



Government of Samoa

# Annual Report 2012 - 2013



Ministry of Natural Resources & Environment

## Acronyms

AIREP – Aleipata Island Restoration Program  
AVA- Australian Volunteer Association  
BECA – BECA International Consultants Ltd  
COT - Crown of Thorns Starfish  
CBDAMPIC- Capacity Building in the Development of Adaptation Measures in Pacific Island Countries;  
CGPS – Continuous Global Position System Base Station  
CRAM – Coral Reefs Assessment and Monitoring  
DAC-Disaster Advisory Committee  
EU – European Union  
FESA - Fire Emergency Services Authority  
GCI - Global Communications Institute  
IAMP2 – Institutional Asset Management Project 2;  
ICCRAHS - Integrated Climate Change Risks in Adaptation for the Health Sector  
IFAW - International Fund for Animal Welfare  
IRIS-Integrated Research Institute in Seismology  
IWC - International Water Centre  
JICA-Japan International Cooperation Agency  
KIGAM – Korean Institute of Geology and Mines;  
METAR – Meteorology Aerodrome Report  
MNRE- Ministry of Natural Resources and Environment  
MOH – Ministry of Health  
NAPA – National Adaptation Plan of Action  
NAP-National Action Plan  
NCCT- National Climate Change Country Team  
NCSA – National Capacity Self-Assessment  
NDC - National data Centre  
NDMP – National Disaster Management Plan  
NIWA - National Institute of Water & Atmospheric Research  
NESP - National Environment Sector Plan  
NEX – National Execution of Projects  
NUS – National University of Samoa  
NWRIMS - National Water Resources Information Management System  
PEF - Pacific Environment Forum  
PCCSP - Pacific Climate Change Science Project  
PICPP-Pacific Island Climate Prediction Project  
PILN – Pacific Invasive Learning Network  
PEA – Preliminary Environment Assessment  
ROFOR – Route Forecast  
SIAM – Second Infrastructure Asset Management Program  
SLISE- Samoa Lithospheric Integrated Seismic Experiment  
SNITT- Samoa National Invasive Task Team  
SOE - State of the Environment  
SOPAC – Secretariat of the Pacific Applied Geo-science Commission  
SPREP-Secretariat of the Pacific Environment Programme  
UNCCD- United Nations Combating Climate Desertification  
UNFCCC - United Nation Convention on Climate Change  
WHOI – Woodhole Oceanographic Institute  
WMO-World Meteorological Organization  
WWW- World Weather Watch program

## MINISTER

Hon. Faamoetauloa Lealaiauloto Taito Dr. Faale Tumaalii



## CHIEF EXECUTIVE OFFICER

Tuifuisaa Taulealeausumai Laavasa Malua



### LAND BOARD

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• Chief Executive Officer, Ministry of Natural Resources & Environment	Deputy Chairman
• Attorney General	Member
• Chief Executive Officer, Ministry of Finance	Member
• Chief Executive Officer, Ministry of Agriculture & Fisheries	Member
• Chief Executive Officer, Ministry of Works Transport & Infrastructure	Member
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• Poloa Sio	Member

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• CEO, Ministry of Women, Community & Social development	Member
• CEO, Ministry of Works, Transport & Infrastructure	Member
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• Leiatua Isikuki Punivalu	Member
• Luamanuvae Ene	Member
• Sauvao Amiatu Sio	Member

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• Chief Executive Officer, Ministry of Finance	Member
• CEO, Ministry of Women, Community & Social development	Member
• Managing Director Samoa Water Authority	Member
• General Manager, Electric Power Corporation	Member
• 4 Community Representatives	
• 1 NGO Representative	

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• CEO, Land & Transport Authority	Member
• CEO, Ministry of Women, Community & Social Development	Member
• CEO, Samoa Tourism Authority	Member
• Commissioner, Ministry of Police & Prison	Member
• Commissioner, Fire Emergency & Authority	Member
• Su'a Mulitalo Suapi	Member
• Atoa Tafunai	Member
• Patu Ativalu	Member

## **FORESTRY BOARD**

• CEO, Ministry of Finance	Chairman
• CEO, Ministry of Natural Resources & Environment	Deputy Chairman
• Leota Ioane	Member
• Faamoetaulua Lagisoifua Etene	Member
• Liumauga Malologa	Member
• Namulaulu Lino	Member
• Lemana Aukusitino Ono	Member

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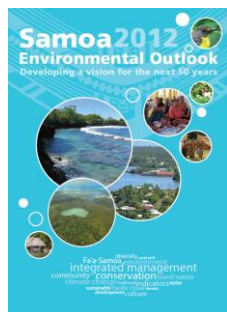
## The Year under Review

### KEY HIGHLIGHTS FOR THE YEAR UNDER REVIEW

#### Samoa State of the Environment ( SOE ) Report Card 2012 launched with stakeholders and schools.

The Ministry celebrated its 1st SOE Report Card at a special launch which involved key stakeholders ( from the private and public sector ) and schools ( primary and secondary ) in June 2012 at the Samoa Conference Convention Centre. The CEO Taule'ale'ausumai Laavasa Malua in his official address noted that the presentation of the SOE Report Card marks the beginning of an exciting and challenging period for the Ministry and Samoa to reflect on the state of its environment and think about the way forward. The SOE brochure is the first initial assessment summarized into a report card for Samoa, and also the first country in the Pacific to have used this assessment tool.

The Report Card hopefully aims to bring about creative interest from our young generation and the general public to be more involved and take responsibilities for future management decisions. It is also designed to improve environmental education and training amongst decision makers and the general public. With funding and technical assistance from SPREP, we were able to work with representatives from the University of Maryland Centre for Environmental Science on developing the Report Card for Samoa.



#### Regular Induction Training

A series of Induction Training was conducted for new recruited staff in June, August ( 2012 ) and January, May 2013. The objective of these trainings was to guide the new recruits in the execution of their duties and responsibilities as public servants. Not only that, but to understand the functions and operations of the Ministry in relation to their own area of work. Presentations covered: MNRE

Performance Management system including Organizational structure, Corporate Plan, Management Plan, Capability Plan and Service Charter. Followed by discussions on Working Conditions & Entitlements, PSC Act 2004 and HR Policies and procedures.



#### Partnership with FESA to conduct First Aid Training for MNRE staff

The first aid training was conducted by Mr Steve Williams of the Samoa Fire & Emergency Services Authority ( FESA ) hosted by the Disaster Management Office. The aim of first aid training is to preserve life, protect unconscious, prevent the condition worsening, promote recovery and assist with medical aid. There were various topics discussed including Reassurance -Tender Loving Care which is an aid tool we carry with us at all times to reduce anxiety, reduces heart rate, blood loss and reduces stress. It is a very interesting and useful training to save a life not only in the working environment but also relatives and loved ones. We would like to acknowledge the assistance of Steve Williams from FESA for his time and knowledge sharing.



#### PSC Workforce Planning Workshop .... MNRE Workforce Plan 2013 - 16.

Representatives from the Ministry participated in the Samoa Public Service Workforce Planning Workshop; 2012 - 2015. The objectives of the workshop is to orient Ministry Management and staff regarding public service workforce 2012 -2015, and to ensure that the Samoa Public Service have the necessary human capital to accomplish its strategic goal and objectives. Thus it's guiding vision "Samoa Public Service will have the right people, with the right skills, in the right place at the right time".



The MNRE Workforce Plan 2013 -16 was discussed and finalised at its Management Corporate Review (August 2012). The data analysis indicates a number of key HR issues for the Ministry to address and to help achieve the ministry's strategic workforce goal.



### School Awareness Programmes - SOE Report Card 2012

School awareness programs were conducted for private and mission schools on the SOE Report Card (English & Samoan). Nine schools participated with the total of 436 students. The presentations focused on Samoa process for reviewing the State of the Environment and how it can be used as a resource teaching tool for students and teachers.

Discussions highlighted the aim of the Report Card which provided a quick snapshot of the current state of Samoa's environment based on an ecosystem assessment on the thematic habitats, and also intended to promote a general understanding of the environment, challenges and some of key features which warrant measures of protection from all relevant stakeholders. The students expressed positive comments on the Report Card as an excellent resource tool.



### Celebrating 50 years of Independence



### MNRE Technical Working Group - SOE Conceptual Framework workshop

The Ministry conducted a series of in-house workshops to discuss the draft Conceptual Framework developed to guide Samoa's SOE review with the Consultant, Tuaifaiva Samuelu Sesega. The conceptual framework provided a set of indicators to measure the health of the environment in the different habitats used for the review.

The application of the Integrated Environmental Assessment ( IEA ) tool helps to address environmental issues based on the following five fundamental questions on the state of the environment.

1. What is happening to the environment and why?
2. What are the consequences for humanity and the environment?
3. What has been done and how effective is it?
4. Where are we heading?
5. What actions could be taken for a more sustainable future?

Key issues and possible indicators for the SOE review were identified during the IEA training and SOE planning workshop in 2010. These issues and indicators will serve as conceptual frameworks for data compilation, analysis and presentation, as well as for any other necessary activities to gather information to improve the understanding of the states and trends of issues of major environmental changes in Samoa and the extend of policy actions to address them.

An important part of this SOE review is the development of these indicators to the most practical and relevant values for the current and future monitoring and review of Samoa's SOE



## Surveying Dolphins around Samoa - "A pattern of Dolphin" project.

Ms Juney Ward and Mr Titimanu Simi from the Division of Environment and Conservation joined Professor Baker on a survey around the islands of Savaii and Upolu. Professor Scott Baker ( Associate Director of the Marine Mammal Institute of the Oregon State University ) was investigating the genetic diversity of dolphins across the South Pacific as part of his Pew Marine Conservation Fellowship project called "A Pattern of Dolphins".

The main focus of the Samoan expedition was to collect information on the genetic relatedness, distribution and movements of dolphins in Samoa through photo-identification and collection of small samples of skin. The surveys were funded by the Pew Fellowship and the International Fund for Animal Welfare (IFAW), and conducted with local charter fishing operator, Greg Hopping, aboard the 'Pure Indulgence'. A total of six species were encountered during the Samoan surveys. Five species were from the dolphin family and included spinner dolphins, bottlenose dolphins, rough-toothed dolphins and short-finned pilot whales (which, despite their name, are a member of the dolphin family).

The findings of this research will contribute to a long-term data set and will also further build onto the understanding of the residency patterns, threats and important habitats utilized by dolphins in Samoa that may be established as marine protected areas.



Short-finned pilot whale (*Globicephala macrorhynchus*) with a cut dorsal fin (on the left)  
Photo: Juney Ward, 2012



Spinner dolphin (*Stenella longirostris*) known for their acrobatic displays of leaping and spinning out of the water - Photo: Rene Albertson, 2012

## Research and Monitoring on Whales and Dolphins:

Two surveys were conducted during this fiscal year. One survey focused mainly at investigating the genetic diversity and relatedness, distribution and movements of dolphins in Samoa. A total of six species, four of which were from the

dolphin family while the other 2 were whale species. The second survey looked specifically at understanding the migration, distribution, behaviour and trends of humpback whales in Samoa. Thirteen humpback whales were photographed and catalogued based on their dorsal fins and the underside of their tail (flukes). None of the humpback whales documented during this survey were re-sighted from previous years indicating the low population of these whales present in Samoa. A single dwarf sperm whale and melon-headed whales were recorded for the first time in the wild.

- **Stranding Incidents:** A single adult short-finned pilot whale (*Globicephala macrorhynchus*) was found dead and reported from Faleula. Tissue samples were collected for genetic analysis.

## Marine Turtle Flipper Tagging & Necropsy Programs:

Only two turtles were flipper tagged and released back into the wild. The green and hawksbill turtles were applied new titanium tags on their rear flippers. Titanium tags were provided by the Secretariat of the Pacific Regional Environment Programme (SPREP) as part of an ongoing partnership to monitor the migration of marine turtles. A necropsy was performed on an adult green turtle found dead and reported by community members of Matautu-Falealili village. The necropsy was undertaken to determine whether the turtle had died from ingesting plastic materials.

## MNRE Corporate Review - Promoting Good Governance

The Corporate Services division conducted a series of consultations with all the divisions to review its corporate documents ( Management Plan, Capability Plan, Service Charter, Corporate Plan 2008 - 11 ) and to facilitate discussion on the implementation of the Performance Management System, and the draft Workforce Plan 2013 - 16 for the Ministry.



The internal reviews were conducted over a period of 4 weeks and culminated in the final management review in August 2012. The CEO commended the effort and work by the CSD and encouraged open dialogue and communication within the Ministry in order to improve service delivery and performance.



The MNRE Minister, Hon. Faamoetaulua Lealaialoto Taito Dr. Faale Tumaalii expressed his appreciation to the CEO, Taule'ale'ausumai Laavasa Malua and the Ministry for the hard work. The CEO, acknowledged the commitment of the staff and commended the hard work and effort of everyone in the Ministry. Also, he strongly emphasized that such reviews are very important assessment tools for the Ministry to move forward and to reaffirm its strategic direction.

It has been 10 years since the Ministry had conducted its annual reviews. This year's review was delayed due to the 50 Years Independence celebrations; however the CEO was pleased to acknowledge that set targets have been achieved. These achievement included the approval of the Disaster Management division and vacant ACEOs position been filled. The CEO's presentation covered a much broader review of the current Corporate Plan focusing on the Ministry's vision and mission, its strategic goals, key deliverable and the way forward.

#### **Investment in Staff Development - Post Graduate Certificate in Integrated Water Management**

Three MNRE staff ( Suluimalo Amataga Penaia, Tuuamalii Sam Semisi, and Fiasosoitamalii Siasosi ) graduated with a Post Graduate Certificate in Integrated Water Management from Griffith University ( Queensland, Australia via on-line ). The two year study programme is part of the capacity building component of the Pacific IWRM Programme for Pacific Islanders working in the water sector in their own countries or who are directly involved with the Pacific IWRM Programme and have met the course requirements. To congratulate the graduates, a special luncheon was hosted by the CEO Taulealeausumai Laavasa Malua where he proudly presented the graduates with their certificates.

A key capacity building component of the Pacific IWRM Programme is the delivery of an accredited Post Graduate Certificate (PGC) Course in IWRM for Pacific Islanders working in the water sector in their own countries or who are directly involved with the Pacific IWRM Programme and have met the course requirements.

The IWRM Post Graduate Course was coordinated by International Water Centre (IWC) in Brisbane and delivered through a joint venture with four leading Universities in Australia including the University of Queensland, Griffith University, Monash University and the University of Western Australia over a two year period (July 2010 – July 2012) via distance and flexible learning and some face to face time.



#### **WHAT IS THE MONTREAL PROTOCOL - Ozone Open Day**

The Ministry commemorated the 25th Anniversary of the Montreal Protocol on Saturday the 15th September 2012. More than 100 students and parents gathered in front of the Government building to commemorate the 25th Anniversary of the Montreal Protocol with the theme, "Protecting our Atmosphere for future generations".

It is believed that if the International agreement is adhered, the ozone layer is expected to recover by 2050. There were presentation for the general public and a poster competition for the students. The Primary schools category for the 1st place went to Ms Sala-Marie Manu from Samoa Primary School. The Secondary School Category first place went to Wilbert of Leififi College. The students enjoyed the day and learned a lot about the Ozone Layer and how to protect the atmosphere.



## Enforcement of Water Abstraction Licence Scheme

The Water Abstraction Licensing Scheme is one of the regulatory tools being implemented by the Water Resources Division to ensure the sustainability of water resource development in the country. In the past few months the WRD have carried out inspections of two water developers applying for licences to abstract water.

These two developments include a beverages manufacturer; "The Samoa Beverages Company" and a road construction limited the "Ah Liki Construction Limited". The Samoa Beverages Company is a new establishment at Falelauniu and has applied for a licence to abstract groundwater using a recently drilled bore hole permitted by the MNRE late last year.

The WRD is negotiating the best approach to pump test this bore hole before a licence can be issued for water use. Ah Liki Construction is applying for a licence to continue its current surface water use for road and construction purposes in compliance with the Water Resources Management Act 2008. Inspections have been carried out and inspection reports are available from the Water Resources Division.

## Awareness Programmes - Learning about the Environment

Students from Robert Louis Stevenson primary school explored the Vailima Botanical Garden in September 2012 ( Levels 5 – 7 ) with high hopes to explore and experience nature including plants and animals in addition to the various services offered by the Ministry through our National Reserve Section at Vailima. A total of 178 students including 12 teachers and 20 supervisors enjoyed the tour to: 1) Botanical garden 2) visit to the Information Centre 3) Plant nursery and compost 4) Apaula pool 5) Mt Vaea hike.



## Installation of the Electronic Weigh Bridge at Tafaigata Landfill

A ground breaking ceremony was held at Tafaigata landfill on 11 September 2012. This event marks the commencement of construction works and installation of an electronic weigh

bridge at the landfill. Mr Shiro Amano, the Chief Advisor for J-PRISM ( a regional project on Solid Waste Management ) on behalf of JICA and the Government of Japan acknowledged the support and the initiatives by MNRE for installation of such a crucial equipment for data collection on the volume of wastes disposed of at the landfill. Mr Amano also added that the Government of Japan will continue its support to Samoa until 2015 in combating issues due to the increasing volume of solid wastes generated at sources.

The CEO, Taule'ale'ausumai L. Malua acknowledged the continuous support by the Government of Japan on the solid waste management in Samoa. Taule'ale'ausumai added, "the weigh bridge will greatly assist the waste sector in data collection as it has been an outstanding issue for the sector. The CEO also encouraged the waste sector to make positive use of the opportunity and the assistance by the project. The Bluebird Construction Company as the Winning Bidder for the works. Construction works will be completed by the end of the year.

There were two main Components of the work;

1. The Installation of the Weighbridge and its structures.
2. Construction of a small Operating Office.



## Crane Truck to assist Samoa with risks and challenges associated with climate change.

The Ministry receive a truck ( Hyundai HD 75 model ) with a heavy duty crane to be used by the Water Resources Division-Hydrology Section ) under NAPA funds. The Australian High Commissioner, Dr. Stephen Henningham stated that "this is just one truck, but it is part of a much bigger story which is the close and constructive partnership between Australia and Samoa especially in terms of our Partnership for Development ". Australia and Samoa with other countries of the Pacific Islands region are working together to respond to the risks we all face from the impact of climate change. One of the key aspects is identifying the impact of climate change on groundwater resources. This is important because climate change and

sea level rise could threaten fresh water supply in coastal areas.

Through the Samoa-Australia Partnership for Development, Australia has been pleased to assist Samoa to adapt to the risks and challenges of climate change. This new truck will assist with the heavy equipment transportation and the installation of our ground water stations. These stations will monitor salt water intrusion into our coastal spring as a result of sea level rise. It is now very unsafe for the staff to manually install these heavy equipments especially when we drill to depths of 100 meters below. Manually pulling up drilling pipes and installing heavy equipment for hours is quite a very unsafe practice.



#### **MNRE presents SOE Assessment at the 23rd SPREP Meeting - Noumea**

The 23rd SPREP Meeting at Noumea covered 3 key components in its programme: ( i ) Pacific Environment Forum; ( ii ) SPREP Meeting; ( iii ) High Level Pacific Ministerial Meeting.

##### **( i ) Pacific Environment Forum ( PEF )**

The PEF for this year's meeting focused on the issue of environmental monitoring and reporting. The PEF was held prior to the SPREP Meeting allowing for the outcomes to be tabled at the SPREP Meeting for its consideration. Representatives from SPREP and national governments including Samoa presented on different key aspects of the PEF theme "Implementing national and regional state of the environment ( SOE ) monitoring & reporting".



Samoa is the first country in the Pacific to undertake its SOE in line with the Integrated Environmental Approach ( IEA ) approach and its experience in this endeavour will be shared and explored with other PICs. Samoa's presentation also shared some key learning lessons with other PICs.

#### **Environment Week 2012 - 'Sustainable Development - Riding the Waves of Change'**

The focus of the environment week was on Forestry & Protected Area Management, Disaster Risk Reduction, International Years of Oceans, Mangrove Conservation and Tree Planting. The variety of events included tree planting at selected sites, floats, poems and Samoan speech competitions, traditional dance and songs, community competition on mangrove conservation areas, community debates and consultations.

The official opening at Poutasi village ( Monday 29 October ) included the youth Samoan speech competition, poems and traditional entertainment. The floats procession on Tuesday reflected the theme ' "International Year of Oceans" – Environment & Conservation'. The programme in Savaii on Wednesday 31 October at Taga village highlighted the conservation and preservation of forestry and protected area management. A community debate and a fashion show on wearable arts and songs on Disaster Risk Reduction with the theme "Making women & children partners for disaster risk reduction" was quite popular with the public. The official closing at the Vaiteleta trench included a tree planting and the presentation of the annual national Environment Award 2012 to:

- Individual Category - Dr Tuuu Taulealo
- Group Category - Air New Zealand







### **Weighbridge opened at Tafaigata landfill site**

The 1st weighbridge was officially opened January 2013 by the Ambassador of Japan, Mr Yasuaki Nogawa and the Hon. Prime Minister Tuilaepa Sailele Malielegaoi at Tafaigata.

The landfill project has become a role model for improved facilities, management and operation not only in Samoa but also in other Pacific countries as the first application of the Fukuoka method in this region.

Waste management is a major concern for small island countries in the Pacific region. His Excellency Nogawa stated that the waste data management facility is an important part of the JPRISM. It will assist in putting a price on the actual cost of solid waste disposal and assist the government in formulating policies for managing solid waste in a sustainable way.



### **Ozone Depleting Substance Recovery Project**

The recent devastation by Tropical Cyclone Evan and resultant floods has caused damage to many refrigeration and air conditioning systems in Samoa particularly in the Apia area. The refrigerants contained within these machines are ozone depleting substances which have been found to break down the ozone layer increasing health risks for all Samoans.

The Cyclone Evan Ozone Depleting Substances Recovery Project was carried out on Saturday 23rd February 2013 by a group of refrigeration and air conditioning technicians in front of the Government Building. These technicians were divided into three teams and assigned to the selected villages in Apia that were most affected by Cyclone Evan.

The main objectives of this project were to raise awareness of the community on Ozone Layer Protection and the Montreal Protocol as well as raising the profile of the Samoa Refrigeration Engineers Association. The teams were able to collect damaged refrigeration equipments and recovered ODSs from other premises. An electrical safety test on refrigeration or air conditioning machines

was also conducted as assistance to the community to decide whether to use their machines or have them disposed of. An information booth was also set up in front of the Government Building at the Eleele Fou to inform the public about the ODS Recovery Project, Ozone Layer Protection and Environment effects of refrigeration and air conditioning gases.



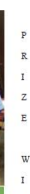
### Young Environmentalist Star Award 2012

This year top 20 students have been awarded with prizes for "2012 Young Environmentalist Star Awards" as follow;

1. Alden Jr Godinet (TOP Student )
2. Lenora Rasmussen
3. Chrizzannalyn Solaese
4. Faletose Letaulau
5. Fotufaleiupolu Letaulau
6. Angela Laiman
7. Miranda Tausisi
8. Alatina Hereme
9. Josephine Warren
10. Vaaiva Kolone Vaa
11. Lareena Alama
12. Ulrich Ah Ben
13. Edithmaria Faolotoi
14. Lanu Palepoi
15. Iliganoa Brown
16. Lilly Latu
17. Adelina Joni Leapai
18. Ming File Pasese
19. Mikayla Meredith
20. Christoinette Laalaai

The Prize giving was well attended by parents and students together with representatives from the respective sponsors. The Acting CEO Ms. Anne Rasmussen gave the official opening and acknowledge the support of parents and the contribution from students towards our environment page as future environmentalist.

Thus, the Ministry would like to acknowledge our main sponsors; Samoa Land Corporation, McDonalds Restaurant and Samoa Stationeries & Bookshop together with the continuous support from the respective divisions and projects.



### Awareness Programmes - Going into the Mangroves

Year 3 students from the Vaiala Beach School took a day out of their classrooms and visited the mangroves in Apia to know more about them. The young students have been learning about how mangroves protect the coasts and coral reefs, the habitats mangroves provide, the threats posed to them and what is needed to be done to protect them.

The field trip took place on the 3rd of April 2013 and it was their first visit to the mangroves and is part of their learning activities and were assisted by the Marine Conservation Section along with their parents and teacher. There they learned about the different characteristics of the two common mangrove species in Samoa which are the *Rhizophora samoensis* and *Bruguiera gymnorhiza*, the various animals that live in the mangroves such as crabs and mudskippers as well as observe the types of waste polluting the mangrove forests.



### Application of Biogas Technology

The Renewable Energy Division under support of European Union (EU) Water and Sanitation Sector Support Programme (WSSSP) conducted a feasibility study on the production of biogas through anaerobic digestion from household sewage and green waste as an alternative on-site management system that will improve sanitation and provide a freely accessible and clean renewable energy



source for domestic households in the Vaitele peri-urban area.

The most common on-site wastewater management system used by residential and commercial developments in Samoa is the septic tank system. However, studies have shown that the current septic tank system is very poor and as a result on-site wastewater management has become poor due to site conditions and construction and lack of understanding of proper maintenance. The consequences of these poorly performing systems can lead to increased health risks and environmental deterioration.

Currently, two pilot sites have been fitted with biogas digesters in Vaitele Fou.

1. Congregational Christian Church of Samoa - Vaitele Fou community house with 5 toilets connected to a septic;
2. A family of five also in Vaitele Fou.

The system being installed is biogas recovery system plus secondary treatment which are constructed wastewater gardens. The MNRE will be sampling the discharge from the wastewater treatment system to monitor the water quality of the system. Furthermore, the biogas recovered is treated further and is used to fuel a biogas 2-burner stove, a biogas rice cooker and some biogas lights to demonstrate the use of this free clean renewable energy source. The project also has a capacity building component where by individuals have been trained ("training by doing") to construct a system. Ten individuals from Vaitele Fou, Tuaeфу and Vaimoso took part in the construction of these systems.

The funding from Sanitation Subsector that have been utilized in this project increases value and provides extra benefits for all. This project will be an excellent candidate for a Nationally Appropriate Mitigation Actions (NAMA) Programme for Samoa after rollout.

### **National Consultations on the State of the Environment Report ( SOE ) and the Environment Sector Plan**

The Ministry conducted a series of consultations with communities and key stakeholders for Upolu and Savaii on the "State of the Environment Report 2013 and the National Environment & Development Sector Plan (NESP) 2013 -16 ".

The consultations for Upolu and Savaii included: 1. Sui o Nuu, Women's' Committees & Youth Groups from the communities; 2. Government Ministries & Corporations 3. Private Sector, Chamber of Commerce, Civil Society & NGOs, and Farmers Association.

The objectives of the consultations focus on discussing the key findings in the SOE Review Report and to engage and solicit views from the communities and all key stakeholders on environmental issues and trends highlighted in the Report. It was also an opportunity to present the draft 'National Environment & Development Sector Plan (NESP ) 2013 -16 and provide for some feedback from stakeholders before finalizing the document.



### **Rehabilitation works at the Lake Lanoto'o National Park**

The Integration of Climate Change Risks and Resilience into Forestry Management of Samoa ( ICCRIFS) Project is now on the move for implementing rehabilitation activities on Lake Lanoto'o National Park as Project site No. 2. The rehabilitation work focuses on demonstration of forestry technique for upland native forest, recovering loss forest and protecting the remaining native forest through conservation.

The first rehabilitation carried out included replanting open areas, efforts to eradicate invasive species and upgrading part of the trail to the lake. The trail was upgraded with construction of steps using available

resources from the cutting down of invasive trees and hiring of local people staying closer to the Lake Lanoto'o to carry out the work. Their involvement will enhance knowledge on the importance of protected areas such as Lake Lanoto'o National park.

It is recorded that 2.18 hectares (7 plots established) have been replanted with tava, malili, tamanu and asitua, seedlings provided by the Forestry nursery at Vailima. More rehabilitation works are proposed for Lake Lanoto'o until the project come to an end. There is a need for more native tree species and climate resilient trees to be planted in this area. Villages such as Laulii to Falevao will commence rehabilitation work in June followed by Mauga o Salafai as a third project site and these maintenance works should be carried out every 3-4 weeks.



Lake Lanoto'o National Park on the move for rehabilitation work



community input

## Enforcement & Investigation Manual Training

The Legal Division hosted a one day workshop in May 2013 as a refresher training for the existing authorised officers of the Ministry and official training for the new authorised officers on the Enforcement and Investigations Manual.

The Enforcement Investigations Manual was developed by the Legal Division and launched in 2012 for MNRE's enforcement work. The first training on the EI Manual was conducted in December 2012. It is intended that the training will ensure that all authorised officers were aware of the Enforcement Investigations Manual and aware of the procedures and processes contained within. Under MNRE legislation authorised officers have considerable coercive powers including: conducting investigations without a warrant, search and seizure and to collect evidence.

It is imperative that any officer intending to use coercive powers is aware of the legal limitations and ethical obligations associated with using those powers. As such, the training has been considered as a compulsory prerequisite for all MNRE authorised officers prior to them acting in that capacity. Thirty MNRE staff members that have successfully completed the training and have been issued with their identity cards to act as authorised officers for MNRE.

## ENFORCEMENT AND INVESTIGATION MANUAL TRAINING



Group discussions ( Water Management Division )



## Formulation of Water Resources Management Plans & Village By Laws for communities.

Community engagement is one of the most effective methods of relaying messages and implementing programs within villages. It involves a persistent and challenging consultative process within communities, as compromises on particular village developments that impact on natural resources are often made. In most cases the overall consensus is based on the level of understanding and awareness a particular community have on the issues discussed. Positive support from the village council of chiefs, results in village-wide engagement which utilizes opportunities brought about by traditional management and governance systems.

The Water Resources Division carried out a series of community consultation with villages within the Gasegase Community ( Vaimoso, Sinamoga and Alafua and Moamoa ) on the current Draft Gasegase Watershed Management Plans and on Village Bylaws, tools which hopefully will reverse the adverse activities undertaken by people living within the vicinity of the Gasegase River. The Gasegase Watershed Management Plans is a structured guide to the sustainable development, use and management of the Gasegase watershed. This plan is made pursuant to Part VIII of the Water Resources Management Act 2008 (WRM

Act) and will be enforced when approved by the Head of State in accordance with section 26 of the WRM Act 2008.

Village Bylaws on the other hand are established for the villages to assist in the enforcement of the law within their village settings using their own village systems, with assistance from the WRD. The WRD has done follow up work, monitoring rubbish disposal into rivers and also how we can better improve waste management at the village/household levels.

#### **GEF National Stakeholder Workshop with Private Sector**

The Global Environment Facility ( GEF ) conducted a National Stakeholder Workshop on the 12th & 13th June at the Orator Hotel to discuss GEF policies and procedures, funding mechanisms and promoting partnerships. The GEF Fund provides financial assistance to recipient countries to meet the agreed incremental costs of activities that generate global environmental benefits.



A number of GEF funded project currently being implemented by the Ministry:

NAPA 1: Integrating Climate Change Risks in the Agriculture & Health Sector of Samoa ( ICCRAHS )

NAPA 2: Pacific Adaptation to Climate Change ( PACC )

NAPA 3: Integration of Climate Change Risks and Resilience into the Forestry Management Sector of Samoa ( ICCRIFS )

NAPA 4: Australia - Samoa Partnership

NAPA 5: Integration of Climate Change Risks and Resilience into Tourism Sector ( ICCRITS )

National Biodiversity Strategy and Action Plan ( NBSAP )

GEF PAS Invasive Species

Land Degradation: Strengthening Multi Sectoral Management of Critical Landscapes ( SMSMCL )

National Action Plan ( NAP )

Ozone Project:

Capacity Building - State of the Environment ( SOE ) Report & Environment Sector Plan )

#### **Participatory 3Dimensional Model in Samoa to promote conservation efforts.**

The Forestry Division through the Integration of Climate Change Risks and Resilience into the Forestry Management Sector of Samoa ( ICCRIFS ) conducted a community workshop ( June 2012 ) to construct the first Participatory 3 Dimensional Modeling in Samoa. The workshop was assisted by Mr. Kenn Mondiai and Mr. Patrick Vauet of Partners with Melanesians (PwM) based in Papua New Guinea (PNG).

The workshop brought together 14 villagers from Laulii to Falevao. Representatives worked extensively with the Ministry in the construction of a 3D Model at the Galusina Village Resort.

The P3D Modelling is a community based mapping method that integrates local, indigenous with existing scientific knowledge. An important tool that combines contour maps and geographic precision with local understanding of the ground surroundings and environment.



During the workshop, a wealth of information and knowledge was shared from the communities. Having a bird's eye view of their surroundings has increased their awareness and understanding with regards to vulnerabilities to climate change and natural hazards alike. With the completed model in place, the planning of future activities to be implemented is further enhanced especially in relation to Agro forestry in the Lowland areas as the establishment of Conservation areas in the Uplands and the rehabilitation of degraded areas. Marine Ecosystems Conservation and Management

#### **Biodiversity Research and Monitoring**

**Mangrove surveys** were carried out at Le Asaga Bay mangroves under the MESCAL project to map the boundary of the mangrove area as well as to identify mangrove species and associated coastal trees found within the mangrove ecosystem. A long-plot survey was



also conducted at the site to measure biodiversity, structure, biomass and living carbon content.

Other valuation surveys were conducted for the mangroves of Safata, Vaiusu, Vailoa and Sogi. The survey sampled random households from the nine villages of Safata District, Vaiusu, Vailoa and Sogi. The survey identified the importance, uses and management of mangroves from each respective village.



#### **Coral collection**

A PhD student from the University of Otago carried out her research at the Palolo Deep Marine Reserve to investigate the rate of dissolution of calcifying organisms in current ocean conditions and predicting future conditions based on IPCC scenarios.

#### **Exploratory dive for Potential Medicinal/Pharmaceutical Values**

An exploratory dive at Manono-tai was carried out to determine specimens that may have potential medicinal/pharmaceutical values and properties. Sponges were collected from around the seagrass sites which will be analyzed. This preliminary survey was in collaboration with the Scientific Research of Samoa (SROS) and the Victoria University, New Zealand.

#### **Crown of Thorn Starfish (COT) Assessment**

Eleven sites on the southern coast of Upolu Island were assessed for the reported increase in COT numbers observed by the communities. High numbers of COTs were observed at Vaovai, Tafitoala and Samusu. Palolo Deep Marine Reserve, Amaile, Vailoa, Lalomanu, Saleilua and Poutasi had low numbers of COTs. No COTs were reported for Satitao and Ulutogia during the time of the survey.

#### **Seagrass Monitoring**

A survey was carried out at Vaiala and Tafitoala to map the seagrass areas and to also collect information on the percentage of seagrass species composition.

#### **Community Involvement - Samoa Heritage Project**

The Ministry continues to work in partnership with the Ministry of Education, Sports and Culture towards promoting community consultations and awareness on Samoa's natural and cultural heritage, and intangible culture. A series of consultations was carried out in Upolu and Savaii to promote understanding on Intangible Cultural Heritage.



**Chinese- Samoa Earthquake and Tsunami Monitoring System:** after the final finesse touch to the National Data Center and the four (4) broad-band seismic stations – Afulilo, Togitogiga, Vaiaata and Asau equipment operations commenced in July 2012;

**Upgrade in the Geo-magnetic Monitoring System** – upgrade of geomagnetic equipment and housing complete at the same time with funding from the United States and Swiss countries members of the International Associations of Geomagnetism and Aeronomy (IAGA) it included training.

**WMO – Severe Weather Forecasting and Disaster Risk Reduction Project:** offered to host a Weather Forecasting and end-user Disaster Management workshop to improve disaster early warning system in Samoa.

**Japan Grant Aid Project for Improving Weather Forecasting and Warning Facilities:** commence operations in June after final tests on equipment at the end of May include:

- Aviation – renovation of SAA tower used for operations and complete the Pilot Briefing room; pilot briefing to commence in 2013;
- Forecasters Building (FB) – complete construction of disaster resistant building at Mulinuu to house state-of-the- art forecasting and early equipment;
- Computers installed in the Climate section to link and transmit weather data to CliDE database;

- Stand-by Generator (SG) house in disaster proofed building;
- 24 solar panel installed on roofing of FB & SG buildings to offset main grid power; and
- Installation and operation of Wind-Profiler Radar.



**CLiDE and CLIDesc Database:** collaboration between Australia-Japan projects work continue to improve features for efficiency in the operations of the SQL database.

**Launch of Climate of Samoa Book:** - funded by the Australian International Climate Change Adaptation Initiative and implemented by the Pacific Climate Change Science Project (PCCSP); available as updated reference material 'Climate of Samoa' launched by the Australian High Commissioner in Samoa and Minister for Natural Resources and Environment during the 2012 Environment week in November.



**WMO – Regional Association V – South-west Pacific and East Indian Ocean:** Samoa hosted this very important regional meeting that not only show-case Samoa to the World but portrayed Climate as a high priority issue for government.

**IOC- UNESCO – SOPAC PTWS:** collaboration with WMO for a joint meeting of the committee and members for the Asia-Pacific region back-to-back with the WMO-RAV meeting.

**UNFCCC** - Samoa offered to host the Cartagena Dialogue and the Adaptation Funding Board meetings, actions that indicate our commitment to the Climate Change Agenda;



**UNFCCC – COP18** – In Doha, Samoa demonstrate not only commitment through execution of activities to reduce GHGs that is causing climate change but voice support to the extension of the legally-binding Kyoto Protocol beyond 2012. Let alone actively participate in the Climate Change adaptation and mitigation debates of the Convention



#### **Mt Vaea restoration**

Conservation work in partnership with Pacific Invasive Initiative( PII ) experts in the implementation of the Mt Vaea trial blocks for effective controls targeting invasive plants. Restoration activities started with 1079 native trees planted on Mt Vaea from July, September 2012 and Feb-March 2013. A total of 836 natives and rare plants collected from OLPP National Park (Togitogiga) in October 12, 2012.

#### **Post Evan Town Clean up**

Massive clean-up and removal of fallen Pulu trees in Apia town area as result of cyclone Evan in December 2012.

Mt. Vaea Land Slide assessment in February 2013 and Post assessment of cyclone damage to Vailima National Reserve. Replanting and re-landscaping of seriously damaged reserves ie. Fuluasou, Vailima, Ao'olemalo, Lotosamasoni from cyclone Evan.

Compilation of report submitted to Disaster Advisory Council on 20th December 2012 as a result of a Rapid Assessment Survey for Impacts of Cyclone Evan on Forest and Terrestrial Biodiversity of Upolu, conducted on 18th and 19th December by team of experts and qualified personnel from SPREP, UNDP, Local Consultant and MNRE.



## ISSUES AND CHALLENGES

Most of the issues identified in the last report remain although they may be different in varying degree. This is an overall summary of issues shared by all the divisions considered as factors affecting the full delivery of their services. It is also worth noting that these issues are mostly related to resources and capacity building. Some of the specific issues are mentioned in the respective division reports. And some of these do stand out as follows:

### i. Human Resources

Despite the increasing number of total staff, there is a shortage of qualified staff in the technical field such as: surveying, chemicals and hazardous wastes, Information and Communication Technology (ICT) in applied meteorology ( weather and climate forecasting ) and in biodiversity conservation.

The Ministry's Workplan 2013 - 16 has already identified some key measures to help address these issues with staff capacity.

### ii. Finance

Limited budget to fully cover services delivery throughout the financial year. Other divisions are trying to cope with increase budgetary overhead costs ( eg., with the installations of essential equipment to enhance monitoring and timeliness issuance of weather earthquakes and tsunami events )

### iii. Quick turnover of junior staff in particular divisions.

iv. Limited space within Divisions to conduct consultations ( ie., investigations and extra side desk for plans ). With the growing number of staff, some Divisions are operating in overcrowded conditions, thus posing occupational hazards.

### v. Enforcement

This is a critical area for the Ministry to ensure that Authorized Officer under various legal instruments are well equipped with the knowledge and capacity to enforce key environmental legislations.

### vi. Sector Coordination

With the establishment

Need more training Local/Overseas

### Recommendation

- It is recommended for the vacant position to be filled in the next financial year (2012-2013)

- Recommend the Aerial Mapping in this financial year 2012- 2013
- Ground truthing and updated field work for the topography maps.
- New photocopy & 3 versions for MapInfo to update.

### 10. Memorandum of Understanding (MoU).

Due to high value of the data requested from various stakeholders to be used for planning new activities in project sites, awareness programme and monitoring, the Technical Division is responsible for this to ensure the security of the data.

### Acknowledgements:

The Ministry wishes to acknowledge and thank our stakeholders and communities that we have worked collaboratively and closely together this fiscal year.

Lastly, we wish to express our appreciation and acknowledge the support from the following organizations: SPREP, Australian Government through the Department of Sustainability, Environment, Water, Population and Communities, IUCN and The Nature Conservancy.

## STAFF DEVELOPMENT

### Overseas Training & Staff Development

The Ministry continues to promote staff development at all levels through in-house training, public service in-country training, overseas travel, capacity building through supports and exposures to international forums.

Note a slight increase in the number of training opportunities offered overseas for staff.

The total number of fully funded overseas training secured under projects and MEAs came to 145.

The Ministry is very fortunate to receive many invitations for training through its affiliations with numerous international donors and regional bodies such as SPREP, SOPAC, IUCN, and more.

The challenge remains for the Ministry to ensure that the knowledge transfer and up skilled exposure from these opportunities are shared with staff and made to good use.

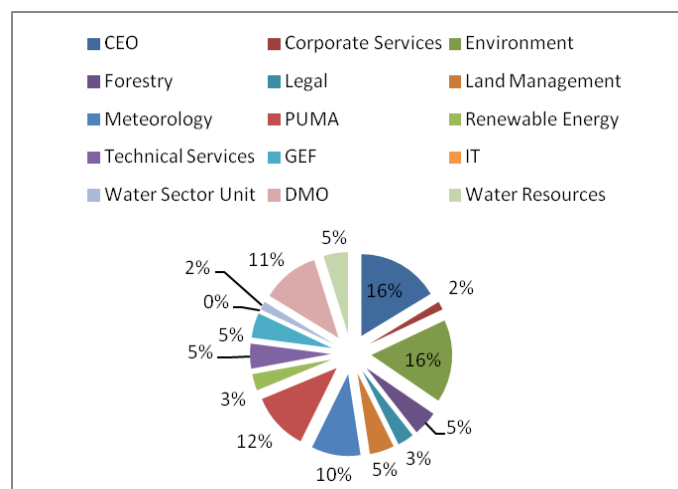
<i>Division</i>	<i>Overseas travel</i>	<i>No. of staff</i>	<i>Conference /Meetings</i>	<i>Training</i>
CEO	10	1	10	0
Corporate Services	4	3	1	3
Environment	24	16	7	17
Forestry	10	8	3	7
Legal	5	2	2	3
Land Mgnt	8	5	3	5
Met	23	16	7	16
PUMA	17	9	3	14
R.Energy	4	3	2	2
Technical Services	7	6	2	5
GEF	4	1	1	3
IT	1	1	0	1
Water Sector Unit	2	1	1	1
DMO	17	8	5	12
Water Resources	9	10	3	6
<b>TOTAL</b>	<b>145</b>	<b>90</b>	<b>50</b>	<b>95</b>
<b>2011/12</b>	<b>133</b>	<b>72</b>	<b>53</b>	<b>80</b>

### Staff development by Divisions

<i>Divisions</i>	<i>Conference/Meetings</i>	<i>Training</i>
CEO	10	0
Corporate Services	1	3
Environment	10	17
Forestry	3	7
Legal	2	3
Land Management	3	5
Meteorology	6	17
PUMA	7	14
Renewable Energy	2	2
Technical Services	3	5
GEF	3	3
IT	0	1
Water Sector Unit	1	1
DMO	7	12
Water Resources	3	6
<b>TOTAL</b>	<b>50</b>	<b>95</b>

A breakdown of these training opportunities by divisions shown in the table and graph.

Most of these were for staff involved with environment conservation, climate services, urban planning and disaster risk reduction.

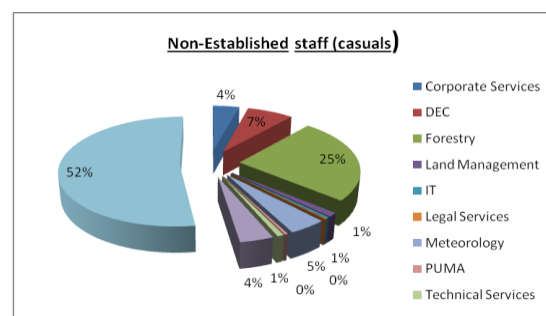
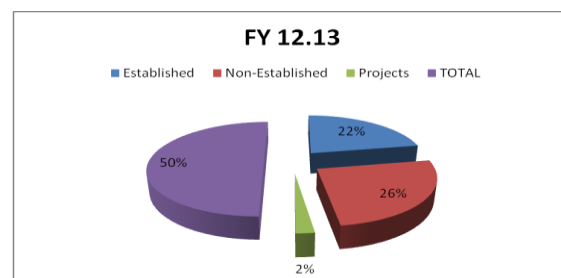


## ESTABLISHMENT

The Ministry recorded a total of 474 staff, which indicated a slight decrease from the previous year. Some key features noted in the Ministry's workforce plan include: 63% of the total workforce are males to 37 % females, the staff are relatively young with 68% below 40 years of age with the other 31% are over 50 years. This will greatly have an impact on the Ministry's given that most are near retiring age or on temporary employment having reached the retirement age.

Division	Occupied	Vacant	Total estab	Non-establis hed	Projects	Total
CEO	1	0	1	0	0	1 ( 1 )
Ministerial Support	4	1	5	0	0	5 ( 5 )
Corporate Services	24	2	28	21	0	49 ( 44 )
DEC	17	2	19	65	1	85 ( 85 )
Forestry	25	2	17	146	6	161 ( 181 )
GEF Services	1	0	1	0	0	1 ( 1 )
IT	2	1	3	2	0	5 ( 3 )
Land Mgnt	23	0	23	6	1	30 ( 28 )
Legal Services	2	2	4	1	0	5 ( 2 )
Met services	22	2	24	25	4	51 ( 52 )
PUMA	15	2	17	2	0	19 ( 23 )
R.Energy	2	0	2	0	2	4 ( 4 )
Technical Services	24	1	25	6	1	30 ( 32 )
Water Resources	17	3	20	20	2	42
DMO	7	0	8	0	2	10
Water Sector Unit	3	0	3	0	1	4
<b>TOTAL</b>	<b>189 ( 182 )</b>	<b>18</b>	<b>202</b>	<b>294</b>	<b>20</b>	<b>516 ( 506 )</b>

Established	202
Non-Established	294
Projects	21
<b>TOTAL</b>	<b>516</b>



## OUTPUT 1: OFFICE OF THE CEO - POLICY ADVICE TO THE MINISTER

Provide policy advice to the Minister on matters relating to the sustainable management of Samoa's natural resources and the environment.

### Quantitative Performance

Provide advice on weekly meetings with the Minister on matters under the MNRE mandate and the management of the Ministry. Provide briefs when required from time to time. Advise on ministerial meetings and conventions. Develop and prepare relevant policies.

### Human Resources:

CEO

Policy advice & policy development	<ul style="list-style-type: none"> <li>Weekly meetings with the Minister on the work of the ministry</li> <li>Briefing on 6 national events and Environment Week</li> <li>Developed Forest Policy</li> <li>Policy review of Land use, Water Resources, Disaster management (under IAMP 2), Marine</li> </ul>
Regional & national obligations	Attended COP for UNFCCC, UNCCD and other international/regional meetings, SPREP review
Management	Carried out review of 2011-14 Corporate Plan and developed new CP for the period 2012-14. Also conducted Review of - Capability Plan, Management Plan, and Service Charter Completed 2011/12 Annual Report
Others	Prepared and submit Cabinet submissions, STSC submissions, CDC reports, and projects progress reports

### Performance Targets

- Meteorological Services
  - 2 project on-going with Government of China and JICA
  - Chairmanship of the Disaster Advisory Committee
- Sustainable management of forests and water resources
  - Water Sector Coordination work integrated well within MNRE
- MEAs reporting obligations continue
- 2 major outstanding land disputes resolved
- Represented Samoa at 6 international meetings
- Private sector partnership in national waste management operations for sustainable environment

- National Waste Management Act 2010 consulted and contracts signed for urban area maintenance
- Land related technical services
- Regular sessions of the Land Commission with 10 seating with the 12 months
- Legislations reviewed
- Performance Management System
- Timely reports and discussions with the Minister on critical issues, Cabinet decisions and other priorities.
- Budget managed efficiently with no over-spends. taking of lands required for watershed at Afiamalu and Malololelei, and lands required for road widening along the Vaitele Street
- Procure contracts for the construction of 3 new roads at Government leased lands in Laloanea, Aleisa and Nu'u



Doha - Qatar Meeting/ 18th COP Meeting



Rio + 20 Meeting in Rio De Janeiro



Nagoya Protocol Ministerial Meeting

### **Sub Output 1 - RENEWABLE ENERGY** **( under Output 1 - Office of the CEO )**

The 2012-2013 financial year was a very active year for the Renewable Energy Division (RED) with the implementation of one feasibility study, finalizing of two proposals, conducting of Non-motorised and biomass resources surveys, and increased number of awareness and promotion workshops.

The 2012-2013 period highlights some components implemented of the seven priority areas of the NGHGAS and as follows;

- i. Energy Efficiency and Biofuel Applications in the Land Transport sector.
- ii. Energy Efficiency in the End Use of the Electricity – Promoting Energy Efficiency in the Pacific Project – Phase 2 (PEEP2)
- iii. Use of methane from biomass for cooking and lights
  - Feasibility study for biogas as an alternative on-site wastewater treatment system in the peri-urban area of Vaitele
  - Feasibility Study of the production of Biogas and organic fertiliser in the agriculture and food management sectors in Samoa
- iv. A Policy Framework to support reduction of GHG emissions.

Other obligations of the division are;

- To assist with identifying technical and financial assistance under international climate change and green energy sources to assist with the development of renewable energy and energy efficiency in Samoa;
- Provide advice to policy makers through the renewable energy division of appropriate, sustainable and environmentally friendly renewable energy sources and generation and energy efficiency measures;
- RED is also responsible for coordinating and monitoring the implementation of renewable energy and energy efficiency projects executed at/with relevant sectors, ministries and communities.

#### **Quantitative Performance**

The RED provides technical advice to PUMA, NECC and Energy sector developments and projects relating to renewable energy and energy efficiency. It inspects and evaluates the type of renewable energy technology to employ, conducts energy efficiency awareness programmes, and energy audits.

The Divisions also develops proposals for RE and EE programmes and also assists communities in accessing to RE and EE funds and technologies for development.

#### **Key Achievements**

##### **(i) Energy Efficiency and Biofuel Applications in the Land Transport sector.**

- a. Output 1: Carbon emissions in the land transport sector reduced through energy efficiency
  - Work plan for EE in Non-motorised Transport (NMT) and motorised transport (MT) was developed and implemented.
  - Emission Testers practiced at LTA headquarters during vehicle registrations, emission data is recorded.
  - Emission standard on the machines are tested to 70%.
  - NMT, Falealupo, Lefagaoali'i, Sapapalii, Moata'a, Tafitoala, Mutiatele and Apolima Uta was completed.
- b. Output 2: Carbon emissions in the transport sector reduced through the use of coconut oil as an alternative to diesel fuel
  - USD150,000 was transferred from IUCN for the biodiesel expansion from coconut oil to Jatropha.
  - Visit by SROS staff member to the Tinytech Plants Company in India to assess the Oil expeller equipments that are going to be shipped over for oil production.
  - Replanted Jatropha on 5 acres of land at STEC Plantation for oil production as an alternative to coconut oil.
- c. Output 3: Capacity building achieved in climate change generally and climate change mitigation in particular
  - National Energy Day was held in Savaii on the 21st September.
  - Workshops on EE in land transport were done in Tuanai, Upolu and Samalaeulu, Savaii.
- d. Output 4: Effective project management achieved
  - Continued monitoring the implementation of works.
  - Facilitated meetings.
  - Coordinated all the awareness programmes under this project.
  - Facilitated payments pertaining to this project.
  - Submitted quarterly reports regularly to IUCN.



(ii) **Energy Efficiency in the End Use of the Electricity – Promoting Energy Efficiency in the Pacific Project – Phase 2 (PEEP2)**

- a. Output 1: Development of Energy Database
- Continued review of reports and documents of energy in Samoa. The database will provide relevant information needed for the implementation of activities under outputs 2, 3, and 4.
  - Hotel Energy Efficiency Survey completed
  - Residential Energy Efficiency survey form design completed
  - PEEP2 project team initiated development of Energy end-use database

Projected Annual Energy Savings* (kWh)	Projected Annual GHG Reduction (tons of CO <sub>2</sub> e/year)	Cost per Lifetime saving (SAT/kWh)	Simple Payback Period (months)	Measure Lifetime (Years)
45,233	36.2	0.73	65.7	7.5

\* Savings are at the generation level and include T&D losses.

- b. Output 2: Development of Energy Efficient Policies and Procedures

- Consultations were carried out with relevant government agencies to review existing EE targets and GHG reduction as well as follow up progress of review of the National Energy Policy
- engaged Samoa Housing Corporation to explore the possibility of setting up housing loan schemes which entitles owners to limited grants for including EE measures in their home designs
- Presented working paper to NECC on Benefits of Energy Efficiency
- Consulted with MOR and the PALS Project on the suppression of importation of high energy consumption appliances and possible collaboration of the PALS and PEEP2 projects
- International expert on building codes was recruited to review the existing Samoa building code
- Walk-through Energy Audit Training conducted form 30 individuals from government, hotel and commercial enterprises and the air conditioning industry.
- Report for Energy Efficiency building code for New construction completed
- Report for Green Hotels Rating Scheme for the Pacific completed

ii. **Energy Efficiency Lighting in Government buildings.**

Proposal has been approved by ADB to implement EE lighting projects in the Accident Compensation Corporation, Central Bank of Samoa, Mapuifagalele Little Sisters of the Poor, Ministry of Education, Sports and Culture, MNRE, Ministry of Police and Prisons, National Health Service, National University of Samoa, Polynesian Airlines, Samoa National Provident Fund and Scientific Research Organisation of Samoa.

This project will purchase and supply 6,881 energy efficient T5 lamps with electronic ballasts to replace existing T8 lamps in the buildings of the participating government agencies. The total project is valued at ST\$251,277.00

Participating government agencies	Projected Annual Energy Savings* (kWh)	Projected Annual GHG Reduction (tons of CO <sub>2</sub> e/year)	Cost per Lifetime saving (SAT/kWh)	Simple Payback Period (months)	Measure Lifetime (Years)
ACC, CBS, Mapuifagalele, MESC, MNRE, MPP, NHS, Polynesian Airlines, SNPF, SROS	405,829	324.7	0.09	7.4	6.8

\* Savings are at the generation level and include T&D losses.

- c. Output 3: Implementation of Energy Efficiency Programs
- i. Energy Efficiency Street lighting program
- This project will procure 160 31W Streetlight LED systems to replace existing Mercury Vapour light system on selected roads within the Apia Town area. The total project is valued at ST\$247,480.

### iii. Energy Efficient Luminaires in Government Buildings

This project includes the procurement and installation of energy efficient lighting systems for the Development Bank of Samoa and the National University of Samoa. Existing 1360 3-lamp luminaires with T-8 lamps will be replaced by with new luminaires with 3 energy-efficient T-5 lamps. The total project is valued at ST\$252,747

Projected Annual Energy Savings* (kWh)	Projected Annual GHG Reduction (tons of CO <sub>2</sub> e/year)	Cost per Lifetime saving (SAT/kWh)	Simple Payback Period (months)	Measure Lifetime (Years)
85,769	68.1	0.29	35.4	10

\* Savings are at the generation level and include T&D losses.

### iv. Implementation of EE measures in Hotels and Commercial Sector

Aggie Grey's and Pacific Pearl were consulted for implementation of lighting and AC project for the hotels while Yazaki Corporation were consulted for the EE lighting project in the commercial sector.

### d. Output 4: Information Dissemination and Public Awareness

- Website for PEEP<sub>2</sub> has been developed (<http://www.ee-pacific.net>)
- EE Guidelines have been developed for Hotels, Commercial buildings and street lighting.

### (iii) Biogas production through anaerobic digestion to subsidise energy costs and improve sanitation.

- A Feasibility Study for biogas as an alternative on-site wastewater treatment system in the peri-urban area of Vaitele
  - The focus of the study was to study the production of biogas through anaerobic digestion from household sewage and green waste as an alternative on-site management system that will improve sanitation while and provide a freely accessible and clean renewable energy source for domestic households in the Vaitele peri-urban area. Two pilot biogas systems were constructed, installed and commissioned at two households in Vaitele Fou. Two pilot sites have been fitted with biogas digesters in Vaitele Fou. One is a Congregational Christian Church of Samoa - Vaitele Fou community house with 5 toilets connected to a

septic and the other is a family of five also in Vaitele Fou. The system being installed is biogas recovery system plus secondary treatment which are constructed wastewater gardens. Both systems will continue to be monitored throughout 2013 for wastewater discharge quality and biogas production. The capacity building component of allowed for individuals to be trained ("training by doing") in constructing a system. Ten individuals from Vaitele Fou, Tuaefu and Vaimoso took part in the construction of these systems

b. A Feasibility Study for the production of Biogas and organic fertiliser in the agriculture and food management sectors in Samoa was conducted with the financial support of the FAO to observe the potential of producing biogas for the waste streams in commercial farming and processing as well as tourism sector. The outcomes of the study included;

- General research about biodigesters and their application internationally in the agriculture and food management sectors, including literature research into the production rates of biogas from different organic material resources.
- Research into the relevant policy and information documents available from the Government and other regional agencies, meetings were held with relevant government ministries and operational agencies, and a survey questionnaire form was developed in collaboration with staff from the Renewable Energy Division of the Ministry of Natural Resources and Environment (MNRE).
- The outcome of the survey and consultation resulted in the formulation of example types of potential 'next step' demonstration programme of potential renewable energy projects for the commercial farming and processing and the tourism sectors.

### (iv) Project Proposal

- **Policy Framework to support reduction of GHG emission.**
- A proposal for funds to develop a Renewable Energy and Energy Efficiency Regulatory Framework and for development of a National Appropriate Mitigation Action programme was submitted to the IUCN.

#### **Biofuel ( Biomass and Biodiesel) project proposal**

- Lead the Sector, in developments of biofuel projects for expansion of biodiesel production from lab scale to commercial scale and biomass gasification for electricity
- Biofuel proposal was submitted to IRENA and SIDS DOCK for funding

#### **(v) Negotiations with Private Investors**

- Arranged negotiation with potential investors in renewable energy
- Conducted presentation to potential local and overseas investors the procedures on how to investigate and applied for energy business in Samoa

#### **(vi) Other Public Awareness**

- The division coordinated the National Energy Day in collaboration with the MOF.
- Several brochures on renewable energy and energy efficiency and these were displayed at the National Energy Awareness Day

#### **Human Resource**

- 1 ACEO, 1 Principal RE Officer, 1 Principal Projects Coordinators, 1 Senior Project Coordinator (contract expired on October 2013)



#### **Sub Output 1 - GEF**

( under Output 1 - Office of the CEO )

To provide a coordinated programme base to support sustainable management of Natural Resources and the Environment.

The GEF unites 183 countries in partnership with international institutions, civil society organizations (CSOs), and the private sector to address global environmental issues while supporting national sustainable development initiatives. Today the GEF is the largest public funder of projects to improve the global environment. An independently operating financial organization, the GEF provides grants for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.

GEF has been the main source of external financial assistance to Samoa's environment sector and has contributed enormously to Samoa's success in building a strong foundation for national environmental activities and meaningful contributions to international environmental efforts.

#### **Human Resource**

- 1 ACEO

#### **Quantitative Performance**

This Division manages and facilitates the Ministry's access to GEF and other external project funding through the effective planning and preparation of project proposals.

It also manages the National Adaptation Projects for Climate Change directly mainly the:

- NAPA 1 - Integrated Climate Change Risks into Agriculture and Health ICCRAHS,
- NAPA 4 - Australia - Samoa Government Partnership - 5 components ( Meteorology, Groundwater, PUMA, FESA/DMO, Tourism and Capacity Building), ICCRITS - Integrated Climate Change Risks in the Tourism Sector.

The Division also provides policy Advice on Climate Change implementation.

**Outcome 1.1 Enhanced accessibility to GEF project funding and related funding sources**

In the period of July 2012 - June 2013, the GEF Office and the GEF Operational Focal Point conducted a series of workshops for the stakeholders to enhance the accessibility of all stakeholders to understand the GEF and its criteria's as well as its functions and how each stakeholder can relate and access GEF funds and support. It is imperative as the operational focal point to conduct workshops of this nature to communicate to stakeholders and to the public ongoing MNRE/GEF and other development partners' efforts that is already beginning to improve livelihoods of the communities.

The workshops were working sessions with the following stakeholders and groups:

1. All Government, Cooperation and Agencies  
12th - 13th June 2013
2. Civil Society Organizations - CSOs June 2013
3. Private Sector - Chamber of Commerce. June 2013

#### Key Achievements:

- All project coordinators from within MNRE and across the Sectors that we are partnering with delivered presentations pertaining to their own areas of intervention.
- A total of 15 presentations were delivered to the audience
- Enhanced public knowledge of GEF procedures and guidelines and stakeholders were able to develop a project identification form in a concept phase
- All participants received GEF certificate for successfully completing the exercise
- GEF Office and OFP for the first time delivered a presentation to the CSO forum and were able to successfully assist the SUNGO become a member to GEF CSO network. SUNGO can now participate in all GEF forums internationally, regionally and locally.
- GEF OFP able to communicate effectively to private sector through the chamber of commerce the public private partnership of the GEF and private Sector.

#### Analysis

Over the last few years we have received an increase in interest from the public with regards to project proposals and applications to access the GEF funds. This increase is attributed to greater awareness via media, targeted resourcing as well as outreach workshops and direct dialogues with the stakeholders.

**Outcome 1.2: Effective management of GEF programmes to facilitate the planning and preparation of project proposals and project synergies.**

The GEF office and the OFP have aspired to keep a coordinated approach over all the projects funded by GEF and executed by multi stakeholders. Over the period of July 2012 - June 2013 the GEF office conducted a series of workshops to facilitate the planning and preparation of project proposals and create synergies across all projects.

#### Achievements

Project Identification Forms:

- 3 PIFs

Project Preparation Grants - Project Document

- 1 PPGs

#### Human Resources: 1 ACEO



GEF Workshop with the private sector stakeholders



GEF Regional Workshop



## OUTPUT 2: MINISTERIAL SUPPORT

Provide secretarial and administrative support to the Minister.

### Quantitative Performance

- Provide support services to the office of the Minister which includes:
- screening and arranging people requesting audience with the Minister;
- screen all correspondences;
- answering telephones;
- prepare and arrange for the Minister's local trips, and overseas trips for ministerial meetings on international conventions or representing GOS;
- arrange for official opening ceremonies which involve typing of scripts and speeches;
- and secretarial services which include typing and circulations where appropriate.

**Human Resources:** 1 Executive Secretary, 1<sup>st</sup> Secretary, 2<sup>nd</sup> Secretary, 1 Office Assistant, 1 Driver

Number of briefings conducted with the Sector CEOs	41
Number of Sector Senior Management Meetings	11
Number of Board Meetings (4 Board of Directors) + Special Meetings	54
Number of International Conferences attended by the Minister	15
National and Regional conferences hosted by the Minister	4
Number of official functions and key official functions in which the Minister officiated	13

### OVERSEAS CONFERENCE ATTENDED

- Dialogue High Level Meeting on the G20 Development, Washington USA
- High Level Conference of the Small Island Developing States on achieving sustainable energy for all & RIO+20, SIDS informal Ministerial Meeting, Bridgetown Barbados
- RIO+20 United Nations Conferences on Sustainability Development, Rio De Janeiro
- 23rd SPREP Meeting & Associated Meeting Noumea,
- New Caledonia
- Second Global Biennial Conference on Small States
- Official opening of the Invest Samoa conference, London and 1 in Auckland NZ
- UN-Habitat: Sixth Season of the World Urban Forum, Nadi Fiji

- Convention of Biological Diversity 11th Conference of the Parties ( CBD-COP 11), Hyderabad, India
- United Nations Framework on Climate Change- UNFCCC, Doha Qatar
- 27th Season of the Governing Council/ Global Ministerial Environment Forum, Nairobi
- Fourth Regional 3R in Asia, Viet Nam
- World Water Day, Netherland
- China Conference of Plenipotentiaries on the Minamata- Signing of Convention on Mercury and its Preparatory Meeting, Minamata Japan
- China-Pacific island Countries Economic Development Cooperation Forum, Guangzhou China
- United Nations Framework on Climate Change – UNFCCC, Warsaw Poland
- Regional Workshop on National Implementing Entity to the Adaptation Fund, Samoa
- Pacific Agribusiness Agriculture Research for Development Initiative -Breadfruit Industry (SROS), Samoa,
- 14<sup>TH</sup> Session Meeting of the Tropical Cyclone Committee of the WMO, Samoa
- 5<sup>th</sup> Annual review of the Water and Sanitation Sector, Samoa





**OUTPUT 3: LAND MANAGEMENT**

*To facilitate and implement sustainable land management and administration of land-based resources.*

**Sub Output 3.1****CUSTOMARY LAND LEASE SECTION****Management of Customary land leases & licenses**

The Land Administration Section of the Ministry also administers the licensing and leasing of customary lands on behalf of the Minister who is the trustee for beneficial owners of customary land in accordance with the provisions of the Alienation of Customary Land Act 1965

**Quantitative Performance**

The Minister may grant a lease or license over Customary land in accordance with purpose of usage and most importantly the Samoan custom, to the advantages and fulfilment of desires and interests of the beneficial owners of the land and the public interest in general for the following purposes;

- For an authorized purpose approved by the Minister e.g. religious, business or for plantation purposes etc; 20 + 20 year lease.
- For a hotel or industrial purpose; 30 + 30 year lease.
- For forestry purpose to comply with the Forests Act 1967.

The following works were carried out during the year;

- 28 site inspection of new customary land leases in both Upolu and Savaii;
- 20 mail delivery of rental advice and decisions on customary lands;
- Preparation of Legal documentation of leases without documents
- Continuous updating database of customary lands;
- Updating and sorting of customary land lease files into chronological order to ensure they are updated for scanning and database.
- Conduct meetings with Beneficial Owners on ways for the economic use of their customary lands that are not in used (6).

Revenue from the 5% Commission in Leasing Customary Land and other services for the period 2012 - 13 compared to 2011 - 12.

YEAR 2012		
MONTHS	REVENUE	
JULY 2012	\$ 8796.32	
AUGUST 2012	\$ 7011.73	
SEPTEMBER 2012	\$ 4405.43	
OCTOBER 2012	\$ 6144.27	
NOVEMBER 2012	\$ 2665.41	
DECEMBER 2012	\$ 2729.96	
<b>TOTAL</b>		<b>\$ 31,753.12</b>
YEAR 2013		
MONTH	REVENUE	
JANUARY 2013	\$ 1984.16	
FEBRUARY 2013	\$ 1498.01	
MARCH 2013	\$ 2301.66	
APRIL 2013	\$ 3286.53	
MAY 2013	\$ 2551.16	
JUNE 2013	\$ 3389.91	
<b>TOTAL</b>	<b>\$15,011.43</b>	<b>\$15,011.43</b>
<b>OTHER INCOME</b>	<b>\$ 2776.50</b>	<b>\$2776.50</b>
<b>TOTAL REVENUE 2012 - 2013</b>		<b>\$49,541.05</b>

There is an enormous decrease in revenue from the commission earned from leasing customary lands on current financial year 2012 – 2013 compared to last financial year 2011 – 2012, due to the inconsistent of lease payments with reference to lease documents date of payments.

Another indication of the decrease is that, there were other Samoatel leases that were terminated on last financial year due to inefficiency of posts transmission services at their current location

**Sub Output 3.2****GOVERNMENT LAND ADMINISTRATION SECTION**

As a result of the re-structuring of the former Land Administration Section, the Government Land Administration was established officially as a separate section as of the 1st of June 2012, and henceforth its functions were revised to focus entirely and solely on matters concerning government lands.

The Government Land Administration section strives to implement system of best practices and procedures for the

sustainable management of government lands. The section is responsible to and therefore its core function is to provide secretariat services to the Land Board. The Land Board is a statutory board established originally under the Land Ordinance 1959, and later under the Land Survey and Environment Act 1989, whose duties include the administration, management, development, alienation, settlement and protection and care of Government land.

### **Sub-Output 3.3: LAND ADMINISTRATION.**

Human Resources:

1 Principal Officer, 2 Senior Officers, 1 officer (vacant), 1 assistant officer and 2 Casuals

#### **1. Management of Government Lands**

The Land Board is responsible for the management of government lands in accordance to Part I - VII of the principal Act, the *Lands, Surveys and Environment Act 1989*. This include -

- Purchase any freehold land or interest of any lease in any Government land for the purpose of settlement as farming, urban, commercial or industrial land or for any government purpose;
- Develop land held for any Government purpose;
- Alienate Government land by leasing in accordance with the procedures set out under the Act;
- Reserve from any lease a strip of land for soil or water conservation;
- Exchange the fee simple in any government land for the fee simple of any other land and may receive or pay any sum by way of equality of change.

#### **Quantitative Performance**

The Land Board is authorized to:

- Purchase any freehold land or interest of any lessee in any Government land for the purposes of farming, urban development, settling commercial or industrial land and/or for any other government purpose;
- Alienate Government land by way of lease only for any purpose in accordance with procedures set out there under the Act;
- Develop land held by the Board for purposes required for by the Government;
- Exchange in fee simple of any government land for any other land as well as receive or pay any sum by way of equality of change.
- Reserve any strip of land held, for soil and/or water conservation;

The following activities were carried out in the financial year 2012 - 2013:

- Prepare and provide secretariat support for 13 Land Board meetings, 1 special meeting and 2 sub committee meetings
- Facilitate land exchanges as approved by the Board
- Facilitate procedure for the taking of lands required for watershed at Afiamalu and Malololelei, and lands required for road widening along the Vaitele Street
- Procure contracts for the construction of 3 new roads at Government leased lands in Laloanea, Aleisa and Nu'u.
- Supervision of the road construction contracts as required for by the Board
- Inspections of all government land in Upolu and Savaii.
- Collect rental payments for all government land leases
- Supervision and maintenance of cemetery grounds at Maagiagi, Tufuiopa, Vaimoso, Tafaigata and Vailele
- Process applications for burial plots
- Advertise, receive and process applications to lease government lands.
- Prepare and process new leases with the new system of land registration.

The land administration is not only responsible for the administering of the government land leases but also is responsible for the government lands that have not been designated by the Land Board to be leased out and thereby provide advice to the Board on how to best utilize these lands.

Land takings have slightly increased in the 2012 -2013 financial year due to two factors.

- Firstly is because of the increasing need for the conservation of water catchment areas on the upper highlands of Upolu.
- Secondly is because of road developments which include the widening of main public roads particularly on the North West coast of Upolu, and the formation of new roads around the Apia Municipality to ease traffic congestion.

Such undertakings require substantial parcels of customary and freehold lands which are duly compensated in accordance with the law.

Cemetery grounds have recently been considered a priority for the section due to the increasing application for burial plots from the public. It is essential that this service is available daily and consistently to the public but more importantly that the cemetery grounds are maintained to a state which is accessible and desirable to the public eye. However, the land administration has only in its capacity,

one personnel responsible for the supervision and management of 5 cemetery grounds – Tafaigata, Vaimoso, Tufuiopa, Maagiagi and Vailele.

Due to this shortage in personnel, the section is at most times unable to fully execute its responsibilities particularly the regular monitoring and inspection of all government lands.

	ACTIVITY	#
1.	New leases	26(13)
2.	Assignment of lease	2(1)
3.	Procuring Contracts	4 (0)
4.	Issuing of licenses to occupy government land	4(2)
5.	Land Exchange	0(1)
6.	Land Taking	3(2)
7.	Processing burial plots application	86 (63)

*Figures in parenthesis are for the 2011-2012 F.Y*

During this financial year, the land administration section procured services for the construction of 3 new roads on government leased lands at Laloanea, Aleisa and Nu; this is a rare activity for the section relative to the previous years.

Previously, the construction of roads was a responsibility of the Land Transport Authority which was then called the Ministry of Transport; hence, if needed be, the Land Board would put in a request to the above authority for the construction or rehabilitation of roads in government leased lands. But due to the constant requests and complaints from the tenants, the Land Board resolved that the ministry would have to pursue with the construction of any new road and the rehabilitation of existing roads at the government land leases.

Subsequent to satisfying the requirements of the government's procurement policies, the ministry engaged the Lucky Construction for the construction of the new road at Aleisa, the Webster Works & Infrastructure for the construction of the new road at Laloanea, and Ulia Construction for the new road at Nu.

In addition, the Ministry secured the services of the Land Transport Authority to supervise and test the road at Laloanea and Aleisa. The road at Aleisa was completed in April 2013, the road at Laloanea was completed in June 2013 and the road at Nu will be completed on September 2013.

#### Contracts Procures July 2012- June 2013:

	CONTRACTOR	CONTRACT NAME	CONTRACT PRICE (T\$)
1	Lucky Construction	New Road at Aleisa	\$196,960.50
2	Webster Works & Infrastructure	New Road at Laloanea	\$217026.16
3	Ulia Construction	New Road at Nu	\$252,833.02
4	Land Transport Authority	Supervision and testing of roads	\$23,000.00

#### Revenue received

The section is responsible for the collection of the rental payments for the leases throughout the entire financial year. However, the actual revenue from the leases may vary from the expected revenue as payments of rents are made accordingly to the conditions for each individual lease – e.g. some leases are paid monthly while most of the leases are paid annually;

Secondly, some lease payments are due in on the 1st of January while most are due on July. As a result, the revenue receive for each month may vary significantly, nevertheless the revenue collected at the end of each financial year is more or less the same. Any significant variation in the end of fiscal year revenue can be a result of various factors.

The two most common factors are:

1. the lessees had paid in advance the rent and as a result did not make any payments in the current financial year;
2. the lessees have not paid there rents and therefore have accumulated arrears.

The first factor is sometimes outside of the ministry's control as the Land Board does not object and more in fact encourages the advance payments of rents for all leases. The second factor on the other hand, is a determinant that the ministry takes very seriously and often results in the termination of some leases. Any arrears amassed by any lessee is seen as the failure on the part of that tenant to observe his or her obligations under the lease agreement and therefore is considered as a breach of contract – the grounds for termination.

The government lands that are leased are categorized accordingly into the subdivisions it is situated in: - Afiamalu, Aleisa, Apia Park, Laloanea, Land reclamations, Motootua, Nu, Salelologa, Tanumalala, Tiavi, Toomatagi. An 11th category encompasses all other government lands

that are not affiliated with the above major subdivisions such as the government lands in the town area, government lands clustered all over the country and land reclamations on the coast.

#### Revenue from leases BY SUBDIVISION

	SUBDIVISION	AMOUNT (T\$)
1	AFIAMALU	\$13,498.56
2	ALEISA	\$5,300.00
3	APIA PARK	\$1,970.00
4	LALOANE	\$21,784.00
5	MISCELLANEOUS	\$273,720.19
6	MOTOOTUA	\$50.00
7	NUU	\$6,200.00
8	TANUMALALA	\$22,602.00
9	TIAMI	\$975.00
10	TOOMATAGI	\$100.00
11	SALELOLOGA	\$29,900.00
<b>TOTAL</b>		<b>\$376,099.75</b>

The table below shows the number of applications the ministry received for burial plots during the financial year. Obviously, the ministry is receiving more applications compared to the previous years. This is due to more and more of the people applying for reserve plots.

#### Revenue from applications for burial plots

	CEMETERY	# of Applications	Amount (T\$)
1	Tafaigata	62	\$18,050.00
2	Vailele	22	\$6,400.00
3	Maagiagi	2	\$200.00
<b>TOTAL</b>			<b>\$24,650.00</b>

	ACTIVITY	EXPECTED OUTCOME	TIMEFRAME
1	Procure Contract for the construction of the Kingmercury Road at the Salelologa Township	The ministry expects the timely development of the Salelologa township by providing sufficient access roads to parcels that are currently inaccessible.	1 – 5 months
2	Procure Contract for the maintenance of the Vailele Cemetery grounds	The timely and adequate maintenance of the grounds by a selected contractor with the ministry verifying and confirming the quality of the works the contractor does.	1 – 3 months
3	Procure carpentry services for the construction of burial plots	The objective is to ensure that all burial plots are constructed accordingly to the standard set out by the ministry unlike the current practice where the plots are self-made by applicants.	1-5 months

#### Total Revenue for FY July 2012 – June 2013 (BY SOURCE)

	SOURCE	AMOUNT (T\$)
1	PAYMENTS OF LEASES	\$376,099.75
2	BURIAL PLOTS APPLICATION	\$24,650.00
3	LEASE APPLICATION	\$320.00
<b>TOTAL</b>		<b>\$446,508.92</b>

A few activities are in the pipeline to ensure the effectiveness of the service that the land administration section provides and top of it, to ensure that the objectives for the financial year are achieved.

### Sub Output 3.4

#### LAND DEVELOPMENT SECTION

The Land Development Section provides policy with regards to matters on development and management of lands and land-based resources. All decision made by the Minister through the Chief Executive Officer are based on advises given to him by the section.

The Section is also the main focal point for the coordination and implementation of the United Nations Convention to Combat Desertification (UNCCD), which aims to address land degradation concerns in Samoa. In addition, Land Development staff is continuing to provide counterpart assistance and follow-up development to the maintaining of Samoa's Capacity Building and Mainstreaming of Sustainable Land Management (SLM) Project. They are also providing administrative and support for the GEF5 SMSMCLS "Strengthening multi-sectoral management of Official Landscapes in Samoa)

Various functions of the Land Development Section which operates under the Land Management Division includes the:

- Formulation, review and implementation of various land policies with environmental significance of land as a natural resources to all stakeholders,
- Administration of sand mining applications including regulating operations for individual, communal and commercial purposes in accordance with its code of environmental practices conduct and ethical standards;
- Administration of reclamation applications include site-visit to draw-up environment report and assessment and submission of matters to Land Board for approval
- Administration of temporary stalls and banners and other activities that utilize governmental land in the town area;
- Coordination and implementation of the United Nations Convention to Combat Desertification (UNCCD) which concerns all issues and project-related activities pertaining to land degradation; and
- Coordination of the GEF Funded Medium Size Project for Sustainable Land Management.
- Coordination of the GEF5 SMSMCLS Project.

#### i) Policy Development and Implementation

There are no new policies except for existing policies which were then reviewed while new policies require a consultative process to commence development.

#### ii) Sand mining Operations

The table below shows the revenue earned during this reporting period 2012-2013. There has been a decrease in

numbers of commercial applicants from 16 to 12 and yet there was profit of \$13,100.00 from revenue collected from commercial mining. For Individual operator, there were decrease number of 43 applicants and revenue collected was decrease to \$375.00. Although there was a drop of applicants, there was an increase of \$13,100 from the revenue during 2012-2013 in comparison to year 2011-2012's financial year.

Human Resources:

- 1 Principal Land Development Officer
- 1 Senior Land Development Officer
- 1 Land Inspection Officer
- 1 Land Development Officer
- 1 Assistant Land Development (Casual)



**Table 2: Revenue from Sand mining Activities**

	Commercial		Individual		Total
	# of Permits Issued	Revenue	# of Permits Issued	Revenue	
July	(3) 2	(\$1,400.00) \$2,000.00	(5) 1	(\$1,620.00) \$20.00	(\$5,020.00) \$2,020.00
Aug	(2) 0	(\$400.00) 0	(2) 1	(\$25.00) \$50.00	( \$425.00) \$475.00
Sept	(2) 2	(\$4,500.00) \$3,000.00	(6) 2	(\$635.00) \$30.00	(\$5,135.00) \$5,165.00
Oct	(0) 0	(0) 0	(4) 5	(\$105.00) \$340.00	(\$105.00) \$445.00
Novr	(0) 0	(0) 0	(6) 5	( \$125.00) \$775.00	( \$125.00) \$900.00
Dec	(1) 0	(\$1,000.00) 0	(5) 1	(\$165.00) \$10.00	(\$1,165.00) \$1,175.00
Jan	(0) 0	(0) 0	(5) 2	(\$575.00) \$60.00	(\$575.00) \$635.00
Feb	(2) 1	(\$2,100.00) \$2,000.00	(4) 7	(\$50.00) \$25.00	(\$2,150.00) \$2,175.00
Mar	(0) 2	(0) \$2,000.00	(0) 2	(0) \$1,055.00	( 0) \$1,055.00
April	(1) 0	(\$2,000.00) 0	(4) 8	(\$425.00) \$440.00	(\$2,425.00) \$2,865.00
May	(0) 1	(\$1,000.00) \$10,000.00	(2) 8	(\$45.00) \$675.00	(\$2,045.00) \$2,720.00
June	(5) 4	(\$4,500.00) \$11,000.00	(3) 1	(\$45.00) \$20.00	(\$4,545.00) \$4,565.00
<b>Total</b>	<b>(16) 12</b>	<b>(\$16,900.00) \$30,000.00</b>	<b>(49) 43</b>	<b>(\$3,815.00) \$3,440.00</b>	<b>(\$23,715.00) \$33,440.00</b>

**iii) Reclamation Issues**

Reclamation was transferred under this Section in 2011. Revenue collected during this financial year as shown in the table below was \$1,000.00 and a decreased of \$2,000.00 from 2011-2012's earning.

Months	Applicants	Revenue
(July 2011) July 2012		
(August 2011) August 2012	0 1	0 \$500.00
(September 2011) September 2012	0 0	0 0
(October 2011) October 2012	0 1	0 \$500.00
(November 2011) November 2012	0 0	0 0
(December 2011) December 2012	0 0	0 0
(January 2012) January 2013	0 0	0 0
(February 2012) February 2013	0 0	0 0
(March 2012) March 2013	2 0	\$1,000.00 0
(April 2012) April 2013	2 0	\$1,500.00 0
(May 2012) May 2013	1 0	\$500.00 0
(June 2012) June 2013	0 0	0 0
<b>TOTAL</b>	<b>5 2</b>	<b>\$3,000.00 \$1,000.00</b>

**iv) Stall and Banners – Activities**

Administration of temporary stalls and banners and other activities using government lands in the town area continues to be regulated by the Section. As shown in the Table below, a total of \$4,680.00 has been earned in comparison to the \$11,790.00 from the same period in the previous year which decreased to \$6,930.00.



Months	Stalls using Govt. Area			
	# of Permits Issued		Revenue	
July	(26)	3	(\$465.00)	\$70.00
August	(9)	1	(\$220.00)	\$20.00
September	(25)	4	(\$1,315.00)	\$60.00
October	(16)	15	(\$880.00)	\$565.00
November	(27)	8	(\$895.00)	\$1,830.00
December	(35)	22	(\$1,685.00)	\$960.00
January	(20)	4	(\$1,920.00)	\$130.00
February	(22)	4	(\$1,620.000)	\$80.00
March	(15)	2	(\$545.00)	\$30.00
April	(16)	17	(\$570.00)	\$85.00
May	(62)	73	(\$1,150.00)	\$930.00
June	(13)	5	(\$525.000)	\$100.00
<b>Total</b>	<b>(286)</b>	<b>168</b>	<b>(\$11,790.00)</b>	<b>\$4,860.00</b>

#### v) United Nations Convention to Combat Desertification (UNCCD).

The Land Development Section continues to be the coordinating unit responsible for the implementation of the UNCCD. As a party to the Convention, Samoa is required to satisfy its various obligations and in particular, the formulation of Samoa's National Action Plan Programme (NAP) to combat land degradation and mitigate the effects of drought.

The Section had been undergoing training and processing in the development of Samoa's 5th National Report and gladly announce that it was submitted to the Convention in November 2011 on due time. The Convention Secretariat has adopted a new method for online reporting to enable easier monitoring and evaluation of the national status of land degradation and efforts to address these concerns.

##### Land Development Section – Staff

1. Principal Land Development Officer
2. Senior Land Development Officer
3. Land Inspection Officer
4. Land Development Officer
5. Assistant Land Development (Casual)

#### vi) Samoa's Capacity Building and Mainstreaming of Sustainable Land Management Project (SLM)

Land Development Section continues to work as coordination section in follow-up and improvement work of the SLM Project after its completion at the end of 2011.

### Sub Output 3.5 - LAND REGISTRATION

#### System

A new Open Source Software called Solution for Open Land Administration (SOLA) was introduced at the beginning of 2012 to replace LRS currently operate the registration of land titles. This change aims to improve the registration service and reducing fraud transaction and other difficulties face with the public in land matters. The current system used standard forms for each type of transaction, and its format according to the requirement of Land Title Registration Act 2008. The forms can be edited when any amendment done on the principle Act and passed by Parliament. The only changes in SOLA software are the naming of services used for inputting the information for any changes described by a lodged application.

The status of customary land never changes in registration of lease or license for development; also the title still under the matai for the trustees of its family who owned the piece of land to be leased or licensed. One of the interesting appearances at the back sheet of the CFC, there's a small drawing of the locality of the selected lots. The drawing illustrated features of the surrounding area.

#### Application

There's nothing different in the process of lodging new application for registration in changing system from LRS to SOLA. It is possible for individual to complete their own application forms of which type of transaction apply for registration with supporting documents to guarantee them and must be witnessed by selected people. Using of private solicitor to help the public prepare and lodge the necessary documents for registration still valuable under Land Title Registration Act 2008. Staffs of Registration Section registered in computer and produce a new Computer Folio Certificate (CFC) indicating a new change according to an application lodged by an agent. The staffs scan the application and all supporting information and saved in the archive for future reference.

The computerized land registration system can create new computer folio certificates of a registered lot, when the lot subdivided and a new survey plan approved by the CEO. The particular original lot cancelled as soon as the new survey plan approved and new computer folio certificate created and approved. New folios could be created for a new subdivision if the subdivided lot frees from encumbrances, such as mortgages, caveats, leases and so on. The public can request copies of computer folio

certificate produced by the computerized system at any time they need.

#### Fees

Standard application form -	\$5.00
Lodging application for registration -	\$100.00
Search fee -	\$5.00
A4 copy -	\$5.00
A3 copy -	\$8.00

These fees were formed and approved when the Land Title Registration Act 2008 implemented in March 2009 and it can only be change when reviewed and approved by the CEO of the Ministry.

#### Registration Procedure

1. The client (Lodging Agent/Individual)
  - Do the full search of the property (Land Records)
  - Seek any legal advice (Lawyer or Land Profession)
  - Buy the standard form and fill (Individual or Solicitor)
  - Lodge and pay the registration fee to the Ministry of Natural Resources and Environment for registration
2. The Land Registration Staff
  - Receive and check the application
  - Registered if all requirement of Land Registration Act 2008 achieved
  - Requisition if any requirement failed or anything not complied under Land Registration Act 2008
  - Printout New (CFC) Computer Folio Certificate
  - Forward to the Registrar for signature of approval
3. The client (Lodging Agent/Individual)
  - Check the registration section for any complete application
  - Sign the released book and uplift the new (CFC) computer folio certificate

The approved period of five (5) working days for processing a new application declares under the Ministry's Service Charter, but in our new computer system, can be process in one working day when busy or at the same time if the Registrar available for signature.

Table 1  
Internal Application

Period, 01 July 2012 until 30 June 2013 (with no fees)		
	Services	Lodged
1	Cancel Mortgage under Power of Sale	13
2	Cancel Title	135
3	Cancel Transmission under Transfer by Administrator	57
4	Cancel Miscellaneous	11
5	Change Estate Type	0
6	Change Right or Restriction	4
7	Convert to Title	71
8	Correct Registry	120
9	Correct Registry (Cancel Right)	33
10	Create New Folio	1112
11	Record Proclamation	1
	<b>Total</b>	<b>1,557</b>

Table 1 above indicates the amount of internal application we did for different services indicate by the table. These different services particularly for converting information from old Land Register Book to computer, creation of new folio of subdivided lots and correction of errors on the registry.

Table 2  
External Application Received for Registration  
( next page )

Table 2 - External Application Received for Registration

Period from 01 July 2012 until 30 June 2013 (with fees)				
	Services	2012/2013	2011/2012	Different
1	Removal of Caveat	34	28	6
2	Removal of Court Order	3	0	3
3	Termination of Lease	41	14	27
4	Cancel Life Estate	1	0	1
5	Discharge of Mortgage	427	438	-11
6	Cancel Transmission	24	0	24
7	Variation of Lease	5	0	5
8	Variation of Mortgage	112	61	51
9	Caveat	39	37	2
10	Court Order	5	3	2
11	Lease	95	86	9
12	Record Life Estate	2	0	2
13	Miscellaneous	27	12	15
14	Mortgage	527	518	9
15	Sub Lease	0	16	-16
16	Transmission	80	77	3
17	Transfer	656	653	3
18	Power of Attprney	15	36	-21
19	Cance Power of Attprney	1	0	1
	<b>Total Received</b>	<b>2094</b>	<b>1979</b>	<b>115</b>

Table 2 shows the amount and difference of application lodged for registration in financial year 2011/2012 and 2012/2013.

Looking through the data, we acknowledge the increasing of application received in 2012/2013 by 115 than 2011/2012. Variation of mortgage has a most number of the increasing while only 9 mortgages different between financial year and many mortgages discharge in 2011/2012 than 2012/2013. In leases, 41 leases terminate this period compare to 14 leases terminate last period and the different of 9 lease between 2011/2012 and 2012/2013. Transfer of title is the majority of application lodged (656) and only 3 applications different from the last period.

Table 3 - Total amount of application

Period from 01 July 2012 until 30 June 2013		
	Services	2012/2013
1	Services With Fees	2094
2	Services with no fees	1557
	<b>Total of services</b>	<b>3,651</b>

Table 3 described the total number of application both internal and external and at the same time, its spell out the total services for registration did in Land Registry Section in 2012/2013.

Table 4 - Revenue Received From Application

**Table 4 - Revenue Received From Application**

	<b>Auaunaga</b>	<b>2012/2013</b>	<b>2011/2012</b>	<b>Different</b>
1	Tatalaina o Taofiga	\$ 3,400.00	\$ 2,800.00	\$ 600.00
2	Aveeseina l iuga o Faamasinoga	\$ 300.00	\$ -	\$ 300.00
3	Aveeseina o Lisi	\$ 4,100.00	\$ 1,400.00	\$ 2,700.00
4	Cancel Life Estate	\$ 100.00	\$ -	\$ 100.00
5	Aveeseina o Mokesi	\$ 42,700.00	\$ 43,800.00	-\$ 1,100.00
6	Aveeseina o Tausimea	\$ 2,400.00	\$ -	\$ 2,400.00
7	Faapoopoina o Lisi	\$ 500.00	\$ -	\$ 500.00
8	Faapoopoina o Mokesi	\$ 11,200.00	\$ 6,100.00	\$ 5,100.00
9	Taofiga	\$ 3,900.00	\$ 3,700.00	\$ 200.00
10	Faamauiua luga o Faamasinoga	\$ 500.00	\$ 300.00	\$ 200.00
11	Lisi	\$ 9,500.00	\$ 8,600.00	\$ 900.00
12	Faamauiua o Esetete	\$ 200.00	\$ -	\$ 200.00
13	mataupu eseese	\$ 2,700.00	\$ 1,200.00	\$ 1,500.00
14	Mokesi	\$ 52,700.00	\$ 51,800.00	\$ 900.00
15	Toe lisiina atu	\$ -	\$ 1,600.00	-\$ 1,600.00
16	Tausi mea	\$ 8,000.00	\$ 7,700.00	\$ 300.00
17	Faaliliuina atu o le pule	\$ 65,600.00	\$ 65,300.00	\$ 300.00
18	Pule Faatagaina	\$ 1,500.00	\$ 3,600.00	-\$ 2,100.00
19	Aveeseina o le pule faatagaina	\$ 100.00	\$ -	\$ 100.00
	<b>Aofaiga</b>	<b>\$ 209,400.00</b>	<b>\$ 197,900.00</b>	<b>\$ 11,500.00</b>

The table above indicates the increase of revenue in this period by \$209,400.00 compared to last financial year for the sum of \$197,900.00. The income of \$11,500.00 isn't a big profit, but it is base by the amount of application received with an increasing of 115. This is a sign of the effect of our economy by cyclone Evan and the drop of the world economy in previous years. We can easily prove this by discovering financial application such as transfers, mortgages, variation of mortgage, discharge of mortgages and land leases. People can't afford to purchase piece of land, commercial bank encourage and review conditions to prevent them from unpaid mortgage. The developers didn't lease land for any development due to financial problem.

Table 5 – Revenue from Search Fees and Photocopies

Months	Revenue		
	2012/2013	2011/2012	Dif
July	\$ 2,162.00	\$ 2,195.00	-\$ 33.00
August	\$ 2,030.00	\$ 2,210.00	-\$ 180.00
September	\$ 1,793.00	\$ 2,000.00	-\$ 207.00
October	\$ 2,183.00	\$ 2,205.00	-\$ 22.00
November	\$ 1,822.00	\$ 1,970.00	-\$ 148.00
December	\$ 1,631.00	\$ 1,020.00	\$ 611.00
January	\$ 1,746.00	\$ 1,310.00	\$ 436.00
February	\$ 1,199.00	\$ 1,770.00	-\$ 571.00
March	\$ 1,301.00	\$ 1,265.00	\$ 36.00
April	\$ 1,164.00	\$ 1,150.00	\$ 14.00
May	\$ 1,982.00	\$ 1,625.00	\$ 357.00
June	\$ 1,048.00	\$ 1,140.00	-\$ 92.00
<b>Total</b>	<b>\$ 20,061.00</b>	<b>\$ 19,860.00</b>	<b>\$ 201.00</b>

Table 2 shows that only \$201.00 that this financial year more than previous year. This service depend on how often the public come in to search information from our office.

Table 6 – Revenue from Standard Forms

	2011/2012	2012/2013	Different
Application Forms	\$ 10,095.00	\$ 9,980.00	\$ 115.00

Table 3 is a total amount of income received from standard for registration.

Table 7 – Total Revenue

Source of Income	2012/2013	2011/2012	Difference
Documents for Registration	\$ 209,400.00	\$ 197,900.00	\$ 11,500.00
Searches and Copies	\$ 20,061.00	\$ 19,860.00	\$ 201.00
Standard Form	\$ 9,980.00	\$ 10,095.00	-\$ 115.00
<b>Total</b>	<b>\$ 239,441.00</b>	<b>\$ 227,855.00</b>	<b>\$ 11,586.00</b>

Table 7 above illustrates the 3 sources of income for output 3:3. It also indicates the increase of revenue from financial year 2012/2013 than 2011/2012. The main reason of difference in revenue spells out in table one (1) above specify the increasing of documents lodged for registration compare to the last financial year.

#### Unit Title

Unit title operate under Land Registry Section, but from the implemented date until now, no instrument neither unit title plan lodged for registration.

#### Human Resources

- 1 Principal Land Registry Officer, 2 Senior Officers
- 2 Officers, 1 Assistant Registry Officer, 1 Casual workers



## SUB OUTPUT 3.6 LAND VALUATION

Valuation Section under MNRE has begun its regulatory role as required under our Land Valuation Act 2010 with the official appointment of its Land Valuation Committee. This Committee aims to implement its administrative functions in monitoring of valuation practices in Samoa, developing valuation standards and exercising other functions given by the Ministry. Nevertheless, our Section is continually providing valuation services to official government requests through our Land Board or from other government agencies and corporations. These valuation tasks are done for statutory purposes and it's either for land exchanges or for compensation issues which normally are considered complex and requires a lot of effort and time.

### Quantitative Performance:

Other additional duties included under our Land Valuation Section are the handling of Stamp duty transfer documentation. These duties on transfers of lands have now being handed over from MOF to our Ministry. There have being a lot of challenges arises from these new changes; nevertheless, we have utilized these challenges and put them into good use for our staff to develop their capacity and extend their skills & knowledge to provide efficient and effective services to the public.

Numerical projections of revenues as well as our daily work activities are clearly stated below;

### Valuation Tasks & Projected Revenue

Valuation Tasks	Total Number	Total Revenue
Individuals/Corporations/Private	(200) 370	(63,585) 102,105
Advices to Land Board for compensation cases	(20) 30	These are considered as official works
Advices to Government for land exchange cases	(10) 10	These are considered as official works.
<b>TOTAL</b>	<b>(230) 410</b>	<b>(63,585) 102,105</b>

(Note: Figures from previous years are shown in parenthesis)

### Stamp Duty & Projected Revenue:

Transfers (Deeds)	Total No. of Transfers (Deeds)	Total Revenue
Law Firms/Individuals	(689) 554	(\$1,012,393.31) \$1,850,229.28

There is a slight decrease in statutory valuations particularly in cases that requires valuation advices to government for leasehold properties, compensation cases, and land exchange purposes. There's been a remarkable increase in requests from various institutions, lenders and the general public for opinions in regards to valuation.

Overall, the priority is to overlook the progression of licensing of valuers and monitoring of valuation practices in Samoa by preparing ethics, rules and standards in place to guide local practitioners in performing their valuation duties.

Two (2) members of valuation staff have been awarded with an official valuation license by the Samoa Valuation Board under approval from the CEO and now addressed as Licence Valuers under MNRE. 3 members are still within the Valuation section with one of our staff now pursuing his degree at USP, Suva Fiji.

### Existing & Proposed Projects & Events:

- Valuation advices and services extended to private corporations and Land Board on land leased related matters.
- Establishing database to collect and record information (sales & rental) which is vital for conducting valuation tasks.
- Attending various projects, workshops and educational trainings within the Ministry
- Reviewing and Monitoring of FVS on quarterly basis
- A proposal to create another section for Stamp Duty official matters (under Land Management Division) given that all legal documents (from MOF) will be soon given under Stamp duty of MNRE in the near future.

A brief overlook of our on-going valuation tasks are as follows;

Valuation Tasks	Expected Outcome	Time frame	Expected Revenue
i)Updating and monitoring of Formula Valuation System (FVS)	This FVS is currently been published on the ministry's website	FVS is updated and published regularly on a quarterly basis. Note: this is recommended to be done on an annual basis	Our intention is to provide this information as a guideline to land values to all its users.
ii) Valuation advices for corporations	These assignments are for purposes of stocktaking, insurances, and rental/lease assessments.	Normally for these sorts of assignments, it requires a time frame of 2-3 weeks.	Our charges are based on time, site inspection and so forth. A minimum fee of \$500 is charged accordingly but can be assess from time to time.
iii)Valuation assessments for individuals and general public.	These valuations for finance security purposes have now been outsourced to the private sector/valuers.		The Ministry can be engaged only to resolve any queries.
iv) Valuation advices for Land Board and other government requests	It is our priority to provide and allocate our services to Land Board for assignments which required ministerial decisions.	These assignments usually last up to 2 - 3weeks	The natures of these tasks within our Ministry are considered to be official works.
v)Valuation section is currently faced with monitoring and processing of Valuation licences to local valuers	A total number of 7 valuers now hold licence to practice with annual practicing certificates. 5 are private valuers. 2 are with the Ministry	Applications to be submitted to the Land Valuation Committee to be assess and approved.	Valuers are expected to pay their annual practice licence. A fee of \$500 is charged for renewal of these licences and \$250 for annual practicing certificate.
vi) Collection of Land Sales for our Sales database(through Land Transfers and Stamp duty records from our section and Land Registry)	These land information is vital to our work because they reflect accurate information on property market in Samoa.	Maintain, monitor & provide regular update of our database on every 2 months basis.	This information is made available to private valuers, real estate agents and general public.
vii) Stamp Duty Transfer	Assessing of sale transactions to confirm new changes in stamp duty fees. Transfer deeds are submitted from various individuals and law firms with necessary proof to finalized assessment	These assessments are given a time frame of at least 2-3 days. This can vary if all proper documents are submitted and provided on hand.	New changes have occurred in stamp duty fees as approved by the Revenue Board.

#### Proposal for New Staff:

With the increase awareness of valuation services in regards to the property market in Samoa, the demand for more skilled personnel in our section is vital. It is also important that these new recruits should perform efficiently and be supervised by those who are qualified or registered as licence valuers either within the government ministry or the private sector. Additional staff is also recommended for Stamp duty works in the near future.

#### Human Resources:

1 Principal Valuer, 1 Senior Valuer, 1 Senior Stamp Duty Officer, 1 Land Valuer, 1 Assistant Valuer.



## OUTPUT 4 : TECHNICAL SERVICES DIVISION

### Sub Output 4.1.

#### SURVEY SERVICES

To provide survey services for Government lands requested by the Land Board, divisions of the Ministry and any other works approved by the Minister or CEO. The Survey section is also responsible for inspection and investigation survey required by the ministry and also works executed by private Surveyors.

#### 1.1 Geodetic Control Network

Geodetic Control Network includes horizontal and vertical networks. It is the framework or backbone of all surveys in Samoa. The Survey section is responsible for the establishment, maintenance and upgrading of the networks.

#### 1.2 Spatial Data Infrastructure

There are two Faleolo and Fagalii Continuous Global Position System Base Stations (CGPS). Fagalii CGPS station is to monitor climate change and Sea Level Rise in the region and it is the effort and collaboration by Australia (AusAid) and Samoa Government.

Faleolo CGPS station was installed in 1996 and it is a research project initiated by the University of Hawaii and in collaboration with the Institute of Geological and Nuclear Science of New Zealand and the Government of Samoa. This project is to monitor the crusty movements of tectonic plates of the South West of the Pacific Region. The data collected is relayed weekly to New Zealand for analyzing and provide yearly reports for enabling decision making.

#### 2. Issuance of Surveyors License and Annual Practicing Certificates

Five annual practicing certificates were issued to Private Surveyors in the Private Sector and three annual practicing certificates were issued to Surveyors within the Ministry.

#### 3. Registered Licensed Surveyors

Tuala Piki Tuala	-Private Surveyor
Manu'alesagalala Enokati Pelo	-Private Surveyor
Galuvao So'oalo Viliamu Sepulona	-Private Surveyor
Seve Keilani Soloi	-Private Surveyor
Alaiasa Sagalala Salanoa	-Private Surveyor
Seiuli Ueligitone Seiuli	-Private Surveyor
Vitaoa Peleipu Fuatai	-MNRE
Safuta Toelau Iulio	-MNRE)

#### 4. New Registered Licensed Surveyors(2012).

Tupai Eseta Maualaivao	-Samoa Land Corporation
Levei Tanoi Auelua	-SLC
Lemalu Petania Tuala	-MNRE

### 5. Achievements & Details of work carried out

	Work Executed.		Status
1.	Survey of land to be taken for road purposes at Laloanea.	Various .	Completed \ approved survey plan 11030.
2.	Subdivision of Pt lot 38 at Tuasivi for leased purposes	Govt.	Completed \ approved survey plan 11089
3.	Redefinition survey of lot 1, 2 & 3 on Plan 10517 at Taumesina for leased purposes.	Govt.	Completed
4.	Redefinition survey – Boundary between lot 91 and lot 92 on Plan 1869 at Aleisa.	Govt.	Completed
5.	GPS survey of Quarry site on Plan 2957 at Tuiolemu, Aleipata	Govt.	Completed
6.	Topographic Survey of land to be leased at Avele\Vailima – Contour plan and Levelling	Govt.	Completed topographic survey plan.
7.	Redefinition survey of the access road between lot 359 and 719 on Plan 2778 and 3283 at Vaivase Uta.	Various .	Completed
8.	Redefinition survey of the Western Boundary of lot 1 on Plan 10011 at Tauese, Apia. (Police Department)	SLC.	Completed
9.	Redefinition survey of lot 1 on Plan 10396 at Malololelei for water reserve purposes.	Govt.	Completed
10.	Redefinition survey of 7 lots on Plan 7069 at Salelologa Township for leased purposes.	Govt.	Completed
11.	Subdivision of Pt. lot 760 at Taumesina for leased purposes.	Govt.	Completed\ approved survey plan 11075
12.	Redefinition survey of the access road on Plan 2083 at Apia	Govt.	Completed
13.	Redefinition survey of the western boundary of lot 103 on Plan 3226 at Vaisigano\Apia.		Completed
14.	Survey of Vaiala rugby field at Taumesina.	Govt.	Completed
15.	Survey of land at Salelologa for leased purposes.	Custo mary.	Completed

16.	Redefinition survey of lot 2 on Plan10294 for lease purposes at Tafaigata	Govt.	Completed
17.	Redefinition Survey of the northern boundary on Plan 3080 at Sinamoga	Various	Completed
18.	Subdivision of lot 1 on Plan 10349 at Avele for leased purposes.	Govt.	Complete\ approved survey plan 11001
19.	Survey of Customay land at Lufilufi to be leased by the Met Office.	Custo mary.	Completed\approve process
20.	Survey of land for leases purposes at Mulifanua(STEC)	STEC	Completed\ approved survey plan 11090
21.	Survey of Pt. lot 472 and road on Plan3606 at Palisi.	Various	Completed\ approve process
22.	Redefinition survey of the access road to Government Leased land on Plan 4890 and 4891 at Laloanea.	Govt.	Completed
23.	Redefinition survey of lot 1527 on Plan 4723 at Afiamalu.	Govt.	Completed
24.	Redefinition Survey of the access road on plan 10397 at Aleisa.	Govt.	Completed.
25.	Survey of Mulivai stream protection reserve at Apia.	RCM	On hold.
26.	Redefinition Survey of lot 665 on plan 4609 at Falelatai Uta for leased purposes.	Govt.	Completed.
27.	Subdivision of lot 3 on plan10538 at Afiamalu.	Govt.	Completed\ approved survey plan 11113.
28.	Redefinition Survey of lot 828, 829 and 827 on Plan4799 at Togafuafua.	Various	Completed.

Within this financial year, the survey section performed extremely well to achieve its target and completed most survey requests by the Ministry and the Government within its agreed timeframe.

The services are provided in accordance with all relevant Survey Regulations, Acts and Ministerial Policies in all land related matters.

## Sub Output 4.2- SURVEY QUALITY ASSURANCE

Provide services to support the Land Registration System and various parts of the Ministry in graphical presentation of cadastral boundaries, indexing of Land Survey information on Record & Cadastral Maps. Issuance of Field Books, receiving and examination of all Survey Plans lodged by Licensed Surveyors. San and Record all approved plans on Digital Cadastral Database (DCDB). The other responsibility of this section is updating Solution for Open Land Administration (SOLA SYSTEM).

Outputs	Outstan ding July 2011 - June 2012	New	Total	Outcome	Achievements	
					Comple te	M
Survey Plans received and approved	33	198	231	231	212 approved	19 requisitions
Plans to be scanned	-	212	212	212	212	
Digitise of Scanned plans on DCDB	-	212	212	212	212	
Recording of Approved Plans on Sola	-	212	212	200	12 still awaiting because only two used the other await parts to repair	
Miscellaneous  {Additional Jobs}	Prepare & produce Digital layers MP7,MP8,MP9,MP10 & MP11 as requested by SWA (MOU )					
	Digitised Land required road names at Vaitele fou,Vaitele Uta required by the Geographic Names Board committee.					
	Search and copy of Westec land at Mulifanua requested by Stec.					
	Preparing of residue plans request by Land Registration Sysem.					
	Investigation of plans and ownerships of the land and road at Lepea.					
	Searching requested road widening at Aleisa and print copies ACEO Land Managenent.					
	Editing changes to the digital map for road names					
	Recording requested plans on the system					
	Training on Unit Title.					

## Revenue collected July2012-June 2013

	External	Internal	Total
Examination fees	\$18315.15	\$835.00	\$19,5150.15

### Sub Output 4.3 NATIONAL MAPPING

The National Mapping Section is responsible for the reproduction of national maps for the entire nation. The Mapping Section continue its usual daily operation for the services requested using 1999 aerial photo, satellite imagery and other series of flying since 1954. It also highlight issues of changes in the structure on the entire development in the country. Update of topography maps and the cadastral of land ownerships, forest resource, new settlement and many of the government development.

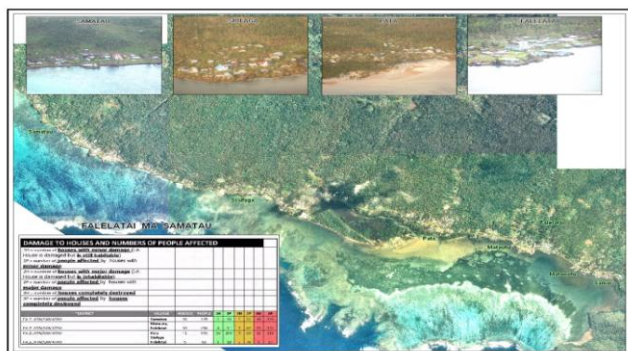
The Mapping section assisted the Disaster Management operation when natural disasters occur within the country. Continue to assist schools in different level for Environment and Natural resource issue and the impact of land, forests and marine to climate change (maps).

During cyclone Evan in December 2012, the Mapping section were involve in mapping out the affected areas within Upolu island, also with the assessment team for inspection of houses, buildings and government assets that were damaged by Evan.

#### Products and Services:

1. Aerial Photography
2. Rectified Orthophoto maps
3. Topographical Map Series
4. GIS Layers and Digital datasets
5. Thematic maps requested.
6. Map of Electoral Boundaries
7. Nautical charts and maritime boundary issues (EEZ) exclusive economic zone.
8. Cadastral Survey boundaries on aerial photographs.
9. Produce maps for long term planning such as SoE. FD etc.
10. Produce maps for natural disaster impact.

Falelatai/Samatau after cyclone Evan December 2012.



Mulivai, Safata



#### Revenue collected: JULY 2012- JUNE 2013

Products	Official uses with costs	Receipts items	Total
Topographic Maps	(11)\$260.00	(103)\$3,560.00	\$3,820.00
Orthophotos	(157)\$2,893.00	(28)\$550.00	\$3,443.00
Thematic maps	(196)(13,235.00)	(19)\$540.00	\$13,775.00
Print outs	(85)\$2,730.00	(18)\$365.00	\$3,095.00
Tourists maps	(6)\$30.00	(24)\$120.00	\$150.00
TOTAL	\$19,148.00	\$5,135.00.00	\$24,283.00

#### Projects.

Continue support and assistance for projects where mapping requirement are needed, assistance within the ministry continued to meet all requirements for the sustainable development and management of the natural resources and environment

#### Geographic Names Board.

This financial year marked the establishment of the Geographic Names Board approved under the Spatial Information Agency Act 2010.

Objectives:

- To eliminate ambiguity and uncertainty in geographic Names in Samoa.
- To ensure there is appropriate recognition of Samoan heritage and culture in the selection of geographic names
- To provide the institutional and administrative framework that facilitates the widest practicable community consultation on matters covered by this Act.



The National Mapping section will continue with its usual services in providing reliable and accurate spatial information to assist internal and external users for a sustainable development of natural resources and the environment of Samoa.



## SECOND INFRASTRUCTURE ASSET MANAGEMENT PROJECT (SIAM-2)

### UProgramme Purpose and Project Development Objectives:

The purpose of the Infrastructure Asset Management Programme (IAMP) is to:

*Enhance the economic, environmental, and social sustainability of transport and coastal infrastructure assets, and to manage those assets, natural resources and disaster risks through an effective partnership with private sector stakeholders.*

The Programme has been implemented over a period of nine (9) years in two phases as follows, to meet the targets shown in the table below, which was updated from the original outline, i.e:

- IAMP – I: Meeting Vital Priorities and Strengthening Management (1999-2003)
- SIAM-2: Investing for Sustainable Growth and Protection (2004 – 2009)

IAMP Phases	Phase IAMP - I	Phase – SIAM-2
Period	January 1999 – March 2004	July 2003 – December 2009
Project Development Objectives	<i>Vital Infrastructure Priorities and Strengthened Management</i>	<i>Investing for Sustainable Growth and Protection</i>
Key Programme Outputs	<ul style="list-style-type: none"> <li>• Environmentally and socially sustainable management of coastal infrastructure is initiated</li> <li>• Management of infrastructure assets is becoming service-oriented involving public, private and community stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Management of environment, natural resources and disasters, restructured and in partnership with civil society</li> <li>• Environmentally and economically sustainable protection of infrastructure assets in coastal and other areas</li> </ul>
Criteria for : Subsequent Adaptable Programme Financing (IAMP-I to SIAM-2) and, End-of-Programme	<ul style="list-style-type: none"> <li>• Coastal Zone Infrastructure Strategy endorsed by Cabinet</li> <li>• DLSE reform endorsed by Cabinet</li> </ul>	<ul style="list-style-type: none"> <li>• At least 60% of road and coastal infrastructure developments justified by appraisal and priorities of approved sector plans</li> <li>• At least 80% of coastal communities participate in Coastal Infrastructure Management Strategy (CIMS)</li> <li>• 80% of coastline in Upolu and Savaii adequately protected for 20 year storm events.</li> </ul>

List of Acts/Regulations	AG's Office	Parliament	Status
1. Land Title Registration Act (C5.01)	Yes	Yes	Passed by Parliament (now in effect since 2009)
2. Land Titles Registration Regulations (C5.01)	Yes	Yes	Passed by Parliament (now in effect since 2009)
3. Survey Act (C5.01)	Yes	Yes	Passed by Parliament (now in effect since 2010)
4. Survey Regulations (C5.01)	Yes	Yes	Not yet passed
5. Valuation Act (C5.01)	Yes	Yes	Passed by Parliament (now in effect since 2010)
6. Valuation Standards & Code of Ethics (C5.01)	Yes	Yes	
7. Spatial Information Agency Act (C5.01)	Yes	Yes	Passed by Parliament (now in effect since 2010)
8. Emergency and Disaster Management Bill (C4.01)	Yes	Yes	Passed by Parliament (now in effect since 2007)
9. Environment Impact Assessment Regulations 2007. (C4.01)	Yes	Yes	Passed by Cabinet (now in effect since 2007)

#### **MNRE LEGISLATIONS**

#### **ADDITIONAL FINANCING TO THE SIAM-2 PROJECT**

#### **UPDATE REPORT.**

#### **(Remaining components)**

**CONTRACT C4.0102:** Overall Update and Prioritization of Services Under Environment, Risks and Resource Management as well as Prioritization on Design and CIM Plan Work

100% completed.

#### **MNRE GOODS PROCUREMENT (under the SIAM-2 project and Additional Financing).**

All 100% completed.

#### **PACIFIC REGIONAL INFRASTRUCTURE FACILITY (PRIF) FINANCING TO THE SIAM-2 PROJECT.**

The PRIF financing will enable the completion hopefully of the MNRE additional tasks that were requested to the World Bank for funding. These activities were identified during the progress and on-going implementation of the SIAM-2 Project tasks under the additional financing credit and would hopefully complete in 2013, the date that the SIAM-2 project ends.

#### **CONSULTANCY SERVICES (Firm)**

#### **(C5.03): Unit Titles Act 2009 Implementation (USD\$255,234.66 incl. taxes)**

This consultancy will see the practical implementation of the Unit Titles Act that was passed by the Samoan Parliament in 2009 but is yet to be enforced or enacted as there is no capacity within MNRE for skills and knowledge-wise or in the private sector for that matter. There is an urgent need to implement this consultancy now.

#### **Current Status:**

- Tenders Board Approval granted August 2011,
- World Bank Approval granted October 2011,
- Contract C5.03 was signed on 16 December 2011 between the GoS and LEI,
- Consultancy work was started on 18 February 2012,
- Payment No. 1 and No. 2 have been completed in the previous financial year 2011-2012,
- Addendum No. 1 request was sent from the Bank to include a Drainage Easement component for the West Coast Road under this contract and MNRE accepts it, August 2012,
- Addendum No. 1 to Contract C5.03 was cleared by Attorney General's Office in September 2012,
- Addendum No. 1 Contract signed between Land Equity International and MNRE, 12 October 2012 for an Addendum amount of USD\$60,372.86 incl. VAGST and other taxes. The closing date for the consultancy was extended to 31 January 2013,
- Payments 3, 4 and 5 were completed in this financial year 2012-2013.

**Milestones:**

1. Payment No.3 of 20% of Contract price (USD\$51,046.57) has been completed after the reports have been finalized following the ministry's review and acceptance as per the signed C5.03 Contract;
  - Land Registration Software Amendment Report – Final,
  - Unit Titles Implementation Report – Final,
2. Payment No. 4 of 10% of Contract price (USD\$25,523.28) has been completed upon approval and acceptance of;
  - Final Project Report on Contract C5.03.
3. Payment No. 5 of an Addendum No. 1 to Contract C5.03, an amount of USD\$59,772.86 upon successful completion of the guidance on drainage easement task and acceptance of output reports;
  - West Coast Road Drainage Easements Guidance on Legal and Valuation Aspect Finalised Report.

**PRIF GOODS PROCUREMENT.****C4.0201A: Procurement of 6 Handheld GPS Units for the Ministry of Natural Resources and Environment.****Current Status:**

- March 2012, Advertisement in the local Observer Newspaper for Quotations,
- 30 April 2012, Closing date for Bids as well as their opening during the Tenders Board meeting,
- Tenders Board meeting accepts the report by the Evaluation Panel on 22 May 2012 regarding the procurement and awards the bid to Comptech Xtra Ltd at bid price of \$9,954 inclusive of VAGST and other taxes.

**4.0201B(i) : Procurement of a Laptop and Flat Panel Screens for the Ministry of Natural Resources and Environment.****Current Status:**

- March 2012, Advertisement in the local Observer Newspaper for Quotations,
- 30 April 2012, Closing date for Bids as well as their opening during the Tenders Board meeting,
- Tenders Board meeting accepts the report by the Evaluation Panel on 22 May 2012 regarding the procurement and awards the bid to Computer Services Ltd at bid price of \$15,040 inclusive of VAGST and other taxes.

**C4.0201B(ii) : Procurement of an Off-Site Server for Ministry of Natural Resources and Environment.****Current Status:**

- March 2012, Advertisement in the local Observer Newspaper for Quotations,
- 30 April 2012, Closing date for Bids as well as their opening during the Tenders Board meeting,
- Tenders Board meeting accepts the report by the Evaluation Panel on 22 May 2012 regarding the procurement and awards the bid to Datec Samoa Ltd at bid price of \$23,288.76 inclusive of VAGST and other taxes.

**C4.0201C: Procurement of a Plotter for the Ministry of Natural Resources and Environment.****Current Status:**

- March 2012, Advertisement in the local Observer Newspaper for Quotations,
- 30 April 2012, Closing date for Bids as well as their opening during the Tenders Board meeting,
- Tenders Board meeting accepts the report by the Evaluation Panel on 22 May 2012 regarding the procurement and awards the bid to Comptech Xtra Ltd at bid price of \$27,599.00 inclusive of VAGST and other taxes.

**C4.0201D: Procurement of a pH110 Meter for Ministry of Natural Resources and Environment.****Current Status:**

- March 2012, Advertisement in the local Observer Newspaper for Quotations,
- 30 April 2012, Closing date for Bids as well as their opening during the Tenders Board meeting,
- Tenders Board meeting accepts the report by the Evaluation Panel on 22 May 2012 regarding the procurement and awards the bid to Computer Services Ltd at bid price of \$2,990.00 inclusive of VAGST and other taxes.

**C4.0202C: Procurement of MapInfo Softwares (Upgrade) for Ministry of Natural Resources and Environment.****Current Status:**

- March 2012, Advertisement in the local Observer Newspaper for Quotations,
- 30 April 2012, Closing date for Bids as well as their opening during the Tenders Board meeting,
- Tenders Board meeting accepts the report by the Evaluation Panel on 22 May 2012 regarding the

procurement and awards the bid to Samoa Stationery & Books Ltd at bid price of \$44,800.00 inclusive of VAGST and other taxes.

**New MNRE Server** (purchased using SIAM-2 Project Counterpart Budget).

**Current Status:**

- 3 Quotations for new server received, May 2013, from CSL, Datec and Comptech Xtra Ltd,
- Preferred firm, Comptech Xtra with the lowest quoted price of ST\$17,977.00 tala incl. of taxes selected and advised to procure the equipment,
- Unsuccessful bidders were also advised of the quotation result,

**WORKS PROCUREMENT.**

**C4.0203C: MNRE Off-Site Storage Facility (ST\$65,602.90)**

**Current Status:** Not yet started

- Request for Proposal cleared from AG's Office October, 2012,
- Newspaper advertisements for bidders through the end of October and the whole of November 2012,
- Tender opened at Tenders Board meeting deferred to 7 January 2013 due to Cyclone Evans,
- Only 1 Tender received after bid opening on 7 January 2013 and that was from Diamond Head Design and Build company,
- Evaluation Report cleared by Tenders Board and award the works to Diamond Head at its meeting 29 January 2013,
- Contract between MNRE and Diamond Head Design and Build signed 22 February 2013,
- Physical construction works by Contractor, Diamond Head was completed 100% on 22 March 2013,
- Payment completion is 90%, 10% is retained for Defects Liability as per signed C4.0203C Contract payable around March 22, 2014.

**CONSULTANCY SERVICES (Individual)**

**C7.01: PUMA Training**

**Current Status:** Not yet started

**C7.02: GPS Training for MNRE Staff**

**Current Status:** Not yet started

**C7.03: Quality Assurance Training**

**Current Status:** Not yet started

**SOLUTIONS FOR OPEN LAND ADMINISTRATIONS – SAMOA PROJECT (SOLA – SAMOA)**

Samoa has become the first country to put the new software *Solutions for Open Land Administration* (SOLA) into operation. The UN Food and Agriculture Organization (FAO) developed the open source software to make computerised cadastre mapping and registration systems more affordable and sustainable for developing countries. A cadastral map is a comprehensive register of a country's real property. It commonly includes details like land ownership, tenure, precise location, dimensions and area and the value of individual parcels of land. SOLA offers Samoa the chance to use a computerised system that integrates both title registration and cadastral mapping functions.

**Activities:**

- **February 2012** – Standup sessions starts, Sprint 1 starts as well,
- **March, April, May & June 2012** – Sprint sessions continues with daily standup sessions, (Sprint and standup sessions are for reporting on tasks done so far on the development of the software by MNRE and CSL staff members, the FAO consultant assists out in all the sessions),
- One Review session was scheduled with the MNRE Management to review the software development and recommendations for improvement at the end of May 2012.

**Equipment: (value is around USD\$50,000.00)**

- 2 High end Servers supplied by FAO for MNRE,
- 2 laptops also provided by FAO for use in the project

**Personnel:**

- MNRE Land Management staff (2) and Quality Assurance Section (2) staff,
- 2 software developer staff from Computer Services Ltd (CSL),
- 1 FAO consultant.

**Output:**

A stable computerized software system that depicts and integrates both title registration and cadastral mapping functions that is also tailor-made to Samoa's needs.

## About SOLA

*SOLA is a three-year trust fund project. It is funded by Finland. FAO's Climate, Energy and Tenure Division Land Tenure team initiated and manages SOLA to improve land tenure security for the poor. SOLA is also an important tool to help implement the Voluntary Guidelines on Governance of Tenure of Land, Fisheries and Forests in the context of National Food Security. The Committee on World Food Security officially endorsed the Voluntary Guidelines in May 2012.*

*Please visit the SOLA Website for more information:*  
<http://flossola.org/>

*Neil Pullar, the SOLA Project Coordinator, can be contacted at:*  
[neil.pullar@fao.org](mailto:neil.pullar@fao.org)

*Vitaoa Pele Fuata'i, Project Manager in the Samoan Ministry of Natural Resources and Environment can be e-mailed at:*  
[peleiupu.fuatai@mnre.gov.ws](mailto:peleiupu.fuatai@mnre.gov.ws)

## Output 5 - ENVIRONMENT & CONSERVATION

### 5.1 - TERRESTRIAL CONSERVATION

#### Quantitative Performance

#### National Policies and Strategies for Terrestrial Biodiversity

a. National Biodiversity Strategy and Action Plan (NBSAP)  
The UNEP provides financial support for the review of the National Biodiversity Strategy and Action Plan and the development of the fifth National Report to the Convention on Biological Diversity (CBD). The Technical Consultant for the review of the National Biodiversity Strategy and Action Plan and the development of the 5th National Report has been advertised.

b. Strategy for the management of water lettuce in Samoa.

The team has identified the need to develop a strategy for the management of water lettuce in the country. Therefore, a strategy was formulated with the aim to control and or eradicate water lettuce from infested areas within Samoa. The three main objectives: (1) To identify and monitor the distribution of water lettuce infestations in Samoa (2) To increase the awareness and skills of the landowners, growers, flower growers and the general public on the impacts of water lettuce (3) To implement rapid response for new found water lettuce infestations. The strategy is in draft form and will finalise soon.

#### National programme for the control and management of Terrestrial Invasive Species.

a. Monitoring of mongoose traps at Satitoo  
Ongoing monitoring of 9 DOC 250 traps placed at Satitoo was conducted by our section to ensure this strange animal will be eradicated completely from the site and the country. Traps were continually baited with eggs. Upon completion of the monitoring the following result was recorded.

The monitoring team had experienced a number of set-off traps during check up. Some traps were accidentally been set-off but still without no clue of how it occurs. For those reasons, monitoring work considered a perfect sign of best practices, to ensure each trap box to be in good form of catching the mongoose in no time.



Table 1 :

Results recorded from monitoring of mongoose at Satitoo from July to November, 2012

Jul	9	-	1	8	2	Eggs	<ul style="list-style-type: none"> <li>• 2 set-off traps but all been damaged</li> <li>• 7 traps remain at site</li> </ul>
Aug	8	-	1	7	5	Eggs	<ul style="list-style-type: none"> <li>• 5 set-off traps inclusive of 1 damaged trap</li> <li>• Re-set 4 then a total of 6 traps remaining</li> </ul>
Sep	7	-	1	6	1	Eggs	<ul style="list-style-type: none"> <li>• 1 set-off trap also been damaged</li> <li>• 5 traps total in September</li> </ul>
Oct	6	-	1	5	1	Eggs	<ul style="list-style-type: none"> <li>• 1 damaged trap</li> <li>• 4 traps remaining in duration of October</li> </ul>
Nov	5	-	-	5	-	Eggs	

#### b. Myna bird control project

##### 1. Poison baiting operation

The section received a report from Aiono Tile of Fasitoo Uta on the impact of myna birds settling within the ceiling of his house and also reported damages to their Church Building by the pigeons. The section conducted an assessment and noted that the myna bird at its breeding season making nests and laying eggs on the ceiling of Mr Tile's house. Assessment was also carried out at the Church Building of the CCCS, and witnessed the impact of the pigeon to the ceiling, the walls and the floors of the building. The baiting operation was carried out to both properties at Fasitoo Uta.

##### 2. Monitoring of dead mynas and the bait

A follow-up visit to Mr Aiono Tile's house noted an indication of baits been eaten at both sites. The team removed nest from the same area but no eggs been found only feathers. The monitoring to the CCCS Church building at Fasitoo Uta confirmed that only small portion of bait has been eaten and new droppings of pigeons has been observed.



#### 3. Identified roost site at Moamoa

Residents at the Catholic compound at Moamoa reported observing myna birds in abundance around the area. The team carried out its first visit to the area and observed a large group of myna birds flying further upland. We continued to move towards their flying path, until we got the exact area where they roost. They were present at high population in a dense bush of Shoebuttan ardisia, togo vao (*Ardisia elliptica*) and on African rubber tree, pulu vao (*Funtumia elastica*). These two trees are listed as invasive species in the National Invasive Species Action Plan.

#### 4 Monitoring of myna roost at Moamoa

The monitoring work focus mainly to find out whether myna birds feed on the togo vao and pulu vao and to search for any nest and to obtain more information on their behaviour at the site. The result obtained that they start to fly in from different direction to the site at around 4pm and by 6:30pm to 7pm; they are at high numbers making loud noises. In the early morning at 5:30am, they were present at a very high population. At around 6:30am to 7:00am, their noises became louder as they fly all over the place and mostly up the coconut trees before departing towards town in pairs or in groups. The team also found out they do not feed on these trees.

#### c. Water Lettuce Surveillance

##### 1. Initial Investigation

The Terrestrial Section received a report ( Bill Nagle of the Pacific Invasive Initiative in New Zealand, James Atherton of Environmental ) regarding water lettuce at Lyn's Getaway in Motootua which is an invasive plant. According to Ms Netzler this was purchased from Agnes Chan of Vaivase Uta and she was aware that the water lettuce is invasive in China and has an impact on the environment especially in the streams, lakes and rivers.

An initial investigation with Ms Agnes confirmed a fish pond containing water lettuce and was from Helena of Vaigaga, the owner of the Bayview Garden & Nursery. More information was obtained from Helena on places in the country where this weed is existed. Helena stated during our communication that she started to remove this plant from her fish pond by way of hand clearance when she found out that water lettuce is invasive. Furthermore, she also found dead gold fish in the pond which makes her suspicious that this might be the cause given that this plant has dense cluster branched roots. Few plants were left in the pond during our investigation, and she assured us that she would take them all out.

Fish pond containing water lettuce at Vaivase



fish pond with water lettuce at Vaigaga

Further searches by the team ( at Vailoa and Apia ) found that the water lettuce was used as a source of food for fish (tilapia). The invasive plant was fast growing wild and covered the whole surface of the pond. It had to be removed physically by hands.

### Monitoring of water lettuce infested areas.

Ongoing monitoring of water lettuce identified sites was conducted by the terrestrial section. There are six sites already been identified and mapped. During monitoring, we found out that only few left in fish ponds.

### Water lettuce flyer & Information Sheet

The water lettuce flyer was developed to provide awareness and understanding for the general public. It also included information on the water lettuce habitats, its impact on the environment as well as activities that the public can do to reduce and or eradicate this weed completely if they have it in

their yards. Both English and Samoan version are finalized and yet to print out for distribution to the public and schools.

The information sheets provides information on water lettuce and why this weed is a problem as well as what the ministry is doing about it and what the general public can do to help minimize or stop the problem.



### Research and Monitoring program on flora and fauna conservation.

#### 1. Initial Inspection of flying fox roosting sites.

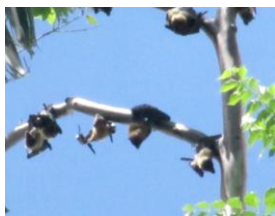
##### 1.1 Roost at Magiagi

An initial inspection to the roosting site at of Magiagi. From there, two roosts (mango and pulu) were located with flying fox being roost communally in these trees. The species was identified as a Tongan flying fox with about sixty to seventy in total population. This species roosts in large colonies and is mostly active at night. These new roosts have been indentified after the Cyclone Evan. The total population that normally roost in these trees is not yet known but residents mentioned that there are more flying foxes coming to roost in these trees when it's getting dark.

##### 1.2 Roost at Fasitoo Uta

Another roost was reported at Fasitoo Uta and reported that this roost was identified during a Forestry field visit around the area. A search was conducted by a team of two to the site.

According to the couple who owns the land, the matter occurred a week after the Cyclone Evan, and that they move from trees to another within their land. Their workers found a sack of stones under the roosts, and suspicious that the villagers around the area might came into the place for hunting. Moreover, the workers were asked for permission by the villagers to access the site, but they never allowed anyone.



The roost tree was identified as the eucalyptus; with the total population of about 300-400 which is less than it was before as mentioned by the couple.

### 1.3.2 Monitoring of flying fox roosting sites.

The massive destruction by the cyclone Evan is believed to be the major reason of flying foxes moving to the lowland areas searching for food and habitats.

The illegal hunting of the species being monitored is still at large with a small number of people now being seriously aware of such issue. Meanwhile, three roosting sites were been recorded during the first week of monitoring which were under surveillances by the Terrestrial Section, with two sites situated at Magiagi and the other one at Vaigaga. Still various sites were at undisclosed locations with some of the sites that were being exist were destroyed by cyclone Evan. Hence, these new roosting sites now are being experience due to habitats loss and food supplies making these species to adapt to a new surrounding for survival.

### 1.3.2 Manumea field visit.

The Terrestrial team has working together with the National Parks and Reserves Section to carry out survey for manumea aiming at gathering the necessary biological and ecological information that can assist conservationist and managers make informed decisions to help advance conservation efforts on saving the remaining population of the endangered tooth billed pigeon.



The section has achieving most of its expected outputs for the projects that we are currently implementing and the programs under its management.

## Sub-Output 5.2 - MARINE CONSERVATION

### i. Marine Species Conservation and Management

#### Workshops and Meetings:

Humpback whale survey training workshop was held for the 300-Level Environment students of the National University of Samoa (NUS) as well as the DEC's staff members. This training workshop provided the participants' background on the biology, distribution, conservation status and threats of humpback whales and other whale and dolphin species found Samoa. It also provided an avenue for the participants to learn about the methodologies undertaken to study humpback whales in Samoa.

#### Turtle in Captivity Meeting:

A meeting was held to re-activate the marine turtle working group. The main objective of the meeting was to provide an update on the current status and implementation of recommendations that were provided in a survey report conducted in 2008. It also provided an opportunity to address the Marine Wildlife Protection Regulation 2009 and engage the involvement of other relevant organizations such as the Samoa Tourism Authority, Fisheries Division and the Ministry of Women, Community and Social Development.

#### Legislation:

Review of Mangrove legislation: A review of existing legislations which covers the protection of mangroves was conducted under the MESCAL project. The review report provides a list of recommendations and identifies the need to develop either specific legislations or policies for the management and protection of mangroves or incorporate into existing environmental legislations that will be reviewed.

#### Projects:

##### Ecosystem-based Adaptation (EbA):

The EbA project is implemented at two pilot sites – Tafatafa and Manase. The EbA component is part of SPREP's Coastal Management Adaptation to Climate Change project which aims to develop lessons learned, publications and methodologies that will be widely applicable across the region, particularly in areas where sea walls and infrastructure alterations are not a feasible option and also where mangroves are ill-suited. This project is in collaboration with the Ministry.

## **Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES)**

**Inter-Agency Collaboration:** An inter-agency collaboration meeting was held involving representatives from different Government Ministries. The main objective of the meeting was to establish a CITES Committee to implement obligations under the Convention. This includes identifying the Management and Scientific Authorities, their roles and responsibilities and providing an update on the implementation progress since the National meeting held in March 2012.

**Database:** CITES Database: A database to store information on the export and import of any CITES listed species has been developed. The database would also be able to assist with the development of the CITES report to the Secretariat.

### **Information and Awareness Programs**

**Presentations and Field Trips:** Assistance was provided to more than 400 students from both Primary and Colleges in the form of presentations and field trips. A presentation on the conservation efforts and work of the Marine Conservation Section was also carried out for the Environment and Conservation students of the National University of Samoa.

**Mangrove Clean-Up:** A clean-up at the Le Asaga Bay was carried out in collaboration with volunteers from Tafitoala. The clean-up at the demonstration site is one of the key outcomes of the MESCAL project, which is, improving mangrove conservation and co-management at the demonstration site. The Woman's Committee of Moataa also organized a one day community clean-up campaign, where more than 50 representatives from the youth groups, matai and Sunday school children collected rubbish from their mangrove conservation area.

**Educational materials:** Four new information materials were developed for this fiscal year. This includes three brochures/factsheets: 1) Seagass of Samoa; 2) Corals and coral reefs of Samoa; 3) CITES brochure and 1 CITES poster.

## **PERFORMANCE ACHIEVEMENTS**

### **2.1 Marine Species Conservation and Management**

#### **2.1.1 A Pattern of Dolphins (aPOD) Survey**

A project called "A Pattern of Dolphins" aims at investigating the genetic diversity and relatedness, distribution and movements of dolphins across the South Pacific including Samoa through photo-identification and genetic sampling. Surveys were conducted over a period of 9 days in August 2012 covering both islands of Upolu and Savaii. This survey was a collaborative work led by Professor Scott Baker, Associate

Director of the Marine Mammal Institute of the Oregon State University and the Marine Conservation Section.

A total of 6 species were encountered during the survey. Four of these species were from the dolphin family and included spinner dolphins (*Stenella longirostris*), bottlenose dolphin (*Tursiops truncatus*), rough-toothed dolphin (*Steno bredanensis*) and short-finned pilot whales (*Globicephala macrorhynchus*). The other 2 species encountered included the humpback whales (*Megaptera novaeangliae*) that migrate from the Antarctic during the winter months (July - November) and the cuvier's beaked whale (*Ziphius cavirostris*), a cryptic deep-water whale.

#### **2.1.2 Humpback Whale Survey Methodology Training Workshop**

A one day training workshop was held in October 2012 for the 300-level Environment and Conservation students of the National University of Samoa (NUS) and DEC local personnel. The focus of the training workshop was to provide a background on the biology, distribution, conservation status and threats of humpback whales and other whale and dolphin species found Samoa. It also informed students of the conservation efforts implemented by the Ministry to ensure the conservation of these vulnerable species.

The training workshop also provided the students and staff lessons on how to conduct surveys for marine mammals using non-lethal methods such as photo-identification, genetic sampling and acoustics. This training workshop was also carried out to prepare students and staff for the humpback whale survey conducted in October 2012. The training workshop is part of the humpback whale research project funded by the Australia Government through the Department of Sustainability, Environment, Water, Population and Communities.

#### **2.1.3 Humpback Whale Survey**

Surveys to understand the migration, distribution, behaviour and trends of humpback whales (*Megaptera novaeangliae*) in the waters of Samoa were carried over a period of 20 days (October – November 2012). Boat based surveys were focused on the south, southeast and southwest coasts on Upolu Island. During the first week, third year students from the National University of Samoa participated in the research expedition. The purpose of their participation was to allow students the opportunity to experience, learn and gain interest in studying marine mammals in Samoa.



Unfavourable weather conditions limited the surveys to the sheltered area of the island (south-southwest). However, the southeast coast of the island was surveyed when working conditions were durable. Despite bad weather, a total distance of 1,485km was covered with a total of 125 hours spent on the water searching and working with whales and dolphins.

A total of 25 groups of whales and dolphins were encountered which comprised of four species that were identified and two groups of unidentified species. Species that were positively identified included humpback whales (*Megaptera novaeangliae*), dwarf sperm whale (*Kogia sima*), spinner dolphins (*Stenella longirostris*) and melon-headed whales (*Peponocephala electra*). Thirteen humpback whales were photographed and catalogued based on their dorsal fin and flukes (underside of their tail). None of the humpback whales were re-sighted from previous years indicating the low population of these whales present in Samoa. Spinner dolphins were recorded on the majority of surveyed days and in reasonably high numbers ranging from 80 - 100 individuals in a group. The single dwarf sperm whale and more than 250 melon-headed whales were recorded for the first time in the wild. These species were only documented present in Samoa from stranding incidents. Tissue samples for genetic analysis was collected from humpback whales (n=1), spinner dolphins (n=4) and melon-headed whales (n=5).

The humpback whale project is a 2 years program funded by the Department of Sustainability, Environment, Water, Population and Communities of the Australian Government through the Indo-Pacific Cetacean Research and Conservation Fund. The survey team included Samoa Mata'afa and Aniva Va'alotu (NUS students), Olivia Wales, Anita Horsley and Malaeniu Tanielu (Sa'Moana resort) and Fini Male, Va'atele Anoifale, Joe Te'o, Samantha Kwan and Juney Ward of DEC.

#### 2.1.4 Stranded Short-finned Pilot Whale

A single stranding of an adult male short-finned pilot whale (*Globicephala macrorhynchus*) was reported from Faleula. The dolphin (despite its name) was found dead and floating within the reef on the 7 March 2013. Tissue samples were collected for genetic analysis. The cause of stranding could not be determined. No necropsy was carried out.

#### 2.1.5 Flipper Tagging & Necropsy of Turtles

Only two turtles were flipper tagged for this fiscal year. This included a juvenile green turtle caught entangled in a fishing net (upega) from Saleilua and a juvenile hawksbill turtle reported from Vaigaga. Both turtles were tagged with titanium flipper tags provided by the Secretariat of the Pacific Regional

Environment Programme (SPREP) and released at Mulinuu. No injuries were noted on the both turtles.

An adult female green turtle was found dead and reported by community members of Matautu-Falealili village. A necropsy was performed on the dead turtle to determine whether the turtle had died from ingesting plastic materials. There were no signs of major injury on the external body of the turtle apart from a small cut on its belly. No plastic materials were found in the stomach contents.

#### 2.1.6 Turtle in Captivity Meeting

A meeting was held in May to re-activate the working group that looked into the issue of keeping turtles in captivity for tourism purposes. The main aim of the meeting was to provide an update on the current status and implementation of recommendations that were provided in a survey report conducted in 2008. It also provided an opportunity to address the Marine Wildlife Protection Regulation 2009 and engage the involvement of other relevant organizations such as the Samoa Tourism Authority, Fisheries Division and the Ministry of Women, Community and Social Development.

#### 2.1.7 Turtle Research and Monitoring Database System (TREDS)

The new TREDS which is a database provided by SPREP was re-installed onto the computers and a training was carried out for the new marine conservation officers. TREDS is used to store data collected from tagging, nesting and stranding programs conducted annually by the Section. The information collated in the database is also used to monitor turtle populations and identify movement patterns from the foraging to nesting areas. From 1985 to 2013, a total of 270 data on turtles from tagging and nesting programs is stored in TREDS.

### 2.2 Marine Ecosystems Conservation and Management

#### 2.2.1 Mangrove Survey and Clean-Up

The mapping of the Le Asaga Bay mangroves was carried out under the MESCAL project. The one day survey conducted on the 23rd November 2012 focused on mapping the boundary of the mangrove area as well as identifying mangrove species and associated coastal trees found within the mangrove ecosystem.

A clean-up at the Le Asaga Bay was carried out in collaboration with volunteers from Tafitoala. The clean-up at the demonstration site is one of the key outcomes of the



MESCAL project, which is, improving mangrove conservation and co-management at the demonstration site.

A long-plot survey at the demonstration site was also conducted. The long-plot survey is a practical and effective method of measuring biodiversity, structure, biomass and living carbon content of the mangrove ecosystem accurately and at low cost.

#### 2.2.2 Coral Collection from Palolo Deep Marine Reserve

Assistance was provided to PhD student Patila Amosa, from the University of Otago. Ms. Amosa's research is to investigate the rate of dissolution of calcifying organisms in current ocean conditions and predicting future conditions based on IPCC scenarios. Her main study area was the Palolo Deep Marine Reserve where samples of dead corals and seawater samples were collected from the area for dissolution experiments. Samples collected will be used in a chemistry experiment and will be part of Ms. Amosa's PhD research project.

#### 2.2.3 Exploratory dive for Potential Medicinal/Pharmaceutical Values

An exploratory dive at Manono-tai was carried out as part of a request for assistance by the Scientific Research of Samoa (SROS) and the Victoria University, New Zealand. The main objective of the dive was to explore the marine environment for specimens that have potential medicinal/pharmaceutical values and properties. The one day dive collected sponges from around the seagrass beds of the Island of Manono. The project will investigate other sites around Upolu and Savaii in extensive surveys that is proposed in 2013.

#### 2.2.4 Crown of Thorn Starfish (COT) Assessment

An increase in the number of COTs observed in many of the villages along the southern coast was reported. Assessments were conducted at eleven sites - Palolo Deep Marine Reserve, Lalomanu, Vailoa, Ulutogia, Satitua, Amaile, Samusu, Tafitoala, Saleilua, Poutasi and Vaovai. Vaovai, Tafitoala and Samusu had the highest numbers of COTs present in their marine environment. The COTs were observed in lower numbers for Palolo Deep Marine Reserve, Amaile, Vailoa and Lalomanu. Satitua and Ulutogia reported no COTs at the time of the survey.

#### 2.2.5 Valuation Survey

A valuation survey for the mangroves of Safata is now completed. The survey interviewed households from the nine villages of Safata District. This household survey identified the importance and uses of mangroves as well as the

management of mangroves. The valuation survey was also conducted for Vaiusu, Vailoa and Sogi. The valuation survey for mangroves is also part of the MESCAL project.

#### 2.2.6 Review of Mangrove Legislation

A review of existing legislations which covers the protection of mangroves was conducted under the MESCAL project. The main objectives of this review are 1) to provide an overview of legislations on mangroves and those relating to the use and management of the mangrove ecosystems; (2) provide an overview of policies on mangroves and those relating to the use and management of the mangrove ecosystems; (3) analyze and assess these legislations; and (4) analyze and assess these policies.

The review report also provides a list of recommendations and the need to develop either specific legislations or policies for the management and protection of mangroves or incorporate into existing environmental legislations that will be reviewed.

#### 2.2.7 Reef Resilience Online Training Program

A 2 day (26 - 27 June) online training course looking at Reef Resilience was held at SPREP for participants from the Division of Environment & Conservation and the Fisheries Division of MAF. The online course is part of The Nature Conservancy curriculum which offers coral reef managers, trainers and policy maker's guidance on building resilience to climate change into the design of Marine Protected Areas (MPAs).

#### 2.2.8 Seagrass Monitoring

Seagrass monitoring was carried out for Tafitoala and Vaiala. There has been no detailed monitoring of seagrass beds in Samoa. This was the first survey undertaken to map the seagrass areas for these two sites and to also collect information on the biodiversity of seagrass.



## Other Work Affiliations

### *Response to Development Complaints & Inspections*

The Section conducted three site visits with the PUMA in response to complaints from members of the public with various developments. The following table lists Section's inspections.

MCS Personnel	Sites/Reported Activity	Purpose of Inspections
Samantha Kwan	Sinalei Resort - sand dredging activity damaging nearby corals	Site visit was conducted to determine whether the sand dredging activity was impacting the health of live corals within the vicinity.
Samantha Kwan	Vaitoloa - solid waste disposal and wastewater discharge into Vaitoloa	Site visit was conducted confirming the reported activity. Recommendations provided.
Samantha Kwan	Vaisigano - discharge of grey water from Aggie Grey's hotel into Vaisigano river	Site visit was conducted confirming the reported activity. Recommendations provided.
Samantha Kwan	Fagaloa - report of unpleasant smell from EPC hydro	Site visit was conducted at Fagaloa. Interview was carried out and recommendations provided to PUMA.

### *Environment Week Floats*

In commemoration of the Environment Week, one day was dedicated to recognizing the importance of the marine biodiversity. Floats were done by each Division of the Ministry, where each Division was given a specific species or ecosystem that was considered threatened or had significance in our culture and tradition. This was the first float held by the Ministry and was very successful in delivering the message across the public. The floats included species and habitats such as the shark, whale, dolphin, turtle, mangroves, tuna, giant clams, frigate bird and coral reefs.

### *Community consultations:*

The Terrestrial Conservation Section carried out a consultation with the Puluu of Savaii with regards to their myna bird program. This provided an opportunity for other section's to provide awareness for their programs and the Marine Wildlife Protection Regulation was presented and well received by the Puluu.

### *Internal consultations:*

An internal MNRE consultation was carried out to provide an update on the process required to review and update the NBSAP document as well as the development of the fifth national report. This internal consultation is also to identify key personnel within the Ministry that will be facilitating the different working groups when reviewing and updating the NBSAP document.

### *Enforcement and Monitoring*

Reports of illegal hunting of green turtles carried out at Manono Island were reported. Unfortunately, the people carrying out this activity were not identified and the reported incident was only reported to the section a month after the activity occurred. The section still carried out their investigation and is now working with a diving company to ensure that further illegal activities are reported early.

## Sub-output 5.3: NATIONAL PARKS & RESERVES

### *Effective Management of parks and reserves*

### Performance Measures

#### 3.1. Reserve Management and Maintenance

- Lawn mowing, weeding, rubbish collection, tree trimming, facilities upgrading, native/endemic replanting are all routine activities operated for each reserves from time to time.
- Materials and equipments needed are provided to serve the needs in the field though there is always a change in the amount and/or number required to complete each tasks depending on the weather, employees and equipments available/damaged.
- There has been a rise in the number of issues consulted with the public/ communities /individuals regarding reserves and reserve assets. All cases such as destroying/damaging plants/trees, reserve signs, litter, illegal plantation have been reported to the office where requests have been lodged for police investigations and further actions.
- The Hyundai Ltd request to remove plants planted on Vaitele East Reserve has been solved given evidence of its establishment and supporting statements indicating environmental significance for its location

and the services provided. The Reserve will remain as it is but the team will look at ways to avoid blocking the company's view at the same time serving its purpose as a recreational reserve.

- Extensive maintenance conducted for Fuluasou, Ao-ole-Malo and Vailima reserves after cyclone Evan
- Re-opening of the Mt. Vaea trail for public use which was buried by falling logs as a result of cyclone
- Regular monitoring of maintenance schedule and performance of field workers
- Section bi-weekly meetings, preparation of bi-weekly programmes, Bi-weekly reports on programmes implemented and monitoring results
- Erected new direction sign for Taumeasina reserve
- Part of the Taumeasina Reserve has been leased out to the village of Vaiala for the establishment of their rugby field. However the offshore island of about 10 acres has been allocated to a company from PNG for the development of a new hotel.
- A proposal to purchase new equipment to adequately maintain 13 terrestrial reserves in the urban area of Apia has been submitted to management for their final decision.

### **3.2. Reserve Management Plans**

- Two of the old plans named Taumeasina and Fuluasou Management Plans have been revisited and revised for finalization.
- One new plan has been prepared for Vaitele Fou Reserve and is in draft form.
- The CEO has endorsed the Ao'olemalo reserve management plan however alterations have been made for Taumeasina management plan to reflect new development on site.
- Other plans had been circulated for final comments and discussions before finalization. There are higher expectations for the other twelve reserves to involve the same process and should be final within the next financial year or before the end of 2013.
- The delay in finalizing these plans is due to the high number of staff turnover, important data/information impediment and availability of funds to implement compilation of full report.

### **3.3. Small Scale Infrastructure Upgrading for Vailima Botanical Garden and Information Centre.**

This is one of the planned activities for July-December, 2012 with financial assistance from the Japan International Corporation System (JICS). Small infrastructure upgrading

activities that JICS be able to support include the renovation of the fale at VBG car park, improving of walking paths in the Botanical Garden, signage and renovation work at Robert Louis Stevenson's Tomb.

### **3.4. Invasive Management project for Mt Vaea**

As an ongoing management program for Mt Vaea restoration and rehabilitation, various approaches have been trialled out with enormous level of technical expertise and advice provided by our local consultants and the Pacific Invasive Initiatives.

- Formulation of TOR for Technical committee for Mt Vaea Restoration project.
- Monitoring of trial blocks set up during the PII Invasive Plants Training course to research on the efficacy level of GLYPHOSATE chemicals to control invasive plants.
- Started restoration blocks by replanting on the open areas and killing Albizia trees by both Glyphosate chemical and ring barking.
- Ring barking of about 1500 tamaligi trees on Mt. Vaea
- PII assisted with data analysis put together by the team for future reference and successfulness of invasive species management projects.
- PII donated necessary equipment required for efficiency trial
- Mini trial testing chemical efficiency to control Pulumamoe and Puluvaio has completely destroyed by cyclone Evan in December 2012

### **3.5. Rattan Control project**

In March 1st 2013 another raid by the SNITT team has able to pull 1442 seedlings of rattan (cane like plant) from Papasea site where it was originally planted in early 1990's. The number gradually increases presumably as a result of cyclone Evan in December 2012 which knocked down canopy trees and allowing rattan seeds to germinate. The rattan control exercise is scheduled to eight months interval.

### **3.6. Vaitele-fou Reserve (Quarry Rehabilitation project)**

Rehabilitation work at Vaitele-fou reserve has been funded by the UNCCD Venezuela grant and the New Zealand Aid through the UNDP and executed by the Division of Lands of the Ministry of Natural Resources and Environment. This programme has able to provide materials necessary for soil stabilization of critical areas of the reserve, improving of trails and establishment of a mini sport field for social activities of public and nearby communities.

### **3.7. Reserve plant and bird monitoring**

Monitoring for birds and plants has been conducted for Fuluasou, Taumeasina and Vaitele Fou Reserves. These are three of the five terrestrial reserves large enough to do monitoring programs for both birds and plants. Vailima and Ao'olemalo have baseline data for birds and will be included in the next monitoring for 2013.

Biodiversity monitoring is important to the development of reserve management plans which include specific management actions for the conservation of species and ecosystems.

### 3.8. GEF-PAS Invasive Species project

There is a delay in the implementation of activities under this GEF funded project due to the delay in the process of recruiting a local coordinator and changes made by the PSC on all Project Coordinators' salary being downscale to \$54,000 per annum.

### 3.9. Awareness and Education material

A written proposal for possible funders to aid with the printing and materials for providing this service to the public but our efforts have not been answered yet. Booklets, information sheets, posters and designs have been prepared hence needed funding

A plant booklet and education workbook will be printed under JICS project. On-going printing of trail maps for hikers on Mt. Vaea

### 3.10. Maomao/Manumea project

- Completed mao study at Fale'olefee (Magiagi) village/site.
- Critical findings from ecological and biological studies of the maomao adhere that this bird laid a single egg per year
- Critical threats are rats and deforestation happening on site
- Mao presentation was conducted at NUS for the Science department attended by both students and lecturers (19th September 2012)
- Mao presentation was conducted at Magiagi Primary School attended by year 1-8 and teachers as well (27th November 2012)
- Meeting with members of the Magiagi council of chiefs to discuss possible actions for the conservation of Mao (6th December 2012)
- 13th – 16th November 2012, Bird Recovery Group Meeting in Apia to discuss how to effectively carry-out surveys for the Manumea in order for the group to access possible funding for recovery programmes necessary to revive the population of this critically endangered bird.
- The group also assessed Vailima Botanical Area as possible site for a breeding centre for this particular bird.

- Group represented by Zoologist from Hawaii, Bird Life International, CI, SPREP, NZ-DOC and Buttler and Associates from New Zealand

### 3.11 Ramsar Project

- Representative to the 11 conference of the parties of RAMSAR in Bucharest Romania from 8 – 13 July 2012
- Submitted Ramsar Information Sheet for Samoa STATUS
- Press release submitted for public awareness confirming the official registration of Lanoto'o National Park as RAMSAR site under the convention

### 3.12. Plant Database update

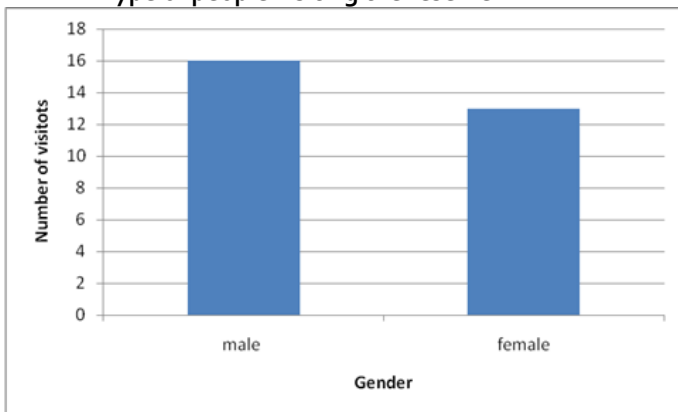
- Data and new information added to the database housed within the Reserve Section monthly. This information includes trees collected for the nursery, outgoing trees for the reserves and also updates of information already stored in the database.
- Existing plant database is a trial for Vailima reserve alone

Date	Name	Reason	Number
24/07/12	Police Dept (S.R.U) Team	Exercise.	29 members
01/08/12	APTC students	Visit RLS tomb and experience nature	6 people
21/09/12	Robert Louis Stevenson Primary School Lotopa	Understand the importance of forest conservation	146 students 12 teachers 20 supervisors =178
22/11/12	Peace Chapel School Vaimea	Understand the importance of nature conservation	24 students 2 teachers 1 parents = 27
	<b>TOTAL</b>		<b>240</b>

### 3.13. Visitor Survey and Monitoring

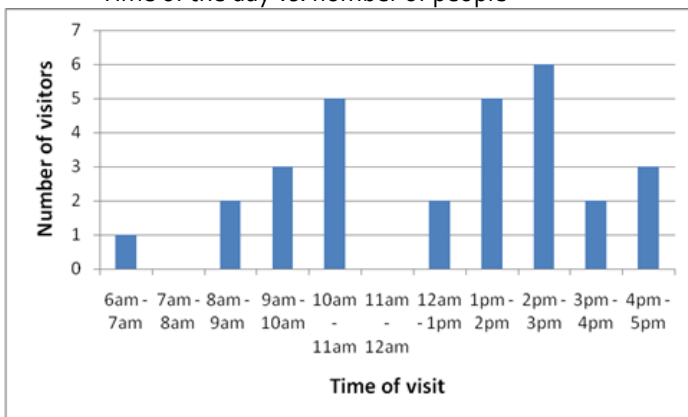
- On-going monitoring of visitors to Vailima National Reserve
- Survey conducted based on type, purpose and time of visits to the reserve
- Regular monitoring of visitor sign book at Vailima National Reserve
- Conduct school visits within Vailima Botanical Garden

**Type of people visiting the reserve**



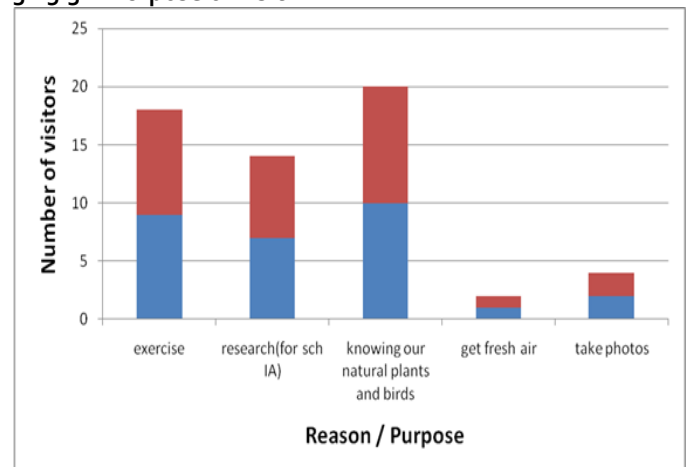
The graph above shows that the majority of the people visiting the Vailima National Reserve are male. They came here for different reasons, some male use as an exercise place, and some using for research of their own understanding about our native plants and birds.

**Time of the day vs. number of people**



The table and column graph shows the amount of time visitors spend at the Vailima National Reserves for various reasons. As we look at the column graph, most of the people visit here around 2.00 o'clock pm to 3.00 o'clock pm a day.

**3.15.3 Purpose of visit**



The graph provides the reasons and purpose for people visiting the reserve. Most of them came here to experience and to understand more about our native plants and birds. The main reason is for people to exercise, walk and run up to the top, for health services.

**3.15.4 Number of group, overseas and local visits Jul – Dec 2012**

#### Local People

	Month	Number
1	July	1301
2	August	1448
3	September	1472
4	October	1490
5	November	1501
6	December	1333
	<b>Total</b>	<b>8545</b>

#### Overseas

	Month	Number
1	July	293
2	August	393
3	September	301
4	October	403
5	November	433
6	December	481
	<b>Total</b>	<b>2304</b>



### 3.15.5 Group Visit

Number of group, overseas and local visit Jan – June 2013

#### Local People

	Month	Number
1	January	501
2	February	701
3	March	1090
4	April	1320
5	May	1225
6	June	1214
	<b>Total</b>	<b>6051</b>

#### Overseas

	Month	Number
1	January	54
2	February	102
3	March	201
4	April	347
5	May	333
6	June	341
	<b>Total</b>	<b>1373</b>

### 3.15.7 Group Visit

Date	Group/Name	Reasons	Number
26 <sup>th</sup> February 2013	NUS Students Or Science Students	They were trying to find out the different kind of trees that growing behind the river.	20 students + 3 teachers = 23
1 <sup>st</sup> March 2013	Samoa Adventist College Staff	They were having a hike on the mount. (Program for Fitness)	22 Staff
4 <sup>th</sup> March 2013	SIT SAMOA USP Students	Walking for Exercise	12 Students
08 <sup>th</sup> March 2013	Senese Staff	Hiking	20 Staff
10 <sup>th</sup> April 2013	Brisbane Jr Boys Rugby Team	Visiting Robert Louis Tomb	30 students + 3 Coaches = 33
22 <sup>nd</sup> April 2013	Marina Ship	Visiting RLSM and Tomb	8 People
	<b>TOTAL</b>		<b>118</b>

### 3.17. Other Matters

#### Voluntary Programs

- Taku has been working with us for two years under the JICA voluntary program to Samoa.
- Mr Marty from Australia who volunteer himself to work while visiting Samoa for four weeks.

Cyclone Evan: 13 December, 2012.

- Work on bulky debris clearance from town area particularly Pulu trees that have been uprooted and/or broken down.
- Assisted DMO with aid distribution to families that have lost their homes during the cyclone Evan.
- Conducted the Forest Damage Assessment Survey for Upolu and drafting of report for submission to CEO MNRE and Disaster Advisory Committee.

Reserves Damaged from Cyclone Evan.

All reserves visited have been impacted and ranged from extremely impacts to low impact. The largest reserve of Mt Vaea has been assessed and reports concluded that this is the most impacted of all 20 reserves in Samoa; also experienced extreme damage caused not only to natural fauna and flora ecosystems but recreational activities that were been developed.

Vailima National Reserve is one of the key biodiversity areas severely impacted by the cyclone where restoration programs are highly recommended for the future.

## Sub Output 5.4 CHEMICAL AND HAZARDOUS WASTES

### 1.0 Key activities for the 12 months

- Implementation of regional project on "Used Oil Management in the Pacific Region"
- Regional project in the Pacific Island Countries (Samoa, Cook Islands and Kiribati) on E-waste was approved by the UNEP
- Procurement for the Construction of Office for the Sludge Treatment Facility at Vaiaata
- Maintenance of Sludge Treatment facilities at Tafaigata and Vaiaata
- Shipment of Hazardous chemicals (used lead-acid batteries) from Pacific Recycle Company and Westend Company to New Zealand for disposal and recycle
- Public awareness and educational programs for the Hazardous Waste Management
- Installation of Boreholes at Vaiaata Sludge Facility

### 2.1 Implementation of regional project on "Used Oil Management in the Pacific Region"

This project has been implemented in collaboratively with the relevant stakeholders including the private sector and government ministries. The Agence Francaise de Developpement (AFD) and United Nations Environment Programme (UNEP) are the two key supporting agencies which have jointly funded and prepared an initiative to support waste management in the Pacific Region. The core

focus of this initiative is to develop practicable and sustainable options for the waste oil stewardship system in Samoa. Besides to ensure the risks arising from these sorts of unsafe waste are properly managed in an environmentally sound and inexpensively efficient manner. Currently the project is finding effective and management options to deal with waste oil through the development of a stewardship system suitable for Samoa.

## **2.2 Regional project in the Pacific Island Countries (Samoa, Cook Islands and Kiribati) on E-waste was approved by the UNEP**

The Secretariat of the Pacific Regional Environment Programme (SPREP) in partnership with the Ministry of Natural Resources and Environment through the Division of Environment and Conservation have signed a Memorandum of Understanding (MOU) in February 2013 under the Regional Project framework for Electrical and Electronic Waste (E-Waste) Management. The aim of this Agreement is to develop the national capacity in Samoa, Cook Islands and Kiribati to implement integrated and holistic management of imported Electronic and Electronic Equipment (EEE) to ensure the sustainable management of our associated waste streams.

The main components of this Regional Project are as follows:

- Development of a model integrated database and reporting mechanism for monitoring EEE for Pacific Island Countries (PICs) - Currently being developed
- Development of a model E-Waste Recycling Options for the PICs– Completed
- Development of a model legislation to promote the recovery and recycling of E-Waste and Used Oil for the PICs – Currently being developed.

The section is currently in the process of gathering information on the stages of the EEE life-cycle - use, import, export, distribution and disposal, for inclusion in the model legislation document for Samoa

## **2.3 Procurement for the Construction of Office for the Sludge Treatment Facility at Vaiaata**

The works for construction of office for the monitoring of the facility operations and maintenance at Vaiaata have undergone a formal tender process. Construction works commenced in end of May 2012 and will be completed in September 2013 including additional works.

## **2.4 Maintenance of Sludge Treatment facilities at Tafaigata and Vaiaata**

Both facilities have been maintained regularly twice a monthly within a two year contract period.

**2.5 Shipment of Hazardous chemicals** (used lead-acid batteries (ULABS)) from Pacific Recycle Company and Westend Company to New Zealand for disposal and recycle. Shipment of ULABS or any hazardous waste of interest by local recycling companies as mentioned above have undergone the Basel Convention requirements through notification procedures. Both the Exporting Country (Samoa) through the MNRE and the Importing Country (Environment Authority of NZ) will have to provide consent prior to shipment for disposal and recycling.

## **2.6 Public awareness and educational programs for the Hazardous Waste Management**

Awareness raising activities and programs on hazardous waste including wastewater and sludge management issues has been carried out in every three months, led by MNRE through the Chemicals and Hazardous Waste Management Unit in coordination with the Solid Waste Management Unit awareness programs. Yet in spite of these efforts, more work is still required to change behaviour and to ensure that waste are properly stored and managed in an environmentally sound manner.

## **2.7 Installation of Boreholes at Vaiaata Sludge Facility**

The MNRE through the Water Resources Division has completed installation of three boreholes at the Vaiaata facility for groundwater sample collection. Sampling work is carried out in every two months for testing at the Scientific Research Organization of Samoa.

## **4.1 Issues and Challenges**

### **CHALLENGES**

- Governance of Chemicals and Hazardous Waste
- Limited funding
- Knowledge and Information
- Risk lessening
- Unlawful International Traffic
- Capacity building and Technical Cooperation

### **WAY ONWARD**

- Institutional development for chemicals and hazardous waste management
- Effective public awareness and educational programs among all related stakeholders
- Integrate chemicals management into national plans and regulatory framework
- Shared responsibilities among related stakeholders in managing chemicals at every level.
- Tracking system for chemicals and hazardous waste
- Increased technical assistance and technology transfer
- Principal Act for Chemicals and Hazardous Waste

## Sub Output 5.4 - SOLID WASTE MANAGEMENT

### 4.1 Key activities of twelve months:

- Renewal of Public Cemeteries Maintenance Services Contracts.
- Renewal of Eleelefou Public Toilet Operation and Maintenance Services Contracts.
- Renewal of Apia Daily Litter Maintenance Services Contracts.
- Formulation of Solid Waste Management Project with World Bank's IFC Branch.
- Construction of the Tafaigata Landfill Computerized Data Recording Facilities.
- Post Cyclone Evan Pilot Cleanup.
- Preparation for the SIDs Conference to be hosted by Samoa.

### 4.2 Performance Measures:

#### 4.2.1 Renewal of Contract Services.

Four Contract Services under the Solid Waste Management Section were renewed during the reporting period. All these Contract Services were done in accordance to the Procurement Procedures.

As usual, the Services were advertised publicly and evaluated by representatives from MoF, MWTI, Office of the Attorney General and MNRE. The recommendations were then forwarded to the Governments Tenders Board for approval. The table below outline the Services and the respective awardees.

SERVICES	SITE/ZONE	CONTRACTOR	COST
Public Cemetery	Vailele	Advance Commercial	\$29,808.00
	Magiagi East	R & M Mowing Services	\$32,200.00
	Magiagi West	SCAP Enterprise	\$26,306.25
	Tufuiopa	SCAP Enterprise	\$12,707.50
	Vaimoso	SCAP Enterprise	\$8,797.50
	Tafaigata	Benjay's Lawnmowing	\$96,351.95
Apia Daily Litter	Zone A	R & M Mowing Services	\$100,000.00
	Zone B	R & M Mowing Services	\$95,451.00
	Zone C	R & M Mowing Services	\$91,540.00
Public Toilet	Eleele Fou	SCAP Enterprise	\$81,399.98
Apia Lawn	Zone A	DJ Compound Cleaning	\$33,844.96

	Zone B	Benjay's Lawnmowing	\$43,205.50
	Zone C	Arthur Pesega Lawnmowing	\$10,166.00

The Public Cemetery Contract Services were later transferred under the Land Management Division for monitoring.

#### 4.2.2 Formulation of the Solid Waste Management Project with the World Bank's International Financing Corporation.

The MNRE in collaboration with MoF formulated a project involving the International Financing Corporation (IFC). The representative from the IFC paid a visit to introduce the project and a brief note on their success similar project in the Maldives. The phase 1 of the project will involve:

- Information gathering and analysis;
- Identification of financial gaps
- Understand the solid waste sector;
- Possible revenue generation streams.

A team of experts will be recruited to undertake various component of information gathering and will be expecting them within the next reporting period.

#### 4.2.3 Construction and Installation of Tafaigata Landfill Computerized Recording System.

JICA under its Japanese Technical Cooperation Project for Promotion of Regional Initiative on Solid Waste Management in Pacific Island Countries (J-PRISM) has donated the construction and installation of a landfill computerised recording system at Tafaigata. The JICA office was responsible for the procurement process and was awarded the construction works to Bluebird Construction Company.

The construction commenced with a ground breaking ceremony on 11 September 2012 and the facility was commissioned on the 30 January 2013. The facility was handed over on behalf of the Government of Japan by Japan Chargé d'Affaires ad Interim Mr. Kazumasa Shibuta and was accepted by Honourable Prime Minister, Susuga Tuilaepa Lufesoliai Aiono Sialele Malielegaio on behalf of the Government of Samoa.

Figure 1. Ground breaking ceremony for commencement of construction works



Figure 2. Japan's Chargé d'Affaires ad Interim on his remarks during the facility opening



Figure 3. Honourable Prime Minister during his keynote address



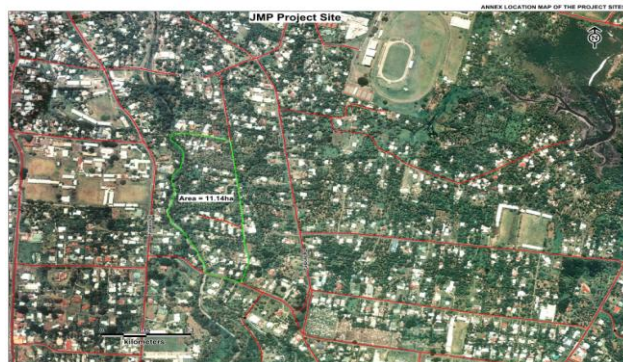
#### 4.2.4 Post Cyclone Evan Pilot Cleanup Project.

Evan, a category 3 cyclone, smashed into Upolu on the 13 December 2013 with winds of up to 150km an hour. It also brought along heavy rains resulting in unprecedented flooding devastating thousands of people in the Vaimauga district and other areas. In the Vaimauga West District, 95 households were destroyed with 789 people affected.

As a result of the impact of Cyclone Evan, flooding was the most serious of its devastating part resulting in washing away of most of the solid wastes that were expected to be footprints of Evan as it left Samoa.

JICA Samoa office in collaboration with MNRE urgently formulated a pilot cleanup project to some of the Lelata-Maagao area. The formulation of the project was based on the lessons learnt from the similar operation implemented during the Tsunami in 2009.

Figure 4. Map of the Pilot Site:



The project objectives were basically in promotion of the following aspects:

- Waste segregation and minimization on the pilot site;
- 3Rs (Reduce, Reuse, Recycle) concept
- Initiatives for Cost reduction and time saving.

The project under JICA Samoa Office funding was successful in terms of achieving the above mentioned objectives. During pre-operation assessment, it was estimated about 1000+ loads of debris will be transported to the Tafaigata landfill. However, through implementation of the 3Rs concept, the total amount of loads arrived at 693. Some of the materials were reused by those affected residences assisting in their urgent recovery effort. In addition, the total working days planned was 10 but the operation was managed to complete within 6 working days.

Figure 5. Comparison before and after the operation.



4.2.5 Preparation for the SIDs Conference:  
The Government of Samoa has offered to host the UN SIDs Conference in 2014. As part of the preparation, the Ministry has its obligations for preparation for the conference. It was known that this will be the biggest event Samoa has ever hosted and efforts were concentrated on waste management during the conference. Preliminary information was collected specifically for the Tuanaimato venue. A plan was forwarded by the allocated task team and the Ministry representatives visited the site for appropriate measures to take. This process is still ongoing.

4.3 Staffing.  
All 5 permanent positions within the Section have been occupied with the assistant of 7 casual workers. However, there are no permanent staff positions based in Savaii except for a single casual worker who is working at the Vaiaata landfill.



**OUTPUT 6 - FOREST MANAGEMENT**

*To ensure the Sustainable Development and Management of Samoa’s Forestry Resources.*

Human Resource: 1 ACEO

Samoa’s forest resources must be developed and managed sustainably according to the vision for Forestry Management in Samoa. Most of all activities and operations were successfully implemented sustainably through the forestry regions located on both islands in Upolu and Savaii. The following are some of the highlights that have been achieved within this financial year.

**Sub Output 6.1: FORESTRY MANAGEMENT SECTION**

Ensure proper management of community woodlots, national parks and native forests.

Human Resources:  
2 Principal Officers (Upolu & Savaii)  
Vailima 1 Senior, 3 Officers, 9 casuals  
Togitogiga 1 Senior, 4 Officers, 20 casuals  
Maota 1 Senior, 3 Officers, 20 Casuals  
Asau 1 Senior, 4 Officers, 42 casuals

**Quantitative Performance:**

**a. FOREST CONSERVATION**

To focus on the sustainable forest conservation with great emphasis on the ecological restoration of the four National Parks and greening of seawalls and establishing Community Conservation Areas.

- le Pupu Pue
- Lake Lanotoo
- Mauga-o-Salafai
- Masamasa - Falelima),

Effective Development and Management of National Parks.

Mauga- o- Salafai National Park - The total area of Mauga-o-Salafai National Park is 6,944 hectares. The total area restored within this Financial Year is 89.5 hectares, equivalent to 1.29 % of the total area. Ecological Restoration has been focused on planting trees that are existed and found growing in the area.

Masamasa - Falelima National Park - the total area for Masamasa - Falelima National Park is 2,039 hectares and out of this number 1,281.5 hectares have been restored which is 62.8% already planted with different tree species,



mostly exotics which includes *Sweatena macrophylla* (large leaf Mahogany), *Tectona grandis* (Teak), *Eucalyptus deglupta* (Eukalipi), *Eucalyptus pelitta* (Eukalipi Pelita), and some of the native tree species such as *Terminalia richii* (Malili), *Planchonella* spp. (Mamalava), *Syzygium inophlloides* (Asi toa), *Pometia pinnata* (Tava), etc.

#### O le Pupu-Pu'e National Park Togitogiga

O le Pupu-pu'e National Park located at the south eastern side of Upolu Island has a total area of 2,494 hectares, from the Coastal up to the top of Mount Pu'e.

#### Ecological Restoration:

##### National Parks Ecological Restoration

National Parks	Target (ha)	Ach. (ha)
O le Pupu Pue (Togitogiga)	25	21.25
Lake Lanotoo National Park	10	8.5
Mauga-o-Salafai National Park	25	29.1
Cornwall Estate National Park	40	48.5
<b>TOTAL</b>	<b>100</b>	<b>107.35</b>

##### Maintenance (Weeding and Slashing)

Region	Target (ha)	Ach. (ha)
Togitogiga	512	349
Vailima	40	37.8
Mauga-o-Salafai	313.5	269
Cornwall Estate	565.5	945.1
<b>TOTAL</b>	<b>1,431</b>	<b>1,600.9</b>

##### Refilling

Region	Target (ha)	Ach. (ha)
Togitogiga	108	98.3
Vailima	15	8.94
Mauga o-Salafai	88	63
Cornwall Estate	116.1	67.6
<b>TOTAL</b>	<b>327.1</b>	<b>237.84</b>

#### Remarks:

Cyclone Evan affected most of the forest operations and infrastructure of the Forestry division within this Financial Year. Nevertheless, the scheduled activities of Forestry Regions in Upolu were suspended thereafter until February 2013. Workers were fortunately prioritized in the Cyclone Evan rehabilitation work program; therefore a great shortfall of targets of various activities.

The restoration and maintenance component was reasonable whereas the refilling component fell short of the target due to

field workers engagements in other tasks not planned and the good survival rate within the proposed compartment planned for refilling.

#### Strengthening partnership with Stakeholders on Forest Conservation

Two (2) workshops and one (1) awareness programme were targeted for implementation within this financial year. All these workshops and awareness programme were completed. More than 50 individuals from the villages of Taga and Gataivai participated in two separate workshops conducted to strengthen partnerships on Forest Conservation.

One (1) awareness programme was held at Taga village for members of the community during the Environment week programme in Savaii.

#### Greening of Seawall:

Two seawalls were targeted for Upolu region, however, only the seawall at Mulinuu was planted with coastal species by Vailima workers during April 2013. This activity can only be implemented depending on the PACC project for the number of seawall completed during the current financial year.

#### b. FOREST DEVELOPMENT

##### Planting of Bamboo:

Two (2) hectares were targeted to be planted with bamboo species for all four (4) forestry stations, however, due to the unavailability of planting materials and the limited number of seedlings available in nurseries affected the implementation of this activity within this Financial Year.

#### Community Forestry Programme:

##### Newly Established Community Woodlots

Region	Target (farmers)	Ach. (farmers)
Togitogiga	24	8
Vailima	86	51
Maota	50	40
Asau	50	33
<b>TOTAL</b>	<b>210</b>	<b>132</b>

## Monitoring of Woodlots

Region	Target (farmers)	Ach. (farmers)
Togitogiga	60	54
Vailima	140	101
Maota	120	105
Asau	180	211
<b>TOTAL</b>	<b>500</b>	<b>471</b>

Lack of interest at some of the regions in Savaii to plant trees due to the longer rotation age than some crop trees was the main difficulty in implementing this component. Poor road conditions were also a contributing factor.

## Nursery Statistics

### Seedling Production

Region	Amnt Propagated
Togitogiga	21,018
Vailima	37,168
Maota	22,830
Asau	24,867
Vaipouli	2,000
<b>TOTAL</b>	<b>107,883 seedlings</b>

### Seedling Dispatched

Region	Amnt dispatched
Togitogiga	14,180
Vailima	14,378
Maota	14,391
Asau	12,851
Vaipouli	4,883
<b>TOTAL</b>	<b>60,683 seedlings</b>

Seedlings dispatched were mainly for ecological restorations, community forestry programme, new seawalls tree planting and coastal rehabilitation and for refilling of dead seedlings one month after planting programme.

## Forest Harvesting Operations:

The table below shows 11 Applications that were handed in during this financial years work activities conducted in both Upolu & Savaii.

Table: Forest Harvesting License/Permits for FY2012/2013:

	License & Permit Number:	Hectares (hac)	Volume (m³)
1.	HPA002-13	73.7	14.35
2.	HLA003-13	5	38.44
3.	HLA004-13	76	31
4.	HLA005-13	6	39.57
5.	HLA006-13	4	31.8
6.	HLA007-13	2	11.42
7.	HLA008-13	2	18.18
8.	HLA009-13	1	14.58

9.	HLA010-13	4	22.6
10.	HLA011-13	6	21.9
11.	HLA012-13	20	100.51

## Sub Output 6.2: POLICY AND PLANNING SECTION

Framework for policy formulation and planning of work program

Human Resources:

1 Principal Officer, 1 Senior, 1 Officer

## Quantitative Performance

### One Million Tree Progress Report

During the last two months of the One Million Tree Planting Campaign, a draft Preliminary report was submitted and handed out to all stakeholders involved in this campaign for comments and inputs. The finalized One Million Tree Preliminary Report was submitted to the Minister for his approval before the start of the Environment Weeks Commemorations in Late October and beginning of November 2012.

Inventory database and SamFRIS GIS mapping updated:

The National Forest Inventory is currently in the process of its initial stages, funded by the Japanese International Corporation System (JICS) from the government of Japan. The project proceeded with the handing over of vehicles, tools and equipments to the Government of Samoa through the Ministry of Natural Resources and Environment (MNRE) in June 2013.

The beginning of the inventory survey will start towards the end of the next financial year 2013. The Policy & Planning section will continue to collaborate with the project to ensure the coordination of the inventory survey is done accordingly as well as with on-the job trainings for field staff involved.

## Forest Management Act 2011

Royalty fees was discussed and approved by the Forestry Board Meeting on November 15th, 2012. Order of fees, signed by the Minister of MNRE on the 31st January 2013m, was published on the local newspapers and aired on the local television station's notices programme. A presentation on the Forest Management Act 2011 was offered during one of the ICCRIFS Project community consultation at Lotofagā, Safata.

### **Forest harvesting permits and Licenses:**

The Forestry Division received sixteen (16) applications for harvesting license/permit within this Financial Year.

- 2 Forest Harvesting Permits
- 14 Forest Harvesting Licenses

Five of these applications was received in Financial Year 2012/2013, was later approved within the first and second week of the Financial Year 2013/2014 period. Therefore; the total number of applications approved by the Forestry Board for Financial Year 2012/2013;

- 1 Forest Harvesting Permit
- 8 Forest Harvesting Licenses

Applications rejected include;

- 1 Forest Harvesting Permit – associated with government land

Pending approval;

- 1 Forest Harvesting License – fees not paid

Other Activities:

The first Forestry Board meeting was held in October 2012 consists of members from Government Ministries (MNRE, MOF, MAF, and MWCSO) and Representatives of the community. The Forestry Board acts as the competent forestry authority or implementing authority for the purpose of implementing activities relating to forestry resource management.

The Policy and Planning section is responsible for disseminating invitation letter, coordinate and compile issues to be discussed in every Forestry Board meetings, once or twice a month upon request by the Minister of MNRE

### **Sub Output 6.3: RESEARCH AND DEVELOPMENT SECTION**

Develop effective research measures for appropriate forest conservation and utilization

Human Resources;

1 Principal Officer, 1 Senior, 1 Officer, 4 Casuals

#### **Quantitative Performance:**

##### **Strategy to promote agro-forestry**

A full day stakeholder workshop was conducted on 05 March 2013 to promote agro forestry and other farming practices.

Stakeholders were invited to participate include SFA, METI, MCIL, MAF, MWCSO, WIBDI, ICCRIFS, etc. The 'Strategy' will be prepared upon recruitment of Consultant.

#### **Research and monitoring program on forest pests and diseases**

Trial exercises was conducted at Togitogina and Vailima nursery to identify health status of forest tree species and collect data of pests and diseases impacted different tree species. This aim is to build capacity of staff and casual workers on pests and diseases identification and to familiarize with information which was developed to monitor this activity. A form was developed together with information available from the ACIAR Project in 2003 was utilized to assist with the surveillance of forest trees.

A survey was planned to carry out on January to June 2013, unfortunately Cyclone Evan has caused massive destruction to existing plots at Togitogina National Park.

#### **Database on forest tree resources**

Two databases were developed to house information on forest tree species of Samoa;

Database 1 – Forest Tree Resources:

The database contains information of natives and exotic species of Samoa.

Database 2 – Import and export Timber of Samoa:

The database contains information on total volume of timber import and export in Samoa.

Information is obtained from the Statistics Department Office and enters into the database on a monthly basis.

#### **Education and public awareness programs on forest tree resources**

Research Section participated in four (4) national events through information display board and awareness materials displays to improve public awareness and knowledge of forest trees diversity; SBEC Awareness Day, NUS Open Day, Public Service Day and Environment Week 2012.

#### **Coordination of Ramsar activities**

Management plan of Lanotoo was completed and currently on-hold until ICCRIFS's review is completed. This is to ensure that climate change component and open standards are incorporated in the MP so it will be recognized internationally.

This year, the Ministry commemorates World Wetlands Day 2013 (WWD2013) through media awareness activities due to devastation Cyclone Evan has wrought which affected many lives. The program was broadcasted on TV1 during Lali Program on Saturday 01 February 2013. It emphasizes the importance of the Ministry's ongoing work in managing the area and acknowledging its partners who actively support the management development of the area including SPREP, ICCRIFS etc.

The Ramsar Information Sheet (RIS) for Samoa's Ramsar site namely Lanotoo National Park has finally completed, endorsed by CEO and was submitted to Ramsar Secretariat on 19th October 2012. The RIS provides essential data of Samoa's Ramsar site which considered of international importance in order to allow analysis of Lanotoo National Park at any given time provide baseline data for measuring changes in the ecological character and provide material for publications which inform the public about the Park. Upon submission of the RIS (with map), Lanotoo National Park is now officially recognized in the List of Wetlands of International Importance as site No 1412 (the Ramsar List).

Prepared summary of annual activities for Ramsar Annual Report 2012

- Preliminary Site visit to Lake Lanoto'o and published report with recommendations.
- Awareness materials produced.
- Lotofaga community consultation conducted.
- Scoping mission with Partners with Melanesian for the Participatory 2 Dimensional Model for the project sites and the Development of the 1st P3D Model for Samoa the Laulii – Falevao model.
- Rehabilitation work for Lake Lanoto'o and hiring of 20 field assistants from nearby villages to build their capacity in ecological restoration and improving livelihoods through a "cash for work" activity.
- Production of 12 nursery signs for the community nurseries
- Publishing of report for "Lake Lanotoo preliminary site visit report" and "ICCRIFS Project Inception report".
- NGO meeting with METI, SFA and WIBDI regarding engaging NGO's for implementation of project activities at the community level.
- ICCRIFS website developed as part of the Forestry Division web page of the official MNRE website.
- Recruitment of the GIS specialists and the Knowledge Management and Communication Specialists.

## **DONOR FUNDED PROJECTS IMPLEMENTED UNDER THE FORESTRY DIVISION**

### **1. Integration of Climate Change Risk & Resilience into Forestry Management of Samoa (ICCRIFS):**

To increase the resilience and adaptive capacity of Samoa to the threat of climate change through targeted adaptation interventions in lowland agro-forestry and upland native forestry areas.

Human Resources;

1 Project Coordinator, 1 Corporate Assistant, 1 Communication Officer, 2 Technical Officers, 1 Casual

#### **Quantitative Performance:**

- Technical Advisor for the project was recruited.
- New Project coordinator recruited.
- Site Management Planning for climate resilience of Samoa's forest Workshop conducted for MNRE staff.
- First Technical Support and Advisory Team meeting held on 6th July 2012.
- 5 community nurseries constructed.
- Community Nursery Training Workshop for 29 participants from 14 villages from Laulii – Falevao.

### **2. Forestry and Protected Area Management (FPAM):**

To enhance sustainable livelihoods of local communities living in and around protected areas

Human Resources;

1 Project Coordinator, 1 Technical Advisor

Quantitative Performance:

- Consultations with new villages (Satoalepai, Fagamalo, Lelepa, Avao, Saleia, and Vaipouli), to make up the third site (Matautu) of the project replacing original villages which had rejected the project due to some village disputes.
- Signing of village Memorandum of Understanding (MOU) expressing their consent in accepting the project to be implemented in these villages.
- Signing of Community Conservation Areas (CCAs) at the three project sites Taga, Gataivai, and Matautu to conserve their upland forests as protected areas.
- Appointment of village committees at each village to work together with the project team in implementing project activities.
- Preparation of project maps for the new site.
- Preparation of the Letter of Agreement (LOA) which is a mechanism in which the project funds are

transferred to the service provider (MNRE), to produce the required activities and outputs as per project document.

- Preparation of another LOA for Women in Business Development Incorporated (WIBDI) to provide services required on organic agriculture.
- Ongoing activities on awareness throughout the year and participation in national events like Environment Week, Biodiversity day, Water & Forests Day, etc.

### 3. Samoa Agro-Forestry and Tree Farming Program (SATFP):

To enhance sustainable livelihoods of Samoans and improve their resilience to climate change impacts through better use of agricultural and forest resources, resulting also in a mitigation of emissions and an improved economy.

Human Resources;            1 Project Coordinator

Quantitative Performance:

- The on-going delay with the recruitment of the Project Coordinator due to outstanding issues with the PSC relating to the filling of this position continues to undermine serious efforts by the MNRE to execute the SATFP in a timely manner
- Increased number of farmers and communities engaged in program activities through the Taiala program run by METI. Ten (10) new villages have established Cooperatives under the program and have received training mainly in life skills and permaculture.
- Cyclone Evans (December 2012) caused further delay to the implementation of activities planned for the period. Despite these obstacles, modest progress was made during the first three months of the year, including the recruitment of the Technical Adviser, progressing discussions and negotiations for the undertaking of the capacity building consultancy, development of the SATFP Procurement Guidelines, drafting of Eligibility Guidelines for the use of funds earmarked for the private sector, conduct of a stakeholders workshop to introduce and raise awareness about the SATFP and the Eligibility Guidelines, etc.
- In the aftermath of cyclone Evan, SATFP was requested to assist with the development of a recovery plan for the forestry sector. This was submitted to MNRE, AusAID and other SATFP partners for review and comment.
- Consultations continued with NGOs and CBOs such as METI, WIBDI and FSA with the view to engage them more in the implementation of program activities. Relations with METI are excellent however; WIBDI and FSA have yet to show greater interest and commitment.

- A procurement manual was produced and a workshop involving several staff of MNRE and some NGOs was organised to review it.
- Two site visits (on 28 March and 27 June) to METI projects funded under the program were organised with assistance from METI staff.
- The CEO of MNRE approved of the establishment of two agro-forestry demonstration plots at Tafaigata land (approximately 2 hectares in area) owned by the Ministry. Plot 1 is a demonstration of a tree (malili) and food crop (taro) mix. More than 6,000 tiapulas have been planted along with about 900 malili seedlings in plot 1. Plot 2 involves a mix of a different tree species (asitooa) and fruit trees (various species) and will be managed and monitored closely by program staff. Both plots will be inter-planted with calliandra - a nitrogen fixing plant species - to improve soil fertility.
- The capacity building consultancy commenced with the undertaking of the scoping mission by the consulting firm (RECOFTC) in June 2013.

### 4. Forest Preservation Programme in Samoa (FPP):

Enhancing management capacity for National Parks & Reserves in Samoa

Human Resources;            2 Project Officers

Quantitative Performance:

- Land Cover Map 2013
- Satellite Images of 2010, 2011 and 2012 of 2010, 2011 and 2012 purchased from USA. Using these satellite images, the teams digitized the Land Cover Map of 2013 and identify survey points to be surveyed
- Field Inventory Survey
- Five teams, consisting of MNRE staff carried out the field inventory for four months in Upolu and Savaii. The main data needs to be collected by the Forest Field Inventory are DBH of trees, species and height of all trees within the survey plots.
- Analysis of NFI Data
- A consultant was hired with an assistance of Japan experts to assess and analyse the data and drafted report for the SAMFRIS 2013.
- Two consultants were hired to prepare the overall plans to find effective, efficient and low impact method on the environment to exterminate woody exotic invasive species mainly at O Le Pupu Pue National Park (OLPP NP) at Togitogiga and Vailima



Nature Reserve (VNR) at Vailima. This was completed and presented for stakeholders for further comments. Two overall plans approved.

- A local survey firm was hired to survey the boundary of the Vailima Nature Reserve (VNR), plus 100 acres already released by the Land Board to lease by the Ministry of Agriculture and Fisheries. The total distance of 8.2km were demarcated and then completed.
- Eight infrastructures upgraded at Vailima Nature Reserve and nine were upgraded at OLPP National Park
- Poster of Infrastructures Upgraded
- A local road construction company was hired to upgrade the access road and it was successfully completed to a good standard.
- Neighboring schools of OLPP NP were briefed on the concept of Agroforestry and its applications. Demonstration plots of agroforestry were also set up on their own compound. T- Shirts were also donated by the project for each participated school.
- Company was hired to create websites for OLPP NP and E flora. Two websites already drafted and will be finalized soon. Trainings also will be conducted for MNRE officers for them to update the websites when required.
- Handover ceremony of infrastructures was conducted to officially hand the using and maintenance of infrastructures from the Government of Japan to the Government of Samoa.
- Consultations with communities were also conducted to improve their knowledge and also they were hired to employee on implementation of activities.
- Trainings of the MNRE staff were mainly to equip themselves to sustain applicable tools to other areas of Samoa. Officers went to Japan and Fiji and the rest were trained by Japanese experts at on-site during implementation.



## Output 7 - METEOROLOGY

*To provide meteorological and geo-science services in support of sustainable development of natural resources.*

It was an interesting year and exciting in many ways, and one with major achievements. The Meteorology Division continued to work closely with its data-collecting stakeholders and end-users of weather climate and geo-science information those utilizing data for their planning and implementation of activities.

A major milestone for government is the operationalization of the geo-sciences earthquake National Data Center (NDC) funded by the Peoples Republic of China with four (4) broadband seismic stations – Togitogiga, Afulilo, Vaiaata, and Asau. This initiative had assisted greatly in the enhancing of local seismic knowledge and improved lead-time for Samoa Earthquake Monitoring and Tsunami Warning System.

During the same period was the successful completion and upgrade of the Weather forecasting and Communication systems a project funded by the Government of Japan. This has widened the scope for provision of a more detailed and accurate forecasting services. Moreover, the on-going support of the WMO Severe Weather Forecasting and Disaster Risk reduction Project (SWFDP) link to the disaster and for the effective dissemination of weather information to the end users.

The launching of Climate of Samoa document during the Environment Week is another major milestone for government and without doubt a reference book which shall remain the cornerstone and platform for climate change and climate services research in this country. And being one of the longest data-collection institution in the Pacific, the current focus is on data rescue, adequate data coverage, data acquisition and analysis and critical the scientifically proven climate products.

The LDC funded project, Integrated Climate Change Risks in Adaptation for the Health Sector (ICCRAHS), National Adaptation Programme of Action (NAPA) planning water and disaster management multi-sectors, Forestry – Integrating Climate Change Risks, regional – Pacific Adaptation on Climate Change (PACC); Pacific Climate Change Science & Strategy; Pacific Islands Climate Prediction and Sea level and Climate Monitoring Projects continue to contribute immensely to resourcing but more so to the great strides made by our climate services.

The year showed neutral to EN conditions, coined to have similar environment conditions to the time of severe Tropical Cyclones Val and Ofa in 1990-91. It remained warmer than average temperature for the Pacific. As a result, above normal

rainfall fell at the onset of the wet season fared to have contributed to flooding in the Vaisigano catchment more intense by Tropical Cyclone Evans that battered Fiji and Samoa during the month of December.

Samoa continues its successful hosting of international meetings, and for the second time it has hosted the World Meteorological Organization (WMO) Regional Association V (RAV) for the Southwest Pacific meeting; United Nations Framework Convention on Climate Change (UNFCCC) Cartagena Dialogue and Adaptation Fund Board meetings. It also organized an IOC-UNESCO Pacific Tsunami Warning System committee meeting in conjunction with the RAV.

### Section Performance Activities

During the year the Meteorology Division once again met the challenges of providing weather climate and geo-science services to the community. Some notable performances include:

#### Weather

- continued the 24/7 services in providing SYNOPS, METARS, observations and daily weather bulletins for weather monitoring – public, marine and aviation;
- complete four (4) quarterly reports of significant events for the WMO Severe Weather Forecasting and Disaster risk reduction project (SWFDP);
- provide technical support for the SWFDP workshop with DMO;
- complete the modernization of weather forecasting: installation of the IBL forecasting system, tsunami early warning system and radio and networked all 7 JICA automatic weather stations (AWS) linked to the Forecasting Building at Mulinuu;
- In-collaboration with NOAA via Pago Met. Office partially completed maintenance work in early December for the NOAA six (6) automatic weather stations , technicians return to assist with operations to monitor tropical cyclone Evans;
- technical support and advise to participants at the WMO RAV meeting in July;
- complete operations and monitoring of Tropical Cyclones, Evans in December and Gary January 2013 plus 15 tropical depressions for the 2012\_13 tropical cyclone season

### **Climate Section & Ozone Unit**

- on-going historical and current climate and weather data entry and archiving to the CliDE database funded by Australia's Digitization project – 5 part-time staff on contractual arrangements;
- CliDE database networked to the Forecasting Building a collaborative effort and partnership arrangement between Japan (Weather forecasting project) and Australia (Pacific Climate Change Science project);
- continue to provide climate advice and participate actively in national and regional climate change projects that include: Integrating Climate Change Adaptation Risks to Health and Agriculture sectors (ICCRAHS); Integrating Climate Change Risks to forestry sector; Pacific Adaptation to Climate Change (PACC); Planning, Water and Disaster Management (NAPA4), Tourism, Pilot Project for Climate Resilience and the Education sector funded by GIZ; USP – EU Global Climate Change Alliance project;
- complete twelve (12) monthly climate situation reports (diagnostic statements) and teleconferences with National Institute of Water and Atmosphere on the Island Climate Update (ICU) bulletins and with the Australian Bureau of Meteorology – On-line Climate Outlook Forum (OCOF) bulletins;
- complete national consultations with Australian Bureau of Meteorology and diplomatic staff for framing of the Pacific Australia Climate Change Science and Adaptation Project (PACCSAP) merging the previous – PCCSP, PASAP, PICPP, and SLCM projects merged to COSSPAC; and
- Complete Tropical Cyclone season 2012\_13 Outlook report published in local media newspaper, on audio on radio, visual on television; posted on the Ministry website.
- recruit project coordinator for Ozone unit in September to replace project coordinator that resigned in July ; resumption of National Ozone Committee meetings and re-commence work on sixth ISP, the outstanding TPMP activities and HPMP on-going work; and
- The Ministry has decided to celebrate the 25 years of the Montreal Protocol for the protection of the Ozone layer, September 15 by inviting Schools from around the Country

to participate in the activities to embrace the theme – protecting the Ozone Layer for generations to come; and

- complete informal Prior Informed Consent (iPIC) workshop and one technical training workshop organized by NOC.

### **Climate Change**

- Complete three (3) Project Management Unit technical meetings for the LDCF funded Integrated Climate Change Risks in the Agriculture and Health sectors (ICCRAHS), and two (2) National Steering Committee meetings;
- Provide technical and administrative support to the Agriculture and Health sector activities in collaboration with the Project coordinators;
- ICCRAHS: meteorological component: complete a sector engagement workshop in October to provide knowledge and understanding and use of climate products; and
- In- progress for sustainability of the ICCRAHS project, a consultant was recruited to provide a report for possibility of another project embracing the outcomes of the ICCRAHS project. The GFCS is the potential source of funding.

### **Geo-science**

- complete twelve (12) monthly summary of Earthquake activity reports for the Samoa-Tonga region;
- complete installation of four (4) broad-band stations – Togitogiga, Afulilo, Vaiaata and Asau; National Data Center (NDC) commenced operations in July;
- commence of 24/7 operations and monitoring of Earthquake activities for the region - National Data Center manned daily routinely on a roster basis in March 2013;
- complete Geo-magnetic housing and instruments upgrade electronically and computerized internet connected co-funded by partners of the International Associations of Geomagnetism and Aeronomy (IAGA), Switzerland, New Zealand and United States of America; and

- complete drilling operators training and maintenance and upgrade of drilling rig 520C funded by the WASSP project auspices of Water Resources Division in April;

#### 4. Financial Results

- The Meteorology Division achieved an amount of \$SAT37,124 46 % of the appropriated target amount of \$SAT80,000 for the year ending December 2012.
- Total operating expenditures exceeds appropriation of \$275,248 due mainly to increase electricity and internet costs from the new buildings constructed under the Japan and China projects and also due to the 24/7 nature of work.
- Personnel costs of \$1,041,162 and staff of 23 was slightly lower for the second-half of the year with the establishment of a new division of the Disaster Management Office that used to be a section of the division now becoming a self-entity.
- A proposal for an increase budget allocation to meet these costs is eminent for the next financial year. With casual (temporary staff) with more than 5 years of service transferred to permanent positions as circulated by the Public Service Commission we do not envision an increase in the forth coming year.



Weather stations at Vaiaata

## Output 8 - PLANNING & URBAN MANAGEMENT SERVICES

### Sub Output 8.1

The Sustainable Development Section (SDS) administers the development assessment and approvals (consent) process of the Planning and Urban Management Act 2004 (the Act) and Regulations. In addition, SDS prepares reports and recommendations to the Planning and Urban Management Board (Board) regarding determinations.

### Quantitative Performance

The section manages the statutory processes required to administer development applications e.g. register, inspections, notification and referrals procedures, assessments, preparing recommendations, as well as compliance monitoring and enforcement.

### Human Resource

- Staff numbers: 1 Principal, 2 Senior Officers, 3 Officers.
- 1 Australian Volunteer International Development, Environmental Policy and Compliance Officer.

### Achievements

#### 8.1 Regulatory systems to support sustainable development; Development Consent Applications (DCAs)

- 808 development applications registered.
- 792 (98%) DCAs determined by the Agency.
- 16 (1.9%) DCAs determined by the Board.
- 6 (0.74%) DCAs refused by the Agency due to insufficient information.
- 351 (43.4%) development sites inspected.
- 233 (28.8%) referrals to relevant authorities.
- 15 DCAs were publicly notified.
- 1 DCA approved by Cabinet pursuant to section 61 of the Act.
- 1 resolution from the Planning Tribunal to dismiss the appeal lodged by Millenia Hotel.
- 31 EIA reports registered and audited.
- 12 monthly DCA analysis reports.
- 1 annual report.

### Collaborative Support

- Assisted Ministry of Police and Prisons on 31 January 2013 in providing copies for one of the DCAs that had been approved in 2007.



- 1 illegal activity by Mr. Faatupu Ilalio that had been submitted to the Agency for assessment which was later referred to relevant authorities under section 44 of the Act for their inputs and was refused.

#### *Compliance monitoring and enforcement*

- 115 stop orders issued for illegal or non-consented developments.
- 32 stop orders issued for non-compliance with consent conditions.
- 188 (23.3%) DC monitored.
- 35 non-compliance letters issued to ensure compliance with conditions.
- 12 monthly compliance monitoring reports.
- Further enforcement actions on cases:
  - (1) Billboard structures at Malifa by Go Advertising Company which has been resolved.
  - (2) Commercial structure erected over public drain at Fugalei by Mr. Faatupu Ilalio.

#### *Planning Tribunal - Appeal*

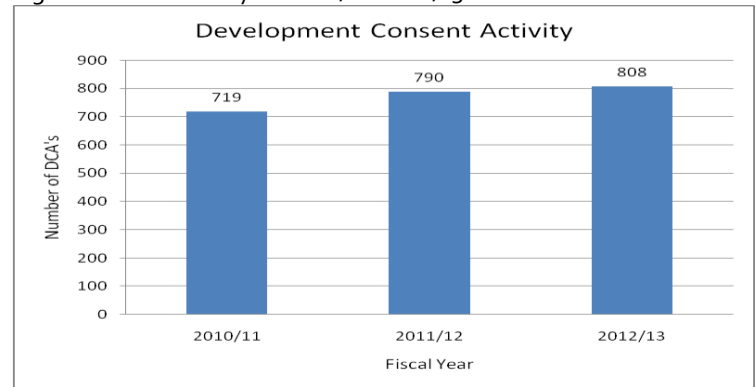
- The substantive Planning Tribunal hearing took place on 26<sup>th</sup> to 29<sup>th</sup> of November 2012.
- On 4 April 2013 the Planning Tribunal dismissed the appeal and upheld the Planning and Urban Management Board decision and attached additional conditions.

#### **Analysis**

Over the last three fiscal years, development consent application figures have steadily increased (See Figure 1).

For example, in between 2010/11 and 2011/12 it indicates an annual increase of 8.9 percent while 2011/12 and 2012/13 shows an annual increase of about 11 percent. Over the last fiscal year the Agency has received on a monthly average 70 applications for processing. This increase is attributed to greater awareness via media, targeted resourcing as well as stronger compliance monitoring and enforcement measures.

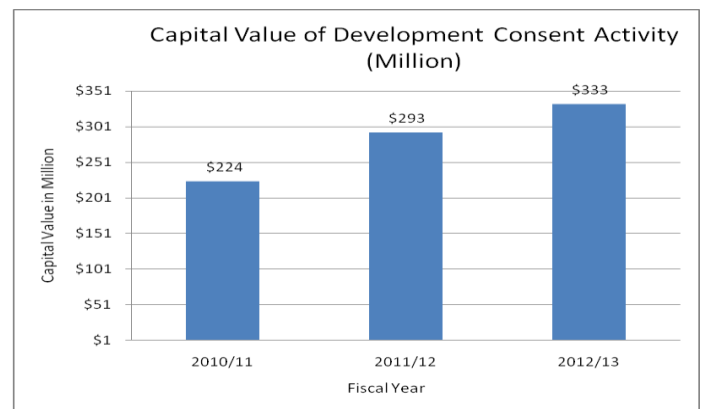
Figure 1: DCA Activity FY2010/11-2012/13



The overall capital value of development activity registered with the Agency in FY 2012/13 is approximately ST\$333,000,000. (See Figure 2)

The revenue generated (subject to the Fees Regulations 2008) is equivalent to ST\$18,380.

Figure 2: DCA Capital Value FY2010/11-2012/13



The categories of development proposals vary across residential, commercial, industrial and infrastructure activities. Spatially the concentration of development activity is on Upolu and acutely within the capital of Apia wider urban area.

Major developments include:

- Hotel Resort at Vavau by Warwick (yet to construct); and
- Hotel Resort at Taumeasina by Lamana.



## SUB OUTPUT 8.2. STRATEGIC PLANNING

The Strategic Planning Section (SPS) is tasked primarily to administer the Act's planning provisions. In addition, SPS is responsible for project planning, management and coordination. Further, the SPS coordinates the Planning and Urban Management Board secretariat services.

### Quantitative Performance

The Section undertook policy development and administering projects.

#### *Human Resource*

- Staff numbers: 1 Principal, 2 Senior Officers, 3 Officers.

### Achievements

#### *Secretariat to the Planning and Urban Management Board*

- 12 Board meetings conducted.
- 12 Board packages including reporting, filling and record management.
- 1 Board Seminar (Seminar Legal Framework and their Responsibilities).
- Board Resolution Database regularly updated.

#### *Policy Formulation*

- Draft National Urban Policy submitted to CDC for consideration (11 June 2013).
- Draft Code of Environmental Practice for Foreshore Infrastructural Development available.
- Draft Code of Environmental Practice for Management and Control of Wastewater Management Systems.

#### *Reforms*

- Legal reform – the Proposed Amendments to improve the Planning and Urban Management Act 2004 in progress.
- Review of Fees and Charges Structure pending- Fees and Charges (Miscellaneous Amendment Bill 2013)

#### *Public Education and Awareness*

- Environment week.
- Sanitation Awareness Workshop.
- Water Sector Review Workshops.
- 4 Newspaper articles.

#### *Capacity Building*

- 4 Improvement and Educational Seminars
  - Team Dynamics;
  - Compliance Monitoring and Enforcement (Part One);
  - COEP for Odour from Wastewater Treatment Systems; and
  - Compliance Monitoring and Enforcement (Part Two).
- 1 EIA Training provided to Samoa Tourism Authority as requested.
- 12 overseas trips to international meetings and trainings.

#### *Administration*

- Public Complaint Database regularly updated ongoing.
- Development Consent Database regularly updated ongoing.
- GIS mapping of DCAs and PCs ongoing.
- Compliance Monitoring and Enforcement Strategy completed.
- Manual for Standard Conditions for Development Consent completed.

### *Project Achievements*

#### *Vaitele Urban Governance Pilot Project*

##### *Reports:*

- Vaitele Institutional Governance Framework completed and approved (23 October 2012).
- Vaitele Urban Governance Strategy completed and approved (23 October 2012).

##### *Meetings*

- 1 Project Executive Group meeting (23 October 2012).

##### *Activities*

- Board approved Vaitele Sustainable Management Plan endorsed by Cabinet (27 February 2013).
- 2 Workshops on the Vaitele Sustainable Management Plan Implementation (Community & Stakeholders in June 2013).

#### *Australia and Samoa Partnership Agreement (NAPA 4) – Surface Flooding/Planning Component*

##### *Activities*

- 2 meetings with Sui o Nu'u (26 & 27 November 2012).

- 40 consultations undertaken in the period of November 2012 - March 2013 on the Apia Spatial Plan Introductory and Development. (36 urban communities, 1 stakeholders, 1 business industry, 2 church denominations).
- Consultation Outcomes Report finalizing.
- Draft Apia Spatial Plan undergoing.
- 1 Coordinating Committee meeting (8 March 2013).



Figure 3: Apia Settlement 2006

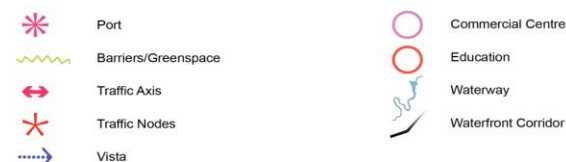


Figure 4: Spatial Analysis

### ***Samoa: City Development Strategy (CDS) Cities Alliance / UN-Habitat***

#### **Activities**

- Finalizing the Agreement of Cooperation between GOS and UN-Habitat.
- Apia's CDS work plan revised and approved.
- CDS Inception Report (11 April 2013)
- Data gleaning commenced for CDS development.
- Monitoring and Evaluation Framework available.
- Key Project tasks and activities are yet to be implemented until AOC is confirmed and account established.

### ***Water & Sanitation Sector Project: National Sanitation Policy Implementation***

#### **National Sanitation Policy**

- National Sanitation Policy under review.
- Memorandum of Understanding for the Sanitation Sector - draft submission to Cabinet available.
- Code of Environmental Practice for Wastewater Management complete.
- 10 sub committee meetings.

### ***Community Sanitation Project (Septic Tank Subsidy Scheme), ADB***

- Project coordinator recruited 28 June 2013, (ST\$54,180 p/a).
- Finalizing PMU positions.
- Developing Application Process guidance.

### ***National Urban Sanitation Survey, EU-Water Budget Support***

- Survey preparation under way.
- Field activities delayed due to Cyclone Evan 2012.

### ***National Effluent Standards, EU-Water Budget Support***

- Design of Terms of Reference in preparation.

### ***National Noise Policy 2011 Review - New Regulation***

- Terms of Reference available. Request for proposal bid document in preparation.

### ***Cities in Climate Change Initiative (UN-Habitat)***

- City Vulnerability and Adaptation (V&A) Report compilation on-going – target finish date September 2013.

#### **Waterfront Development Plan**

- Waterfront Development Proposed project incorporated in wider Urban Policy, Apia Spatial Plan and CDS development.

#### ***Pilot Program for Climate Resilience: Enhancing the Climate Resilience of Coastal Resources and Communities Project, World Bank***

- Preparation of Project Preparation Framework ongoing.
- Draft Project Appraisal Document in progress.

Contract administration and management:

- National Gender Specialist Consultancy service contract (ST\$49,000).
- Project Preparation Technical Assistance service contract (ST\$720,000).

#### ***Adaptation Fund: Enhancing resilience of coastal communities of Samoa to Climate Change UNDP***

Activities:

- Inception Workshop Report (28 February 2013).
- Quarterly Reports (30 April and 15 July 2013).
- Commence procurement of Project Management Unit personnel (Technical Advisor, Coordinator, and Assistant).
- Project office set-up.

### **SECTION 8.3 - URBAN MANAGEMENT SECTION**

The Urban Management Section is responsible for carrying out all duties in respect of administering section 63 of the Act.

#### **Quantitative Performance**

UMS has received, registered, inspected and monitor public complaints issues.

Consultations are conducted on site and written correspondences were issued formalizing agreements, mitigation measures and the required compliance standard.

Orders are issued when non-compliance is observed.

#### **Human Resources**

- 1 Principal Officer, 1 Senior Officer, 2 Officers.

#### **Achievements (July 2012 – June 2013)**

- 205 complaints registered.
- 205 site inspection to confirm public complaint issues.
- 17 (8%) complaints non-confirmed.
- 2 (1%) complaints withdrawn.
- 137(67%) complaints resolved.
- 49 (24%) complaints monitored continuously.
- 67 (33%) referrals.
- 12 monthly reports.
- 1 annual report.

#### **Collaborative Support**

- 11 requests registered and processed (e.g. trees and hedge fence encroachment, boundary issues, rivers and surface water).

#### **Monitoring and Enforcement**

- 42 orders issued.
- 30 cases being monitored.
- 9 cases needing continuous monitoring.
- 1 complaint referred to MNRE Legal Services Division for further enforcement actions. (i.e. Court Order). That is, Ms Elaine Silva for illegal dumping and use of solid waste material as fill for constructing a new road (proposed road does not have Consent). This is further compounded by the sensitive location, the Fugalei mangrove area.



Figure 5:  
Types of rubbish dumped onsite for road construction

Figure 6: Broken louvre frames dumped onsite close to the mangrove area



## Analysis

Over the last fiscal year, public complaints received and registered by the Agency have increased by 11 percent. Also, Figure 5 illustrates the total increase of complaints received in 2012/2013 fiscal year. On average the Agency receives 18 cases per month.

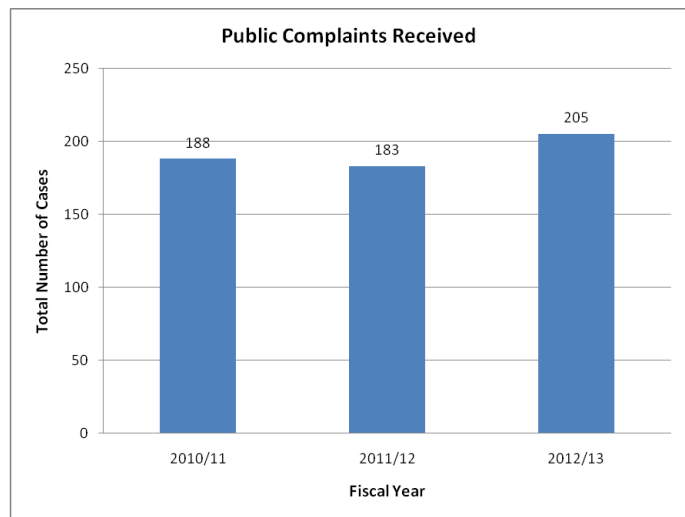


Figure 7: Public complaints trend in three fiscal years

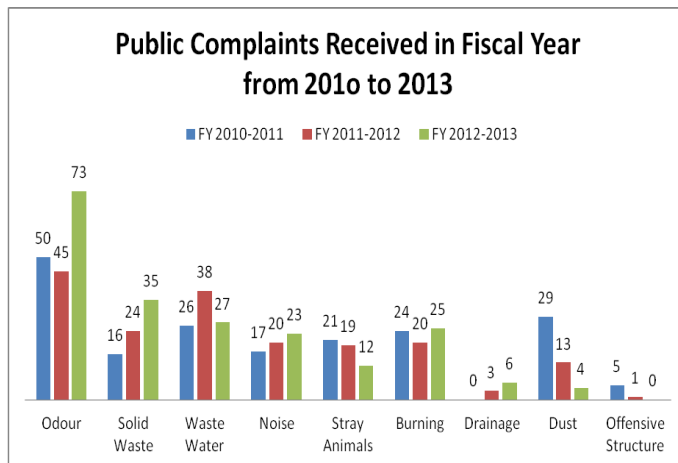


Figure 8: Public Complaints per type during the Fiscal Year 2010-11, 2011-12 and 2012-13

The Agency notes the increase in complaints relative to offensive smell/odour, solid waste, burning and noise pollution. However, other amenity issues such as waste water, stray animals, drainage dust and offensive structures have declined between the year 2012 to 2013. This may be attributed to improvements in awareness program by the Agency.

## Output 9 – WATER RESOURCES

### *Sustainable management of water resources across Samoa.*

The following highlights some of the main activities by the Water Resources Division (WRD) within the 2012-13 fiscal year. New initiatives were designed and implemented to improve monitoring of water resources and watershed areas, as well as the further implementation of the Water Resources Management Act 2008.

The Water Resources Technical Committee continued to meet bimonthly and offered technical support to the newly established Water Resources Management Board. The Board is chaired by the Minister of Natural Resources and Environment, Hon. Faamoetaulua Lealaiauloto Taito Dr. Faale Tumaalii, and meets monthly to deliberate on the water resources management issues and programs being implemented by the WRD.

Cyclone Evan damaged part of the Hydrometric Monitoring Network, and also some of the watershed sites being rehabilitated. As such, much of the early 2013 activities were towards fixing some of the damaged monitoring equipments as well as clearing river channels following the flash floods which affected some of the areas during and following the cyclone.

It also provides a brief summary of the achievements by the NAPA-4 and IWRM Projects, as well as the awareness programs throughout the year. The annual celebration of the World Water Day was a great success together with other awareness raising activities such as the radio talkback show hosted by Niuava Fata Eti Malolo, and school visits.

The report looks at the achievements by the Division, and tracking these against the planned programs in the "Water for Life: Water & Sanitation Sector Plan for 2012-2016". The following Tables 1 and 2, show the Logical Framework and the Targets which will be used to monitor the progress of activities for the Water Resources Subsector.

Figure 3: Community Nursery built for the rehabilitation in Faleaseela

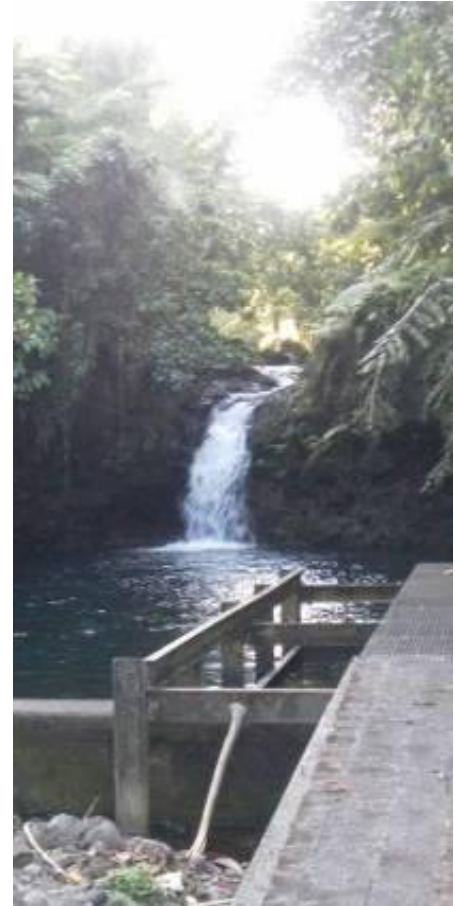


Figure 4: New replanting and fencing at Togitogiga Watershed





Table 1: Water Resources Management Summary Logical Framework (Water For Life Sector Plan, pg47)

OBJECTIVE 2: To improve watershed management and reliability of water resource data through integrated water resource management			
Strategies			
2.1 To strengthen watershed conservation and management	2.2 To improve knowledge and understanding of water resources	2.3 To improve the enabling environment for water resources management	2.4 To strengthen community engagement in water resource management
Actions			
2.1.1 Formulate, implement and enforce watershed management plans and regulatory tools in key watershed areas sustaining water supplies	2.2.1 Expand and Maintain the National Hydrometric Network	2.3.1 Implement and enforce the National Water Resources Policy, Water Resource Management Act, regulations and village bylaws	2.4.1 Develop new partnerships with NGOs/CSOs
2.1.2 Rehabilitate river banks	2.2.2 Quality Assurance of water resource data and information	2.3.2 Formulate the National Water Resources Management Plan (Composite Plan)	2.4.2 Develop a pilot for payments for ecosystem services in relevant watershed areas
2.1.3 Take critical watershed areas (upstream) as reserves	2.2.3 Build local capacity to ensure successful completion of drilling programme for groundwater mapping and modelling	2.3.3 Ongoing administration of the Water Abstraction Licensing Scheme	2.4.3 Pilot and evaluate feasibility of community extension services in critical watershed areas for possible upscaling to strengthen engagement with key communities
2.1.4 Conduct effective awareness and educational programmes		2.3.4 Provide secretariat functions to the Water Resources Technical Committee and Water Resources Management Board;	
		2.3.5 Ongoing monitoring and evaluation of policies and plans	

Table 2 : Key Performance Indicators and Targets for the Water Resources Subsector (Water For Life Sector Plan, pg58)

No	Key Performance Indicators and Targets	Unit	Baseline 2010/11	2012/13	2013/14	2014/15	2015/16	Means of Verification	Assumptions and Risks	Is responsible for monitoring
2.1	Number of Watershed Management Plans developed and approved	No. of Plans	3	5	3	3	3	Watershed Management Plans endorsed by WSSC	MNRE has the capacity to develop watershed management plans	MNRE-WRD
	Percentage of watershed management plans under implementation	%	20%	25%	30%	35%	40%	Audit of Watershed Management Plans	MNRE has the capacity and resources to develop and implement watershed management plans	MNRE-WRD
	Cumulative total hectares of prioritized watershed areas rehabilitated and / or declared reserves	ha	180	190	200	210	220	Field reports, Watershed Database, Minutes of Monthly Meetings	MNRE has the expertise and resources (personnel) to rehabilitate (replant) critical watersheds. Communities are actively engaged and support watershed conservation. Funding is available to purchase highly critical watershed areas for reserve purposes.	MNRE-WRD
2.2	Groundwater potentiometric map developed using established monitoring boreholes	%	3%	5%	10%	15%	20%	Borehole monitoring Reports, WRTC reports, Data Available	Successful drilling programme to establish sufficient number of boreholes in addition to securing SWA abandoned boreholes	MNRE-WRD
	Number of Monitoring boreholes drilled and feasible for groundwater monitoring	No. of bores	3	2	3	3	3	Borehole Monitoring Reports	Rig is available and drillers are qualified to operate rig. Communities in particular landowners agree to use land (through lease agreement) for monitoring purposes. Sufficient funding is available to run full programme	MNRE-WRD
	Number of SWA boreholes used for ground monitoring	No. of bores						Borehole Monitoring Reports	SWA agrees to use abandoned boreholes for groundwater monitoring purposes	MNRE-WRD
2.3	Number of strategies under implementation including regulatory tools enforced in proportion to the number of policies, strategies, legislative and regulatory tools in place	%	baseline to be set by 2012	5% on top of baseline	10% on top of baseline	15% on top of baseline	20% on top of baseline	Audit of Policy, Legislative and Regulatory Framework for Water Resource Management	Plans, strategies, legislation and regulations are implemented and / or enforced adequately	MNRE-WRD
2.4	Established community extension services within critical watershed areas	No. of pilots	nil	1	1	1	1	Pilot Evaluation Reports	Communities are supportive and accept policies and legislation	

The following Table 3 is a summary of the Water Resources Subsector performance in the 2012-13 fiscal year as detailed in the various sections of the report.

Table 3: Water Resources Subsector Performance Report Card 2012-13

SECTOR PERFORMANCE REPORT CARD						
SUBSECTOR		Water Resources Management				
IMPLEMENTING AGENCY		Ministry of Natural Resources & Environment				
FOCAL PERSON		ACEO – WRD				
STRATEGY	KEY PERFORMANCE MEASURES	UNIT	2012/13 TARGET	STATUS	GRADE (1-4)	REMARKS
2.1 To strengthen watershed conservation and management	Number of Watershed Management Plans developed and approved	No. of Plans	5	6	3.5	- WMPs endorsed by CDC but they have yet to be signed by the HOS - Recent trainings on WMPs formulation has assisted WRD efficiency in this activity
	Percentage of watershed management plans under implementation	%	25%	20%	3.5	- Implementation of watershed solutions are undertaken in parallel to the formulation of WMPs - As such close to 20% of activities within the WMPs are often completed by the time the plan is endorsed - Some of these activities include community nurseries, replanting.
	Cumulative total hectares of prioritized watershed areas rehabilitated and / or declared reserves	ha	202	221.93	4.5	The WRD is working towards declaring some of the protected lands as reserves, and more lands in Maiololelei are in the pipeline to be take and reserved.
2.2 To improve knowledge and understanding of water resources	Groundwater potentiometric map developed using established monitoring boreholes	%	5%	5%	4	A draft map is in place and approved by the Board of groundwater in Upolu. More bores will allow a more comprehensive map to be produced.
	Number of monitoring boreholes drilled and feasible for groundwater monitoring	No. of Bores	2	5	5	Despite the capacity challenges with the drilling rigs and operating teams, this activity is progressing according to targets. More bores are required in the coming years.
2.3 To improve the enabling environment for water resources management	Number of strategies under implementation including regulatory tools enforced in proportion to the number of policies, strategies, legislative and regulatory tools in place	%	5% on top of baseline	5%	4	- WRM Reg - Water Allocation Policy - Gasegase & Fulusou Village Bylaws - Draft Upland Conservation Policy - Board established and meeting monthly - 5 new licences issued
2.4 To strengthen community engagement in water resource management	Established community extension services within critical watershed areas	No. of Pilots	1	0	3	While there are a lot of community engagement work/tools being implemented with villages within the targeted watershed areas, a formal extension services framework is yet to be designed and developed.

## Progress of Activities Watershed Management

### 2.1 To strengthen watershed conservation

#### 2.1.1 Formulate, implement and enforce watershed management plans and regulatory tools in key watershed areas, sustaining water supplies.

- Watershed Management Plans (WMPs) for Aufaga, Tafitoala, Loimata o Apaula, and Fuluasou were extensively consulted, and eventually endorsed by the Cabinet Development Committee (CDC) on the 21<sup>st</sup> February 2013. This brings the number of CDC endorsed WMPs to 6 as Vaipouli and Togitogiga had already been endorsed. The implementation of these plans are well underway, with final endorsement procedures now being taken for the plans to be tabled before Cabinet and the Head of State.

Initial consultations with communities within the Gasegase watershed area resulted in a draft WMP in place for this critical area.

- The total rehabilitated land area for the reported fiscal year alone was approximately 24.6ha (Table 4), bringing the cumulative hectares of rehabilitated lands to 221.93ha. This total exceeded the target of 20ha per year.
- Plant nurseries in Faleaseela and Aufaga villages were damaged by Cyclone Evan and have since been renovated. The community nursery in Tafitoala is yet to be rebuilt after it was totally washed away by the flash floods. The main nursery at Vailima continued to be the source of seedlings for the community nurseries, raising approximately 3,500 seedlings per month.

Table 4: Total Hectares of Rehabilitated Sites FY12-13

Rehabilitated Sites	Hectares (ha)
Malololelei	15
Togitogiga	4.1
Fuluasou	1.3
Tafitoala	0.6
Fagalii	2.1
Moamoa	0.1
Moataa	1.4
<b>Total</b>	<b>24.6</b>

#### 2.1.2 Rehabilitate River Banks

- Rehabilitation efforts continued for all monitored sites, with priority placed on areas which were affected by Cyclone Evan. Communities were engaged to facilitate the replanting at Malololelei, Aufaga, Tafitoala, Faleaseela, Solosolo, Lepa, Moataa, and Letogo-Vailele sites; while the WRD through its Watershed Management Section (WMS) carried out the extension of replanting at Fagalii, Togitogiga, Robert Louis Stevenson's Museum Compound, and Loimata o Apaula (upper catchment) sites.
- The WMS was also extensively involved in the clearance of debris blocking the river channels following the flash floods during and after Cyclone Evan.
- A new initiative known as the River Ecosystem Health Monitoring (REHM) Program was designed and implemented by the WRD, with the aim to improve the health of rivers and other water sources. The first phase of the initiative was implemented during the latter half of the fiscal year and involved the constant monitoring of river channels in the urban areas (Fuluasou, Gasegase, Loimata o Apaula, and Fuluasou rivers) for pollution from solid waste and waste water disposal. Monthly visits to monitor the level of waste disposal along these rivers and also to issue warnings to families carrying out pollution activities, were done by the WMS.
- A total of 28 Precautionary Notices were issued to families living along rivers banks and disposing wastes into the rivers. The notices highlighted the need for these families to clear their rubbish and also to take measures to rehabilitate any areas which might have been affected by their activities. Followup visits saw full compliance to the notices as families had cleared rubbish from the river banks. There is a need to continue the enforcement of this initiative and expand it to other rivers where necessary.
- Another important activity to assist the river rehabilitation and cleaning was by the IWRM Project in supplying rubbish stands for areas where waste disposal is a problem at Moamoa, Moamoa and Lalovaea.

### 2.1.3 Take Critical Watershed Areas as Reserves (part of the IWRM Project)

- A further 52 acres of the Catholic Lands at Malololelei was taken by Government for watershed conservation purposes. This brings the total area of the Malololelei Reserve to 84 acres. Rehabilitation efforts are underway within this site, through the relocation of cattle farms, the removal of invasive species such as the *Merremia* vine and the Devil's Thorn. Fencing off of the reserved area so that the seedlings are not affected by stray livestock has also been undertaken (Figure 4).
- Opportunities to work with and forge partnerships with communities and civil society organisations in protecting critical watershed areas which are within their lands are currently being discussed, such as the Seven Day Adventist Church lands at Tapueleele (Savaii), and the Toamua lands at Tapatapao.

## Hydrological Services

### 2.2 To improve knowledge and understanding

#### 2.2.1 Expand and Maintain the National Hydrometric Network.

- There was damage to 8 hydro-logger gauging stations as a result of the Cyclone Evan flash floods. Since then only 5 stations have been repaired and are operating again (Togitogiga, Faleaseela, Lotofaga, Alaoa East and Solosolo), while the other 3 stations which were completely washed away are still offline (Fausaga, Tafitoala, Alaoa West). Despite this set back, increased frequency of spot gauging continued at all the affected sites to ensure minimum effect on the collated data.
- An additional 3 rain gauging stations were installed at Tiavi, Papapapaitai (Lepu'e) and Falealupo-uta. The rain gauge at Asau was relocated to Falealupo-uta due to a land dispute issue.
- At the end of the fiscal year the surface water monitoring network included 17 rain gauges, and 16 flow gauges (3 of which are currently non-operational).
- The groundwater monitoring network was expanded by 5 monitoring bores. These new sites were Tamaligi, Satittoa (Aleipata), and 3 bores at Vaiaata (Sapapalii). Information from these monitoring bores, together with new bores that will be constructed and installed in the future, will provide more information to the development of a comprehensive

groundwater potentiometric map of the country. Figure 12 illustrates the current groundwater information.

- 3 pump test exercises were undertaken during the fiscal year, two in collaboration with the Samoa Water Authority at Neiafu and Falelauniu; and 1 with the Samoa Beverages Company at its production facility. The pump tests were conducted to determine the hydraulic properties and to enable the determination of the sustainable yield of the studied aquifers. The derived safe yields were 32.4m<sup>3</sup>/hr for the Neiafu borehole, 30m<sup>3</sup>/hr for the Falelauniu borehole, and 2.2m<sup>3</sup>/hr for the Samoa Beverages Company's production borehole.

#### 2.2.2 Quality Assurance of Water Resources Data and Information.

- The Hydrology Section of WRD gathers and maintains water resources information in the National Water Resources Information Management System (NWRIMS). The quality of this information is vital to ensure effective planning and decision making. As such the WRD contracted the New Zealand National Institute of Water & Atmospheric Research Ltd (NIWA), to analyse and review the quality and usefulness of water resources data, collected and stored by the division.
- This contract assignment was carried out in September-October 2012 by NIWA experts, Mr J. Fenwick and E. Baddock. The study reported on some of the issues as well as measures to further improve data management and analysis within the division, such as extensive in field trainings on some of the equipments, and continuous tutoring/mentoring of staff involved with editing and uploading of the data into the database.
- It also highlighted the issue of staff turnover having an effect on the quality assurance of information. This is a problem when trained staffs leave the service, therefore not allowing a constant and effective quality check on the collected information. Annual reports on the collected information and analysis carried out by the division were highly recommended.
- The report commended the procedures in place for collecting and storing of data, as well as the progress made by the responsible staff on data editing

following their intensive training by the two NIWA experts.

- As part of their annual reporting the Hydrology Section has compiled a report on the analysis of annual rainfall from January-December 2012, as well as the average flows and flood events during the same time period. This report is available from the Hydrology Section.

#### 2.2.3 Water Resources Quality Guidelines

The WRD is reviewing the 1996 SPREP Water Quality Protection Criteria for the South Pacific, in-order to ascertain a national guideline for water resources quality in Samoa. There are existing information on the quality of water resources from different sites around the country, but a more comprehensive baseline needs to be established, together with a guideline to set the thresholds for different parts of a stream/river. This will set the indicators so that water resources quality can be better managed.

There is hope that through a partnership with one of the regional organisation/program, the WRD will be able to carry out a national baseline survey on the water resources quality at the different times of the year, thus allowing monitoring against the parameters which will be established in the National Guideline for Water Resources Quality in Samoa.

#### 2.2.4 Flood Monitoring – Flood Season 2012-13

Flood monitoring following heavy rainfall periods of Cyclone Evan, and the extent of the flash floods at Vaisigano was closely monitored by the Hydrology Section. A flood report for the Vaisigano Catchment was produced and sited flash flood depths of inundation ranging from 0.5-more than 2m during the cyclone, depending on topography. Several branches which were considered cut off from the main river and would never experience flowing water, over topped with flood waters during the cyclone. Other floods during January and February were closely monitored by the WRD.



Figure 10: Installation of hydro-logger, Lotofaga



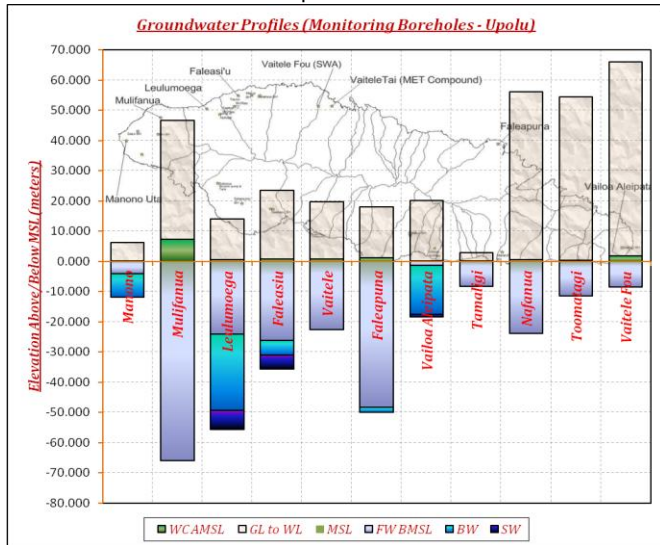
Figure 11: Borehole construction at Vaiaata, Savaii.

#### 2.2.5 The National Adaptation to Climate Change Program of Actions: Project Profile #4 (NAPA-4) – Groundwater Monitoring Project

- AusAid funded and now in its 3<sup>rd</sup> year of implementation.
- The project procured a specialised crane truck worth \$SAT 282,915.84. It is a 2012 Hyundai HD 75 model, equipped with a crane of 3.4 tons lifting capacity. It will assist the WRD in the heavy construction works involved with the installation of monitoring bores, making the work much easier and safer.
- The crane truck was also important in other related climate change and natural disaster works such as the installation of the Emergency Beacons by the Disaster Management Office and the clearance of debris blocking river channels and seawall.
- Completed 3 shallow monitoring bores within the vicinity of the Vaiaata Dump Site in Savaii. There purpose was to assist in the long term monitoring of impacts that this development might have on the surrounding surface and groundwater.



- The other new site was at Tamaligi (within the Sinave Reserve next to the NZ Immigration Office).
- Numerous geo-technical site surveys, monthly data collection, and inspection of SWA abandoned bores to assess if these can be used for monitoring purposes, were undertaken during the fiscal year together with the groundwater team of WRD.



**Figure 13: Monitoring at Samoa Beverages Company.**



**Figure 14: Monthly Borehole Monitoring**



**Figure 15: Education on water resources monitoring**

### 3. Policy & Regulatory Framework

To improve the enabling environment for water resources management

### 2.3.1 Implementation of the Policy and Regulatory Framework

- The Water Resources Management Regulation 2013 was formulated through the technical assistance of Mrs. Sarona Ponifasio of the Ponifasio Law Firm, and was consulted extensively throughout late 2012. The Regulation was endorsed by Cabinet in February 2013 and signed by the Head of State on the 13<sup>th</sup> of June 2013.
- The Water Allocation Policy was endorsed by the CDC in February 2013.
- Village bylaws were drafted for Gasegase and Fuluasou watershed areas, following consultations with the villages within these catchments. These consultations were held in strategic community locations in April and May 2013 so as to ensure that all of the targeted community leaders and families were able to attend and raise issues regarding their watershed activities.
- The draft bylaws are with the Legal Division of the MNRE for an internal review, before submission to the Attorney General's Office.
- Several trainings were carried out by the Legal Division of MNRE in Enforcement of its various legislation. Senior staff of WRD were able to attend these trainings and be certified Authorised Officers under the WRM Act 2008.
- Further training on Monitoring and Evaluation of policies and plans is required for the limited staff of the Policy and Regulatory Section so that they can effectively undertake medium-term auditing of the

current policy and legal framework, before independent reviews at the end of the WRM Strategy 2007-2017 for an example.

#### The Water Resources Management Board and Water Resources Technical Committee (WRTC)

- The Cabinet approved the setup of the Water Resources Board following its Cabinet meeting on the 15<sup>th</sup> June 2012, and the chairmanship of the Minister of Natural Resources and Environment in its meeting on the 18<sup>th</sup> July 2012.
- The first Board meeting was convened on the 13<sup>th</sup> September 2012, and has been deliberating on water abstraction licenses as well as other water resources management issues and plans, on a monthly basis
- The WRTC which provides technical support to the Board has been the core for coordination between the WRD and its key stakeholders such as MAF, SWA, MWCSO, IWSA, MOH, as well as the other divisions in the MNRE (the MET Office, Legal Division, Technical Division, Division of Environment and Conservation, Forestry Division, and Land Management Division). The WRTC hosts its meetings bimonthly and was able to meet 5 times during the fiscal year.

Figure 16: Gasegase Bylaws and WMP Consultation at Vaimoso Village, Methodist Church Hall.



#### 2.3.5 Ongoing Administration of the Water Abstraction Licensing Scheme

- A total of 5 new licences were issued during the fiscal year as given in Table 5. These were all issued to water bottling companies currently abstracting water from their private bores to produce their respective beverage products.
- All the technical reports and bore facilities operated by these companies were investigated by the WRD before granting the licences which included the conditions regarding their abstraction activities. Basis for the general and specific conditions are identified in the Water

Allocation Policy, the WRM Act 2008, and the Water Licensing Regulation, and included the daily pumping and abstraction rates which should not be exceeded by the developer.

Table 5: Water Abstraction Licences issued in the 2012-13 fiscal year

Water Developer	Licence No.	Village
Samoa Beverages Company	G1/28/01	Falelauniu
Le Vai Company Ltd.	G1/29/01	Siusega
Vaitele Spring Waters Company	G1/29/02	Vaitele
Samoa Artesian Water Company Ltd. (Borehole 1)	G1/125/01	Mulifanua
Samoa Artesian Water Company Ltd. (Borehole 2)	G1/125/02	Mulifanua

- On the 25<sup>th</sup> June 2013 the Minister of Natural Resources and Environment issued a revised Water Resources Management Fees Order given in Table 6 below. The Order makes amendment to the abstraction fee which now applies only to groundwater abstraction, and not to surface water takes.

Table 6: Water Resources Management Fees Order 2013

No	Subject	Fees (\$)
1	Application fee for a permit to: (a) drill or dig for water; or (b) make or use bore to take water from any water resource; or (c) to investigate any water resource to identify source of water for commercial purposes.	500.00
2	Application fee for a licence to take surface water from any water resource.	500.00
3	Application fee for a licence to take groundwater from any water resource.	500.00
4	Abstraction fee for taking ground water from any water resource.	0.10/m <sup>3</sup>

- Challenges remain in the effective enforcement of the WRM Act 2008 especially in terms of the Water Abstraction Licensing Scheme. Abstraction activities of the SWA and EPC, the two major water developers in the country remain unlicensed.
- As such further enforcement work by the MNRE is required to ensure the full compliance of these water utilities and other unlicensed water developers with the provisions of the WRM Act 2008. Monitoring of



current licence holders is also a priority, with a tracking system now in place to ensure that the licence holders are complying with the conditions of their licences.

#### 2.3.6 New Policies and Plans

- Progress towards a draft of the National Water Resources Management Plan is developing slowly and will be available in the coming fiscal year for initial consultations.
- The draft Upland Conservation Policy is also envisaged to be consulted with stakeholders and the Ministry, before submission for approval before the CDC. This policy provides a framework to better regulate/control the development of upland areas so that forests and watershed areas above 600m will be reserved/sustainably managed through the development consent process.

#### 4. Public Awareness and Education

To strengthen community engagement in water resources management

##### 2.4.1 Develop partnerships with NGOs/CSOs & Community Extension Services

- There are several areas where the WRD can build partnerships with communities and NGOs in the sustainable management of water resources. Some of these opportunities have already been implemented by the WRD in the different villages, through the setup of community nurseries which are able to supply native tree species and fruit trees for replanting efforts as mentioned in Section 2.1 of this report.
- There has also been an emphasis on sustainable agricultural methods during watershed conservation awareness programs, such as the promotion of agro-forestry, and the buffering of plantations and animal farms away from the river banks. Village bylaws as mentioned in Section 2.3 have also been promoted within critical watershed areas. These bylaws promote village engagement in enforcement of sustainable water resources management, as it provides an enforcement tool that can assist village councils in protecting water resources. This is through the use of village penalties that will deter villagers from undertaking harmful activities.
- The NGOs have been vocal in calling for critical upland watershed areas to be reserved as was seen in the SUNGO's support to Government to take action in securing critical upland watershed areas which have been cut down to make way for development at Malololelei. More and more land is being taken at Malololelei to ensure

the sustainability of the forests and subsequently the water resources for the township of Apia.

- In some villages the WRD have signed MOUs with the Council of Chiefs to ensure partnership in replanting of watershed areas and the conservation of water resources for the future. These include the villages of Togitogiga, Vaipouli, and Aufaga.
- There is also a MOU being drafted between the Seven Day Adventist Church of Samoa and the MNRE, in protecting more than 50 acres of forest owned by the Church in Tapueleele Savaii. This piece of land is situated 400m above sea level and the Church wishes to have it reserved for wildlife and also for water resources, as several streams pass through the land.

##### 2.4.2 World Water Day 2013: *Theme - Water Cooperation for Our Future*

- The World Water Day (WWD) this year was celebrated on the 22 March 2013 at the Tui Atua Tupua Tamasese Efi Convention Centre. It was launched by the Minister of Works Infrastructure and Transport, Hon. Manualesagalele Enokati Posala, who in his official address reiterated the need for effective cooperation amongst all agencies within the Water and Sanitation Sector. He also highlighted the importance of ensuring cooperation from communities and other stakeholders, given the transversal nature of water and also the significant amount of land under customary ownership.
- The WWD program included (i) a Water Concert where selected colleges took part in a song and skit competition, and (ii) a water quality testing and water gauging demonstration. The program was put together by the WRD and aimed at raising public awareness on the different cooperation and partnerships within the Water and Sanitation Sector, and also the opportunities where stakeholders can come and support the work of the sector in the sustainable management of water resources.

##### 2.4.3 School Awareness Programs

- This year's the WRD visited only the Vaiola College in Savaii and presented on issues on sustainable water resources management.
- *World Water Quality Monitoring Challenge* (during the World Water Day 2013 programs): Two science students and a science teacher were invited from selected colleges around Upolu Is. to attend a training

on how to carry out basic water quality sampling at a water source. The demonstration was undertaken by the Hydrology Team of the WRD at the Alaoa point of the Vaisigano River, using Student Water Quality Monitoring Kits. The demonstration offered a chance to build the capacity of students on how to monitor the water sources close to their schools and record data on basic physical parameters of water, such as pH, dissolved oxygen, temperature and turbidity.



- At the end of the demonstration activity, each of the schools were presented with a memory stick provided by SPREP, and a School Water Quality Sampling Kit. These tools will be used by the trained teacher and science class for analyzing water samples, and to record monthly data/results.
- Monthly visitations by the MNRE to these schools will be undertaken to assist with their monitoring work and to collect information entered into their databases for further analysis. It is expected that the school with the most accurate and well kept information by the end of the school year will receive an award.



#### **2.4.4 River Clean-up Campaign**

- One other major awareness activity was the River Clean-up Campaign at the 4 urban rivers within the Apia Catchment, during the 2012 Environment Week celebrations. Communities were engaged to assist the MNRE clean the Vaisigano, Fuluasou, Gasegase and Loimata o Apaula rivers, while at the same time raising their awareness on the importance of keeping rivers clean for a healthy Samoa.



#### **2.4.5 Media Awareness and Educational Programs**

- Continued with ongoing awareness campaigns on various media outlets around the country. These included TV Spots, interviews, news items on TV3 and TV1, newspaper articles and Children's Environment Corner in the Samoa Observer, Talamua Media and Newsline Newspapers.
- The Radio Talk Back Show called "Punaoa o le Suavai ma le Tulafono" promoted the WRM Act 2008, sustainable watershed management and other environmental issues from August 2012 to October 2013. The show was hosted by Niuava Fata Malolo and had guests from all agencies of the Water and Sanitation Sector as well as other divisions of the MNRE.

### **Challenges and Way Forward**

1. There was great effort in improving the implementation and enforcement of the WRM Act 2008. This resulted in an increased awareness in the licensing scheme and also on the various detrimental activities which pose great harm to the quality and quantity of water resources. This was also seen in the decrease in the number of families using rivers as rubbish disposal sites in all 4 major urban rivers of Apia.
2. However a lot more effort is required in engaging land owners in protecting forests on their lands, located within critical catchments. This has led to a move by Government through the MNRE in trying to take lands which are of great significance to public needs such as water and electricity, while consequently benefiting wildlife. This process however takes a long time and

involves a lot of capital. However the MNRE in line with the Precautionary Principle believes that the costs of preserving these critical biodiverse areas and their ecosystem functions will be much less than what it will take to rehabilitate and find technologies to provide these natural supports in the future.

3. Despite the number of private businesses applying for water abstraction licenses, SWA and EPC have yet to do so despite these two utilities being the major water users in the country. Efforts to ensure that these two agencies comply with the WRM Act 2008 are currently a priority.
4. There has been good training on hydrological and hydro-geological monitoring and data analysis. However, there is a need for more hands on trainings both within the field and also with more experienced agencies preferably overseas

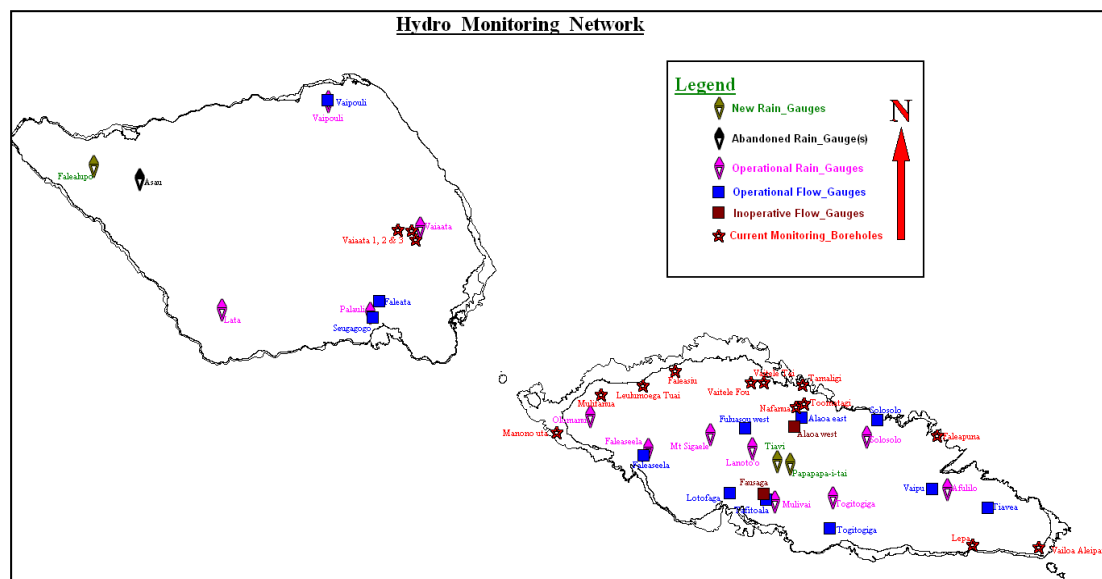


Figure 9: Map of the Current Hydrometric Network.



**Figure 5: Monitoring of the LO stream.**



**Figure 6: New rubbish spotted and family being consulted on the spot to take quick action to clean up the pollution.**



**Figure 7:**  
Medical/hospital wastes  
found in the LOA river.



**Figure 8: Species present and common in the LOA stream – prawns, fish and limpets/snails.**

## Output 10: DISASTER MANAGEMENT

*Mainstreaming the disaster risk management framework in all sectors to ensure sustainable risk reduction and preparedness, effective response and durable recovery from any disaster.*

Budget: Personnel - \$211,947.00; Operating Expenses - \$77,209.00

Human Resources: 9 Officers – 1 ACEO, 2 Principal Officers, 2 Senior Officers, 3 Officers, 1 Office Assistant, and 1 Project-funded staff (CDCRM Advisor<sup>1</sup>)

### 1. Overview

This year was a challenging year due to the impacts of Tropical Cyclone Evan (TC Evan) which affected Samoa from the 12 to the 15 of December 2012. At the time of this disaster, only six staff was on board however it was far better compared to the time the tsunami affected Samoa in 2009 where only three staff were in the Disaster Management Office (DMO).

The response operation for TC Evan continued on until the 16<sup>th</sup> of January 2013 when the Emergency Period expired. The DMO staff continued to conduct damage assessments and reports, distribute relief supplies and liaise with other humanitarian organizations to assist with relief while some 200 Government staff seconded to the National Emergency Operation Centre (NEOC) from other Government Ministries returned to their usual place of work.

By the end of the reporting period, all five new positions approved under the new structure as well as existing positions were filled including one project funded staff, the CDCRM Advisor which is funded by Australian Red Cross through the Samoa Red Cross Society for three years to coordinate the implementation of the CDCRM program.

### 2. Qualitative Performance

#### 2.1 Disaster Management

The Disaster Management Section is responsible for the implementation of disaster management (preparedness, response & recovery) requirements of the National Disaster Management Framework.

**Outcome:** Robust, people centred, end-to-end disaster management systems to ensure increased preparedness, effective response and durable recovery

**Human Resources:** 1 Principal Officer, 1 Senior Officer, 2 Officers

Achievements within the reporting period are as follows:

- Emergency Operation for Tropical Cyclone Evan since 11<sup>th</sup> of December 2012
- Operated and manned the National Emergency Operation Centre since 7:00am on the 13<sup>th</sup> of December 2012 to coordinate response to the impacts of Tropical Cyclone Evan;
- Convened and chaired one meeting of the Disaster Advisory Committee and thirteen meetings of the National Disaster Council including circulation of weather updates and situation reports;
- Prepared 13 situation reports on the progress of response including relief of food and non-food items to families affected and restoration of lifeline services such as the transport network, electricity, water, communication, health and sanitation services, as well as the clean up dirt, downed trees and debris;
- Coordinated initial damage assessments to determine extent of the impact to inform relief efforts and restoration of lifeline services and the post disaster needs assessment;
- Coordinated the management of and provision of food and water and sanitation to four evacuation shelters that were directly managed by Government for internal displaced persons in urban area and provided relief supplies to those who were sheltered in 22 shelters under the management of denominational groups and Alii and Faipule of the villages affected;
- Coordinated the receipt of and distribution of food and non food items to 2614 households in 164 villages during the Emergency Period. During the period following the expiry of the Emergency Period, distributed food items to 400 families in 20 villages and gas ovens & BBQ sets to 200 families in 18 villages;
- Assisted the donors and the Ministry of Finance in coordinating requests for international assistance;
- Coordinated provision of resources to facilitate the provision of services to the villages and families affected and welfare of Government staff and volunteers who assisted the DMO in providing the required emergency services;

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<sup>1</sup> CDCRM Advisor – Community Disaster and Climate Risk Management Advisor

- Facilitated debrief to discuss and record lessons learned from TC Evan response and prepared the debrief report. Debriefs were undertaken amongst DMO staff, staff seconded to work at the NEOC, DAC Sub-Committees for First Response and Initial Assessment, Community Welfare and IDP, Shelter, donors, and the Disaster Advisory Committee;
- Had meetings with the post disaster needs assessment team to develop the recovery plan for the DMO.

#### Meetings

- Convened one Disaster Advisory Committee meeting in October 2012.

#### Community disaster planning

- Developed disaster plans for 35 beach fale operators in collaboration with the Samoa Hotel Association under the Tourism Tsunami Recovery Program and 30 hotel operators in Savaii and Upolu under the Tropical Cyclone Evan Recovery Program;
- Completed four sub-modules on shelter, relief, evacuation and warning to facilitate training of village response teams;
- Conducted two support partner agencies and one CDCRM Implementing Agency workshop to familiarize them with the CDCRM program and sub-modules for village response teams trainings;
- Developed one household disaster safety poster;
- Conducted two consultations with the Ministry of Women, Community and Social Development (MWCSO) to facilitate integration of DRM into Community Sector Plan.

#### Trainings

- Three national trainings on emergency operation centre, disaster risk reduction and logistics were delivered by SOPAC and RedR in collaboration with DMO;
- Two human resources trainings delivered for the DMO staff to increase their awareness of internal and PSC policies related to employment entitlements and coordinated 1 GPS and mapping training for members of the Volunteer Emergency Response Team Samoa (VERTS);
- Four representatives from the DAC including the DMO, MWCSO and Samoa Red Cross attended a regional training on the Sphere Standards which is a set of universal

humanitarian standards that is available to all countries to guide the provision of emergency services;

- Other international trainings included international training GIS and application to reduce disaster risks and impacts; exploring legal mechanisms to strengthen disaster response; and disaster mitigation and restoration for public works.

#### Awareness programs

- Distributed 207 tsunami awareness materials to schools around the country including 142 in Upolu and 65 in Savaii and provided information materials to students undertaking research in disaster management;
- Issued two media release in relation to the emergency operation centre training and partnership exercise;
- Developed a resource toolkit to facilitate the delivery of disaster basic trainings and development of disaster plans for response agencies, schools, NGOs, and private sector;
- Conducted a community consultation to inform the development of the National Forest Fire Management Strategy;
- Conducted 3 presentations to the Surf Life Saving, Leififi College and Samoa Nurses Association to inform them of how to develop a disaster plan;
- Designed, developed and uploaded the webpage for the DMO and a face-book page;
- Designed and developed more than 10 pages on hazards and safety procedures published in the Bluesky telephone directory for 2013;
- Developed and circulated two DMO quarterly newsletters.

#### Simulations

- Conducted three simulations including a training and simulation to test the knowledge and understanding of key personnel from first response agencies using the Coordinated Incident Management System (CIMS); a simulation to test response collaboration with international defense forces for the Disaster Advisory Committee and the participating defence forces of the Pacific Partnership and a simulation during the Pacific Ocean-Wide Tsunami Exercise to



test response by the Meteorology Office to a tsunami event.

- Evaluated the Samoa Airport Authority aircraft emergency drill to test the response by all emergency services that would be required to respond to an event of similar nature;

#### Warning Systems

- Conducted the review of the tsunami, cyclone and climate early warning systems through DAC, DAC Sub-Committee for Emergency Communication and Warning Systems and Communities;
- Conducted site selection visits for the siren network;
- Updated and circulated to Meteorology Division an updated mater list of the contact details of the members of the Disaster Advisory Committee and village representatives;

#### Emergency Communication

- Completed about 40% of the required work to install the emergency radio communication network on Upolu Island.

## 2.2 Disaster Risk Reduction

The Disaster Risk Reduction Section is responsible for the implementation of the risk reduction (prevention and mitigation) requirements of the National Disaster Management Framework.

**Outcome:** All hazards risks and vulnerability reduced or prevented

**Human Resources:** 1 Principal Officer, 1 Senior Officer and 1 Officer

Achievements within the reporting period are as follows:

#### Risk assessments

- Planned and conducted three risk assessments to inform the design of Siutu seawall and rockwalls at Laulii River and Mulivai River;
- Planned and conducted 14 risk assessments in Savaii focusing on North eastern coastline and 19 risk assessments in Upolu focusing on Vaimauga region towards the Southern coastline;
- Planned one risk assessment on Mt. Vaea/Palisi area, completed literature review and convened one meeting of the DAC Sub-Committee for Disaster Risk Reduction;
- Developed one database for risk assessments.

#### Reviews

- Developed one site inspection form and a review template to guide the review of Preliminary Environmental Assessment Report (PEAR) and full Environmental Impact Assessment (EIAs) Reports submitted to PUMA to support the proponents applications for development consents;
- Reviewed and provided comments on three EIAs and one PEAR.

#### Trainings

- Conducted two DRR educational training on disaster mitigation and prevention and cost-benefit analysis. The latter was conducted by SPREP.

#### Coastal and riverbank protection

- Prepared and reviewed tender documents for consultancy services to design and supervise the construction of Siutu seawall and rock walls at Laulii River and Mulivai River;



## Output 11 – WATER SECTOR COORDINATING UNIT

This year saw the official implementation of the Water for Life Sector Plan 2012-16. With the implementation of the updated sector plan, key changes have been instituted to guide annual sector reviews to ensure sector annual reporting is based on agreed annual performance targets. The Sector hopes that this will ensure effective monitoring of the Sector Plan's implementation status on an annual basis.

Implementation of the National Water Services Policy 2010 continues. Key areas to note include the review of SWA's governance arrangements including a review of plans to establish a Utility Regulator. Final report including recommendations has been submitted to the MOF for appropriate actions.

The events of Tropical Cyclone Evan in December 2012, half way through the financial year resulted in a complete re-prioritisation of Government and hence sector wide priorities as all national efforts focused on emergency relief works and soon after the implementation of short to long term recovery programs. The Sector through the MNRE-WSCU coordinated sector related relief and response aid to affected areas in close collaboration with the DMO, Samoa Red Cross (Samoa, New Zealand, Australia), ADRA, SWA, IWSA and MOH. A Sector Post Disaster Needs Analysis (PDNA) was consolidated by the WSCU with technical inputs from the SWA, IWSA and MNRE-WRD and DEC.

### PERFORMANCE ACHIEVEMENT

#### Human Resource:

- 1 Coordinator/ACEO,
- 1 Deputy Coordinator / Principal Officer
- 1 Senior Procurement Officer
- 1 Communications Officer

#### Quantitative Performance:

##### 1. Strengthened Sector Policy Framework

###### (a) Implementation of the Water for Life Sector Plan 2012-16

Implementation of the updated Water for Life Sector Plan 2012-16 commenced this financial year. Efforts to closely monitor the implementation of the Sector Plan required changes to the Sector's annual review reporting format. Changes include the referencing of annually budgeted activities against the agreed Framework for Action 2012-16 presented in the Sector Plan. This ensures that sector annual review reports are based on identified and agreed annual performance targets.

###### (b) Implementation and review of the National Water Services Policy

- Review of SWA Governance Arrangements

A review of SWA's existing governance arrangements was contracted to KEW Consult by MOF to advise on appropriate options and approaches to achieve improved governance and subsequent performance of SWA, taking into account the ongoing reforms to the Board of Directors and the proposed introduction of a regulator. Review has completed and Final Report with recommendations has been submitted to the Ministry of Finance.

- **Establishment of a Utility Regulator**

Recommendations on the establishment of a Utility Regulator have been tabled to MOF. A final decision is pending and will require the endorsement and approval by Cabinet with regards to the scope and operationalisation of the utility regulator.

- **MOU between SWA and IWSA**

As required under the National Water Services Policy (NWSP) 2010, a Memorandum of Understanding (MoU) between the Samoa Water Authority (SWA) and the Independent Water Schemes Association (IWSA) was drafted to facilitate:

- the establishment of a constructive relationship between SWA and IWSA with mechanisms to manage the relationship;
- an enabling environment and framework to support and promote optimum solutions for quality water service provision.

The MOU has been drafted in close consultation with the SWA and IWSA.

###### (c) MoU for the Effective Management of the Apia Urban Drainage Network

The MNRE in collaboration with the MWTI facilitated the development of a MOU to promote and strengthen coordination and cooperation of key implementing agencies (MNRE, MWTI, MWCSA and LTA) with mandated functions in the effective management of the Apia Urban Drainage Network. Extensive consultations with key parties to the MoU are being carried out. The MoU is anticipated to be finalized and signed in the next financial year.

### 3. Sector Coordination

A total of 46 sector-wide meetings were held during the financial year not including sector-wide consultations and workshops facilitated by the WSCU for planning, review and evaluations and budgeting purposes.

Meetings recorded for the period are listed below:

JWSSC Quarterly Meetings meetings	4
TSC monthly meetings meetings	9
Water Resources Subsector (bimonthly) meetings	5
Sanitation (monthly) meetings	7
SWA Water Supply (bimonthly) meetings	4
IWS Water Supply (monthly) meetings	7
Flood mitigation/Drainage (monthly) meetings	6
Drinking Water Quality (bi-monthly) meetings	4

#### 4. Review and update Sector MTEF

The Medium Term Expenditure Framework (MTEF) 2012-15 was reviewed and updated to 2013-16 through extensive sector-wide consultations with sector implementing agencies. The sector budget screening with the MOF was held on the 29<sup>th</sup> April 2013 after which final budget bid was submitted in the following month of May.

#### 5. Sector Performance Monitoring

Following the revision of the Sector Plan 2008-2012, the sector now has a total of 61 indicators under its new performance framework for 2012-2016. Details of the revised sector performance framework are presented in the updated Water for Life Sector Plan 2012-16.

#### 6. Sector Annual Review

The 6<sup>th</sup> Annual Water Sector Review for the period 2012-13 was carried out on the 30<sup>th</sup> October 2013. This year's review saw changes made to the annual review reporting format to align with the agreed Framework for Action 2012-16. The name of the report has also been revised to "Sector Performance Report" to put more emphasis on performance based reporting. Publication of the 5<sup>th</sup> Annual Review Report for 2011/12 was officially launched during this year's annual review.

#### 7. Sector Capacity Building

A 3 year sector capacity building plan has been developed to facilitate a more coordinated and targeted approach to addressing capacity needs of each implementing agency. The Plan identifies basic training needs that are common across the sector as well as more specialized and technical training requirements. Different modes of delivering sector capacity needs are also presented in the report and looks at innovative options such as twinning arrangements, short term courses, work attachments and the weeklong trainings depending on the

scope and availability of participants. A sector capacity building workshop was held in August 2012 to reconfirm IA needs.

#### *Pacific Water and Waste Association (PWWA)*

The annual regional conference for the PWWA was held in October 2013 in the Cook Islands. The Sector was well represented at the regional conference with participation from the Managing Director of SWA, President of the Independent Water Schemes Association and representatives from the MNRE, MWCSO and MOH. Annual gatherings of the PWWA provide a unique platform for water utilities (SWA and IWSA) as well as regulators and policy makers to share technical and regulatory experiences.

#### *National Water and Sanitation Sector Forum*

The National Sector Forum was held in November 2012. Findings of four research studies were presented during the forum as follows:

1. "Water Attitudes, Consumption and Waste at the household level" - By Tuiloma Susana Taua'a
2. "The impacts of climate change and development in water catchment areas on water resources" - By Aurora Elisaia-Vaai, Siatua Lautua & Mafutaga Leiofi
3. "Comparative Study of Water Sector Governance between SWA and IWSA for Safata District" - By Reverend Vavatau Taufao
4. "To identify households in Samoa that are wholly reliant on rainwater harvesting for their water supply" - By David Neal, Opetia Opetia and Rodney Su of the Samoa Red Cross

#### *Quarterly Sector Coordinators Forum*

Quarterly Sector Coordinators meeting was held in April 2013 and the Sector was asked to present on its progress and issues. The Sector Coordinators forum is chaired by the MOF and quarterly meetings provide an opportunity to share experiences and lessons learned amongst Sector officials. There are currently 14 Sectors identified under the GoS Sector Planning Initiative including the Water and Sanitation Sector.

#### *LiDAR Consultation*

In May 2013, Jack Out of Woods Pacific presented on the application of LiDAR in sector related developments in particular water supply works, drainage works (including roading) and watershed management. Mr. Out's presentation was made following numerous requests from Sector IAs (LTA, SWA and MNRE) interested in purchasing the LiDAR. A key issue noted during consultations with Mr. Out relates to the capacity of MNRE to house the LiDAR and costs associated with the use of the LiDAR. Mr.

Out was therefore requested to submit a proposal to the MNRE clearly specifying relevant applicable specifications, capacity building and set up components and financial costs for the Sector's consideration.

### ***Pacific Partnership***

In June 2013, the Pacific Partnership involving US, Australian and New Zealand army and navy officials facilitated a technical exchange of knowledge and expertise on drinking water quality, rainwater harvesting and operational health and safety issues targeting key sector implementing agencies namely SWA, IWSA, MOH, SRC and MNRE.

### ***Sector Research Initiative***

The 2<sup>nd</sup> round of the Sector's Research Initiative for 2013/14 was launched in June 2013. The first round saw the completion of four research studies with findings presented at the Sector National Forum 2012. Concept papers for the 2<sup>nd</sup> round have been issued and expressions of interest are being sought to carry out approved research studies. This Initiative provides an opportunity for the Sector to bridge the gap in policy formulation, development impacts and strategic interventions.

### ***WHO Water Safety Project***

The WHO pledged capacity building support towards strengthening the Water Safety Planning process under the leadership of MOH and in collaboration with the MNRE, SWA and IWSA. A consultation between key agencies and WHO Consultant facilitated the finalization of the WHO Water Safety Project.

## **8. Sector Disaster Preparedness and Response**

### ***Tropical Cyclone Evan***

TC Evan made landfall on the 14<sup>th</sup> December 2012. On the 18<sup>th</sup> December 2012 the first meeting of the Sector Disaster Response Coordination Adhoc Committee was convened. A total of 8 meetings of the Adhoc Committee were held up to the 29<sup>th</sup> January 2013. Members include the SWA, IWSA, SRC (Samoa, New Zealand and Australia), ADRA, OXFAM, MNRE and MOH. MNRE through WSCU chaired committee meetings. The Sector through the Adhoc Committee acted as a technical working group responsible for coordinating water and sanitation relief and response aid to affected communities and reported to the DMO. Part of the work of the Committee in association with the DMO included the installation of temporary water filling stations in identified critical areas with water and sanitation problems, coordination of strategic areas for water carting services provided by SWA, ADRA, SRC and FESA. The Sector Post Disaster Debriefing facilitated by DMO was held on the 6<sup>th</sup> February 2013.

### ***World Bank Post Disaster and Needs Analysis (PDNA) Training***

A three-day training facilitated by the World Bank and MOF took place from the 14 -16 January 2013. Sector implementing agencies MNRE (WSCU, PUMA, DEC, WRD), SWA and IWSA participated. The training was centred on how to conduct a Damage and Loss Assessment (DaLA) towards the formulation of a national PDNA report. The report was formulated based on sector inputs and the WSCU was responsible for consolidating the water and sanitation sector PDNA with technical inputs from SWA, IWSA, MNRE-WRD/DEC (waste management).

### ***OXFAM Watershed Recovery Program May – June 2013.***

The Sector through the MNRE-WRD worked in partnership with the OXFAM-New Zealand based group and Conservation International on a recovery program that saw the rehabilitation of degraded watershed areas around Maagiagi following TC Evan. Watershed rehabilitation works were carried out from May to June 2013.

## **9. Issues**

### **Human Resource Management**

- Staffing constraints in key implementing agencies in particular MNRE-WSCU/PUMA; MOH-HPS (drinking water quality testing)

### **Sector Coordination**

- Sector implementing agencies are overly committed resulting in key personnel not participating in key sector planning processes. This is particularly the case for implementing agencies with mandates broader than that of the Sector. For example MOH, LTA, MWCSO, MWTI.
- There is still limited engagement of IAs at the high level (through the Joint Water Sector Steering Committee) again this is dependent on CEO availability.
- Delays in obtaining information and IA inputs for reporting purposes. The quality of sector reporting is also dependent on IA submissions and the ability of the WSCU to undertake full analysis which is often constrained by delays in submissions.

### **Sector Financing**

- IAs still faced with capacity constraints to fully utilize budget allocations. This is often due to high staff turnover as experienced by some IAs and the inability of IAs to fill vacant positions either due to lack of outside interest or delays in internal recruitment and selection processes.

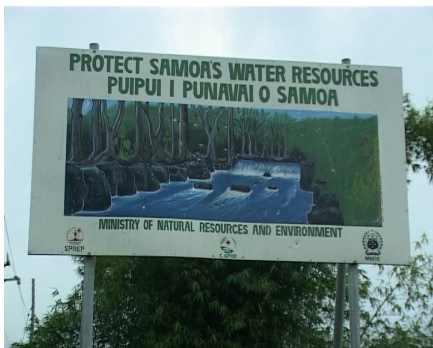
- Consumption of budget allocations across IAs is difficult to reconcile due to mis-postings by Accounts Sections of respective IAs.

#### Sector Capacity Building

- With the development of the 3 year Sector Capacity Building Plan completed, work should now focus on implementing the plan over the next 3 years. Delays are also anticipated depending on funding availability.

#### Sector Performance Framework

- There are still issues with the Sector's Performance Monitoring System. This involves collection of data from IAs, the timely availability of the data, verification and reporting of the data. This requires the recruitment of a senior personnel (at the Principal level) to be responsible for managing the system.



### Central Services 1 (CSU 1): LEGAL UNIT

Provide legal services to support the sustainable management and development of natural resources and the environment.

#### Human Resource

- 1 ACEO; 1 Legal Officer;
- 1 Australian Volunteer International Development

#### Quantitative Performance

The legal division provides legal and policy advice to all 13 divisions of MNRE as well as the Minister and CEO. Another important role of the division is to engage with other government departments and organisations in implementing statutory roles and functions as well as project activities. The Division is also involved in the active promotion of laws and environmental legal issues the community requires assistance; liaise with consultants regarding their provision of services to the Ministry and preparing legal documents such as:

- leases of customary land and government land,
- contracts for services
- memorandums of understanding,
- licenses/permits,
- pleadings for civil litigation as well as
- prosecution matters
- And any other documents required for the effective discharge of the statutory duties of the Ministry.

During 2012 to 2013 the Legal Services Division provided the following services to support the work of the Ministry

#### Achievements

- Alienation of Freehold Land Applications – 42
- Contracts – 84
- Legislative Reviews – 6
- Legal Advice – 50
- Capacity Building – 5
- Litigation – 8
- Project(s) - Enforcement and Investigations Manual launched & Conservation Laws in Samoa Handbook



## Analysis

MNRE continues to grow with the newest addition Disaster Management Officer (DMO) in the amount of divisions. There is also an increase in the amount of contracts compared to the previous year. The legislative reviews have also included the Environment Management and Conservation Bill which was drafted inhouse and subsequently referred to the Attorney General's office for vetting as usual.

A total of 8 civil cases concerning MNRE were pending before the Supreme Court by this time. These cases were *Fuimaono Fereti Tupua v The Samoa Tel Ltd*, *Leapai Alaivaa v Attorney General*, *Celestial Waters v Westpac*, *A&J Wulf v Celestial Water*, *Apia Export Fish Packers v AG*, *AG v Sia Savelio*, *Siva Afi Investments v AG*, *RSI Holdings v AG*. Ongoing legal support to the Office of the Attorney General was provided.

One of the main highlights of this period is the launching of the Enforcement and Investigations Manual as well as the Conservation Laws in Samoa Handbook. The Manual was developed in-house whereas the Handbook was contracted out to Schuster, Betham & Annandale Law Firm which won the tender for developing the booklet. The usual facilitation and provision of information was provided by the Legal Division and assisted by SPREP.

The legal division attended meetings and trainings in Australia, Philippines, Japan and UK for this period. Reports of all the meetings and trainings were approved by Cabinet.

The Division was also grateful to have been given more staff as approved by PSC in early 2013.



## CSU 2 - Corporate Services

### Administration Section

*The Administration Section deals with all personnel matters. Its core functions are to provide the support services in achieving divisional and sectional goals. These include the Recruitment and Selection process of qualified workforce, human resource developments, the transportation pool, records management and the maintenance and carpentry services.*

### Human Resources:

• Principal Officer	1
• Senior Officers	2
• Officers	5
• Senior Clerk	1
• Clerks	2
• Casuals	18

### Quantitative Performance

Employees Database:

Maintain and update database for all employees including personal information, leave, performance appraisal, staff development, and entitlements

### Recruitment and Selection

Co-ordinate and facilitate recruitment and selection for the Ministry. This include the following

CATEGORIES	Total
CEO	1
ACEO'S	14
SALARIES	182
WAGES	242
PROJECT'S	10
<b><u>TOTAL</u></b>	<b><u>449</u></b>

CATEGORIES	TOTAL
RESIGNATION	54
DISMISSED	20
DECEASED	1
END OF CONTRACTS	2
RETIREMENT	3
OTHER	1
<b><u>TOTAL</u></b>	<b><u>81</u></b>

**Central Records:**

Responsible for all mails received and dispatched records management and filling. The record section is responsible for handling of all external and internal correspondence within the Ministry.

CATEGORIES	TOTAL
Mail Received/Dispatched	7122
Outgoing Mail	6823
Internal Distributions	9839
File Search Upon Requests:	520
• Series	302
• Personal Files	220
File Creation:	301
• Series	24
• Personal Files	12
• Contracts	12
• Casuals	52
Classification/Titling/Indexing	8423
Filling	12.458
Photocopies	22.232

**Transport Pool:**

Overall supervision and maintenance of Ministry's fleet. Compared to the previous financial years, the ministry have increased its fleet due to projects that procured most of the vehicles and sending some of the old vehicles to Vaimea for tender by the Ministry of Finance.

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT VEHICLES 2013					
NO. PLATES	MODELS	DIVISION	LHD/RHD	LOCATION	
MNRE65	Nissan Patrol	MINISTER	LHD	TATTE	
MNRE01	D/Cab Hilux Toyota	CEO	RHD	TATTE	
MNRE02	D/Cab Hilux Toyota	ACEO- PUMA	RHD	TATTE	Sanitation
MNRE03	D/Cab Hilux Mitsbishi	TS	LHD	TATTE	
MNRE04	D/Cab Hilux Toyota	CSD	LHD	TATTE	
MNRE05	D/Cab Hilux Toyota	LMD	LHD	TATTE	
MNRE06	D/Cab Mazda pick-up	TS	LHD	TATTE	
MNRE07	D/Cab Mazda pick-up	DEC	LHD	TATTE	
MNRE08	D/Cab Nissan pick-up	TS	LHD	TATTE	
MNRE09	Single Cab Toyota	FD	LHD	TATTE	
MNRE10	Prado Landcruiser	LMD	LHD	TATTE	
MNRE11	D/Cab Toyota Hilux	DEC	LHD	LANDFILL	
MNRE12	D/Cab Toyota Hilux	MET	RHD	MULINUU	NAPA
MNRE13	Landcruiser DMO	CEO	LHD	TATTE	
MNRE14	D/Cab Toyota Hilux	Minister	RHD	TATTE	
MNRE15	D/Cab Toyota Hilux	ASS. MINISTER	RHD	TATTE	

MNRE16	D/Cab Toyota Hilux	DEC	RHD	TATTE	Sanitation
MNRE17	D/Cab Toyota Hilux	ASS. MINISTER	LHD	TATTE	
MNRE18	D/Cab Toyota Hilux	WRD	RHD	TATTE	IWRM
MNRE19	Landcruiser DMO	MET	LHD	MULINUU	
MNRE20	Nissan	CSD	RHD	TATTE	
MNRE21	D/Cab Ford pickup	WRD	LHD	TATTE	
MNRE22	D/Cab Ford pickup	WRD	LHD	TATTE	
MNRE23	D/Cab Toyota Hilux	FD	LHD	TOGITOGIGA	
MNRE24	D/Cab Nissan pick-up	LEGAL	RHD	TATTE	
MNRE25	Hyundai Getz	PUMA	RHD	TATTE	NAPA
MNRE26	Hyundai Getz	RED	RHD	TATTE	Energy Project
MNRE27	D/Cab Toyota Hilux	WRD	RHD	TATTE	Sanitation
MNRE28	D/Cab Toyota Hilux	TD	LHD	TATTE	
MNRE29	Toyota Hiace Van	WRD	RHD	TATTE	Sanitation
MNRE30	Delta Truck Dyna	WRD	RHD	TATTE	
MNRE31	Steed D/Cab	FD	RHD	TATTE	ICCRIFS
MNRE32	Steed D/Cab	FD	RHD	MAOTA - SAVAI	AGRO
MNRE33	Toyota Flat Deck Truck	FD	LHD	ASAU SAVAI	
MNRE34	Toyota Flat Deck Truck	FD	LHD	ASAU SAVAI	
MNRE35	Toyota Flat Deck Truck	FD	LHD	ASAU SAVAI	
MNRE36	D/Cab Toyota Hilux	FD	RHD	VAILIMA	ICCRIFS
MNRE37	D/Cab Toyota Hilux	FD	LHD	TATTE	
MNRE38	D/Cab Toyota Hilux	WRD	RHD	TATTE	NAPA
MNRE38	D/Cab Toyota Hilux	FD	LHD	VAILIMA	
MNRE39	D/Cab Toyota Hilux	WRD	RHD	TATTE	Project
MNRE40	D/Cab Toyota Hilux	RED	RHD	TATTE	RE
MNRE41	D/Cab Toyota Hilux	MET	RHD	MULINUU	NAPA
MNRE42	Landcruiser	FD	RHD	MAOTA - SAVAI	JICS
MNRE43	Landcruiser	FD	RHD	ASAU SAVAI	JICS
MNRE44	Cargo Hino Truck	FD	RHD	ASAU SAVAI	JICS
MNRE45	Cargo Hino Truck	FD	RHD	MAOTA - SAVAI	JICS
MNRE46	D/Cab Toyota Hilux	FD	RHD	VAILIMA	AGRO
MNRE47	D/Cab Toyota Hilux	FD	RHD	ASAU SAVAI	AGRO
MNRE48	Cargo Hino Truck	FD	RHD	TOGITOGIGA	JICS
MNRE49	Cargo Hino Truck	DEC	RHD	VAILIMA	JICS
MNRE50	Landcruiser	FD	RHD	VAILIMA	JICS
MNRE51	Landcruiser	FD	RHD	TOGITOGIGA	JICS
MNRE52	D/Cab Toyota Hilux Grey	FD	RHD	VAILIMA	AGRO

MNRE53	D/Cab Toyota Hilux White	FD	RHD	TATTE	JICS
MNRE54	D/Cab Toyota Hilux White	DEC	RHD	TATTE	JICS
MNRE55	D/Cab Toyota Hilux	DEC	RHD	TATTE	JICS
MNRE56	Greatwall D/Cab	MET	RHD	MULINUU	Project
MNRE57	Greatwall D/Cab	MET	RHD	MULINUU	Project
MNRE58	Tractor	FD		TOGITOGIGA	JICS
MNRE59	Tractor	FD		ASAU SAVAI	JICS
MNRE60	Crane Truck (Hyundai)	WRD	RHD	WRD	NAPA
MNRE61	Toyota Flat Deck	FD	LHD	MAOTA	
MNRE62	Toyota Flat Deck	FD	LHD	ASAU	
MNRE63	D/Cab Toyota Hilux Blue	MET	RHD	Mulinuu	JICA
MNRE64	Toyota Hilux 1998	CSD	LHD	TATTE	
MNRE65	Nissan Patrol Grey	Legal	LHD	TATTE	

### Operation and Maintenance:

One of the major tasks that were carried out by the maintenance section is the construction of the Ministry's vehicle garage extension, building of the National Parks office store room at Vailima, construction of the Forestry nursery at Vailima. This does not include their daily maintenance of office buildings and furniture from day to

day and the maintenance of the Vailele Cemetery chain link fence which they have built in the previous financial year and the maintenance of the ministry's fleet from time to time. This team of only 1 senior maintenance officer and 3 casuals are responsible for all the maintenance work required by any division at any time.

## CAPACITY BUILDING SECTION

*Provide effective and efficient services for HR management and staff development through capacity building, environment education, and public awareness.*

### Output Delivery

#### a. Coordinated programs on Capacity Building

##### i. In-country training

Two (2) technical training requests were approved under the In-Country Training Programme (ICT) for the Ministry namely Environmental Noise and Statutory Land Valuation trainings. Other In-country trainings such as the Structural, Assets, Valuation Assessment and Odour Evaluation are scheduled for the next financial year.

##### ii. National Workshops & Training Opportunities

A number of national workshops were coordinated with other Divisions and projects as well as consultations conducted by the section with schools. A number of MNRE staff welcomes the opportunity to participate in both national workshops and international trainings.

- MapInfo Training for the Coastal Mapping Project
- Greenhouse Gas Abatement Workshop
- Samoa Technicians Certification System Workshop
- Integrated Water Resources Management Project (IWRM) Community Consultation
- State of the Environment Report consultations
- Diploma of Government (Project Management)
- Certificate IV in Training and Assessment

##### b. HR Management

The CSD continues to provide advice and guidance to staff on all HR issues pertaining to Working Conditions & Entitlements, R & S, Grievances and other HR matters. The Complaints Review Committee established to review and discuss staff issues have been tasked to promote awareness and implementation of the Ministry's Anti Harassment Policy (2009).

##### c. Staff Training Database & Reports

A total of 90 staff has been fortunate to attend workshops, work attachment, meetings and seminars overseas.

*d. Resource Materials on Environment Education and Public Awareness*

Public awareness program continue to take priority throughout the period as much of the information provided through community consultations, workshops, national environment events, school presentations etc aim to increase understanding and to engage active participation towards sustainable management of resources and the environment.

*e. National Environment Events*

National Environment Week 2012

*g. Media & Communication*

- The Environment Column "Our Environment Our Heritage" Page with the Samoa Observer and Newsline continue to promote and help raise awareness and understanding on environmental concerns and in particular with school children and the general public on various environmental concerns. Prizes provided and sponsor by companies from the business community and projects implementing within the ministry demonstrate their support and recognition to the young generation contribution towards sustainable management of natural resources and the environment.

- The MNRE Newsletter in monthly issues highlight events of each month continues to capture the interest of numerous national and international stakeholders and promote information sharing amongst the divisions on activities. The monthly editions covered articles on overseas trainings and

meetings, ICT trainings, National Events and monthly Earthquake and Rainfall reports. All these feature articles were covered plus each divisions and projects progress monthly work and achievements.

*h. Corporate Review & Compilation of Corporate Documents 2008-2012*

The corporate review involved the Management and all senior staff whom actively participated in the review of the Plan for 2008-2012.

- Completed compilation of the reviewed MNRE Corporate Plan 2008-2011, Management Plan, Capability Plan and Service Charter.
- All documents posted on the website.

*i. Projects*

The two projects are currently on-going i.e.; Samoa National Heritage Project and the National Capacity Self-Assessment Project.



*Environment week 2012*



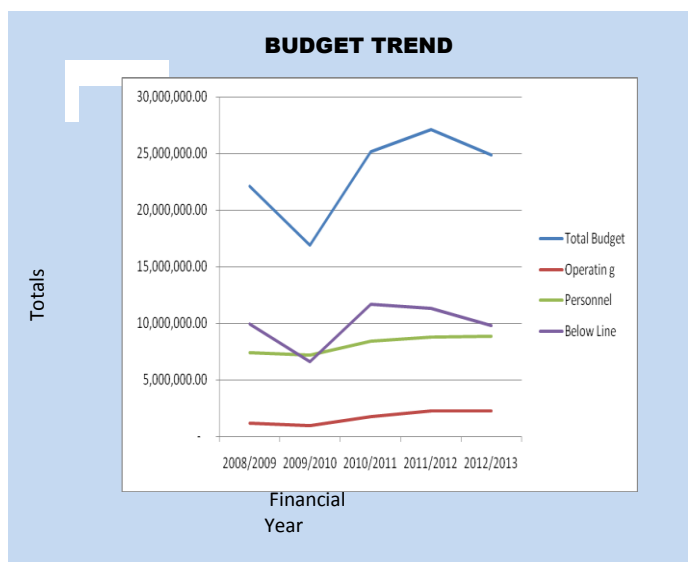
## 1.1 FINANCE SECTION

The finance section is tasked with overall financial management of the Ministry. This includes but not limited to budgetary implications, financial reporting, procurement and payment as well as cost recoveries collection.

### Quantitative Performance

#### 1) Budget

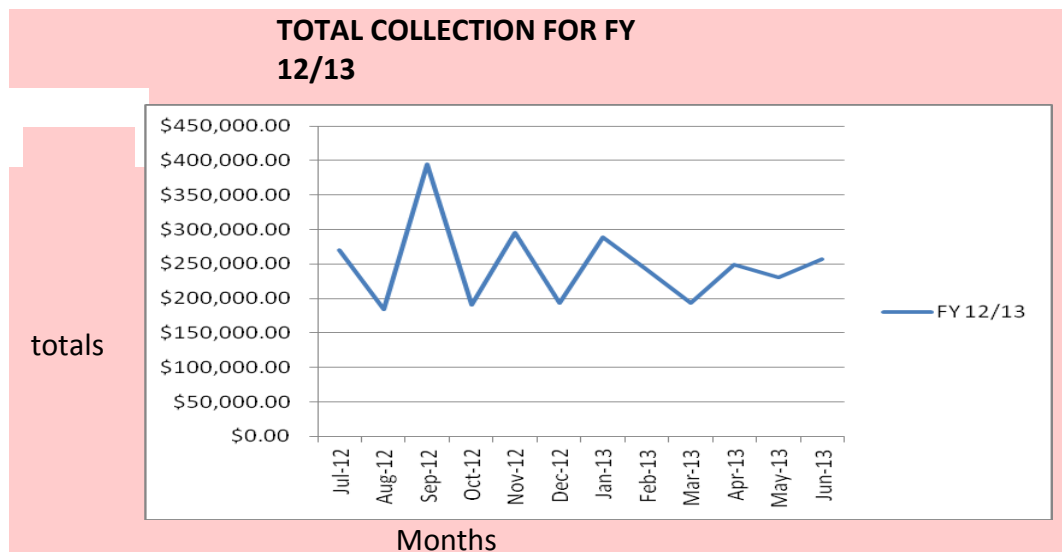
Below is the graph illustrating the overall budget for the ministry for the current financial year with a comparison over the last five years.



There was a slight decrease in total budget for the current year compared to FY 2011/2012. This is due to the high reduction in below line category with the removal of estimates for hosting of two international conferences, which were one off activities. There were also huge reductions in operating budget categories for Division of Environment and Conservation (output5) and Water Resources Division (output 9) in the current year

#### 2) FINANCIAL REPORTING

##### 2a) Cost recoveries



### COST RECOVERIES COLLECTION COMPARISON

Jul-10	\$ 97,953.92	Jul-11	\$ 214,288.98	Jul-12	\$269,560.93
Aug-10	\$ 113,417.00	Aug-11	\$ 284,747.22	Aug-12	\$183,658.69
Sep-10	\$ 78,884.07	Sep-11	\$ 138,072.00	Sep-12	\$ 393,973.00
Oct-10	\$ 212,834.90	Oct-11	\$ 102,353.25	Oct-12	\$190,708.22
Nov-10	\$ 69,079.33	Nov-11	\$ 251,665.47	Nov-12	\$295,152.32
Dec-10	\$ 7,277.50	Dec-11	\$ 126,409.45	Dec-12	\$193,568.83
Jan-11	\$ 48,817.00	Jan-12	\$ 168,816.50	Jan-13	\$289,221.97
Feb-11	\$ 49,651.00	Feb-12	\$ 103,597.28	Feb-13	\$242,660.73
Mar-11	\$ 48,164.67	Mar-12	\$ 113,657.13	Mar-13	\$193,911.80
Apr-11	\$ 61,018.30	Apr-12	\$ 161,714.83	Apr-13	\$248,690.69
May-11	\$ 69,094.94	May-12	\$ 291,665.20	May-13	\$230,942.20
Jun-11	\$ 63,166.50	Jun-12	\$ 279,440.66	Jun-13	\$256,436.46
<b>\$ 919,358.87</b>		<b>\$ 2,236,427.97</b>		<b>\$2,988,485.84</b>	

An inflation in collection in the current year compared to the previous years due to:

- The high collection in stamp duty payments, due to the amount of submissions received and approved by the ministry.

2b) Expenditure  
Outputs provided by the Ministry

Outputs Provided By Ministry

<u>Description</u>	<u>Actuals</u>	<u>% Budget spend</u>	<u>Approved Budget</u>	<u>Remaining funds</u>
<b>2810 - Policy Advice to the Minister of Environ</b>				
Personnel	644,141	99%	650,500	6,359
Operating	375,835	100%	376,139	305
Capital	34,782	100%	34,782	0
<b>TOTAL</b>	<b>\$ 1,054,757</b>	<b>99%</b>	<b>\$ 1,061,421</b>	<b>\$ 6,664</b>
<b>2820 - Ministerial Support</b>				
Personnel	518,092	101%	514,762	- 3,330
Operating	207,414	97%	212,811	5,397
Capital	29,988	82%	36,353	6,365
<b>TOTAL</b>	<b>\$ 755,495</b>	<b>99%</b>	<b>\$ 763,926</b>	<b>\$ 8,432</b>
<b>2830 - Land Management</b>				
Personnel	880,359	100%	883,388	3,029
Operating	159,613	100%	159,886	273
Capital	-	0%	-	-
<b>TOTAL</b>	<b>\$ 1,039,971</b>	<b>100%</b>	<b>\$ 1,043,274</b>	<b>\$ 3,302</b>
<b>2840 - Land Technical Services</b>				
Personnel	678,527	98%	691,668	13,141
Operating	66,337	98%	67,800	1,463
Capital	31,521	99%	31,850	329
<b>TOTAL</b>	<b>\$ 776,385</b>	<b>98%</b>	<b>\$ 791,318</b>	<b>\$ 14,933</b>
<b>2850 - Environment Services</b>				
Personnel	932,313	100%	932,733	420
Operating	243,161	100%	243,668	508
Capital	4,087	82%	5,000	913
<b>TOTAL</b>	<b>\$ 1,179,560</b>	<b>100%</b>	<b>\$ 1,181,401</b>	<b>\$ 1,841</b>
<b>2860 - Forestry Mgmt, Planning, Research Service</b>				
Personnel	1,492,302	98%	1,528,033	35,731
Operating	204,842	98%	208,099	3,257
Capital	-	0%	-	-
<b>TOTAL</b>	<b>\$ 1,697,144</b>	<b>98%</b>	<b>\$ 1,736,132</b>	<b>\$ 38,988</b>
<b>2870 - Meteorological, Hydrological, Geological</b>				
Personnel	942,257	99%	951,162	8,905
Operating	828,495	79%	1,051,410	222,915
Capital	-	0%	-	-
<b>TOTAL</b>	<b>\$ 1,770,752</b>	<b>88%</b>	<b>\$ 2,002,572</b>	<b>\$ 231,820</b>
<b>2880 - Planning &amp; Urban Management Services</b>				
Personnel	527,019	98%	538,931	11,912

Operating	263,324	99%	265,557	2,233
Capital	-	0%	-	-
<b>TOTAL</b>	<b>\$ 790,343</b>	<b>98%</b>	<b>\$ 804,488</b>	<b>\$ 14,145</b>
<b>2881 - Sustainable Water Resources Mgmt</b>				
Personnel	773,290	97%	794,835	21,546
Operating	309,027	89%	346,954	37,926
Capital	136,466	100%	137,000	534
<b>TOTAL</b>	<b>\$ 1,218,783</b>	<b>95%</b>	<b>\$ 1,278,789</b>	<b>\$ 60,006</b>
<b>2882 - Disaster Management</b>				
Personnel	158,126	99%	158,947	821
Operating	127,677	98%	130,209	2,532
Capital	-	0%	1,843	1,843
<b>TOTAL</b>	<b>\$ 285,802</b>	<b>98%</b>	<b>\$ 291,000</b>	<b>\$ 5,197</b>
<b>2891 - Central Services Unit 1</b>				
Personnel	114,811	100%	114,811	0
Operating	14,301	100%	14,301	-
Capital	-	0%	-	-
<b>TOTAL</b>	<b>\$ 129,112</b>	<b>100%</b>	<b>\$ 129,112</b>	<b>\$ 0</b>
<b>2892 - Central Services Unit 2</b>				
Personnel	782,452	100%	785,389	2,937
Operating	318,398	99%	323,184	4,785
Capital	-	0%	-	-
<b>TOTAL</b>	<b>\$ 1,100,851</b>	<b>99%</b>	<b>\$ 1,108,573</b>	<b>\$ 7,722</b>
<b>Total Outputs Provided by Ministry</b>	<b>\$ 11,798,956</b>	<b>97%</b>	<b>\$ 12,192,005</b>	<b>\$ 393,049</b>

The above table summarizes the total expenditure for the ministry in the current financial year.

Most of the budget categories have reached 100% utilization, except some budget lines with spending below prorata. This is mainly due to:

- Low spending in personnel due to vacant positions. These vacancies created as a result of staff promotion either to high positions within the ministry or outside the ministry and emigration.
- Low spending in operating category due to funds not fully committed to the budgeted activities, due to changes in government priorities.

### 3) Issues

- Re-prioritization of approved budgeted activities.
- Staff turnover.
- Absence of procurement plans to guide the spending of each output.
- Some approved initiatives remain unutilized at year end either due to the process or last minute changes in government priorities.

### 4) Human Resources

- 1 Principal Accountant,
- 1 Senior Accountant
- 3 Accounting officers,
- 2 senior account Clerks
- 2 Account Clerks
- 1 Cashier







