



GEF Pacific IWRM Demonstration Project

Rehabilitation and Sustainable Management of the Apia Catchment



Samoa

Final Report

Apia, Samoa

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PREFACE

The implementation of Samoa's IWRM Projects has assisted significantly in raising capacity for sustainable water resources management, not only in the implementing agencies but also within the communities and private sector. Despite the major developments, there still remain a number of significant issues for the Water and Sanitation management:

- Non-revenue water in the urban area is very high at an average of 65%. Water shortages in the urban area during the dry season could be reduced if NRW is reduced
- Urbanisation has led to the encroachment of developments by private land owners into higher grounds/mountain ridges, thus affecting the upper watershed areas. These issues impact on the quality and quantity of the resource as well as creating flood risks on the flood plains.
- Increasing demand on the resource is a priority as more people and development projects move into the urban area. More demand means less water is available in-stream and what limited water is available during the dry season is rationed for water supply.
- Improper septic design especially on the flood plain in the urban area have caused water way pollution from leaks and polluted drainage from overflow during heavy rain.
- Waste disposal into rivers and drains contributes to pollution of the resource.
- Vandalism of rubbish bins, signage and rehabilitated areas
- Effective campaigns on the awareness capacity of the community and public on water resources management issues is still a priority.

Climate variability also remains an issue. Prolonged dry periods as well as heavy rainfall events both contribute to water quantity and quality problems which results in the failure of water treatment plants and non-compliance of water supplies with drinking water standards. Unnatural dry river beds don't support aquatic life, therefore affecting the ecosystems.



Suluimalo Amataga Penaia

Chairperson of the IWRM Project CCC and
IWRM Focal Point Coordinator





1. Water and Sanitation Issues in the Development of the Samoa GEF Pacific IWRM National Demonstration Project

As part of the project planning process a diagnostic analysis study and a hot spot analysis were undertaken to inform project development. The diagnostic analysis was intended to identify the key water management issues and barriers in Samoa to implementing IWRM. The hot spot analysis was undertaken to identify the most appropriate demonstration project for Samoa to support mainstreaming of IWRM. The demonstration scope, based on these assessments, is presented after a summary of the diagnostic and the hot spot analyses.

Diagnostic Analysis

Sustainable development necessitates a balance be maintained between the needs of economic development, public health and environmental protection. Inevitably these three pillars of sustainability create competing and sometimes opposing pressures and demands upon the limited land and water resources of countries. In Small Island Developing States (SIDS) in particular, with limited land mass and even more limited natural water resources, these pressures are a present day reality.

Whilst many SIDS have made great progress to realising sustainable development and achieving the Millennium Development Goals and targets, such endeavour has been generally made through sectoral approaches. In doing so the competitive demands of different sectors are difficult to manage, and the result is a continued increase in population growth, land use and water usage. For some SIDS this demand is now close to exceeding the natural carrying capacity of the islands and watersheds, especially those hosting the country capital. Samoa is no different to many other Pacific SIDS in having to address these challenges at this time, whilst recognising that it, like other SIDS, has limited human and financial resources, and does not have the benefits of the economies of scale that larger countries can utilise.

Samoa consists of two main islands and seven islets. It is rugged and mountainous, with about 40 percent of Upolu and 50 percent of Savaii characterized by steep slopes descending from volcanic crests. The interior of both main islands is still covered with montane forests, and in the case of the highest altitudes on Savaii, cloud forest. These areas also contain volcanic peaks with the Upolu crestal ridge rising to 1,100 m. Savaii has more and younger volcanic cones with the highest peak reaching 1,848 m at Mt. Silisili. West Savaii and north-west Upolu are

almost devoid of surface streams and their associated incised river channels, with uniform terrain and gentler slopes, allowing rapid rainfall infiltration and the development of fresh groundwater lenses.

Of the population of 180,000 people, approximately two thirds live on Upolu, and of them approximately 40,000 live in the capital Apia. The country as a whole has a population density of 63.5 persons/square kilometre, whereas that of Apia has a population density of 570 persons/square kilometre. Not surprisingly the land use in and around Apia is greatly modified from its natural state, with urban development in the coastal plain and low foothills, and periurban development and commercial agriculture in the watersheds.

Water supply in northern, eastern and southern Upolu and eastern Savaii is from surface water intakes, where as that for western Upolu and rest of Savaii is from groundwater. Water shortages are reported during the dry season, especially during extended dry periods associated with the ENSO, in the Apia area on Upolu (served by surface water intakes) and in the Falealupo Peninsula on Savaii (where groundwater is often brackish saline and the population relies upon rainwater harvesting). The Vaisagano Catchment behind Apia provides water for 3 of the 5 hydropower plants in the country. The lack of natural water storage results in these catchments reaching low flow levels within several weeks. Conversely the lack of storage also results in rapid flooding events, with times to peak estimated at less than 3 hours for cyclone and tropical storm associated rainfall events. Flooding in Apia is a recurrent problem.

Water and energy demand is increasing with population wealth, and despite considerable effort in water demand management measures, including metering, leakage detection and repair, tariff incentives and conservation awareness campaigns, per capita consumption of water and power are predicted to rise. With increasing population and landuse pressures, especially around the capital area, land degradation in the catchments is a concern. Inadequate wastewater management and solid waste management in the lower catchments, and increasing vegetation clearance due to urban expansion and cash cropping in the upper catchments not only reduces low flows and increases flash run-off, but also is resulting in perceived increases in erosion, sediment loading and nutrient enrichment of the water courses.



In Savaii logging and forestry are common economic activities in the uplands, whilst in Upolu the northern slopes are continuing to serve the economic expansion of Apia, whilst the southern coastal area is enjoying an expansion of the tourism industry. Collectively these increasing pressures are perceived to be impacting upon public water quality, public health and causing degradation of environmental habitat. Samoa therefore recognises the benefits to be gained by adopting more integrated water resources management approaches. Many of the programmes currently being undertaken demonstrate a commitment to the fundamental IWRM principles.

This diagnostic report allowed a more systematic analysis of the water sector and its linkages to the environment, health, land use, industry and other sectors to be undertaken. The diagnostic outcomes include areas identified requiring institutional strengthening, and a proposed coherent IWRM approach to plan the implementation of these tasks. The ethos of this approach is to build on the activities undertaken to date but to improve the coordinated and integrated planning and management of these activities, moving away from sectoral and institutional delivery, to more effective and efficient collaborative implementation.

Hot spot Analysis

The Pacific Islands Applied Geoscience Commission (SOPAC), have signed an agreement with the Global Environment Facility (GEF) in partnership with the United Nations Development Programme (UNDP) and the United Nations Environmental Programme (UNEP) to develop an innovative programme on Sustainable Integrated Water Resources Management (IWRM).

As part of that, the 'Sustainable Integrated Water Resources and Wastewater Management Project in Pacific Island Countries (PICs)' the 'IWRM Project' was launched and Samoa is beneficiary of that. The scope of this consultancy is part of a logical process that is designed to introduce, enhance and consolidate IWRM approaches and practices into governance structures at the national level as well as at the grassroots levels, such as in the catchments.

This report presents the findings of the Consultant engaged for this assignment. It describes the processes undertaken to achieve the expected outputs and discusses some issues related to IWRM and implications for implementing the full pilot project in Samoa. The close support, assistance and cooperation of all key stakeholders, in particular the National IWRM Focal Point, Mr Suluimalo Amataga Penaia, Assistant CEO of the MNRE and his Water Resources Division staff, made it possible to complete the HSA process and reach consensus on the Demonstration Project in timely manner.

The key outcomes of the given consultancy tasks are as follows:

1. From two consultation workshops held on 28 February and March 2007, the national stakeholders agreed on critical and sensitive areas in Samoa. The Hot Spot areas selected were (1) Apia Catchment (2) Coastal Management (Apia) and (3) Tafa'igata Aquifer; the Sensitive Areas were identified as (1) Faleolo Aquifer (2) Togitogiga Catchment and (3) Irrigation and Rainwater Harvesting Tanumalala and Aleisa districts.
2. The National stakeholders reached consensus after in-depth analysis on the Apia Catchment zone as the Demonstrated Project. Demonstrated Project Concept has been developed and forwarded to SOPAC for comments before finalisation.
3. The collection, synthesis, documentation of information relevant for assisting Samoa in assessing likely co-funding obligations was effected with few difficulties given their sporadic nature, meaning that extra effort was required to obtain them

Determination of Hot Spot/Sensitive Areas

The individual consultations with various key stakeholder agencies proved to be positive platform from which to gain valid information to use for the Hot Spot analysis exercise. It was evident from discussions across the board that each person interviewed from the respective organisations already had clear positions of what they considered to be hot spot/sensitive area requiring attention. The wide ranging issues are reflected in the Summary Table of Issues below. It was also apparent that there was general lack of awareness and appreciation of IWRM principles. Many issues raised appeared to be more sector specific rather than that encompassing sector wide perspective. This sort of attitude however is expected to change with increasing involvement and understanding of the IWRM process.

Amongst the gamut of issues raised, careful analysis and detailed discussion of them resulted in major issues being prioritized for exploration as potential HS and SA at the workshop. They were Vaisigano catchment area, coastal management in Apia, lack of coordination and data exchange within the water sector, the Faleolo aquifer, Togitogiga catchment and inadequate awareness of land and water issues. Given that this initial list was intended to serve merely as starting pointers to generate indepth and focused discussion at the first workshop, it was expected then that some of the issues would be challenged and changes made to the initial list.

With good mix of inter-sectoral participants at the workshop, ranging from CEOs to senior ranked officers from MNREM, SWA, EPC, MWCSO, MoF, MAF, MoH and MESC, open debate and information flowed. Key



concerns raised earlier during the individual interviews were echoed at this forum. In particular, the problem of poor coordination of efforts, resources and data/information within the water sector was highlighted as one that was rather critical as it affected all the agencies and impacted significantly on the utilization of resources. However, as it was identified as an area being addressed under the WaSSP, it was considered best to leave aside so that the funds available for this project were targeted specifically where most needed.

The deliberation and analysis of issues took longer than the actual ranking exercise which followed. A determining factor in the selection process was the concept of replicability of the chosen project to other areas in Samoa or within the Pacific region.

In discussing which issues Samoa should best direct its attention for intervention under this project, water supply although very important was considered lesser priority. This was the general perception of the workshop participants following the WaSSP Management Unit's presentation, demonstrating that regionally, more emphasis was being placed on IWRM and improving water resources management. Over the last decade or so, Samoa has been receiving considerable attention and assistance in improving and rehabilitating its water supply and infrastructure. However, in line with the aims of IWRM, it was emphasized at the workshop that the focus should be on the need to ensure Samoa's water resources are effectively and sustainably developed and managed. In other words, without adequate water resources, there would not be adequate water supply for the country.

Other concerns were discussed in relation to water supply issues, particularly wastewater and sanitation. Notably, these are currently the major focus of an ADB project for improving drainage and wastewater management in urban Apia. Notwithstanding the lengthy discussions over the various issues, it was essential and vital for facilitating better sense of ownership amongst the participants of the IWRM process and recognizing the benefits gained for all the various sectors such as electricity, tourism, agriculture and fisheries etc.

Consensus was reached subsequently on the following respective areas identified as Hot Spots and Sensitive Areas.

Hot Spots

1. Apia Catchment (covering sub-catchments of Vaisigano and Fuluasou)
2. Coastal Management (Apia)
3. Rainwater Harvesting in Aleisa and Tanumalala

Sensitive Areas:

1. Faleolo Aquifer
2. Togitogiga Catchment
3. Tafa'igata Aquifer

The ranking exercise that followed was conducted in the open forum, although the initial plan was to break up into smaller working groups. This decision was unanimous amongst the participants given the climax attained following the discussions/analysis session. The results were later calculated by smaller working group mentioned in the previous section and modified slightly to ensure that the nature of the identified HS/SA were consistent with the provided GEF guidelines and criteria.

The selected Hot Spot area Apia Catchment was examined for suitability in demonstrating the benefits of IWRM. With the concept of IWRM being relatively new in Samoa, it is difficult to assess the effectiveness of previous water resources/supply or water related projects in this context. The success of such projects would normally be measured according to the benefits gained from achieving specific outputs, without giving much heed to the impacts in the wider context.

The Apia Catchment area was considered an appropriate pilot project given its national/regional significance, relevant to its size. The issues present in this catchment impact on all inter-related sub-sectors of the water sector. They have implications for the urban water supply, public power supply, agricultural and recreational activities (eco-tourism), bio-diversity, land use planning as well as fisheries and marine ecosystems. The integrated approach in water resources management is consistent with integrated principles already being practiced in urban planning and the tourism industry.



2. Management of the GEF Pacific IWRM National Demonstration Project in Samoa

The Water Resources Division (WRD) of MNRE was the lead Agency for the Samoa IWRM Demo Project. WRD is part of the Sector Wide Approach Plan (SWaP) formulated under Water Sector Plan and Framework for Action document developed for equitable and sustainable management of Samoa's critical water resources.

WRD is in charge of managing all the water resources of Samoa from water resources management, water resources assessment & monitoring, watershed management, and water resources policy formulation. This division of MNRE is divided in 3 sections. The Hydrology section takes care of all the water resources assessment & monitoring; the Watershed section handles the watershed management of the water resources; while the Policy section looks after all the policies and regulations relating to the water resources.

The Water Resource Division is the sole organization that looks after all the water resources of Samoa both surface and the ground water. This organization provides policies and regulations concerning any water resources of the country as well as providing hydrological assessments and mitigation measures to all the water resources. The WRD leads the Water Resource Management Sub-sector of the Water Sector of Samoa. The other sectors of the Samoa Water Sector include the Water Supply Sub-sector, the Sanitation Technical Committee Sub-sector, the Water Quality Sub-sector, and the Flood Mitigation / Drainage Sub-sector. The sub-sectors each take care of core responsibilities within its scope and is expected to come together bi-monthly under the coordination of the Water Sector Coordinating Unit (WSCU) as a Sector Orientation Technical Steering Committee. This meeting approves and recommend

activities and regulations before finalisation and endorsement from the hierarchy Joint Water Sector Steering Committee.

The IWRM Demo project in Samoa is based in the Watershed section of the Lead Agency Water Resource Division of the MNRE due to its predominant catchment related activities. Even though the IWRM project focuses mainly on watershed management, the project expands its support out to all the various sectors of the water sector in Samoa.

Some of the key national development plans achieved by the WRD thus far are outlined below:

- Water Allocation Policy Drafted
- Village Water Resources Management bi-law
- Watershed Management Plans
- Water Licensing Regulation
- Expanded hydrometric network-Salt water intrusion monitoring bores
- Awareness and Education Campaigns by MNRE/SWA - WWDs and the National Water and Sanitation Day during the Environment Week (Nov)
- NWRIMS (National Water Resources Information Management System)

Lead Agency

Ministry of Natural Resources & Environment (MNRE) - Water Resource Division

Memorandum of Agreement Signed 23rd July 2009

Signed on behalf of MNRE:

Mr Tuuu Ieti Taulealo, Former CEO MNRE

Signed on behalf of SOPAC:

Mr Bahaskar Kao, Deputy Director

IWRM Focal Point Coordinator



Mr Suluimalo Amataga Penaia

National IWRM Project Manager



Mr Sopoaga Sam Semisi



3. Establishment of a Coordinating Body for the Operation of the GEF Pacific IWRM Demonstration Project in Samoa

A national water sector steering committee (WSSC) has been functional since 2006 and serves as an APEX-body that provides overall guidance and direction to most of the water sector projects currently in operation. Its members comprise cross-sectoral senior government officials that are driving the process to achieve water related national goals. Under the WaSSP programme (2006 – 2010), the mechanisms for facilitating better coordination and commitment to IWRM were supported at all levels of the government structures through its institutional strengthening component.

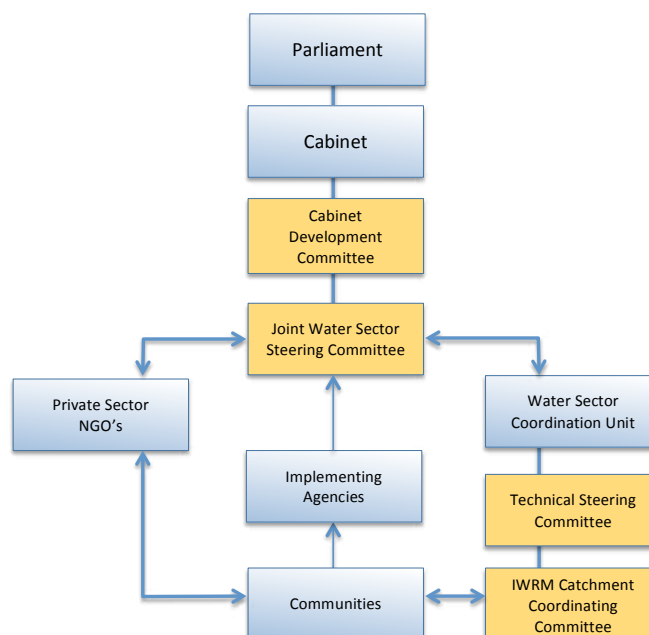
Water for Life was also initiated under WSSC as an ongoing process to stimulate the development of Samoa’s Water and Sanitation sector through a sector-wide approach.

The IWRM Demo Project Coordinating Committee also known as CCC, and IWRM stakeholders comes under the sub-sector committees and it involves many others across the sectors including the private sector, NGO’s, Finance, Tourism, and Health. Our progress and workplan activities are presented to the Technical Steering committee then to the JWSSC as our National coordinating body for the Water Sector.

National Water Sector Steering Committee Members

- o Ministry of Natural Resources & Environment (MNRE) CEO
- o Samoa Water Authority (SWA) CEO
- o Government of Samoa
- o Ministry of Health (MoH) CEO
- o Ministry of Women, Community & Social Development (MWCSD) CEO
- o Ministry of Works, Infrastructure & Transport (MWTI) CEO
- o Ministry of Agriculture (MAF) CEO
- o Electric Power Corporation (EPC) GM
- o Land Transport Authority (LTA) CEO
- o Economic Planning & Policy Division (MoF) ACEO
- o Aid Management & Coordination Division (MoF) ACEO
- o Implementing Agencies Coordinators – ACEOs/Managers (SWA, MoH, MWTI, MNRE/WRD, MNRE/PUMA)
- o Chamber of Commerce
- o SUNGO
- o Independent Water Schemes Association (IWSA)
- o Invited Donors(European Union; ADB and others)
- o TA team leaders of water related projects
- o Secretariat - Water Sector Coordination Unit (WSCU)

Structure of IWRM Committee and links to other National Committees



4. Planning Stakeholder Participation in the Execution of the Samoa GEF Pacific IWRM Demonstration Project

The IWRM project began in 2007 and joined other water sector projects operating around the country. The concept of taking a sector wide approach had gained acceptance at this time and all matters concerning water resources, supply, and wastes were dealt with as a sector. Therefore most of the stakeholders that may have an interest in the IWRM project had already been established through ongoing water sector engagement. The selection process was then focussed on identifying which of the existing water sector stakeholders had a specific interest on the IWRM project and sites using the following steps as a guideline.

1. Identify important stakeholders and their interests
2. Assess the power and influence of stakeholders in relation to the project
3. Determine appropriate project response to each stakeholder/group

4. Plan which stakeholders will participate in the project cycle, when and how
5. Start to identify risks from stakeholders
6. Develop strategy for building participation and stakeholder commitment.

One of the early activities that the IWRM project in Samoa undertook was the engagement of the project stakeholders. It was realised from the beginning of the project the important part that the stakeholders will play in the success of the IWRM project in Samoa. A few months after the start of the project the Samoa IWRM PMU conducted an Inception Workshop for the stakeholders to familiarise them with IWRM project concept and also perform a stakeholders analysis to work out each stakeholders merits and strength toward the project. This exercise was of great benefit to the PMU and it assisted the project realising the input that each stakeholder would contribute to the project.

The following is a list of key stakeholders that were identified through the initial stakeholder analysis.

Stakeholders	Roles
Samoa Water Authority (SWA)	Water Supply, WUE, Sanitation, Water resource demand, Water Safety Plan
Ministry of Health (MOH)	Water Quality, Water Safety Plan
Samoa Tourist Authority (STA)	Tourism information & attraction, Awareness, PES opportunity
Ministry of Agriculture and Fisheries (MAF)	Catchment rehabilitation measures. Unsustainable agriculture activities. Live stock
Ministry of Education, Sports and Culture (MESCC)	Awareness and capacity building
University of South Pacific (USP)	Capacity building – providing technical assistance & advice
Electric Power Cooperation (EPC)	Water Use & Discharge quality and rehabilitation
Ministry of Natural Resources & Environment (MNRE)	Water Resources, Rehabilitation, Mitigation measures, Policy, & Licensing
KEW Consultant	Technical Advice
SUNGO	NGO & community requirements and awareness
Independent Water Scheme Association (IWSA)	Water Use & Community awareness
Catholic Land Board	Watershed conservation, land use activities
Village Representatives	Awareness, Monitoring, Ownership, Rehabilitation measures, Continuity



4.1 Gender Mainstreaming

Gender balancing is a big issue in the Pacific because most meetings and decision making are made by men and through respect and tradition the women are often not heard and are seldom seen around the meetings where communities' important matters are discussed. Samoan people and culture are not immune from these gender issues and are largely a male dominated hierarchy culture. The Samoa culture is mostly focussed on men as leaders of families and its hierarchy is male dominating at the top. In each village the families are led by a high chief who will have other chiefs who are his orators of less status than him. These are large extended families which each chief governs its own household but is centrally controlled by its selected high chief who controls the whole family and mostly males. During village meetings these high chiefs and higher status orator chiefs dominate most of the discussion and women and non-titled men only get to listen through respect and their opinions are not heard. These issues of gender inequality have to be addressed when consulting the community in Samoa.

The IWRM project PMU and the WRD team knowing the culture of Samoa had to come up with ideas to assure that the issue of gender equality is addressed. Whenever consultation with the communities was held different ways of dealing with gender equalities were developed. Depending on the configuration of the attendance, different arrangements with workshop exercises to suit genders were offered. Sometimes in our consultations we broke up gender to have men of high standing, untitled men, women,

and young people forming their own groups for discussion with each recording the outcomes and reporting back to the community during consultation. Other times specific question were posted around the room targeting different genders and people then post their answers anonymously; participants always like these workshops because they are non-threatening and private. Another popular way for approaching gender is to encourage women to lead a group for discussion.

Through experience we found the most successful way to approach engrained attitudes toward gender and power is when inviting community to consultations, specifically request five members per village; the village mayor, a chief representative, a woman representative, a non-titled man representative, and young person representative. During the consultation we will try and break these different groups up in these categories when the workshop activity is on. These will assure that we will have perspective from different gender on discussions of matters

A lot of the issues in the watershed of Samoa have been discussed in terms of equality and during consultations all the information that we gathered are again discussed among the PMU and the WRD who have also an equal representation of genders. There are still issues among the Samoa culture on gender equality at home, church, and village level but the government have realised the importance of women and their role in our society and have put in place strategy to deal with these. These have also been emphasised in our work places to make sure that gender equality is practiced by all.



5. Results Oriented Planning and Implementation of the GEF Pacific IWRM Demonstration Project in Samoa

5.1 Logframe Development

An IWRM Project Stakeholders inception workshop was conducted in December 2009 to review the logframe that was originally developed during the initial stages of the project formation. Minimal changes were made which did not affect the output of the project and this was maintained throughout completion of the project. The only significant change was the time frame for a few activities. The final revision of the logframe for the project was endorsed on early 2012 and it is listed in Annex 4.

5.2 Priority Areas of Work and Results

The following table summarises the priority objectives and activities of the IWRM project. The full project logframe is included with this report as Annex 4.

Project Objectives	Activity
Goal:	
Component 0: Project Management	
Output 0.1 Project Management to deliver successful demonstration project	Activity 0.1.1 Establish PMU and project office
	Activity 0.1.2 Identify stakeholders, including co-funding donors and clarify roles, expectations and responsibilities
	Activity 0.1.3 Manage budgets, deliverable and timelines
	Activity 0.2.1 Establish CCC with Terms of Reference
	Activity 0.2.2 Establish delegated authority for CCC
	Activity 0.2.3 Establish sustainable funding mechanism for CCC beyond the project
Component 1: Policy and Planning, Policy, institutional, and legislative / regulatory requirements in place; Planning and Management tools developed	
Output 1.1 Land Use Plan	Activity 1.1.1 Conduct a Land Use Assessment
	Activity 1.1.2a Draft Land Use Plan incorporating findings of Land use Assessment
	Activity 1.1.2b Consult with community and key and vulnerable stakeholders on Draft Plan
	Activity 1.1.3a Finalise Draft Plan
	Activity 1.1.3b Manage progress of Plan through Cabinet
Output 1.2 Approved revised Water Management Plan (Vaisigano & Fuluasou)	Activity 1.2.1 Review the Plans for the 2 rivers
	Activity 1.2.2 Consult with community of the 2 rivers including key and vulnerable stakeholders
	Activity 1.2.3 Amend & finalise plans
Output 1.3 National IWRM Strategy Implemented	Activity 1.3.1 Amend & finalise plans
	Activity 1.3.2 Consult on Draft IWRM Plan
	Activity 1.3.1 Amend & finalise plans
Output 1.4 Water Safety Plan for Underwater & Surface Water	Activity 1.4.1 Assessment of Water Quality and Quantity
	Activity 1.4.2 Develop the Water Safety Plans
	Activity 1.4.3 Conduct Stakeholders Consultation
	Activity 1.4.4 Finalise the Water Safety Plans
Output 1.5 Reviewed National Water Resources Policy and finalised National Water Service Policy	Activity 1.5.1 Review & finalise National Water Resource Policy
	Activity 1.5.2 Review, update and finalise National Water Service Policy
	Activity 1.5.3 Consult with the whole community, including key and vulnerable stakeholders
Component 2: Rehabilitations and Conservation of the Degraded Areas	
Output 2.1 Data Collection and update of National Water Resources Information Management System	Activity 2.1.1 Identify and confirm priority areas (cadastral survey & etc) for implementation.
	Activity 2.1.2 Procure equipments/assets and collect data for NWRIMS
	Activity 2.1.3 Update NWRIMS and digitise maps (GIS)



Output 2.2 Impact Assessment of land use	Activity 2.2.1 Assess impact of land use and infrastructural new & potentially harmful existing developments
	Activity 2.2.2 Analyse data for soil type classification
Output 2.3 Implementation of pilot priority mitigation measures	Activity 2.3.1 Implement an action plan of priority sites mitigation measures
	Activity 2.3.1a Recommend pilot mitigation measures
	Activity 2.3.2a Assess Task Force report on Malololelei Catholic Land Preservation MCLP
	Activity 2.3.2b Recommend implementation plan for MCLP - Task Force meeting
	Activity 2.3.2c Present recommendation to Stakeholders for approval - CCC meeting
	Activity 2.3.2d Implement Plan MCLP
Output 2.4 Soil, water, and land use monitoring programmed after implementation measures	Activity 2.3.3 Implementation and mitigation measure
	Activity 2.4.1 Develop and implement an annual monitoring plan
Output 2.5 Develop appropriate eco-tourism activities for the Loimata o Apaula & Lanotoo tourists sites	Activity 2.4.2 Update database from current monitoring activities and digitise changes
	Activity 2.5.1 Rehabilitate Loimata o Apaula
Activity 2.5.2 Rehabilitate Lanotoo site (clear track, label native plants, explanation about native birds and history)	
Component 3: Awareness and Capacity Building	
Output 3.1 Sustainable water demand management	Activity 3.1.1 Identify and assess critical areas/sectors for water consumption
	Activity 3.1.2 Develop and implement demand management awareness for targeted sectors
Output 3.2 Awareness, education and capacity development towards watershed users	Activity 3.2.1 Review effectiveness of existing awareness and education programmes and tools
	Activity 3.2.2 Implement awareness and capacity building programme for reviewed/ developed plans
	Activity 3.2.3 Monitoring and evaluation of the programmes

The IWRM project has a quarterly planned stakeholders meeting to discuss progress and future workplan activities. This is the opportunity also for any stakeholder to comment or present any issue relating to the project. This is also the main avenue to engage a stakeholder in the planning, monitoring, and evaluation of project activities. Because the IWRM follows a general but flexible approached on some activities, it is usually able to accommodate for stakeholders reasonable requests

such as needing assistance for rain gauges on a different site or a replacement network computer for data processing. Other stakeholders express their views as they see them in between consultations and we can assist with them.

The following table highlights some of the key national IWRM results to date. The full Results Notes can be found in Annex 5.

Key Results
1. Significant political and financial support from the Government of Samoa watershed management. This includes a commitment to purchase and designate 485 hectares (valued at approximately 81 million Samoan Tala) of upland watershed as a watershed conservation zone. This land was previously under sub-division by the Catholic Church for residential use.
2. Development of Watershed Management Plans (WMPs) for each of the four watersheds of Apia catchment. Key features of the WMPs include establishment of buffer zones and designation natural reserves. This involved an extensive 'community to cabinet' consultative process which has resulted in a commitment by government to finance management plan implementation (valued at ~160 million Samoan Tala) during the period 2013-2017.
3. Mainstreaming of watershed conservation policies into the State of Environment reporting process and the new National Environment Sector Plan Document currently under development. Ongoing efforts include refinement of Samoa's watershed conservation policy to establish a new 'cloud forest' 600 metre exclusion zone to prohibit development at this altitude or higher for the specific purpose if watershed conservation.

The following tables highlights the co-financing that was realised and the additional funding that was leveraged from success of the project activities.

Source	Amount (USD)	Cash or		Description
		Cash	In-kind	
Not indicated	15000	Cash		Administration
Not indicated	10000	Cash		Equipment
Not indicated	10000	Cash		Develop a land use plan
Not indicated	10000	Cash		Review of the watershed management plan (Vaisigano and Fuluasou)
Not indicated	20000	Cash		Develop watershed conservation Policy and Plan
Not indicated	40000	Cash		Develop a water safety plan for underground and surface water
Not indicated	20000	Cash		Review National Water Resources Policy and finalise national water service policy
Not indicated	30000	Cash		Data collection and update of National Water Resources Information Management System
Not indicated	60000	Cash		Assess impacts of land use on water, soil and biodiversity quality
ADB Sanitation Proj.	2000000	Cash		Implementation of pilot priority mitigation measures
Not indicated	60000	Cash		Soil, water, and land use monitoring programme
Not indicated	100000	Cash		Development of appropriate eco-tourism activities
Not indicated	55000	Cash		Water demand management
Not indicated	30000	Cash		Awareness, education and capacity development towards watershed users
Not indicated	45000	In-kind		Salaries/Allowances
Not indicated	37000	In-kind		Administration
Not indicated	10000	In-kind		Equipment
Not indicated	6000	In-kind		Review National Water Resources Policy and finalise national water service policy
Not indicated	10000	In-kind		Data collection and update of National Water Resources Information Management System
Not indicated	10000	In-kind		Assess impacts of land use (including agricultural, infrastructural developments) on water, soil and biodiversity quality
Not indicated	5000000	In-kind		Implementation of pilot priority mitigation measures
	7578000			

Direct from Lead Agency (US\$)		Other Government Agency (US\$)		Private Sector Sources (US\$)		Other Funding Sources (US\$)		Description of Co-Financing Raised
Cash	In-Kind	Cash	In-Kind	Cash	In-Kind	Cash	In-Kind	
500000								ADB for upgrade on WWTP Sogi
20000								Oxfam River clearing
			5000					REHM monitoring
10000			5000					Oxfam/Government staff
			4000					Tools for rehabilitation
			2000					Government
3,000,000		2,999,000						Buying of Land for conservation



5.2.2 Benefits of co-financing

The following boxes present examples of how co-financing and additional funding have helped to benefit the project objectives.

WWTP Waste Water Treatment Plant Sogi

Type: Additional Funding

Donor: ADB Agency

Amount: 2 million tala

Activities and Benefits:

The Waste Water Treatment Plant in Sogi have assisted all the commercial business in the town area to reduce overflow and leakages from septic around the town area. All the septic waste from these commercial buildings has been piped direct to the WWTP. The other major benefit is the wastes from the hospital that used to have many households below it complaining of leakages into the LOA catchment river fouling the water and the neighbourhood. The hospital septic and wastes have now been drain directly into the WWTP



Government Land Buyback Approval

Type: Agency and Government co-financing

Amount: 5 million tala

Activities and Benefits:

The government's approval of the proposal to purchase the Catholic lands that are vulnerable for water resources conservation and its directive to start formulating similar proposals for all the other lands that are susceptible have benefitted the IWRM project greatly. The cost of these lands will be estimated at more than \$100 million but the government have pledge to meet it. Most of the upper regions of the Apia catchment are owned by churches and private land owners and now it is a lot less stressful to propose reserving these lands and removing the land owners for water resources conservation because of the government backing.



6. Strengthening National Coordination and IWRM Policy and Planning in Samoa

6.1 Linkages of Demonstration Activities with IWRM Planning

The IWRM Project is an integral part of the Samoa Water Sector program. Its activities form part of the MNRE Water Resource Division outputs. A Water Sector Coordinating Unit formed to facilitate all the Samoa Water Sectors activities was established in 2010 and became the focal point of all water activities. The success of this Sector wide approach in Samoa has made it easy for the IWRM demonstration project to contribute to all national planning.

The Water Sector is part of the Sector Wide Approach adopted by the Samoa government. Within this Water Sector are 6 sub-sectors; the SWA Water Supply, the IWSA Water Supply, the Water Quality, the Water Resources Management, the Sanitation, and the Drainage and Flood Mitigation. The Water Sector is coordinated by the WSCU (Water Sector Coordinating Unit) a division under the lead agency MNRE (Ministry of Natural Resources and Environment). The IWRM Demo Project is part of the Water Resources Management sub-sector and its Indicators were proposed and aligned to mainly reflect those of the Water Resources Division. These Indicators form parts of the Water Resources Management sub-sector Indicator performance review that will eventually be presented to the National level via JWSSC.

Samoa is now adopting a sector oriented approach to all its ministries and the IWRM project plans are included as part of the water sector plan. The Samoa Water Sector Program is the existing national IWRM Plan of Samoa

6.2 Improving National Coordination for IWRM

The current water sector coordination framework is as follows:

Joint Water Sector Steering Committee (JWSSC)

The Joint Water Sector Steering Committee was endorsed by Cabinet in June 2009 as a permanent Committee and therefore the national apex body for the sector providing overall leadership, policy guidance and monitoring for the Water Sector. This Committee reports to the Cabinet Development Committee (CDC) for the formal approval of new policies and projects. The Committee aims to strengthen coordination efforts to ensure that synergies are maximized while minimizing overlaps and duplication. The JWSSC is supported by the Water Sector Coordination Unit which provides technical secretariat functions.

Technical Steering Committee

The role of the TSC is two-fold; (1) to monitor progress of sub-sector developments and advise JWSSC accordingly and (2) assumes the role of the sector orientation sub-sector and therefore responsible for developing a comprehensive and coherent policy and regulatory framework to guide and govern sector developments.

Sub-sector coordination structures:

SWA Water Supply Sub-sector

IWSA Water Supply Sub-sector

Water Quality Sub-sector

Water Resource Sub-sector

Sanitation Sub-sector

Drainage and Flood Mitigation Sub-sector

The set-up of the sector coordination framework is aligned to sectoral objectives, ensuring sector priorities are being addressed and measured against the sector performance management framework already in place. The IWRM Demo Project in Samoa is part of the Water Resources Sub-sector.

6.3 National IWRM Planning

As a Water Sector and part of a sector wide approach for the Samoa country, we now have a Water For Life Framework for Action 2012-2016 a prioritised 4-year programme based on the key objectives providing a roadmap aiming at achieving its goals with an overarching development goal of "Reliable, clean, affordable water and basic sanitation within the framework of Integrated Water Resources Management, for all people in Samoa to sustain health improvements and alleviate poverty." This overarching goal will contribute towards achieving the Samoa national goal of "For every Samoan to achieve a better quality of life."



7. Capturing Lessons Learned for Replication and Scaling-up of IWRM Best Practice in Samoa

7.1 Lessons Learned

RPCU have provided sufficient support, feedback, and tolerance when needed

The project in Samoa at its initial stage had teething problems such as having a Mechanical Engineer who had never worked in government and never heard of IWRM, Watershed and Catchment before as a Project Manager but the transition into the IWRM was painless due to sufficient support and tolerance from Marc, Ruth, David, and Chris. An understanding and tolerating RPCU is a good lesson

Stakeholder support/ performance

There are many stakeholders such as IWSA, STA, SWA, WSCU, SPREP that joins in with the MNRE stakeholders and support the IWRM project. Perhaps one of the reasons is that we give good sponsorships of their activities. However, some stakeholders just do not support anything that they are not involved in directly like EPC.

Community consultation planning

Putting together 200 community members from 10 different villages for a consultation for the first time is a time consuming and expensive operation. The lesson we learned when only 70 people attended is that we need to be more strategic about who we invite and engage to ensure the most coverage and high-level support.

Engaging proper community committee member

From this episode we learned the importance of researching who is the appropriate leader of an organisation to work with on high-level issues. The Catholic Subdivision issue went on for too long (1 year) as the RTT task force were trying to deal with one representative of the church board. Approaches for a meeting with Mr Fuimaono kept

postponing until finally orders to stop approving any more subdivision were enforced by MNRE as it looked like the church continued to sell its land beyond the 400 proposed acres. Finally the RTT get to meet with the rest of the church board that had no idea about all our dealings with Mr Fuimaono previously. Since then we have reach resolution and mitigation measures are beginning.

Capacity Building

The IWRM Post Graduate Certificate course provided the Samoa PMU with enhanced knowledge and skills to perform its activities. A good lesson learnt.

Holiday Rush

Many activities were not completed or done during the rush of many meetings before the Christmas/New Years holiday. All the schedule activities got stopped as other water sector activities took precedence. The lesson is to allow for holiday rush when scheduling.

Cook Island Study Tour

The Twinning program with Cook Island provided many lessons for us and we are implementing them now such as stop signs on cleaning cars in rivers.

Samoa WWD 2011 Partnership planning between MNRE-WRD and SWA

A successful partnership between MNRE-WRD and SWA personnel in organization the WWD 2011 have now led to many cooperative activities and interaction.



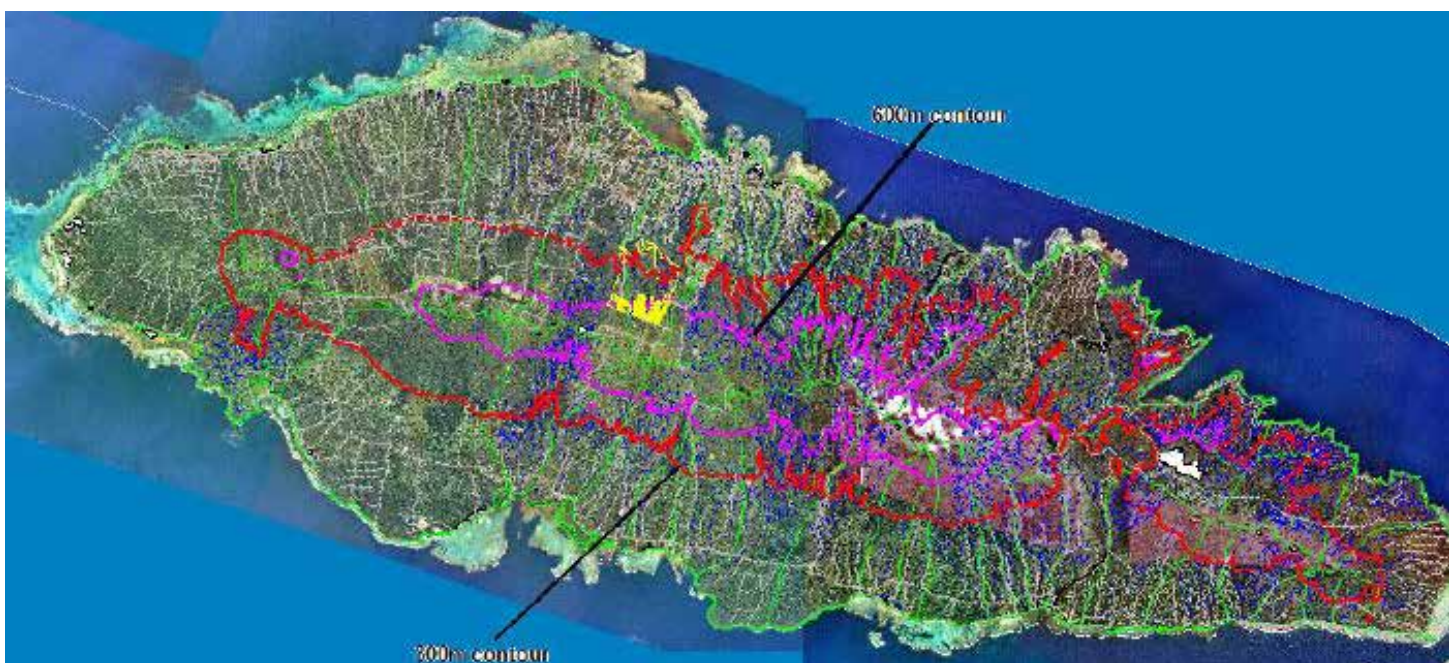
8. Planning the Transition from IWRM to the Regional Ridge to Reef Initiative

8.1 Scaling-Up to broader Integrated Land, Water and Coastal Management

The achievements of the Samoa IWRM Demonstration Project have benefitted the Water Sector's drive to improve the status of the water resources in Samoa. Some of the activities of the project mitigation measures became landmark accomplishments when they reached the higher level of government approval that resulted in directives for up-scaling mitigation measures. One such activity was the proposal to protect the vulnerable watershed regions of the Catholic land being subdivided on the summit of the Apia catchment. The government approved this proposal and have instructed the Water Resources Division to make the same proposal for all private lands that are on the ridge of the Apia catchment. This directive lead the Water Resources Division initiating a plan to formulate a national Water Conservation Policy aimed at protecting the upland of the country for water resources conservation which is one of the mitigation components to be transitioned to the new GEF Ridge to Reef programme. Another of these activities involve the upgrading of the hydrology GIS layer of Samoa as a consequence of increase expertise in GIS mapping through its regular use in the IWRM project activities.

Samoa is in a unique situation because it already has a GEF-STAR national program. The management of this program is directed from the GEF Services Division of MNRE and has already put plans in place for a national coordination committee to overlook its entire GEF project. There is a component already of the Ridge to Reef program of this GEF STAR fund under the SMSMCL project and it is envisage that the IWC GEF Ridge to Reef programme will work side by side with the GEF STAR programme focussing on its own activities but reporting to a coordinated national body that will be in place. The sector wide approach that is adopted by the Samoa Water Sector program will made the formation of a national coordinating arrangement of all the GEF programs transition easy through its current experience and direction.

A proposed summarised logframe for the anticipated IW pilot project is listed as Annex 9 (component 2, & 3 only) as its implementation main components are focus on some up-scaling from the current IWRM project such as taking of land through policy formulation and upgrading GIS layers. The other activities focus on river, coastal & marine ecosystem plans to complete the Ridge to Reef concept





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Annex 1: National Water Sector Steering Committee

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Phone:

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Deputy Chairperson

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Samoa Water Authority CEO

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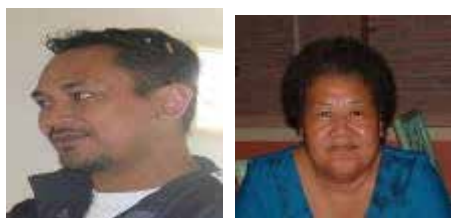
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Annex 2: National Water Steering Committee ToR

TERMS OF REFERENCE WATER SECTOR STEERING COMMITTEE

Roles and Responsibilities:

- Guide sector policy and planning processes
- Mobilize support across sub-sectors and interest groups
- Guarantee quality output
- Monitor water and sanitation policy and programme implementation at a sector-level
- Address key constraints to sector progress and development
- Review and approval of sector plans, investment priorities and the Medium Term Expenditure Framework (MTEF)
- Coordinate donor and Government water and sanitation projects including review and approval of Appraisal Reports, Financial Agreements, Annual Work Programmes, Mid-term Evaluation and Final Evaluations
- Endorse TA Inception reports, TA Final Reports

Meeting Schedule:

- Regular JWSSC meetings will be held quarterly on 1st Wednesday of every month
- Extraordinary JWSSC meetings may be organized as and when required, eg: to discuss (joint) donor identification, (pre)appraisal, monitoring and evaluation missions, special themes and urgent issues

SECTOR ORIENTATION TECHNICAL STEERING COMMITTEE

Roles and Responsibilities:

- Develop of sector policies, strategies and plans for JWSSC review
- Review and approve annual planning documents for the sector projects and sub-components
- Review technical progress versus planning for the sector projects and sub-components
- Review financial progress (commitment vs. disbursement) versus planning for sector projects and subcomponents
- Review and approve expert inputs (ToR) and outputs (technical reports)
- Review and endorse TA-Inception Report and Final Report
- Identify problems and recommend solutions
- Identify policy issues and serious and/or structural problems to be forwarded to JWSSC for consideration

WATER SUPPLY SUB-SECTOR – INDEPENDENT WATER SCHEMES WORKING GROUP

Objectives:

- To strengthen institutional capacity to manage, develop and self sustain independent water-services systems
- To increase access to safe water supply
- To improve the efficiency and effectiveness of water systems

Roles and Responsibilities:

- Oversee overall implementation of Samoa Water Authority – water supply sub-sector tasks
- Plan implementation of working group activities based on approved budgets
- Prepare annual budgets and workplans for sub-component



- Monitor achievement of sub-component activities and report to TSC
- Prepare annual narrative reports on progress of subcomponent
- Promote dialogue and coordinate tasks for the implementation of activities
- Make decisions regarding implementation of activities
- Monitor and approve expenditure for working activities
- Make recommendations for the endorsement of the TSC• Develop project proposals for submission to donors/government through TSC/JWSSC
- Identify problems and recommend solutions
- Report major constraints/policy issues for consideration of TSC/JWSSC

Meeting Schedule:

- Monthly

SANITATION TECHNICAL COMMITTEE – SUB SECTOR

Objective:

- To reduce the detrimental public health and environmental impacts of inadequate sanitation facilities

Roles and Responsibilities:

- Oversee overall implementation of Sanitation subcomponent tasks
- Plan implementation of working group activities based on approved budgets
- Prepare annual budgets and workplans for subcomponent
- Monitor achievement of related water sector indicators
- Monitor progress of subcomponent activities and report to TSC
- Prepare annual narrative reports on progress of subcomponent
- Promote dialogue and coordinate tasks for the implementation of activities
- Make decisions regarding implementation of activities
- Monitor and approve expenditure for working activities
- Make recommendations for the endorsement of the TSC
- Develop project proposals for submission to donors/government through TSC/JWSSC
- Identify problems and recommend solutions
- Report major constraints/policy issues for consideration of TSC/JWSSC

Meeting Schedule:

- Monthly

WATER RESOURCES MANAGEMENT – SUB SECTOR

Objective:

- To set development within a sustainable water resources management framework

Roles and Responsibilities:

- Oversee overall implementation of water resources management sub-sector tasks
- Plan implementation of working group activities based on approved budgets
- Prepare annual budgets and workplans for sub-component
- Monitor achievement of related water sector indicators

TERMS OF REFERENCE WATER SECTOR STEERING COMMITTEE

Roles and Responsibilities:

- Guide sector policy and planning processes
- Mobilize support across sub-sectors and interest groups
- Guarantee quality output
- Monitor water and sanitation policy and programme implementation at a sector-level
- Address key constraints to sector progress and development
- Review and approval of sector plans, investment priorities and the Medium Term Expenditure Framework (MTEF)
- Coordinate donor and Government water and sanitation projects including review and approval of Appraisal Reports, Financial Agreements, Annual Work Programmes, Mid-term Evaluation and Final Evaluations
- Endorse TA Inception reports, TA Final Reports

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- Develop of sector policies, strategies and plans for JWSSC review • Review and approve annual planning documents for the sector projects and sub-components
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- Review and approve expert inputs (ToR) and outputs (technical reports)
- Review and endorse TA-Inception Report and Final Report
- Identify problems and recommend solutions
- Identify policy issues and serious and/or structural problems to be forwarded to JWSSC for consideration

WATER SUPPLY SUB-SECTOR – INDEPENDENT WATER SCHEMES WORKING GROUP

Objectives:

- To strengthen institutional capacity to manage, develop and self sustain independent water-services systems
- To increase access to safe water supply
- To improve the efficiency and effectiveness of water systems

Roles and Responsibilities:

- Oversee overall implementation of Samoa Water Authority – water supply sub-sector tasks
- Plan implementation of working group activities based on approved budgets
- Prepare annual budgets and workplans for sub-component



- Monitor progress of sub-component activities and report to TSC
- Prepare annual narrative reports on progress of subcomponent
- Promote dialogue and coordinate tasks for the implementation of activities
- Make decisions regarding implementation of activities
- Monitor and approve expenditure for working activities
- Make recommendations for the endorsement of the TSC
- Develop project proposals for submission to donors/government through TSC/JWSSC
- Identify problems and recommend solutions
- Report major constraints/policy issues for consideration of TSC/JWSSC

Meeting Schedule:

- Bi-Monthly

TERMS OF REFERENCE CATCHMENT COORDINATING COMMITTEE

Background Information

While the concepts and approaches of Integrated Water Resource Management (IWRM) has long been practiced in PICs at the traditional level, an agreement between SOPAC and GEF in partnership with UNDP and UNEP to develop an innovative programme on IWRM in the Pacific region, has formalized the development of these concepts into IWRM approaches to be implemented nationally and more practically at the catchment level. The long term objective of the IWRM project is to assist the Pacific Island countries to implement applicable and effective IWRM and water use efficiency (WUE) plans in the region.

In line with requirements of the project, Samoa is to develop a full size project brief to be submitted to the GEF Secretariat by November, 2007. A Diagnostic Report which gives a review of national water management, its linkages to other sectors and identifies barriers to preventing IWRM and how to overcome them has been developed. Parallel to this is the Hot Spot Analysis (HSA) which is an assessment and identification of national priority issues that needs to be addressed immediately.

Following the approval of the Demonstration Concept Paper (DCP), Samoa is now preparing its full demonstration project brief focusing on the rehabilitation and sustainable management of the Apia Catchment to improve the quality and quantity of the water resources for enhanced water supply and hydropower generation, socio-economic advancement and reduced environmental adverse impacts.

To coordinate and monitor the project implementation a Task Force comprising of key stakeholders (governmental agencies and ministries, NGOs, professional associations and community) with key water responsibilities and interests is to be established and formalized. The Task Force led by the National IWRM focal point (MNRE) will coordinate and monitor the implementation of the project.

The Task Force will be referred to as the 'Catchment Coordinating Committee' (CCC) comprising of members at the CEO/ACEO-level. The IWRM program strongly supports gender balance and this will be sought in the composition of the CCC. The CCC will be responsible for ensuring the smooth implementation of activities and achievement of outputs in line with the DCP.

Main Tasks

Task 1 Monitor and coordinate implementation of project as per Demonstration Project Proposal (DPP)

Task 2 Ensure that a range of issues is considered increasing the potential for pilot transfer and replication (Linkages)

Task 3 Conduct monthly meetings to ensure the smooth implementation and good progress of activities

Task 4 Assess and monitor activities to be outsourced

Task 5 Assess key implementing agencies annual work plans to be in line with project work programme

Task 6 Review financial activities in line work programs

Task 7 Assess and endorse budget proposals

Task 8 Review & endorse quarterly progress reports to SOPAC

Duration

The CCC may be retained for such a period of time, should the project replicated to other areas of Samoa.

COMPOSITION:

Ministry of Women, Culture & Social Development – Meia Sua
Ministry of Education, Sports and Culture – Tamasoalii Saivaise
Ministry of Agriculture & Fisheries – Leota Laumata/Sina Moala
Ministry of Health – Mele Tanielu
Ministry of Works and Infrastructure – Amosa Pouoa
Samoa Tourism Authority – Christina Gale, Eira Elisara
Samoa Water Authority – Martin/Ruth
Electric Power Corporation – Taulealea
SUNGO – Vaasilifiti Moelagi Jackson
Ministry of Natural Resources & Environment –
PUMA-Jude Kolhase,
DEC- Toni Tipamaa,
Forestry – Maturo Paniani
Land Management - Filisita Heather
Technical – Petania Tuala,
Corporate Services – Elisaia Talouli
University of the South Pacific – David Hunter, Ioane Malaki
SPREP – Vainuupo Jungblut
UNDP –Meapelo



Annex 3: Stakeholder Analysis and Engagement Action Plan

Stakeholder Analysis		Action plan for stakeholder engagement									
Demonstration Project Component 1 / 2 / 3 / 4 / 5 / 6 / 7		[For inclusion in annual workplan (and budget) if appropriate]									
Component focus... Conservation and Rehabilitation measures/plans implemented in priority areas of the Apia Catchment.....											
1 Stakeholder (Organisation/post/ name/contact)	2 Key concerns	3 How does the project affect them?	4 How will they be affected? ++; +; =; -; --	5 How much influence will they be? Very 5 - 0	6 Priority to engage Top 5 - 0	7 What do we need to do?	8 What do we do to engage them? (to get what we need)	9 When do we do to engage them?	10 Who leads?		
1. MAF Titia Faleupolu Sina.moala@aphd.gov.ws	Link between education and IWRM project	3	Lessons learnt for education	3	Attend meeting and assist in school consultation	Continuous communication	Now	PMU			
2. MESC T Saivase tsaivase@mesc.gov.ws	Want to assure project financial good practice is maintained	4	Mutual	5	Accepts request for spending. She controls the finance	Get on her good side	Now	Shared responsibility			
3. Lita lamafana – Accountant manager lita.lamafana@mof.gov.ws											
4. EPC											
5. IPES Dr Peseta Konelio Tone Vice President IPES	The technical and engineering site of the project	2	Mutual	2	Attend meetings	Run stakeholder awareness program so they can understand and support	Should be already	PMU			
6. SUNGO Roina Vavatau sungomanagement@lesamoa.net	Non government organisation representative	4	Mutual	4	Attend meeting	Run stakeholder awareness program so they can understand and support	Now	PMU			
7. STA Eira eira@samoa.travel	Tourism perspective	4	Tourism sites and eco-tourism	4	Promote IWRM in the tourism sector	Run stakeholder awareness program	Now	PMU			
8. SPREP Seiuli Vainuupo – Ramsar officer vainuupo@sprep.org	Want good water management practice	5	Increase awareness of water utilisation	5	Advise on mainstreaming & gender balancing	Make him involve in stakeholder awareness program	Now	PMU			
9. MWCSD Meia Sua – HOPT meia@health.gov.ws	Want an adequate supply of clean water Want to change pig effluent management practice	4	Increase water utilisation awareness	5	Inform community of IWRM. She will have with gender mainstreaming in community	Request her assistance during awareness	Now	PMU			

	Water quality and water safety plans	Water safety work	Water safety plan	++ 5	4	Attend meeting and recommend implementation	stakeholder awareness program	Now	PMU
10 MOH Kassandra Betham – Manager kassandraB@health.gov.ws									
11 SWA Lautua Faafo – Asset Manager lautua@swa.gov.ws	Water supply of the Apia catchment	Water Safety planning for Fuiuasou alaoa	++ 5	5	Attend meetings	Run stakeholder awareness program so they can understand and support	Should be already	PMU	
12 MNRE-CES Eisaia Talouli – ACEO elisaia.talouli@mnre.gov.ws	Corporate service of the MNRE	Deal with all the purchasing requirements of the project	++ 4	4	Attend meetings	Run stakeholder awareness program so they can understand and support	Should be already	PMU	
13 MNRE-DEC Toni Tipamaa Toni.tipamaa@mnre.gov.ws	Adequate and reliable supply of water. Minimise flood damage. Change pig management practice	Increase in awareness of water utilization. Authority/Aim/Work/Budget/Status.	++ 5	5	Advice on conservation	Share knowledge	Now	PMU	
14 MNRE-Forestry Maturu Paaniani – ACEO Forestry Maturu.paaniani@mnre.gov.ws	Adequate and reliable supply of water. Minimise flood damage. Change pig management practice	Increase in awareness of water utilization. Authority/Aim/Work/Budget/Status.	++ 5	5	Utilise already formed community network	Attend meeting of Forestry programme	Now	PMU	
15 MNRE-LM Natasha Kolose - PSLMO Natasha.kolose@mnre.gov.ws	Promotion of SLM practices in management of degraded watershed areas		++ 4	5	Input on SLM practices	Communicate and request feedback	During consultation	PMU	
16 MNRE-Technical Petania Tuala petania.tuala@mnre.gov.ws	Technical section responsible for mapping and GIS needs	Provide assistance on GIS requirements of the project	++ 5	5	Attend meetings and assist on technical needs	Already engaged	Already	PMU	
17 MNRE-WRD Sulimato Penaia – ACEO WRD amataga.penaia@mnre.gov.ws	Adequate and reliable supply of water. Minimise flood damage. Change pig management practice.	Increase in awareness of water utilization. Authority/Aim/Work/Budget/Status.	++ 5	5	Attend meetings and suggest ways to implement the project successfully	Focal Point is aware of his contribution	Already involved	Focal Point & ACEO	
18 MNRE-WRD Sam Semisi – PM IWRM	Adequate and reliable supply of water.	Lead to increase in awareness of water	++ 5	5	Manage the project	Project Manager	Already involved	Project Manager	

Annex 4: IWRM Logframe

Samoa IWRM Project Logframe (2013)

Narrative Summary	Outputs	Baseline indicators	Performance Indicator/Target	Monitoring Mechanism	Assumptions and Risk	Responsible Agency
<p>Overall Goal The Apia Water Catchment is a well managed water resource ensuring appropriate and sustainable management and continued availability of quality water to meet all reasonable health, environmental & economic development needs.</p>	<ul style="list-style-type: none"> Sustainable management of Apia Catchment. 	<ul style="list-style-type: none"> Hot Spot Report 85% score <ul style="list-style-type: none"> Severe degradation of catchment zone Water quality & quantity not acceptable Water pollution level especially downstream very high Eutrophication of solids Community Baseline survey confirms the lack of knowledge in the community regarding integrated water resource management. 	<ul style="list-style-type: none"> Improved living standards Water-quality standard increase (percentage indicator currently 64%) and met target every year. Water-related health statistics Community confident in practicing IWRM concept 	<ul style="list-style-type: none"> Government department such as MNRE, MOH, MESC and MOH monitoring programs and statistic surveys will. IWRM concept familiar to all from another baseline survey on the project life. 	<p>Natural disaster of information Reliable & accuracy Willingness of the community to participate. Government will. Co-funding organisational capacity to deliver outcomes</p>	<p>MNRE- WRD, MOH, MESC</p>
<p>Purpose Improved water resources and wastewater management in the Apia Catchment</p> <p>Improved environmental conditions/water quality and public health</p>	<ul style="list-style-type: none"> Improved agricultural practices within the Apia Catchment and Farmers to be aware of the soil erosion danger of farming slopes and catchment deep slope areas to be protected from cultivations and cattle farming Reduced water and soil pollution and contamination in the CBD area particularly in Fugalei area Policy, institutional and legislative framework in place Wastewater and drainage master plans prepared Reduced incidence of water-related diseases verify by update MOH data Wastewater treatment plant in place 	<ul style="list-style-type: none"> Community farming on river banks and cutting trees on slopes. FAO report on soil erosions around catchment due to farming bad practices No wastewater program in place Individual treatment plants for few building complex No sewer system for the whole CBD Lack of water management awareness in the community 	<p>By 2013</p> <ul style="list-style-type: none"> Community consultations attend by farmers willing to give agro-forestry a go Tree planting starting be rehabilitated around catchment slopes Awareness programs will address Good Agriculture Practices GAP Environmental implication of poor water resources management / household individual responsibility Regulatory and administrative procedures and support IWRM principles WW treatment in operation by 2010 Community and government departments working together on 	<ul style="list-style-type: none"> Feedback from farmers and community Community practicing agro-forestry MNRE 1 million tree utilise by Apia catchment Monitoring of appropriate agricultural practices within the catchment (MNRE & MAFF) Progress of WWT construction & reports Water quality monitoring in surface water drains (WRD MNRE) Householder surveys Business surveys PUMA environmental monitoring reports Household surveys Ministry of Health data 	<p>MNRE implements catchment's monitoring plan in collaboration with MAFF</p> <p>MNRE continue to plan and manage water resource quality Stakeholder support and willingness to accept mitigation action</p> <p>No natural disaster and WWT design work Institutional, regulation, and policy initiatives not implemented Political support for catchments management continues</p>	<p>MAFF, MNRE- WRD, MNRE- FORESTRY</p>

				environment good practices <ul style="list-style-type: none"> • Apia catchment becomes a model for scaling up project internationally for environmental principle 				
Component 0: Project Management								
Effective and timely delivery of IWRM Project; developed capacity of PMU and CCC								
Output 0.1 Project Management to deliver successful demonstration project	<ul style="list-style-type: none"> • Delivery of successful demonstration project 	<ul style="list-style-type: none"> • PMU not established yet 	<ul style="list-style-type: none"> • Project delivered on time and budget, with a replication strategy in place at a national level • Project PM&E plan endorsed by CCC by Jun 2012 	<ul style="list-style-type: none"> • Project reporting 	<ul style="list-style-type: none"> • Ongoing political commitment. Co-funding partners deliver externally funded activities. Capacity to attract and retain suitable personnel 			MNRE-WRD
Activity 0.1.1 Establish PMU and project office	<ul style="list-style-type: none"> • Establishment of PMU and project office 	<ul style="list-style-type: none"> • No PMU 	<ul style="list-style-type: none"> • PMU and office established 	<ul style="list-style-type: none"> • Project Reporting 	<ul style="list-style-type: none"> • Capacity to attract and retain suitable personnel 			
Activity 0.1.2 Identify stakeholders, including co-funding donors and clarify roles, expectations and responsibilities	<ul style="list-style-type: none"> • Stakeholder communication and engagement strategies (such as quarterly meetings & updates) developed and targeted to optimise engagement and project success 	<ul style="list-style-type: none"> • Stakeholders to be established 	<ul style="list-style-type: none"> • Stakeholder communication strategy endorsed by CCC • Stakeholder roles and responsibilities report endorsed by CCC 	<ul style="list-style-type: none"> • CCC Meeting minutes 	<ul style="list-style-type: none"> • Changes throughout project have the potential to change project focus 			
Activity 0.1.3 Manage budgets, deliverable and timelines	<ul style="list-style-type: none"> • Project delivered on time and on budget • Project PM&E plan implemented 	<ul style="list-style-type: none"> • No PMU • No baseline 	<ul style="list-style-type: none"> • Project delivered on time and budget • Project PM&E plan endorsed by CCC by Jun 2012 	<ul style="list-style-type: none"> • Project Reporting and audits • CCC Minutes 	<ul style="list-style-type: none"> • Further changes to GEF budgets or co-funding may compromise all three components. Risks identified above also likely to impact on budgets, deliverables or timelines 			
Output 0.2 Establishment of sustainable CCC	<ul style="list-style-type: none"> • CCC established with authority and sustainable funding mechanism 	<ul style="list-style-type: none"> • CCC to be established 	<ul style="list-style-type: none"> • CCC established with delegated authority and sustainable funding mechanism 	<ul style="list-style-type: none"> • CCC meeting minutes 	<ul style="list-style-type: none"> • Ongoing political commitment to support governance at catchment level. Capacity to attract and retain suitable personnel for CCC 			MNRE-WRD



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Activity 0.2.1 Establish CCC with Terms of Reference	<ul style="list-style-type: none"> CCC established and operating 	<ul style="list-style-type: none"> No delegated governance body at catchment level 	<ul style="list-style-type: none"> CCC established with ToR. Members appointed to CCC 	<ul style="list-style-type: none"> CCC meeting minutes 	<ul style="list-style-type: none"> Ongoing political commitment to support governance at catchment level. Capacity to attract and retain suitable personnel for CCC 	
Activity 0.2.2 Establish delegated authority for CCC	<ul style="list-style-type: none"> CCC delegated to decide on funding and management of catchment 	<ul style="list-style-type: none"> No delegated governance body at catchment level 	<ul style="list-style-type: none"> CCC delegated authority on funding and management of catchment 	<ul style="list-style-type: none"> Cabinet minutes and FK forms 		
Activity 0.2.3 Establish sustainable funding mechanism for CCC beyond the project	<ul style="list-style-type: none"> CCC funded through sustainable funding mechanism, ensuring continuity of actions 	<ul style="list-style-type: none"> No delegated governance body at catchment level 	<ul style="list-style-type: none"> Sustainable funding mechanism established prior to project completion 	<ul style="list-style-type: none"> FK forms (this is government directive for approval of any request) 	<ul style="list-style-type: none"> Ongoing political commitment; positive community response 	
Output 0.3 Replication strategy developed and implemented to mainstream lessons learned	<ul style="list-style-type: none"> Replication Strategy developed and implemented 	<ul style="list-style-type: none"> No replication 	<ul style="list-style-type: none"> Replication report endorsed by RTAG or independent auditor by end of project Technical Replication report endorsed by RTAG or independent auditor by end of project 	<ul style="list-style-type: none"> RTAG Minutes NWSSC Minutes 	<ul style="list-style-type: none"> Capacity to clearly identify relevant lessons for adoption 	MNRE-WRD
Activity 0.3.1 Develop Replication Strategy	<ul style="list-style-type: none"> Replication Strategy implemented 	<ul style="list-style-type: none"> No replication 	<ul style="list-style-type: none"> Replication strategy endorsed by CCC 	<ul style="list-style-type: none"> CCC meeting minutes 	<ul style="list-style-type: none"> Capacity 	
Narrative Summary	Outputs	Baseline indicators	Performance Indicator/Target	Monitoring Mechanism	Assumptions and Risk	Responsible Agency
Activity 0.3.2 Replication project lessons and technical components	<ul style="list-style-type: none"> Project replicated 	<ul style="list-style-type: none"> No replication 	<ul style="list-style-type: none"> Replication report endorsed by RTAG or independent auditor by end of project Technical Replication report endorsed by RTAG or independent auditor by end of project 	<ul style="list-style-type: none"> RTAG Minutes NWSSC Minutes 	<ul style="list-style-type: none"> Capacity to clearly identify relevant lessons for adoption 	

auditor by end of project	Component 1: Policy and Planning	Policy, institutional, and legislative / regulatory requirements in place; Planning and Management tools developed	Division meetings & Policy division monthly reports.	Personnel dedication and schedule execution. Political will and commitment.	MNRE-WRD, FORESTRY, DEC, PUMA,
Output 1.1 Land Use Plan	<ul style="list-style-type: none"> Land Use Plan by Approved Cabinet 	<ul style="list-style-type: none"> Land Use Plan being proposed through the system 	<ul style="list-style-type: none"> Land Use Plan assessment to be finalised by 2011 and ready for Cabinet approval in end 2012. 	<ul style="list-style-type: none"> CCC Meeting minutes 	
Activity 1.1.1 Conduct a Land Use Assessment validating maps & different land use activities to inform planning decisions and consult with community on assessment results	<ul style="list-style-type: none"> Land Assessment carried out 	<ul style="list-style-type: none"> No assessment on land use available 	<ul style="list-style-type: none"> Land Use assessment carried out on Apia Catchments Community consultation on result assessment 	<ul style="list-style-type: none"> Schedule fulfilment 	
Activity 1.1.2a Draft Land Use Plan incorporating findings of Land use Assessment	<ul style="list-style-type: none"> Draft Land Use Plan 	<ul style="list-style-type: none"> No assessment 	<ul style="list-style-type: none"> Draft Land Use Plan ready for consultation 	<ul style="list-style-type: none"> CCC Approval 	<ul style="list-style-type: none"> Personnel dedication
Activity 1.1.2b Consult with community and key and vulnerable stakeholders on Draft Plan	<ul style="list-style-type: none"> Consultation undertaken 	<ul style="list-style-type: none"> Nothing started 	<ul style="list-style-type: none"> Consultation Report outlining the stakeholders consulted and response 	<ul style="list-style-type: none"> Consultation 	<ul style="list-style-type: none"> Sound consultation process able to elicit consolidated feedback
Activity 1.1.3a Finalise Draft Plan	<ul style="list-style-type: none"> Land Use Plan 	<ul style="list-style-type: none"> Not started 	<ul style="list-style-type: none"> Land Use Plan for submission to Cabinet 	<ul style="list-style-type: none"> CCC Approval 	<ul style="list-style-type: none"> Positive community response
Activity 1.1.3b Manage progress of Plan through Cabinet	<ul style="list-style-type: none"> Cabinet approved Land Use Plan 	<ul style="list-style-type: none"> Not started 	<ul style="list-style-type: none"> Land Use Plan approved by Cabinet 	<ul style="list-style-type: none"> Cabinet FK and Minutes 	<ul style="list-style-type: none"> Strong Political will and commitment.



Narrative Summary	Outputs	Baseline indicators	Performance Indicator/Target	Monitoring Mechanism	Assumptions and Risk	Responsible Agency
Output 1.2 Approved revised Water Management Plan (Vaisigano & Fuluasou)	<ul style="list-style-type: none"> Existing Water Management Plan for Vaisigano & Fuluasou reviewed and approved Increase in land protected and/or rehabilitated over the catchment 	<ul style="list-style-type: none"> Existing Water Management Plans for Vaisigano & Fuluasou outdated. Reserves declared by Cabinet/Minister at 1 January 2009 	<ul style="list-style-type: none"> Management plans for the 2 rivers to be approved before the schedule National Water Services Policy approved by July 2012 Catchment zones of 2,000 ha declared in regulations 	<ul style="list-style-type: none"> Cabinet Directives for policy approval National Regulations 	Community/Government commitment and support	MNRE-WRD
Activity 1.2.1 Review the Plans for the 2 rivers	<ul style="list-style-type: none"> Review existing Water Management Plan for the 2 rivers 	<ul style="list-style-type: none"> Old Water Management Plans for Vaisigano & Fuluasou 	<ul style="list-style-type: none"> Water Management Plans review 	<ul style="list-style-type: none"> CCC & Division meeting 	Lessons learnt from existing plans	
Activity 1.2.2 Consult with community of the 2 rivers including key and vulnerable stakeholders	<ul style="list-style-type: none"> Stakeholders consultation 	<ul style="list-style-type: none"> Stakeholders analysis been undertaken 	<ul style="list-style-type: none"> Consultation Report 	<ul style="list-style-type: none"> Consultation report endorsed by CCC 	Sound consultation process able to elicit consolidated feedback; Community support	
Activity 1.2.3 Amend & finalise plans	<ul style="list-style-type: none"> Water Management Plans for the 2 rivers reviewed and finalised 	<ul style="list-style-type: none"> Plans existed but outdated 	<ul style="list-style-type: none"> Revision of outdated water management plans 	<ul style="list-style-type: none"> Water Management Plans endorsed by CCC then Cabinet 	Community support and Government commitment	
Output 1.3 Water Safety Plan for Underwater & Surface Water.	<ul style="list-style-type: none"> Approve Water Safety Plans for Vaisigano & Fuluasou Catchment first then and develop a Water Safety Plan for the nation from there 	<ul style="list-style-type: none"> Water Safety Plans for Vaisigano & Fuluasou pending approval 	<ul style="list-style-type: none"> Legislation for Water Resource Management effective by December 2012 Water Safety Plans for underground & surface water developed by June 2012 	<ul style="list-style-type: none"> Progress Report & meetings 	Government & stakeholders commitment.	MNRE-WRD
Activity 1.3.1 Assessment of Water Quality and Quantity	<ul style="list-style-type: none"> Assess water quality & quantity for the 2 catchment. Current data and compare with existing historical ones Water Safety Plans developed 	<ul style="list-style-type: none"> Hot spot analysis preliminary tests 	<ul style="list-style-type: none"> Assessment & specimen tests ongoing till 2011 	<ul style="list-style-type: none"> Reports endorsed by CCC 	Capacity to attract and retain suitable personnel	
Activity 1.3.2 Develop the Water Safety Plans	<ul style="list-style-type: none"> Water Safety Plans developed 	<ul style="list-style-type: none"> No Water Safety Plan in place 	<ul style="list-style-type: none"> Plan to be drafted by mid 2012 	<ul style="list-style-type: none"> Water Safety Plans for 2 catchments endorsed by CCC 	Capacity to attract and retain suitable personnel	

Activity 1.3.3 Conduct Stakeholders Consultation	<ul style="list-style-type: none"> Stakeholders consultation completed 	<ul style="list-style-type: none"> Stakeholders analysis been done 	<ul style="list-style-type: none"> Stakeholders report 	<ul style="list-style-type: none"> Endorsement of consultation report(s) for 2 WSPs by CCC 	<ul style="list-style-type: none"> Sound consultation process able to elicit consolidated feedback; Community support
Activity 1.3.4 Finalise the Water Safety Plans	<ul style="list-style-type: none"> Water Safety Plan finalise 	<ul style="list-style-type: none"> No Water Safety Plan in place 	<ul style="list-style-type: none"> CCC endorsement of Final Water Safety Plans 	<ul style="list-style-type: none"> CCC meeting minutes 	<ul style="list-style-type: none"> Capacity to convince CCC of importance of WSP and community support
Output 1.4 National IWRM Plan	<ul style="list-style-type: none"> National IWRM Plan approved 	<ul style="list-style-type: none"> Existing National Water Policies need reviewing 	<ul style="list-style-type: none"> National IWRM Plan endorsed by Parliament by end 2012 	<ul style="list-style-type: none"> Parliament to pass National IWRM Plan 	<ul style="list-style-type: none"> Government commitment & support
Activity 1.4.1 Review Governance and institutional arrangements	<ul style="list-style-type: none"> Report on existing arrangements and options 	<ul style="list-style-type: none"> Existing Water Policy 	<ul style="list-style-type: none"> Review of governance and institutional arrangements endorsed 	<ul style="list-style-type: none"> Cabinet minutes 	<ul style="list-style-type: none"> Government commitment & support
Activity 1.4.2 Review key water resource management issues	<ul style="list-style-type: none"> Analysis report on key issues with supporting data 	<ul style="list-style-type: none"> National water reporting arrangements 	<ul style="list-style-type: none"> Water Resources Report endorsed by Cabinet 	<ul style="list-style-type: none"> Cabinet minutes 	<ul style="list-style-type: none"> Available data to support analysis
Activity 1.4.3 Action Plan to implement national policies and governance and institutional arrangements	<ul style="list-style-type: none"> National Action Plan 	<ul style="list-style-type: none"> Nil 	<ul style="list-style-type: none"> National Action Plan endorsed by Cabinet 	<ul style="list-style-type: none"> Cabinet minutes 	<ul style="list-style-type: none"> Government commitment & support
Activity 1.4.4 Consult stakeholders on components of National IWRM Plan	<ul style="list-style-type: none"> Stakeholder consultation report 	<ul style="list-style-type: none"> Community unaware of need for IWRM Plan 	<ul style="list-style-type: none"> Stakeholder consultation report endorsed by Cabinet 	<ul style="list-style-type: none"> Cabinet Minutes 	<ul style="list-style-type: none"> Sound consultation process able to elicit consolidated feedback; Community support
Activity 1.4.5 Obtain Parliament endorsement of National IWRM Plan	<ul style="list-style-type: none"> National IWRM Plan 	<ul style="list-style-type: none"> National policies Budget 2009 	<ul style="list-style-type: none"> National IWRM Plan endorsed by end 2012 Budget line in place by mid-2013 20% increase in budget for IWRM activities by end of project 	<ul style="list-style-type: none"> Cabinet Minutes 	<ul style="list-style-type: none"> Community support and Government commitment



Narrative Summary	Outputs	Baseline indicators	Performance Indicator/Target	Monitoring Mechanism	Assumptions and Risk	Responsible Agency
Output 1.5 Reviewed National Water Resources Policy and finalised National Water Service Policy	<ul style="list-style-type: none"> National Water Resources Policy & National Water Services Policy approved 	<ul style="list-style-type: none"> Existing Water Policies need reviewing National Water Policy need 	<ul style="list-style-type: none"> National Water Policies reviewed by December 2011 	<ul style="list-style-type: none"> Parliament to pass National Water Resources Policy Parliament to pass National Water Services Policy 	Government commitment support	MNRE, MOH, SWA, MWTTI
Activity 1.5.1 Review & finalise National Water Resource Policy incorporating best IWRM approaches	<ul style="list-style-type: none"> National Water Resource Policy reviewed and finalised, including IWRM approaches 	<ul style="list-style-type: none"> National Resource Policy being drafted Water Policy 	<ul style="list-style-type: none"> Watershed Resource Policy reviewed end 2011 	<ul style="list-style-type: none"> NWRP revisions endorsed by Cabinet (Cabinet Minutes) 	Commitment support	
Activity 1.5.2 Review National Service Policy	<ul style="list-style-type: none"> National Water Services Policy reviewed and finalised 	<ul style="list-style-type: none"> Policy being drafted 	<ul style="list-style-type: none"> Policies review 	<ul style="list-style-type: none"> CCC Divisional meeting 	Commitment support	
Activity 1.5.2b Finalise NWSP	<ul style="list-style-type: none"> National Water Services Policy Finalise 	<ul style="list-style-type: none"> Policy being drafted 	<ul style="list-style-type: none"> Policy finalise 	<ul style="list-style-type: none"> CCC Divisional meeting 	Commitment support	
Activity 1.5.3 Consult with the whole community, including key and vulnerable stakeholders	<ul style="list-style-type: none"> National Water Resources & National Water Services Policies present to stakeholders 	<ul style="list-style-type: none"> Policies drafted being 	<ul style="list-style-type: none"> Stakeholder consultation report 	<ul style="list-style-type: none"> Consultation Report endorsement by Cabinet 	Sound consultation process able to elicit consolidated feedback; Community support	
Output 1.6 National Water Resources Legislation	<ul style="list-style-type: none"> National Water Resources Legislation 	<ul style="list-style-type: none"> No legislation 	<ul style="list-style-type: none"> Legislation enacted by Parliament by end of 2012 	<ul style="list-style-type: none"> Parliament to endorse national water resources legislation 	Government commitment support	MNRE, MOH, SWA, MWTTI
Activity 1.6.1 Review existing legislation and scope	<ul style="list-style-type: none"> Report review of national legislation and options 	<ul style="list-style-type: none"> National Resource Policy being drafted 	<ul style="list-style-type: none"> Legislation reviewed and options report endorsed by Cabinet by end July 2012 	<ul style="list-style-type: none"> Cabinet Minutes 	Government commitment support	
Activity 1.6.2 Draft water resource legislation	<ul style="list-style-type: none"> Draft legislation for consultation 	<ul style="list-style-type: none"> No legislation 	<ul style="list-style-type: none"> Draft legislation endorsed by Cabinet for consultation 	<ul style="list-style-type: none"> Cabinet Minutes 	Commitment support	
Activity 1.6.3 Consult with the	<ul style="list-style-type: none"> Legislation 	<ul style="list-style-type: none"> No legislation 	<ul style="list-style-type: none"> Stakeholder 	<ul style="list-style-type: none"> Consultation 	Sound consultation	

whole community, including key and vulnerable stakeholders Activity 1.6.3 Finalise legislation	presented to stakeholders	No legislation	consultation report	Report endorsed by Cabinet	process able to elicit consolidated feedback: Community support	
Output 1.7 National indicator framework embedded in formal national reporting	<ul style="list-style-type: none"> National water resource legislation finalised National IWRM indicator framework embedded in formal national reporting 	<ul style="list-style-type: none"> National framework reporting 	<ul style="list-style-type: none"> Legislation endorsed by Parliament by end 2012 National indicator framework incorporating PM&E endorsed Cabinet by end 2012 	<ul style="list-style-type: none"> Parliament to endorse national water resources legislation Cabinet Minutes 	Government commitment support	MNRE, MOH, SWA, MWTTI
Activity 1.7.1 Review existing water sector indicators	<ul style="list-style-type: none"> Report on recommended changes to reported indicators 	<ul style="list-style-type: none"> National framework reporting 	<ul style="list-style-type: none"> Indicator review endorsed by Cabinet by end of 2012 	<ul style="list-style-type: none"> Cabinet Minutes 	Government commitment support	
Activity 1.7.2 National adoption of PM&E approaches implemented	<ul style="list-style-type: none"> Report on recommended changes to reported indicators 	<ul style="list-style-type: none"> National framework PM&E 	<ul style="list-style-type: none"> National indicator framework incorporating PM&E endorsed Cabinet by end 2012 	<ul style="list-style-type: none"> Cabinet Minutes 	Government commitment support	
Output 1.8 Increased sectoral engagement in formal multilateral communication on water issues	<ul style="list-style-type: none"> Report identifying increased sectoral engagement 	<ul style="list-style-type: none"> Sectors represented in formal meetings prior to project commencement 	<ul style="list-style-type: none"> Report identifying increased sectoral engagement endorsed by NWSSC by end Jun 2012 	<ul style="list-style-type: none"> NWSSC Minutes 	Government commitment support	MNRE, MOH, SWA, MWTTI



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Activity 1.8.1 Increased sectoral engagement in formal multilateral communication on water issues	<ul style="list-style-type: none"> Report identifying increased sectoral engagement 	<ul style="list-style-type: none"> Sectors represented in formal meetings prior to project commencement 	<ul style="list-style-type: none"> Report identifying increased sectoral engagement endorsed by NWSSC by end Jun 2012 	<ul style="list-style-type: none"> NWSSC Minutes 	Government commitment & support	
Output 1.9 National IWRM communication plan framework implemented	<ul style="list-style-type: none"> National IWRM communication plan 	<ul style="list-style-type: none"> No national IWRM communication plan 	<ul style="list-style-type: none"> Plan endorsed by NWSSC by end Jun 2012 	<ul style="list-style-type: none"> NWSSC Minutes 	Government commitment & support	MNRE, MOH, SWA, MWTI
Activity 1.9.1 National IWRM communication plan framework implemented	<ul style="list-style-type: none"> National IWRM communication plan 	<ul style="list-style-type: none"> No national IWRM communication plan 	<ul style="list-style-type: none"> Plan endorsed by NWSSC by end Jun 2012 	<ul style="list-style-type: none"> NWSSC Minutes 	Government commitment & support	MNRE, MOH, SWA, MWTI
Output 1.10 Multi-sectoral APEX body in place	<ul style="list-style-type: none"> Multi-sectoral APEX body incorporating IWRM concepts 	<ul style="list-style-type: none"> NWSSC established 	<ul style="list-style-type: none"> NWSSC Terms of Reference reviewed to reflect IWRM outcomes by end 2012 	<ul style="list-style-type: none"> Cabinet Minutes 	Government commitment & support	MNRE, MOH, SWA, MWTI
Output 1.10 Multi-sectoral APEX body in place	<ul style="list-style-type: none"> Review of NWSSC Terms of Reference 	<ul style="list-style-type: none"> NWSSC established 	<ul style="list-style-type: none"> NWSSC Terms of Reference reviewed to reflect IWRM outcomes by end 2012 	<ul style="list-style-type: none"> Cabinet Minutes 	<ul style="list-style-type: none"> Government commitment & support 	MNRE, MOH, SWA, MWTI
Component 2: Rehabilitations and Conservation of the Degraded Areas						
Conservation and Rehabilitation measures/plans implemented in priority areas of the Apia Catchment						
Output 2.1 Data Collection and update of National Water Resources Information Management System (NWRIMS) for implementation assessment	<ul style="list-style-type: none"> Establish Water Protection Zones for Data NWRIMS available Data NWRIMS available 	<ul style="list-style-type: none"> Water zones established and NWRIMS collection not started Water protection not established and data collection not started 	<ul style="list-style-type: none"> 2 Protected water zones to be established by end 2013 & data/information integrated into NWRIMS 	<ul style="list-style-type: none"> Data collected & project report & NWRIMS & HYCOS established data available 	Human resources availability & consistent data collection	MNRE- WRD, MIET

<p>Activity 2.1.1 Identify and confirm priority areas (cadastral survey & etc) for implementation. The original recommendation was proposed during the hot spot analysis.</p> <p>Activity 2.2.1 Assess impact of land use and infrastructural new & potentially harmful existing developments (agriculture, road, utility works etc) validating GIS data for IDRISI assessment</p>	<ul style="list-style-type: none"> Priority areas identified Land use and infrastructural development impact assessment undertaken. 	<ul style="list-style-type: none"> No assessment done No assessment done 	<ul style="list-style-type: none"> Priority areas established Impact assessment reports of land use/developments completed IDRISI landuse and infrastructure development validate 	<ul style="list-style-type: none"> Priority area Report endorsed by CCC Assessments & reports endorsed by CCC IDRISI maps and macro update 	<p>Data availability</p> <p>Data accuracy</p>
<p>Activity 2.2.2 Analyse data for soil type classification (infiltration rates, soil texture/strength, soil/water retention capacity etc) to determine soil erosion mitigation actions required</p>	<ul style="list-style-type: none"> Mitigation actions proposed as a result of data analysis High erosion zone identified IDRISI maps update 	<ul style="list-style-type: none"> Data analysis not started 	<ul style="list-style-type: none"> Soil type classification Mitigation actions proposed IDRISI database validate and update 	<ul style="list-style-type: none"> Soil Erosion Report endorsed by CCC Map of the landscape and infrastructure 	<p>Capacity to identify cost-effective erosion mitigation strategies</p>
<p>Output 2.3 Implementation of pilot priority mitigation measures</p>	<ul style="list-style-type: none"> Develop a Water Safety Conservation Plan Erosion mitigation measures in place Reforestation of degraded area 	<ul style="list-style-type: none"> No Water Safety Conservation Plan Mitigation measures not started 	<ul style="list-style-type: none"> Soil classification and infiltration rates completed by 2012 Mitigation measures formulated and implemented by 2013 	<ul style="list-style-type: none"> Inspections & field visits 	<p>Accuracy of impact assessment Site availability</p> <p>MNRE-WRDL, FORESTRY, DEC</p>
<p>Activity 2.3.1 Implement an action plan (including revegetation, reforestation) of priority sites mitigation measures to reduce erosion, pollution and associated environmental</p>	<ul style="list-style-type: none"> Mitigation action plan for priority identified sites implementation. 	<ul style="list-style-type: none"> Not started 	<ul style="list-style-type: none"> Mitigation measures for identified priority sites implemented Consultation with landowners, land users, and stakeholders 	<ul style="list-style-type: none"> Reports & inspections endorsed by CCC 	<p>Capacity to identify cost-effective erosion mitigation strategies; Site access</p>



Narrative Summary	Outputs	Baseline indicators	Performance Indicator/Target	Monitoring Mechanism	Assumptions and Risk	Responsible Agency
Output 2.4 Soil, Water, and Land Use monitoring programmed after implementation measures	<ul style="list-style-type: none"> Water, soil, and land use monitoring programmed implemented 	<ul style="list-style-type: none"> No Soil, Water, and Land Use monitoring programme in place 	<ul style="list-style-type: none"> Annual monitoring schedule to be developed within 4 months of mitigation measures formulation 	<ul style="list-style-type: none"> Reports & schedule 	<ul style="list-style-type: none"> Stakeholders support 	MNRE-WRD, MOH
Activity 2.4.1 Develop and implement an annual monitoring plan (field visit schedule and testing programme) to monitor implementing activities	<ul style="list-style-type: none"> Annual monitoring plan developed and implemented 	<ul style="list-style-type: none"> Not started 	<ul style="list-style-type: none"> Annual monitoring schedule programme in place initially during implementation and continue after mitigation formulation 	<ul style="list-style-type: none"> Monitoring programme endorsed and funded by CCC 	<ul style="list-style-type: none"> Staff commitment 	
Activity 2.4.2 Update database from current monitoring activities and digitise changes	<ul style="list-style-type: none"> Mitigation actions results update and digitised to update data for mapping and assessment of 	<ul style="list-style-type: none"> Data analysis not started 	<ul style="list-style-type: none"> Digitised updated results from monitoring activities 	<ul style="list-style-type: none"> Reports endorsed by CCC 	<ul style="list-style-type: none"> Data accuracy Expertise 	
Output 2.5 Develop appropriate eco-tourism activities for the Loimata o Apaula & Lanotoo tourists sites	<ul style="list-style-type: none"> Sanitary facilities for Loimata o Apaula & Lake Lanotoo reserves and rehabilitate the sites including construction of appropriate access and sign board. 	<ul style="list-style-type: none"> No facilities on sites 	<ul style="list-style-type: none"> Sanitary Facilities for Loimata o Apaula & Lanotoo in place 	<ul style="list-style-type: none"> Meeting reports 	<ul style="list-style-type: none"> Access availability and 	MNRE-WRD, FORESTRY, STA
Activity 2.5.1 Rehabilitate Loimata o Apaula ensuring sanitation, signboard, information notices, and access are mitigated.	<ul style="list-style-type: none"> Rehabilitate Loimata o Apaula including building of sanitary facilities, track access, and signboard 	<ul style="list-style-type: none"> Only track access on site 	<ul style="list-style-type: none"> Sanitary facilities for Loimata o Apaula and rehabilitation around the lake Community consultation on site 	<ul style="list-style-type: none"> Progress Section Meeting Reports 	<ul style="list-style-type: none"> Access vandalism & 	

Activity 2.5.2 Rehabilitate Lanotoo site (clear track, label native plants, explanation about native birds and history)	<ul style="list-style-type: none"> Rehabilitate Lanotoo Lake including building of sanitary facilities and tourism information boards 	<ul style="list-style-type: none"> Only track assess on site 	<ul style="list-style-type: none"> Sanitary facilities for Lake Lanotoo and rehabilitation around the lake Community consultation on site activities and protection 	<ul style="list-style-type: none"> Progress Reports & Stakeholders meeting minutes 	Access & vandalism	
Output 2.5 Increased access of Apia population to improved sanitation	<ul style="list-style-type: none"> Apia wastewater treatment plant upgraded and associated sewerage installed 	<ul style="list-style-type: none"> Around 40% People in Apia with access to improved sanitation 	<ul style="list-style-type: none"> 30% increase in Apia residents with access to improved sanitation (11,000 people) 	<ul style="list-style-type: none"> Completion Report endorsed by NWSSC 	Externally funded activity, subject to other organisational priorities, finances, political will and technical capacity	
Activity 2.5.1 Increase access of Apia population to improved sanitation	<ul style="list-style-type: none"> Apia wastewater treatment plant upgraded and associated sewerage installed 	<ul style="list-style-type: none"> XXXXXX People in Apia with access to improved sanitation 	<ul style="list-style-type: none"> 30% increase in Apia residents with access to improved sanitation (11,000 people) 	<ul style="list-style-type: none"> Completion Report endorsed by NWSSC 	Externally funded activity, subject to other organisational priorities, finances, political will and technical capacity	
Component 3: Awareness and Capacity Building						
Output 3.1 Sustainable Water Demand Management	<ul style="list-style-type: none"> High users/consumers identified and awareness and capacity building program put in place for them Demand Management Programme in place for targeted sectors 	<ul style="list-style-type: none"> Water wastage and drainage overflowing visible around the town waterways Communities need awareness and training on water demand management Water leakage and loss in Apia Apia population Baseline of national staff capacity in IWRM 	<ul style="list-style-type: none"> At least 2 farmers practising agro-forestry within project area by December 2013 Water usage and leakage reduced by 30% from system supplying 40,000 people 	<ul style="list-style-type: none"> Training needs analysis plan implemented on report endorsed by NWSSC National capacity report endorsed by NWSSC 	Stakeholders availability Community participation and will	MNRE, STA, MOH, MESC, MWTTI



Narrative Summary	Outputs	Baseline indicators	Performance Indicator/Target	Monitoring Mechanism	Assumptions and Risk	Responsible Agency
Activity 3.1.1 Identify and assess critical areas/sectors for water consumption	<ul style="list-style-type: none"> High users/consumers identified 	<ul style="list-style-type: none"> No assessment done 	<ul style="list-style-type: none"> Report identifying and assessing Critical area/sectors Identify strategy to reduce usage 	<ul style="list-style-type: none"> Report endorsed by CCC 	Community and water users' willingness to cooperate and acknowledge.	
Activity 3.1.2.1 Introduce Demand Reduction/Management strategies in sectors (e.g Tourism, Energy, Agriculture etc)	<ul style="list-style-type: none"> Demand Reduction Water Management Awareness Programme for targeted sectors 	<ul style="list-style-type: none"> Not started 	<ul style="list-style-type: none"> Awareness and capacity building activities for water users 	<ul style="list-style-type: none"> Report endorsed by CCC 	Sector cooperation	
Activity 3.1.2.2 Develop and implement demand management awareness for targeted sectors (e.g Tourism, Energy, Agriculture etc)	<ul style="list-style-type: none"> Demand Water Management Awareness Programme for targeted sectors 	<ul style="list-style-type: none"> Not started 	<ul style="list-style-type: none"> Farmers practicing agro-forestry Reduce water usage resulting to water waste reduction IWRM principles integrated in school 	<ul style="list-style-type: none"> Report endorsed by CCC 	Sectors willingness.	
Output 3.2 Awareness, education and capacity development towards watershed users	<ul style="list-style-type: none"> Long term awareness programmes established in MNRE, MAF, SWA, relevant organisations and inclusive programs across the broad community Project monitoring and evaluation program in place Targeted capacity building program in place with key stakeholders and the broad community Attendance at awareness raising activities and at activities with active engagement 	<ul style="list-style-type: none"> IWRM concept not grasp by the community Communities need awareness and training on water demand management. 	<ul style="list-style-type: none"> Water Demand Management issues are discussed in sectors such as energy, tourism, agriculture, & education Awareness Program implemented and addressed throughout the project Capacity building program implemented to address capacity gaps 30% increases in attendance at awareness raising activities 30% 	<ul style="list-style-type: none"> Project Reporting Community feedback Capacity building program endorsed by CCC Engagement report endorsed by Steering Committee 	Sectors willingness Awareness effectiveness	MNRE, MOH, STA, MWTL, MESC

	increase in active engagement activities	Awareness programme endorsed by CCC minutes	Community participation Sector involvement		
Activity 3.2.1 Review of effectiveness of existing awareness and education programmes and tools in all relevant sectors, the CCC and the broad community	<ul style="list-style-type: none"> Targeted sectors implementing and practicing WDM concept. 	<ul style="list-style-type: none"> Awareness programme in all targeted sectors, the CCC and the broad community including vulnerable stakeholders by 2012 	<ul style="list-style-type: none"> Community participation 		
Activity 3.2.2 Implement awareness and capacity building programme for reviewed/developed plans targeting the different users (industries, whole community, farmers) including vulnerable stakeholders	<ul style="list-style-type: none"> Targeted sectors and the old water management practice. 	<ul style="list-style-type: none"> At least 2 Farmers practicing agro-forestry by project ends. Community willingness to attend consultation Vulnerable stakeholders supporting activities IWRM principles integrated in school curriculum by 2013 	<ul style="list-style-type: none"> Reports on progress of capacity 	<ul style="list-style-type: none"> Public have all seen IWRM awareness programme 	
Activity 3.2.3 Monitoring and evaluation of the programmes	<ul style="list-style-type: none"> Demand Water Management Programme for targeted sectors and the whole community implemented CCC adequately skilled to govern catchment Increase community awareness and capacity to deliver IWRM Vulnerable stakeholder capacity awareness increased hence increasing support to engage IWRM activities IWRM concept established in school curriculum 	<ul style="list-style-type: none"> Not started 	<ul style="list-style-type: none"> Monitoring and reports endorsed by CCC 	<ul style="list-style-type: none"> Monitoring and evaluation program strategy by 2012 reported to CCC on a quarterly and annual basis 	<ul style="list-style-type: none"> NWSSC Minutes
Activity 3.2.4 Country trained staff in monitoring and PM&E	<ul style="list-style-type: none"> Project monitoring and evaluation program in place 	<ul style="list-style-type: none"> None required 	<ul style="list-style-type: none"> Training assessment report endorsed by NWSSC by June 2012 	<ul style="list-style-type: none"> Training assessment report endorsed by NWSSC by June 2012 	<ul style="list-style-type: none"> PM&E training for country staff and associated training assessment report



Annex 5: Results Notes

Implementing Sustainable Water Resource and Wastewater Management in Pacific Island Countries



GEF PACIFIC IWRM PROJECT RESULTS NOTE

<http://www.pacific-iwrn.org/results>

RSC 5 2013

Rehabilitation and Sustainable Management of the Apia Catchment



Top 3 Project Results

1. Significant political and financial support from the Government of Samoa watershed management. This includes a commitment to purchase and designate 485 hectares (valued at approximately 81 million Samoan Tala) of upland watershed as a watershed conservation zone. This land was previously under sub-division by the Catholic Church for residential use.
2. Development of Watershed Management Plans (WMPs) for each of the four watersheds of Apia catchment. Key features of the WMPs include establishment of buffer zones and designation natural reserves. This involved an extensive 'community to cabinet' consultative process which has resulted in a commitment by government to finance management plan implementation (valued at ~160 million Samoan Tala) during the period 2013-2017.
3. Mainstreaming of watershed conservation policies into the State of Environment reporting process and the new National Environment Sector Plan Document currently under development. Ongoing efforts include refinement of Samoa's watershed conservation policy to establish a new 'cloud forest' 600 metre exclusion zone to prohibit development at this altitude or higher for the specific purpose of watershed conservation.

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Ministry of Natural Resources and Environment

1. PROJECT OBJECTIVE

To rehabilitate and manage the Apia Catchment in a sustainable manner in order to improve the quality and quantity of the water resources for enhanced water supply and hydropower generation, social-economic advancement and reduced environmental adverse impacts. This is being achieved through a focus on identifying and rehabilitating vulnerable areas upstream of rivers and it is enforced by the endorsement of catchment Watershed Management Plans as directed by the Water Resources Act.

2. RESULTS: PROCESS

Following the 2011 drought, Samoa put in place under the Sector Wide Approach Plan a Water Sector Coordinating Unit which has led to the development and endorsement of the Water for Life Sector Plan: Framework for Action 2012-2016 document. Similarly, the IWRM Stakeholders consultation process developed by the project is bringing great benefits for water resource and catchment management with continuous attendance from many stakeholders, each contributing feedback and suggestions for the project activities. Participation of stakeholders in planning and monitoring has increased ownership over IWRM concepts and activities. An important result of this was agreement on the Watershed Safety plan for Fuluasou, and actions for dealing with the many issues around its intake and supply have been identified and prioritized for implementation. This is significant as Fuluasou Treatment Plan supplies 70,000 people and suffers from many problems such as overcapacity, shortage of chlorine, pump failure, and high NRW rates. The Water Sector has also consolidated the formation of the CCC and all of the Water Sector stake-holders comprise the same members for all its consultations with inclusion of key community representatives, including women's groups representatives.

Loimata o Apaula and Fuluasou catchments Watershed Management Plans have been approved by the CDC for publishing. Gasegase and Vaisigano catchment WMPs have been consulted through to final drafting. The WMPs gives authority to the Water Resources Division to enforce specified directives and prosecute any illegal activities. These efforts have been supported by awareness and education activities on World Water Day annually, and have been successful in raising the profile and visibility of GEF Pacific IWRM Samoa. The Watershed Conservation Policy led by the IWRM project promotes that the protection of the top 600m of watershed be excluded from any developments. This has led to positive outcomes including government purchase and designation of upland watershed areas to strengthen catchment management. Government has also committed to financing management plan implementation during the period 2013.

2(A) INDICATOR#1: NATIONAL STRATEGY IN PLACE

At the time of project start-up there was no national strategy for IWRM or water resource management in Samoa. The target of the project was to have a sector wide strategy for water by mid 2012. This was achieved and the Sector Wide Approach Plan for Samoa is an IWRM focused plan being implemented under the Samoa Water Coordinating Unit and is widely known as our national water sector strategy. The water crisis of the 2011 drought has raised awareness of water issues at the highest political levels, subsequently Samoa has put in place a Water Sector Coordinating Unit under the Ministry of Natural Resources and Environment to coordinate the progress and activities of the Water Sector. This unit acted to facilitate the development and endorsement of the 'Water For Life' Sector Plan: Framework for Action 2012-2016 document.



Figure 1 Samoa's Prime Minister lending his support to tree planting on World Water Day 2012

2(B) INDICATOR#2: APIA WATER SAFETY PLAN (URBAN)

The target for the project was to have a water safety plan for Apia urban area developed, endorsed by Cabinet, and under implementation. At the start of the project there was no plan and a lot of uncertainty of water safety issues, especially associated with the overloaded Fuluasou Treatment Plant. The Water Safety Plan has been developed through IWRM, endorsed by cabinet, and actions for the intake and supply side have been identified, costed and prioritized. A Water Safety Plan has also been prepared for the second Water Treatment Plant located at Alaoa in the Apia Catchment. Community and stakeholder inputs to this plan are currently being elicited via the conduct of a series of national and local consultations.



Figure 2 Aerial view of the Fuluasou Treatment Plant

2(C) INDICATOR#3: LEGISLATION FOR WATER RESOURCE MANAGEMENT

The project target was to have legislation for water resource management enacted as part of Watershed Management Plans. At the start of the project Samoa had legislation and regulations relating to surface water quality only. A Water Allocation Policy and Water Licensing Scheme has subsequently been endorsed by Cabinet. The Watershed Management Plan for Loimata o Apaula and Fuluasou have been finalised and approved by the CDC and are currently awaiting translation and endorsement by the Head of State for implementation. Water Resources Management

Regulations have also been approved by the CDC. A Watershed Conservation Policy has been developed to provide guidance to the drafting of legislation.



Figure 3 Community members participating in Watershed Management Plan consultations

2(D) INDICATOR#4: PROPORTION OF COMMUNITY ENGAGED IN WATER RELATED ISSUES

The target of the project was to establish 30% increase in active engagement activities. At the time of project start-up almost all community engagement was passive. IWRM has focused on community group participation in clean-ups and forest rehabilitation. On World Water Day 2011, a river clean up event on the Fuluasou River was a successful day with many community members attending. It also identified some areas being used for dumping rubbish into the Fuluasou River. The project has subsequently assisted the community by placing rubbish stands around the area for their rubbish. The annual 2012 river cleaning of the four rivers in the Apia Catchment during the MNRE Environment Week in November saw participant numbers doubled from the previous 2011 Environment Week river cleaning. Similarly, WWD 2013 celebrations increased the number of community members participating from 200 in 2012 to 500 in 2013. In 2013 students from around the island of Upolu undertook two parallel streams of water management activities that were of great benefit and enjoyment to everyone.



Figure 4 World Water Day 2011 river cleaning at the Fuluasou River



2(E) INDICATOR#5: LESSONS LEARNED INCORPORATED INTO OTHER PROJECT(S) AND/OR REGULATIONS

A target of the project was to demonstrate replication from one project to another by project end. In 2011 the Samoa IWRM team undertook a twinning exchange to the Cook Islands IWRM demonstration project. During that visit we observed the use of “No Car Washing Signage” on Rarotonga Island and have subsequently replicated these in the Apia catchment and in other rivers of Samoa.



Figure 5 Stop car washing and littering sign on the river ford

2(F) INDICATOR#6: NATIONAL BUDGET ALLOCATED TO IWRM AND WUE

Prior to project commencement there was little or no national recurrent public budget allocated to IWRM or WUE initiatives in Samoa. A target of the project was to increase national government budget allocated to these initiatives by 20%. On-the-ground works of the IWRM demonstration project assisted in the establishment of priorities and targets for water resources, which the Government is currently investing in via an EU budget support modality for the Water Sector. Specific examples of activities include purchase of lands and fencing of new water resource reserves.



Figure 6 No access signs on Reserves

2(G)INDICATOR#7: NATIONAL IWRM INDICATOR FRAMEWORK EMBEDDED IN FORMAL NATIONAL REPORTING

Samoa's Water Sector previously lacked a results oriented approach. A target of the project was to have IWRM indicators embedded into national reporting. Collaborative efforts of IWRM and the EU have led to IWRM indicators in the form of Key Performance Indicators (KPIs) being embedded in the Water Sector's Water For Life Framework for Action 2012-2016. These IWRM KPIs are currently being incorporated in the water component of Samoa's new National Environment Sector Plan.

2(H)INDICATOR#8: NATIONAL STAFF ACROSS INSTITUTIONS WITH IWRM KNOWLEDGE AND EXPERIENCE

Before the project national staff involved in water resource management had minimal knowledge of IWRM approaches, although the national focal point had some knowledge of IWRM practices via participation in the project's preparation phase. The IWRM project aimed to achieve national-wide knowledge of IWRM among government partners and other stakeholders. In support of this, three personnel from the Government of Samoa participated in the post-graduate Integrated Water Management training programme initiated by the Pacific IWRM programme. A positive benefit of this is the use of lessons from the 'Science of Water' course in the design of buffer zone regulations in Samoa. This higher level learning has been augmented by participation of more than 50 IWRM stakeholders from Samoa in the regional online IWRM rugby competition which has acted to share information on best practices in water resource management and sanitation and raise the profile of IWRM within Samoa. This competition was effective in improving communications between Government agencies. For example, the winner of the 2011 competition was a staff member of Samoa's Finance Ministry.



Figure 7 IWRM Rugby tipping competition winner from MOF

2(I):INDICATOR#9: MULTI-SECTORAL APEX BODY IN PLACE

There was minimal cross-sectoral engagement on water issues prior to commencement of the IWRM project, with communication on these issues largely constrained to an ad-hoc Waters Resources Stakeholder group. The project aimed to establish and convene regular meetings of a multi-sectoral APEX body. This was achieved via the establishment of an overarching body to oversee the Sector Wide Approach to the water sector established in Samoa in 2011 as part of the transition from the EU Water Sector Support Program that had been in place since 2006.



2(J) INDICATOR#10: PROPORTION OF COMMUNITY ENGAGED IN WATER RELATED ISSUES

There were previously few awareness activities on water related issues in Samoa and community engagement in water resource management was minimal. The project aimed to increase community participation in awareness efforts and increase active community engagement in IWRM activities by 30 percent. As a result of IWRM initiatives there has been an estimated 10 fold increase river cleaning and other events like World Water Day celebrations. Efforts to actively engage community members in river rehabilitation efforts following the devastating 2012 Cyclone Evan has resulted in increased community support for IWRM and Watershed Management Plan implementation. An unanticipated outcome of this was also strengthened community level knowledge of how various watershed uses can compromise the resilience of villages to extreme weather events and floods.



Figure 8 WWD 2010 celebrations



Figure 9 River cleaning 2012

2(K): INDICATOR#11: PROJECT DESIGN AND PM&E IMPLEMENTED

The IWRM program aimed to test Participatory Monitoring and Evaluation approaches to IWRM. This represented a novel approach to water resource management which was previously viewed as the sole responsibility of government. A key activity in this area included community participation in the design and operation of a River Ecosystem Health Monitoring Program (REHM) for all rivers of the Apia Catchment. Part of these efforts involved eliciting community input to the planning of waste disposal strategies to reduce solid waste pollution of streams. This resulted in identification of priority locations for rubbish stands which were presented to schools and river side locations. Community participation in the monitoring and evaluation aspects of the REHM has also resulted in strengthened regulation, with warning letters being issued to key households identified as pollution point sources.



Figure 10 Rubbish stand presented to Papauta College

3. RESULTS: STRESS REDUCTION

Protection of land previously earmarked for the Catholic land subdivision is a key achievement for the IWRM Project and Government of Samoa. As a result of efforts of the IWRM project, the Government has committed to the purchase of 1200 acres for inclusion in the Watershed Conservation Zone. To date, 82 acres have been purchased of which 32 have been replanted and fenced off using a community engagement approach. Ongoing community engagement and a monthly maintenance program have been implemented to ensure sustainable management of the rehabilitated area. A further 120 acres have been surveyed for protection above the SWA treatment plant intake.

It is hoped that declaring the top of the East Fuluasou River as a reserve and the subsequent purchase of the land from the Catholic Church will reduce the stress of urbanization of upland catchment areas on river water quality and tributary that supplies the Fuluasou Treatment Plant intake. There have been regular reports of increased turbidity of river tributaries since the Catholic subdivision started.



Figure 11 Community engagement maintenance program

In addition to protection of the upland catchment, rehabilitation around the source and intake has been undertaken as well as agreement on and enforcement of buffer zones of 20m to reduce stresses on the water quality and quantity caused by unsustainable agriculture practices and human mismanagements of natural resources. Effort has also been made to raise awareness of the impacts of car washing. “*Stop Car Washing*” signs near rivers have seen a dramatic reduction of people washing cars next to rivers and has led to reduced contamination of water resources.

3(A) INDICATOR#1: INCREASE IN LAND PROTECTED AND/OR REHABILITATED OVER CATCHMENT

The target of the project was to increase the amount of land protected in Apia Catchment by 2000 hectares. As of 2013 40 hectares of land from the Catholic subdivision have been purchased for water resources conservation and approximately 1500 hectares of upland catchment areas have been proposed for protection, and 15 hectares of the catchment have been identified as priority for rehabilitation.



Figure 12 No access sign to 40 hectares of land protected above Fuluasou intake and tree planting work below it

3(B): INDICATOR#2: REDUCTION IN WATER LEAKAGE LOSS IN APIA

Losses from Apia’s water distribution system were identified as a key factor contributing to stress on Samoa’s freshwater resources. At the outset of the IWRM project there were ~60,000 people serviced by the Samoa Water Authority (SWA) in Apia with non-revenue water (e.g. system loss, theft) estimated at 70 percent. The project aimed to reduce water loss by 30 percent. As a result of the project, the Water Safety Plan for Fuluasou prioritized leakage reduction in the Apia area. SWA has finished leak detection work and leak reduction engineers have worked on fixing leaks which has reduced non-revenue water to ~40 percent.

3(C): INDICATOR#3: POPULATION WITH ACCESS TO IMPROVE SANITATION

Prior to the project there was no septic system regulation for seepage and town sewage leaked into the surrounding environment. Treatment in town was ad hoc and unsustainable. A target of the project was to improve sanitation for 30 percent of Apia’s residents. The outcome has been a functional Waste Water Treatment Plant which now pumps all waste from the central business district of Apia to the plant. This has been augmented by the Tafaigata Sludge Facility which caters for all sludge removed from household septic. Household septic are now also subject to legislation which requires old septic to be fixed and news ones modified to prevent seepage into the ground.

Table 1



Figure 13 Waste Water Treatment Plant Sogi



Figure 14 Water Sector Team Visiting the sludge facility.

Annex 6: Awareness Materials Developed and Media Coverage



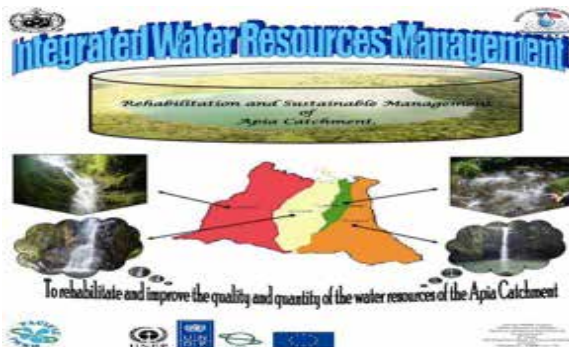
Advertising IWRM on local transport



Promoting rubbish management in watershed areas



IWRM sticker



IWRM Poster



Annex 7: Participatory Monitoring and Evaluation Plan

Participatory Planning, Monitoring, and Reporting Plan for the GEF Pacific IWRM Demonstration Project Entitled: “[Rehabilitation and Sustainable Management of the Apia Catchment]” [Samoa]

1. INTRODUCTION

There are multiple and varied planning, monitoring and reporting requirements as part of the GEF Pacific IWRM Project. These were discussed and agreed during the project’s Inception Workshop in September 2009 and were adopted as part of the operation of Samoa’s national IWRM demonstration project entitled: “*Rehabilitation and Sustainable Management of the Apia Catchment*”.

Participation and engagement of key project stakeholders including community groups and Non-Governmental Organisations [LOA Catchment Committee, Fuluasou Catchment Committee, Vaisigano Catchment Committee, Catholic Church Land Board], the project coordinating committee [IWRM Project Stakeholders Committee], national Lead Agency [MNRE], Cabinet, national development partners [UNEP, UNDP], and global donors in project planning, monitoring, and reporting was considered important in guiding the successful implementation of the project in Samoa.

2. GUIDING PRINCIPLES

The key principles used in developing the project planning, monitoring, and reporting approach were that it should:

- primarily act to better inform an “*IWRM continuum of transition*” in the relevance, effectiveness, efficiency, results, and sustainability of investment in IWRM;
- facilitate good governance of demonstration project activities, including areas of project finances, coordination, planning, capture of lessons learned, and technical quality assurance;
- ensure efficient and cost-effective compliance of reporting requirements of the National Government of Samoa, SPC/SOPAC, UNDP, UNEP, and the GEF;
- ensure relevance of the information and data collected, and that data on project results can be rolled up and down, from “*Community to Cabinet*” and from “*Country to Global Donor*”; and
- Draw on participatory Most Significant Change (MSC) techniques which act to monitoring and validate reported project impacts on behaviour.

3. PLANNING, MONITORING, AND REPORTING FRAMEWORK

The general planning, monitoring, and reporting framework developed for operation through the Samoa national IWRM demonstration project is summarised in Table 1. The timetable of activities is summarised in Table 1.

STEP 1

Project Planning

Insert a brief overview of how you engage Community Groups, your National Coordinating Committee, and Lead Agency in annual and quarterly planning of demonstration activities. Including the planning of your project’s finances, activities, use of lessons learned or examples of best practice generated through your project.

The Samoa IWRM PMU conducts a stakeholders consultation at the beginning of every quarter to present progress report, next quarters workplan, budget review, project overview, and discuss any issues regarding the project. Within the quarterly stakeholders meeting are project progress reports presentation to the Water Sector Technical Committee meeting convened by the Lead Agency held every fortnightly. The Joint Water Sector Steering Committee is the overarching facilitating committee of the Water Sector on the national level and they will review progress and workplan quarterly.

There are community consultations ad-hoc when issues are related to a specific community such as Watershed Management Plan for the LOA catchment inviting the LOA community for consultation.

There is also opportunity to engage communities and stakeholders during national days such as WWD, Environment Week, and Independent days where IWRM project continually participate in.

STEP 2

Project Monitoring

Insert a brief overview of how you engage Community Groups, your National Coordinating Committee, and Lead Agency in monitoring of your demonstration project activities and results. This should include a description of how you involve your stakeholders in the monitoring of project expenditures and budget, as well as reviewing the results of project on a quarterly and annual basis. Community consultations to present Watershed Management Plans engages the community to discuss and evaluate rehabilitation measure for the catchment. Monitoring will involve the number of participants, the amount of mitigation measures identified, and the support of the community regarding ownership of activities. The stakeholders will monitor project progress every quarter. The WSTC monitors progress fortnightly. Endorsement and approval of progress reports and Policies & Plans need to be done by the JWSSC which also looks at Sector indicators achievement.

STEP 3

Project Reporting

Insert a brief overview of how you engage Community Groups, your National Coordinating Committee, and Lead Agency in reporting of your demonstration project activities and results.

In addition to the preparation of your project's routine quarterly and annual reports, this should also include a description of the mechanisms you have established to keep your stakeholders informed of project issues and results on a regular basis, e.g., community meetings, newsletter, use of print/TV media, Cabinet/Congress briefings.

The Stakeholders will be informed and reminded of consultations with personal invitation letters and follow up emails. The community will see tv, radio, and newspaper notices of community consultations as well as invitations sent to each village concerns mayors for participations and program.

All project progress reports, workplan, and budget will be presented to the Stakeholders consultation.

The community will discuss issues relating to specific catchments and sites that concern them.

The lead agency keeps the communication line clear every day on progress and workplan of the project as these are integrated together with the whole sector activities so will be well aware of everything.

The JWSSC meets quarterly and they will sent a directive to attend meetings and present progress & any policy/plan needing approval.

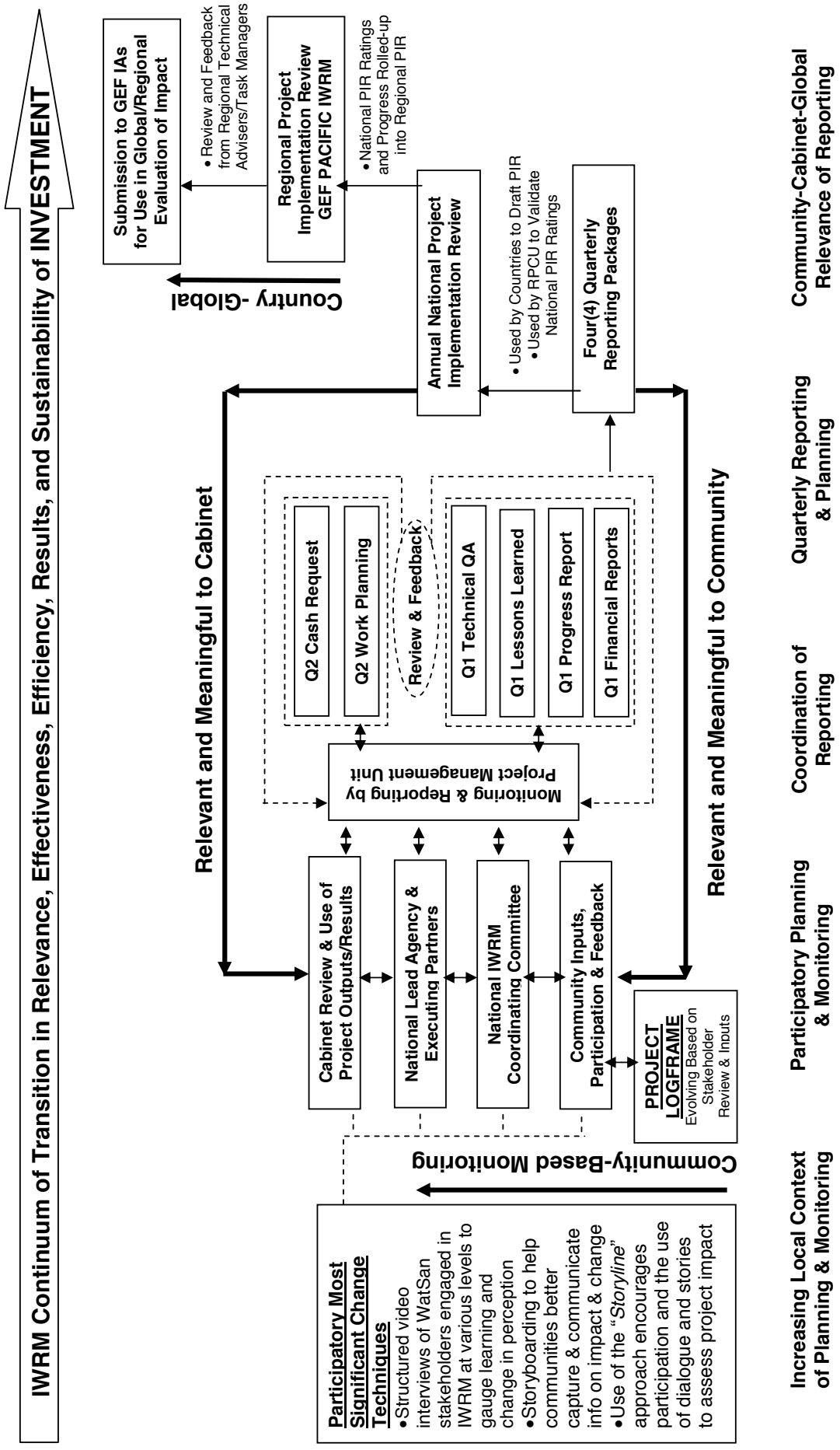


Figure 1 Schematic of the Planning, Monitoring, and Reporting Approach Adopted for the [Rehabilitation and Sustainable Management of the Apia

Table 1 Draft Participatory Project Planning, Monitoring, and Reporting Plan

Quarter	2010				2011				2012				2013			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Community Groups: LOA Catchment Committee, Fuluasou Catchment Committee, Vaisigano Catchment Committee, Catholic Church Land Board																
Participation in regular review of project outputs	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inputs to preparation of quarterly work plans and budget	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Reflective review of project outcomes - workshops			X													
Annual review and inputs to lessons learned																
Annual review and planning of use of traditional knowledge/governance in project planning																
Storyboarding and structured video interview approach to identify Most Significant Change at community level					WWD 22/3								WWD 22/3			X
National Coordinating Committee: JWSSC (Joint Water Sector Coordinating Committee)																
Quarterly inputs to progress, financial, and lessons learned reports prepared by PMU/community groups	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Quarterly review/endorsement of work plans and budget	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Identification of quarterly needs for technical supports and preparation of recommendations based on known benefits and costs of options	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Annual review of replication and scaling-up plans									X							X
Annual review of quarterly reports and preparation of advice/guidance for community groups			X						X							X
Annual endorsement of Project Implementation Review and preparation of advice for Cabinet/Congress		X							X					X		
Lead Agency: MNRE (Ministry of Natural Resources and Environment)																
Ongoing Oversight of Project Management Unit Staff																
Ongoing review of procurement and reporting to ensure compliance with fiduciary standards of MoA parties																
Quarterly review and signature of progress and financial reports for submission to SPC/SOPAC RCU	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Submission of annual PIR and annual summary of community workshop(s) to Cabinet			X							X						X
Development Partners (UNDP and UNEP)																
Review and feedback on annual PIR reports			X													X
Submission of annual project results to global database			X													X
Preparation of materials for global sharing of results																X
Support to production of project experience notes and reports on results in global water for a (e.g. IWC6&7)															X	IWC7



Annex 8: Replication and Scaling-up Plan

Lesson	Audience	Scale	Applicability of Lesson	Replication Tool(s)	Timeframe	Cost
Stakeholder Engagement						
Watershed Management Plan as a tool to sustain manage Samoa Watershed	Government of Samoa	Local Community	Buy in of the stakeholders and the government to the WMP	National/Regional government agencies: <ul style="list-style-type: none"> – Twinning visits – Websites – Regional presentations – Symposiums – WMP Master Plan 	Ongoing to Dec 2016	\$10,000 per catchment @ 3 per year.
	JWSSC	National				\$90,000
	Catchment Communities	International				
	IWRM PMU					
IA						
Project Management						
Sector Wide Approach	International National	National to International level	Sector wide approach (IWRM) for Water Management in Samoa to be practiced in the region and the world	National/International/Regional governments: <ul style="list-style-type: none"> – Strengthen Sector Wide Approach on other Sectors of Samoa – Sector Wide Approach (IWRM) in other Pacific Regions 	2014 – December 2016	N/A
Capacity/Performance						
Building Capacity of personnel	Government Agencies Public Sector, Heads of Government	Regional/ Nationwide	Enhancing capacity in proposing water resources protection implementation measures Post Graduate Studies	National and International symposium Education sector capacity building Watershed Management Plans consultations	2014-2016	\$30,000
Technical						
River Hydro layers of Samoa update and digitise in GIS	Government MNRE Water Sector	Nationwide	Updating and ground proofing of the hydrology layers of all the rivers in Samoa.	GIS mapping confirmation Technical Department precise records Water Resources mapping accuracy	2014-2016	\$50,000

Lesson	Audience	Scale	Applicability of Lesson	Replication Tool(s)	Timeframe	Cost
Political						
Water Resources Mitigation measures accepted by government	Government Water Sector International Agencies	National Regional	Taking of Land for water resources conservation. Acceptance of Upland Policy (Water Conservation) especially the exclusion zone of 600m above sea level	National/Regional government agencies: – Region protecting high ground for water resources – Twinning visits & consultations – Website information	2013-2016	\$30,000
Socio - Cultural						
Community engagement rehabilitation activities	Local communities Watershed communities	Communities	Community utilise to assist with rehabilitation and maintenance of watershed reforestation work	National Regional countries	Ongoing since 2012	52,000
Communication						
Ridge to Reef and Community to Cabinet approached to be enhanced	Nation Communities Educators Regional neighbours	National Regional	The concept of Ridge to Reef and Community to Cabinet if adapted will be beneficial.	IWRM TV spots Water Resources Radio Talk Show School consultation and adaption WWD celebration	2009-2016	\$40,000

Annex 9: IW Pilot Project Logframe

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
1. Increasing knowledge-base and national replication of catchment management planning to strengthen management links between catchment and coastal areas	1.1 Enhanced access to information regarding the status and locations of vulnerable coastal areas in Apia to enhance coastal zone planning	Status of the coastal GIS, number of sites defined and extent of inclusion in coastal zone planning	Strong GIS models exist for catchment areas, now needs extending to include coastal areas	Priority coastal areas identified through GIS mapping of near coast land use, land and coastal sites of waste disposal, status and location of critical marine habitats and fisheries and water quality data in Apia area	Data collection reports, IDRIS maps of priority areas	GIS model can accurately map coastal zone areas
	1.2 National uptake of best practice in watershed management planning in the assessment and design of coastal zone plans	Completeness of coastal zone assessment at three priority sites in Apia	Lessons learned in catchment management and planning from IWRM Project available though limited application for coastal zone management	Replication of the documented Apia watershed planning model to assess coastal vulnerabilities and identify mitigation measures at three priority coastal sites in Apia in preparation for developing a Coastal Zone Management Plan	Coastal assessment reports, community consultation reports, Coastal Zone Status report	Catchment management planning model can be replicated for coastal sites
	1.3 Strengthened linkage between watershed management plans and coastal zone assessments to enhance Coastal Zone Management planning in Apia	Status of synthesis reports and extent of inclusion in Coastal Zone Management planning	WMP's for the four Apia watersheds but limited documentation of how they collectively impact on coastal zone management objectives	Review and synthesis of the Apia Watershed Management Plans to identify and document their collective impact on coastal zone objectives for inclusion in development of Coastal Zone Management plans	WMP's Synthesis report,	Sufficient linkages between watershed and coastal management can be made to enhance coastal environmental protection

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
2. Increasing capacity for effective environmental stress reduction and sustainable watershed management in Apia	2.1 Strengthened biodiversity and sediment load reductions in protected watershed areas via inter-agency partnerships	Establishment of inter-agency partnership Extent of areas successfully re-vegetated	Limit ed involvement in re-vegetation activities of Apia catchment	Partnership between Dept. of Agriculture and Dept. of Forestry established to develop and implement a joint re-vegetation program and associated monitoring and evaluation plan to rehabilitate protected areas	MoA, meeting reports and participant lists, joint Re-Vegetation Program and activity reports, M&E plan and reports	Existing tensions between agencies may limit participation in joint program
	2.2 Improved sustainable watershed management through monitoring and evaluation of existing environmental protection measures	Extent and continuity of the data collected through PM&E Plan Extent of uptake of PM&E recommendations in watershed management	Lack of thorough PM&E for the Watershed Management Plans in Apia	PM&E plan developed and operational for the Apia Watershed Management Plans featuring measures for monitoring inter alia sediment load and water quality, status of invasive species, impacts on near coastal and riparian biodiversity and ecosystem health, and site-level social impacts	Published PM&E plan, monitoring results, annual implementation reports, analysis and comparative studies, watershed management plans	Available resources to undertake monitoring of plan impacts
	2.3 Enhanced community and national level awareness and support of best practice catchment protection models	Number of best practice measures tested and documented Number and scope of best practice measures communicated	Lessons learned from IWRM Project in catchment management	Best practice approach to catchment management and stress reduction measures captured, documented and communicated nationally	Catalogue of best practice approaches and measures	Available best practices in Apia



Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
3. Strengthen support of the National Environment Sector Plan to enhance the mainstreaming of watershed conservation policies in national reporting	3.1 Strengthened capacity for monitoring and evaluation of the National Environment Sector Plan through targeted training	Percent increase in target population with applied skills in PM&E	Limited capacity for developing PM&E plans and refining project activities	Proportion of target Ministry of Natural Resources and Environment staff with applied understanding of PM&E techniques and activity refinement methods increased to 80% through innovative training and assessment techniques	Consultation meeting and activity reports, training workshop outputs including participatory interviews and knowledge testing	Training and capacity building materials are sufficiently well designed to engage target staff
	3.2 Improved national reporting results through development of harmonised monitoring and evaluation frameworks for National Environment Sector Plan	Status and continuity of data collected through PM&E Plan	Limited application of PM&E methods to the National Environment Sector Plan	Participatory monitoring and evaluation framework developed and implemented to determine efficacy of National Environment Sector Plan interventions	Consultation documents, published PM&E plan, monitoring results, annual implementation reports, NES assessment reports	PM&E framework sufficiently well designed to stimulate results reporting improvements
		Extent of uptake of recommendations from PM&E				



