policy passed and enforced – **60% achieved** (draft prepared and processed for approval);
- c. Each outer island to pass and enforce waste by-laws based on the waste regulation – 25% achieved as couple of islands achieved that end from 2017 to early 2018.
- d. At least 5 agreements on land lease and reclamation successfully achieved – **achieved** (most of the outer islands have agreement to extend lease of the dumpsites; will need to revisit this KPI;
- e. 1 regulation on import waste levy passed and enforced – **30% achieved** (rough draft prepared); and
- f. 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 this year (2018) was increased by more than 2.5%

Strategic Goal #2: Stakeholder Awareness

Table 2 shows the progress made and challenges faced in making stakeholders fully understand the merits of proper waste management and co-share the responsibility of managing wastes.

Table 2: Progress on achieving Strategic Goal 2

Implementation Activity	Status	Comments
Goal #2: The stakeholders fully understand the merits of proper waste management and Co-share the responsibility of managing wastes.		
13. Public Awareness Program involving communities and schools through radio, workshops, posters, training, website, etc. on all waste service areas in Tuvaluan language	Done (continuing progress)	<ul style="list-style-type: none"> - Community and school awareness programs were implemented in all the islands. - Awareness through radio programmes, workshops, trainings for stakeholders - Pamphlets and stickers on waste segregation in Tuvaluan language for bins were distributed to communities - Waste collection timetables and map available and distributed to the public
14. Integrate waste management in the school's curriculum – Clean Schools Programme	Done (to be improved)	<ul style="list-style-type: none"> - Waste management is already a part of the school's curriculum in the Basic Science.
15. Provide incentives for recycling, e.g. handicraft, junkyard business, etc. to women groups and other community groups	In progress	<ul style="list-style-type: none"> - Incentives for recycling programmes conducted with Pre-Schools that includes making handicraft from wastes, e.g. make hats, baskets and purse out of milk and juice carton.
16. Conduct activities or events which are co-implemented with stakeholders.	Done (on-going)	<ul style="list-style-type: none"> - Co-implemented activities or events with stakeholders during the Environment Day, clean-up campaigns, Sipikana Festival, and awareness programs with other Ministries and Departments.

As shown in Table 2, most of the activities designed to achieve Strategic Goal 2 are ongoing. However, the effectiveness of these awareness programmes have to be fully evaluated. The incentive mechanism for recycling needs to be expanded to the other sectors like the women, youth and other community groups and NGOs in order to create livelihood opportunities.

KPI (Key performance Indicator) Achievement:

The following progress has been made on the KPIs for Strategic Goal #2 based on reviewer's judgment noting the progress presented in Table 2:

- a. 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** yet pending the job initiation of the new Enforcement Officer;
- b. Key sites presenting examples of poor community behaviour audited to provide measurable baseline data – **30% achieved** (partly captured during the baseline survey);
- c. At least 1 gender sensitive public awareness programme weekly – **not achieved** yet pending the full-blown awareness campaigns to be conducted by the recruited Awareness Officer; Gender equality has been taken into consideration as a priority under the awareness and education programs when outlining of the annual activities for 2018
- d. At least 10 recipients of incentives in a year – **not achieved** since not programmed in the budget yet;

- e. At least 2 national activities co-implemented successfully with stakeholders in a year – **100% achieved** and is an ongoing commitment; and
- f. Regular monitoring of key sites to assess effectiveness of the awareness programmes on community awareness and behaviour – **not achieved** yet but will be incorporated in the job description of the Awareness Officer.

Strategic Goal #3: Public-Private Partnerships

Table 3 shows the progress made and challenges faced in establishing partnerships between the public and the private sector in the delivery of waste services.

Table 3: Progress on achieving Strategic Goal 3

Implementation Activity	Status	Comments
Goal #3: Establish strong partnerships between the public and the private sector in the delivery of waste services		
17. Establish waste industry schemes which will involve private businesses heavily –privatisation of some waste services.	No progress	- There is still only one private recycler for Tuvalu
18. Develop recycling networks.	No progress	- Will provide inputs to the resource circulation study currently under implementation by the Pacific Regional Infrastructure Facility
19. Incorporate waste management in the permitting process for businesses and international contracts with emphasis on management of bulky wastes.	No progress	- Pending while the Waste Management Act is yet to be endorsed by Parliament in December 2017.
20. Acquire handling and storage equipment to facilitate shipping of recycled materials	In progress	- Bought 16 containers to assist with the storage and shipping of recycled materials - Transfer and Recycling Station is under construction with planned completion at the end of February 2018. - Able to procure 22 containers (1,000 litre) to cater for storage and safe handling of waste oil when exported to Fiji
21. Develop and implement a system with importers and transporters on the back loading of recycled materials off the island.	In progress	- The private recycler is currently working on refilling a container with recyclable wastes to be exported overseas. - The back loading will commence once the Transfer and Recycling Station is completed and ready for operation.

Public-private partnership is seemingly not well established in Tuvalu yet but DWM is taking extra effort to build on opportunities for such partnerships to assist in their future resource recovery programmes and potentially in privatisation of waste services.

KPI (Key performance Indicator) Achievement:

The following progress has been made on the KPIs for Strategic Goal #3 based on reviewer's judgment noting the progress presented in Table 3:

- a. Secured funding for private sector to be incorporated into the currently drafted Import Waste Levy legislation – **not achieved** yet pending the development and enactment of the legislation;

- b. At least 1 recycling business established and maintained in a year – **not achieved** yet (waiting for the outcomes of the regional network investigation, e.g.); In addition, outcomes of the Palau visit will enhance privatization of recycling programs
- c. Tuvalu has access to a functioning recycling regional network – **not achieved** yet;
- d. System of back loading of recycled wastes is established and operating well – **not achieved** yet; establish when transfer station is complete and
- e. Waste management planning is incorporated in infrastructure project approval system – **achieved** and its part of the Waste Management Act 2017.

Strategic Goal #4: Best Practice and Cost Effective Approaches

Table 4 shows the progress made and challenges faced in delivering waste services that follow best practice and cost effective approaches tailored to local conditions with continuous improvement.

Table 4: Progress on achieving Strategic Goal 4

Implementation Activity	Status	Comments
Goal #4: Delivered waste services follow best practice and cost effective approach tailored to local conditions with continuous improvement		
22. Investigate and implement options of waste containment and collection of wastes to enable a more reliable and efficient service, i.e. for regular, recyclable and difficult wastes generated by households, commercial establishments and institutions (church, school, government buildings, airport, etc.)	In progress	<ul style="list-style-type: none"> - Gathered information on waste containment during the waste survey - Assessment of collection systems undertaken for all the islands during the waste survey
23. Undertake a time and motion study to update existing collection service.	Done	<ul style="list-style-type: none"> - Made part of the waste survey for all the islands
24. Provide cost-effective waste containers and collection service based on outcomes of investigations.	In progress	<ul style="list-style-type: none"> - Bought waste bins (75ltrs) that were distributed to households without bins and collection service is an ongoing activity of the DWM Department.
25. Develop and implement waste infrastructure and maintenance plan (disposal sites, collection service, recycling and storage facilities, transportation, etc.). This would include inventory of existing facilities and equipment (including bins).	In progress	<ul style="list-style-type: none"> - Contributed to the Tuvalu Asset Management Framework for the Government that was funded through the ADB. - Separate plan specific for the waste sector needs to be developed.
26. Develop a waste asset management plan	In progress	<ul style="list-style-type: none"> - Contributed to the Tuvalu Asset Management Framework for the Government that was funded through the ADB. - Separate plan specific for the waste sector needs to be developed.
27. Acquire well-designed equipment and facility appropriate for particular waste activity and type of waste (including bulky wastes and nappies, among others)	In progress	<ul style="list-style-type: none"> - Procurement of 2 waste dump trucks to assist with waste collection - Procurement of a forklift to assist with bulky wastes and to lift 1,500 litre nappy bins. - Procurement of a metal baler through funding assistance from World Bank to assist with compaction of scrap metals.

Implementation Activity	Status	Comments
Goal #4: Delivered waste services follow best practice and cost effective approach tailored to local conditions with continuous improvement		
		<ul style="list-style-type: none"> - Progressing with the construction of the Transfer and Recycling Station. - Procuring of 300 household bins for Funafuti
28. Enforce use of PPEs.	In progress (ongoing)	<ul style="list-style-type: none"> - Field officers are provided with PPEs such as safety boots, overalls, gloves, safety hats, raincoats, etc.
29. Rehabilitate and operate the existing Funafuti dumpsite or construct new engineered landfill with proper operational procedures (manual) and facilities.	In Progress	<ul style="list-style-type: none"> - Funded by the EU under the EDF 10 and assistance provided by the SPREP
30. Investigate suitability of existing disposal sites in the outer islands	Done	<ul style="list-style-type: none"> - Through the baseline study that was funded by EU EDF 10 through SPREP (PacWaste Project) but have yet to be finalised.
31. Improve the operation and security of the outer island dumpsites (fencing, burying, pushing and compacting)	In progress	<ul style="list-style-type: none"> - Completed the construction of the fence for the Nanumea island dumpsite. - Delays in leasing and carrying out surveys due to communication and transportation (shipping schedule) issues as well as the unavailability of the Lands and Survey officers.
32. Provide equipment sheds, storage facilities and workers' washing facilities in the outer islands	No progress	<ul style="list-style-type: none"> - To be implemented next year due to insufficient funds.
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.	No progress	<ul style="list-style-type: none"> - Insufficient funds to carry out this activity and needed a technical assistant to conduct this activity
34. Set up a transfer station and recycling facility – trash palace in Funafuti and Vaitupu	In progress	<ul style="list-style-type: none"> - The Transfer and Recycling Station for Funafuti is progressing with the construction works and it is anticipated to complete before the end of the year.
35. Introduce and adopt new recycling and waste minimisation technologies, e.g. biogas facility for piggery and food wastes, back loading of recyclable wastes, centralised and home composting; etc.	In progress	<ul style="list-style-type: none"> - Pilot project commenced under the Regional Ridge to Reef (R2R) project on composting using dry pig litter as additional input.
36. Actively implement the 3R + return programme to divert as much waste as possible away from the landfill including segregation of wastes at source and in the transfer stations and a designated area in the disposal sites.	In progress (ongoing)	<ul style="list-style-type: none"> - Segregation of wastes at the household level (green wastes from household wastes) and green waste diversion for composting are ongoing activities - Recyclable wastes will be sorted out once the transfer station is completed
37. Implement community-based composting programmes using traditional means of utilising	In progress (ongoing)	<ul style="list-style-type: none"> - Composting programmes for communities that includes the Falevatie programme in using mulch

Implementation Activity	Status	Comments
Goal #4: Delivered waste services follow best practice and cost effective approach tailored to local conditions with continuous improvement		
compost or mulch for gardening in Funafuti and implement pilot activities in the outer islands		from shredded green waste for the Falevatie (composting toilet). - Communities buy shredded green wastes and black soil from DWM for gardening.
38. Implement Composting of mulch with piggery waste in conjunction with pig growers	In progress	- Pilot on dry litter piggery composting under the Regional R2R project.
39. Design and implement a public anti-littering programme (clean-ups and provision of public litter bins as options)	In progress	- Conducted clean ups with communities as well as Government Ministries - Working on project proposal for the procurement of public litter segregation bins for the QII park and other public areas
40. Undertake assessments of stockpiles of hazardous wastes in all the islands	No progress	- insufficient staff and time to carry out the task
41. Develop and implement systems to properly manage hazardous wastes (chemicals, healthcare, asbestos, e-wastes, etc.), i.e. handling, storage, treatment and disposal	In progress	- Chemicals, waste oil, e-wastes, ULABs are stored at the hangar while health care wastes are dealt by the Public Health Department through incineration.
42. Provide infrastructure and facilities for the proper management of hazardous wastes	In progress	- Hazardous wastes are currently stored at the hangar but will be moved to the Transfer and Recycling Station once completed - Waste oil are stored in containers ready to be exported to Fiji through the Pacific Energy - E-waste are stored in container procured under the DWM funding
43. Implement a liquid waste management programme including collection, storage and disposal.	No progress	- specify reason for no progress No proper equipment and well trained staff to carry out the task

Most of the activities designed to achieve efficient and effective operational systems following best practices have been initiated but progress is slow since most of these activities require substantial resources and further investigation of feasibility. It is expected that these programmes will advance when more project and government funding becomes available.

There is, however, a need to refine and link activities with similar expected outcomes. This will be done as part of this review. The linkage with other relevant programmes such as the Regional R2R is a good initiative and promotes collaboration with other national and regional projects and should be continuously pursued.

It is good to note that the construction of the Transfer and Recycling Station is fast progressing which will eventually be used to implement most of the best practice resource recovery initiatives and containment of hazardous wastes.

KPI (Key performance Indicator) Achievement:

The following progress has been made on the KPIs for Strategic Goal #4 based on reviewer's judgment noting the progress presented in Table 4:

- a. Adherence to the Procurement Policy of the Ministry of Finance – **achieved** DWM fully complied to Public Procurement Regulation
- b. Waste facilities and equipment are designed incorporating climate proofing measures and are operated with minimal health and environmental risks – **partly achieved**. The new transfer and recycling Station has been designed to withstand sea spray impact. Moreover, prefabricated materials shipped were repainted and coated with top antirust paint to minimize the impact of sea spray from the sea side.
- c. Occupational and public health and safety incidents are reduced to nil – **not sure if achieved** (no monitoring mechanism in place yet); There is no monitoring system in place due to the fact that the Health Waste management as the responsibility have been handed over to Health Department in 2016.
- d. 100% coverage of collection in the main island and at least 80% coverage of collection in the outer islands – **achieved**.
- e. At least 10% of wastes are diverted from the landfill progressively each year – **achieved** Funafuti fully achieved this part, outer island is yet to confirm
- f. Reduction of green wastes by at least 50% after 5 years – **partly achieved Funafuti** (no monitoring mechanism in place yet and will revisit to provide better measure of success);
- g. At least 3 composting programmes implemented – **60% achieved** (with the R2R Project and ongoing Taiwan project);
- h. 1 national landfill rehabilitated – **achieved** Funafuti landfill rehabilitation is in progress
- i. All outer island disposal sites improved – **7% achieved** (fencing done Nanumea Dumpsite);
- j. 1 national transfer station established and 1 smaller-scale transfer station in the biggest island of Vaitupu – **60% achieved** (national transfer station in Funafuti due for completion in Dec 2017);
- k. 1 detailed infrastructure and maintenance plan developed – **10% achieved** (inputs into the Tuvalu Asset Management Framework) ;
- l. 1 asset management plan developed – **10% achieved** (inputs into the Tuvalu Asset Management Framework);
- m. Collection, storage and transport of hazardous wastes comply with international protocols – **20% achieved** (currently ongoing with training provided); DWM fully complied with Waigani Convention
- n. At least one hazardous waste storage facility established – **30% achieved** (currently stored at the hangar but proper storage facility planned to be housed in the transfer station);
- o. Reduction of hazardous wastes disposed in the landfill by 80% - **30% achieved** (most of the hazardous wastes are collected and stored separately in the hangar but proper monitoring at the landfill is requited); and
- p. At least 80% of piggery wastes eliminated from the raising site and converted to energy or compost – **5% achieved** (pilot dry litter composting implemented through the R2R Project).

Strategic Goal #5: Human Capacity Development

Table 5 shows the progress made and challenges faced in enhancing capacity of waste practitioners.

Table 5: Progress on achieving Strategic Goal 5

Implementation Activity	Status	Comments
Goal #5: Enhanced capacity of waste practitioners		
44. Assess training needs for the waste and relevant sectors for all the islands.	Done	- Assistance received from SPREP through EDF 10 TCF funds to undertake capacity needs assessment. Report expected to be finalized in couple of weeks

Implementation Activity	Status	Comments
45. Implement national learning programmes through trainings, peer tutoring and other informal mentoring approaches.	In progress (ongoing)	- Conducted two re-echo trainings for DWM staff and field staff under Kaupule after attendance to regional and international trainings - Trainings conducted with communities on waste segregations at the household level.
46. Explore and participate in information exchange programmes with other countries within and outside the region, i.e. South-south cooperation, twinning arrangements, etc.	In progress	- Attended and participated in regional waste meetings and trainings that involves information exchange with other countries. Please provide some examples (e.g. Regional Steering Committee of PacWaste and prioritization workshop for EDF 11 PacWaste plus etc) This also includes technical trainings provided by the JICA to Waste Management annually along with SPREP in the past few years under GEFPAS programs.
47. Provide re-echo training programmes after attendance to regional and international trainings	In progress	- Conducted two re-echo trainings for SWAT staff and field staff under Kaupule after attendance to regional and international trainings

Most of the activities on human capacity development have been initiated as shown in Table 5. However, in order to ensure that these trainings are relevant to the needs of the waste practitioners, a full capacity needs assessment is required.

DWM should continue attending regional and international trainings to provide leadership and champion proper waste management in the country. The re-echo trainings provided by SWAT to field workers manifests this leadership and the commitment to deliver effective waste services.

KPI (Key performance Indicator) Achievement:

The following progress has been made on the KPIs for Strategic Goal #5 based on reviewer's judgment noting the progress presented in Table 5:

- a. At least 2 of the 4 current technical staff has undergone long-term training on waste management or relevant field – **partly achieved** (Director is scheduled to undertake a Postgraduate course in Environment Management 2018 – 2020)
- b. All technical staff has undergone short-term training on various aspects of waste management – **60% achieved** (3 out of the current 5 technical staff have undergone short-term trainings) ;
- c. All field workers and relevant Kaupule staff have undergone in-country trainings and refresher courses conducted at least once a year - **achieved** and ongoing;
- d. At least 1 participant in regional cooperation and exchange programmes in a year - **achieved**;
- e. At least 1 re-echo national training conducted in a year - **achieved**;
- f. A training progression plan developed for all staff within DWM and waste operators, with minimum levels developed, induction program and specialist training programs provided for various staff (e.g. driving, waste collection, sorting, hazardous waste identification and handling, healthcare waste handling, etc.) – **not achieved** yet (preparation of Capacity Building Plan underway);
- g. Staff (waste sector) turnover reduced by 20% annually – **not achieved** since no monitoring measure undertaken yet pending the reform of the DWM structure (2 staff resigned in 2017 and another one early 2018)

- h. Enforcement of proper handover of responsibilities of departing staff as mandated in 3.8.9 of the General Administration Order (GAO) – **achieved**;
- i. Staff in management positions receive training in program and business management to assist their capacity to make appropriate HR and fiscal decisions – **not achieved** yet (trainings to be recommended in the Capacity Building Plan).
- j. Staff performance and training tied into addressing the key goals and KPIs outlined in this document - **not achieved** yet (trainings to be recommended in the Capacity Building Plan).
- k. Project staff recruited to provide technical support to DWM during the operation, monitoring and evaluation – **not achieved** yet.

Strategic Goal #6: Dissemination of Outcomes and Experiences

Table 6 shows the progress made and challenges faced in ensuring that waste activity outcomes are reported and disseminated to relevant stakeholders.

Table 6: Progress on achieving Strategic Goal 6

Implementation Activity	Status	Comments
Goal #6: Waste activity outcomes are reported and disseminated to relevant stakeholders		
48. Undertake a baseline survey of existing waste conditions and services including inventory of imported goods.	In progress	- Conducted the baseline survey to be finalized and endorsed before the end of the year
49. Regular collection of data through standard methods.	In progress (ongoing)	- Waste data collected during waste collection through the drivers of DWM and Kaupule and data is inputted into a database
50. Update country waste profiles	No progress	The resource circulation study under PRIF has developed Country Recycling Profiles – can be an important input to the more general country waste profile and definitely worth mentioning it
51. Develop a reporting framework and Implementation through media and government channel to ensure dissemination of information.	In progress (to be improved)	- Regular reporting to the Steering Committee which are elevated to the DCC and Cabinet - Information are further shared with the media during awareness programmes through radio
52. Undertake regular reporting to the Cabinet and stakeholders	In progress (ongoing)	- Regular reporting to the Steering Committee which are elevated to the DCC and Cabinet
53. Create a multi-stakeholder steering committee and establish internal procedures for running the committee	In progress	- Completed the development of the TORs for the Waste Management Steering Committee and three task forces and was tabled to DCC for endorsement The DCC supports the reform of the multi-stakeholder steering committee and task forces for Funafuti but will be tabled for Cabinet's endorsement.
54. Create Waste Sub- Committees in the Outer Island	In progress	- Full range of consultations conducted with each island, the outcome, all islands are willing to setup waste sub-committee on each island.

The baseline assessment and waste survey conducted recently for all the islands is a good kick-start in developing a monitoring and reporting framework to disseminate outcomes at the national and regional level. While there has been data collection and reporting protocols already followed, these

have to be refined through a Monitoring and Evaluation Plan which can also be aligned with the EDF11 project monitoring and reporting framework.

KPI (Key performance Indicator) Achievement:

The following progress has been made on the KPIs for Strategic Goal #6 based on reviewer's judgment noting the progress presented in Table 6:

- a. A data management system is established with proper training on data collection, processing and reporting – **20% achieved** (provisional data management system in place pending the development of the Regional Waste Monitoring System);
- b. Waste data collected and recorded daily - **achieved**;
- c. Daily data reported monthly - **achieved**;
- d. Quarterly data compiled - **achieved**;
- e. Annual report completed -**achieved**;
- f. Established monitoring committee is operational - **20% achieved** (extension of the membership and Terms of Reference of the Waste Levy Committee subjected for approval ;
- g. Quarterly meetings conducted – **not achieved** yet pending formal formation of the Waste Monitoring Committee; and
- h. Reporting framework developed and implemented – **50% achieved** (will revise when the EDF11 Project commences); and
- i. DWM report on waste revenue versus expenditure prepared annually – **not achieved** yet (will revisit based on applicability)

Challenges and Mitigating Measures

The following challenges with appropriate mitigating measure were noted in the delivery of waste services and implementation of activities to support the Tuvalu Integrated Waste Policy.

1. There is limited capacity of SWAT officers in the field which leads to inefficiencies and less productivity in some instances. A reform of the SWAT structure is developed and approval process is underway.
2. Human resourcing and institutional strengthening which limits the capacity of SWAT to perform its tasks. The reform of the DWM structure and the policy implementation will set the tone to strengthen the waste sector in Tuvalu.
 - The waste disposal is nearing the end of its capacity and there is still uncertainty on how soon it can be rehabilitated or extended. External assistance is sought from an expert in the Pacific with recommendations for low-cost modular/progressive rehabilitation works. The works are expected to commence in the first quarter of 2018.
 - Poor communication & transportation deter implementation of activities which impact the effectiveness and efficiency of programmes and services delivered in both Funafuti and the outer islands. Government intervention is required to ensure more fixed and more frequent boat schedule.
 - Active engagement with the community and stakeholders is still a challenge despite regular awareness campaigns including increased demand for services as a result of decisions to expand coverage. More focussed groups such as women and youth can be targeted first s. The targeted groups can be resource persons for the widespread awareness campaigns.
 - The lack and inappropriateness of some equipment affect efficiency of waste delivery. DWM should commence the process of having its own asset management planning to include procurement, maintenance and renewal plan.
 - The expensive cost of delivering waste management services hinders implementation of some of the planned activities. With donor and more government support and sustainable financing mechanisms, investment on waste management can be assured.

- Increasing amount of imported products cause spikes in waste generation. Import regulation mechanisms such as import levy and quality control should be enforced when importing goods.
- The inability of DWM to enforce laws due to lack of appropriate regulation limits their capacity to prevent unacceptable practices such as illegal dumping, littering and burning of wastes. The government should facilitate the adoption of the Waste Act and accompanying regulation.
- Waste segregation cannot be implemented fully due to lack of storage facility for the segregated wastes. The transfer and recycling station currently being built will provide storage areas for segregated wastes.
- Difficult wastes such as bulky wastes, hazardous wastes, demolition wastes, disaster wastes, nappies, etc. cannot be properly managed because of insufficient resources. Management of these wastes can be addressed in the EDF11 bilateral programme with provisions for sustainability.
- DWM engagement in other unplanned works directed by superiors disrupts regular waste management services. Better collaboration mechanisms and protocols should be put in place.

Cross-cutting Issues

Appropriate sectors who have stakes on waste management are involved heavily on the consultations for the review of the strategy. Government and non-government representatives (community and organisations/institutions) across different sectors took part in stakeholder consultations in both the development and review of the Integrated Tuvalu Waste Policy. These brought waste issues into fore across other cross-cutting issues such as gender, climate change, environment, health, governance, etc. It is, however, very early in the stage of implementing the policy that clear visibility of the sectoral involvement can be assessed.

The DWM plays a facilitation and overseeing role in waste management which is based on the principle followed by communities that “waste is everybody’s business”. There is a strong culture and custom in the Tuvaluan community that women plays the role of cleaning up and managing rubbish at the household level. There is a clear indication that they are aware of what and how much rubbish goes into the bins. This can be capitalised in rolling out segregation activities at the household and community level. Discharge of contained rubbish on the roadside or collection points is the joint responsibility of men and women and this will be considered in mapping out specific activities relevant to waste collection.

The handicapped and the elderlies are involved in the awareness campaigns. Some of the elderlies who are also community leaders also actively took part in the consultations. Both these vulnerable groups either undertake or participate in clean-up activities either at the national or local level. They will continue to be targeted community group in developing programmes.

The civil society groups particularly the Funafuti community have always been supportive of DWM activities and continuously undertake clean ups of local, public and beach areas through the Kaupule. This should be highly considered in rolling out community-based programmes.

While most of the progress on the waste sector during this review period can be attributed to the efforts of DWM, there were a number of activities undertaken in collaboration with other government departments and civil society groups. The clean-up campaigns drew support from all sectors in the whole island of Funafuti. The recent changes in leadership in some of the relevant government departments provided better collaboration in common areas such as environmental health (e.g. marine pollution, hazardous waste management, shipping wastes), and climate change.

Reform of the Waste Sector

The enactment of the policy brought into fore significant reforms in the waste sector. Some of the highlights are the following:

1. The Solid Waste Agency of Tuvalu (SWAT) has now been renamed Department of Waste Management (DWM). This is part of the organisational reform which is now under the scrutiny of the Ministry of Home Affairs and Rural Development. The final reformed structure will undergo approval process as soon as the Ministry finds it feasible.
2. Formation of the Multi-stakeholder Steering Committee is underway with the Terms of References already discussed and recommended for endorsement by the Cabinet after the passage of the Waste Management Act. This committee has an expanded membership with key members coming from the Waste Levy Committee. Once the TOR has been approved, the Committee will form three task forces who will deal with waste levy (import regulation), legislation (laws and enforcement), among others. This committee will coordinate, monitor and evaluate the activities of the waste sector with DWM as the Secretariat.
3. Fortunately, as of this writing, the Act was already enacted in the last Parliament meeting on the 6th December 2017. The accompanying Regulation will also be passed during the next Cabinet meeting now that the Act has already been endorsed. This is the most significant achievement since the endorsement of the policy. The legislative and regulatory framework will now strongly back up planned activities of the waste sector. The framework will be coordinated through relevant departments through the Department of Waste Management and the Multi-stakeholder Committee.

Communication Plan

There is no communication plan designed yet pending the recruitment of the Information and Communication Officer once resources have been provided.

Refined Action Plan

Based on this review, a number of linked and related activities were integrated and costings adjusted. The activities were also thoroughly reviewed with the DWM Director to ensure that these can be implemented based on financial and technical considerations. From 54 activities, the refined action plan is now reduced to 47 activities.

The timelines were also adjusted based on progress made to date, the prioritisation exercise on waste issues with the stakeholders as well as the capacity of the team to undertake the planned activities within the remaining 4-year period. External technical assistance is included in the proposed new organisational structure with accompanying budget to provide support in project management during the initial stages of the EDF11 project as well as build the capacity of DWM and Kaupule in the delivery of waste services and the activities in this refined action plan. The refined action plan is in Annex 1 of this report.

The government's funding for certain activities were also adjusted based on current and projected expenditure for the waste sector with due reference to the ***Te Kakeega III National Strategy for Sustainable Development 2016 to 2020 and the Government Roadmap 2015-2019***.

Programmatic Implementation of Activities

The programmatic approach to implementation of the planned activities will allow consolidation of related and linked activities and will streamline monitoring and reporting of outcomes. This programme approach is presented in the waste policy and this review proposes its implementation. Table 7 shows the proposed programmes to enhance effectiveness of the performance of Tuvalu's waste sector.

Table 7: Recommended programmes for the waste sector in Tuvalu

5Es	PROGRAMME	LINK	
		Goal	Action
Establishment	Strong Waste Sector of Tuvalu Programme	1, 4, 5, 6	1, 2, 3, 4, 5, 7, 10, 11, 12, 16, 17, 18, 19, 20
Engineering	Tuvalu Waste Infrastructure Development Programme	1, 4	3, 5, 6, 8, 10, 12, 13, 14, 15
Education	Clean Islands Awareness Programme	2, 4, 5	5, 6, 8, 11, 13, 14, 16, 17, 19, 20
Empowerment	Do Your Share on Wastes Programme	2, 4, 5, 6	1, 2, 4, 6, 8, 9, 11, 16, 17, 18, 19, 20
Entrepreneurship	Waste Economic Programme	1, 2, 3, 4	3, 4, 5, 7, 8, 9, 10, 13, 14

Proposed Targets

A number of key performance indicators are found to be difficult to achieve and it is not clear how these indicators can be measured. The refined indicators are aligned with the refined action plan. These indicators are presented in Annex 2

Conclusions and Recommendations

The review provided a better understanding of the issues besetting the waste sector in Tuvalu with valuable inputs from the stakeholders. The stakeholders were given the opportunity again to be aware of what the government is doing to address ongoing and projected issues. Their participation in both the development of the waste policy and review of the action plan boosted their sense of ownership of the policy and its implementation.

The following activities in the Implementation Plan were completed and with significant progress achieved:

- Existing waste related Acts were reviewed and the Waste Management Act with accompanying regulation has been drafted and recently passed into law during the last Parliament meeting on the 6th December 2017.
- Coordination mechanisms and responsibilities to manage different waste streams in all the islands have been incorporated into the draft Waste Management Act. Shoreline and shipping wastes have now been addressed during the clean-up activities mainly by the Kaupule.
- Public awareness programmes are continuously undertaken in the community and school in all the islands through radio programmes, workshops and trainings. Pamphlets and stickers on waste segregation in Tuvaluan language for bins were distributed to communities as well as waste collection timetables and map were distributed to the public.
- The Basic Science curriculum incorporates waste management as a subject matter but this needs to be further improved.

- Recently, a number of events in Tuvalu required management of wastes which were co-shared between DWM and other Ministries and Departments. These were well coordinated with positive outcome.
- There was an opportunity to undertake a time and motion study for waste collection during waste surveys in all the islands.
- There was also an opportunity to partially investigate the suitability of disposal sites during the baseline survey funded by EU EDF 10 through SPREP (PacWaste Project) although this have yet to be finalised.

The Government of Tuvalu, through DWM is making good progress on the implementation of the Tuvalu Integrated Waste Policy and Action Plan. Out of the 54 activities developed to implement the policy and achieve goals on waste management, 40 are either done with further improvements required or are already in progress and ongoing. This is a significant achievement which reflects DWM's commitment to deliver its mandate.

The rest of the activities which have not been started yet either require significant resources or found to be no longer applicable or awaiting outcomes of the other activities, e.g. adoption of the Waste Management Act which was enacted in the last Parliament meeting on the 6th December 2017. The rehabilitation of the Funafuti Dumpsite, inventory of stockpiles of hazardous wastes, and liquid waste management are activities which require external technical and financial assistance which may be realised through donor assistance. Likewise, the establishment of public and private partnership is an area which requires external assistance and cooperation through recycling networks. The PRIF study on resource circulation may shed light on some of the good resource-effective opportunities to progress recycling in the islands.

The progress review of the action plan allowed refinement and adjustments to future activities including costings which is reflective of a more doable plan. The government's funding for certain activities were also adjusted based on current and projected government expenditure for the waste sector. The review provided better judgment in undertaking the activities and ensure greater probability of success.

The review also allowed resetting targets or key performance indicators to align with the refined action plan.

Recommendations:

1. The outcomes of this review should be considered in designing the work programme of DWM in the coming years.
2. A regular review of the plan to capture progressive results should be undertaken prior to programming future activities.
3. The roles, which are to be assessed during the process of reforming DWM, should be aligned with the refined action plan, which is an outcome of this review.
4. The future performance review should be based on an established monitoring and evaluation plan with progress measured against the established key performance indicators for each strategic action.

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 AGs 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	

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	
5. Lease of land for extension of the Funafuti Landfill and undertake impact assessments for land reclamation, if required.	DWM Environment Department Lands Department						500,000	300,000	200,000	
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						As per work programmes			

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	
	Climate Change Department (Project) Ministry of Transport & Communication Public Works Department									

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	

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	
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						500,000	100,000	400,000	

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	
	Public Enterprise Planning & Budget Department STAT Department									
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										
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	
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	

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	
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	
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	Kaupule DWM Department						150,000	20,000	130,000	

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	
composting programme in Funafuti and in the outer islands.										
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, Lands Department						30,000		30,000	
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	

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	
32. Provide equipment sheds, storage facilities and workers' washing facilities in the outer islands							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						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	
	Marine Finance									
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 though trainings, peer tutoring and other informal mentoring approaches such as re-	DWM Department						150,000	30,000	120,000	

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	
echo training programmes after attendance to regional and international trainings.	Education Department Media TNPSO TANGO Personnel & Training									
40. Explore and participate in information exchange programmes with other countries within and outside the region, i.e. South-south cooperation, twinning arrangements, etc.	DWM Department Personnel & Training Labour						150,000	60,000	90,000	

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						60,000	30,000	30,000	

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	
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 SC						50,000	5,000	45,000	
47. Undertake regular reporting to the Cabinet and stakeholders	DWM Department SC						No cost			

Annex 2: Revised key performance indicators of the Tuvalu Waste Policy

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. 	<ol style="list-style-type: none"> g. New organisational structure for the whole sector including the outer islands are endorsed and implemented; h. At least 1 waste law, 1 waste policy and 3 specific regulations passed and enforced; i. Each outer island to pass and enforce waste by-laws based on the national waste law; j. At least 5 agreements on land lease successfully achieved; k. 1 regulation on import waste levy passed and enforced; l. At least 1 sustainable financing mechanism successfully implemented; m. 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"> • Top three bad public behaviours identified (e.g. burning of wastes, public littering, dumping in lagoon), and a public awareness programme to change behaviour implemented;

Thematic Area	Goals	Actions	KPIs
	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>	<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; • 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"> • Roadmap for improved PPP developed; • 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.
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	<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</p>	<ul style="list-style-type: none"> • Waste facilities and equipment are functioning well 70% of the time; • 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%;

Thematic Area	Goals	Actions	KPIs
		<p>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> <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"> • 100% coverage of collection in the main island and at least 80% coverage of collection in the outer islands; • Waste generation rate is controlled; • 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 hazardous wastes comply with international protocols; • 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.
HUMAN CAPACITY DEVELOPMENT	Goal #5: Enhanced capacity of waste practitioners	<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; • All technical staff has undergone short-term training on various aspects of waste management;

Thematic Area	Goals	Actions	KPIs
			<ul style="list-style-type: none"> • 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; • 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.
DISSEMINATION OF OUTCOMES AND EXPERIENCES	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.

Annex 3: Attendees to the consultation on the review of the Tuvalu Waste Policy

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7th November 2017

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SWAT & Funafuti Kaupule

8th November 2017

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	Ioakim	Labourer – Kaupule	
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	Filemu	Compost Labourer – SWAT	
	Maika	Labourer – SWAT	
	Alofa	Labourer – SWAT	
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