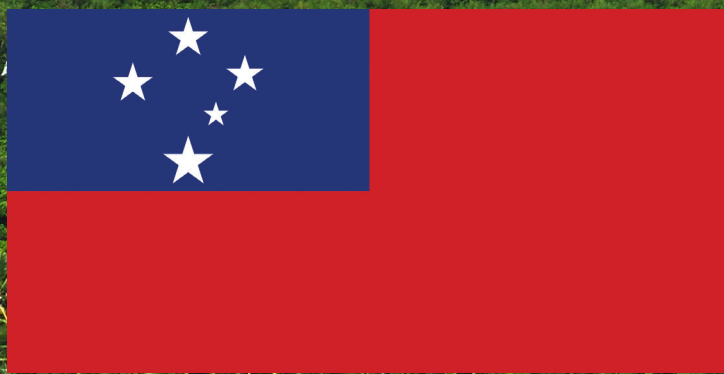


GEF PACIFIC
RIDGE TO REEF PROGRAMME
SAMOA



NATIONAL R2R PROGRAMME
DOCUMENT



GEF Pacific RIDGE TO REEF Programme

Pacific Islands Ridge-to-Reef National Priorities – Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods in Pacific Island Countries

FOREWORD

The Heads of States of 13 Pacific SIDS developed and in 1997 endorsed a GEF International Waters Strategic Action Programme (SAP) for Pacific Island Countries. That document identified priority areas for action in the international waters focal area as improved management of ocean and coastal fisheries, integrated watershed and coastal management, and water supply protection. On the basis of the Pacific SAP, the GEF International Waters focal area has subsequently invested in a series of regional initiatives. The first was the UNDP implemented project entitled “Implementation of the Strategic Action Program for the International Waters of the Pacific Small Island Developing States” initiated in 2000 and operated over almost 7 years to 2006.

In light of the critical water resource and sanitation issues facing Pacific SIDS, GEF support in the years following the conclusion of the IWP project has been targeted at improved coordination and planning of water resource and wastewater management to balance overuse and conflicting uses of scarce freshwater resources through the GEF Pacific IWRM Project. The latter was financed by the GEF, implemented by UNDP and UNEP, and executed regionally by the Geoscience Division of the Pacific Community (SPC) in partnership with 14 Pacific Island Countries.

The GEF Pacific IWRM Project built on achievements of previous investments via a focus on national IWRM demonstration projects aimed at providing an opportunity for participating countries to implement, and experiment with, new management models and methods. The practical on-the-ground solutions to water and sanitation issues demonstrated by the national IWRM projects acted to stimulate support at both community and national government levels for policy reform and the mainstreaming of integrated approaches as part of national sustainable development planning.

The experience and local capacity in integrated environmental and natural resource management generated through the GEF Pacific IWRM project has been recognized both regionally and within the 14 participating Pacific Island Countries as an appropriate entry point for the testing of innovative approaches and measures to integrate land, forest, water and coastal management, including climate change adaptation in Pacific SIDS. In this connection, the GEF multi-focal area, multi-GEF agency programme entitled “Pacific Islands Ridge-to-Reef National Priorities – Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods” (or the GEF Pacific R2R Programme) was developed to provide an opportunity for Pacific SIDS to develop and implement truly integrated approaches for the sustainable development of island economies and communities. Programme activities are organised under the following programme components:

- ✓ National Multi-Focal Area Ridge-to-Reef Demonstrations in all Pacific Island Countries
- ✓ Improved Governance for Integrated, Climate Resilient Land, Water, Forest and Coastal Management
- ✓ Regional and National/Local Ridge-to-Reef Indicators, Monitoring and Evaluation and Knowledge Management
- ✓ Regional Programme Coordination

This National Programme Document summarizes the development of integrated approaches to water resource and coastal management in Samoa to date, including examples of specific results and lessons learned achieved through integrated approaches to environmental and natural resource management. Importantly, this document presents information about the interlinked GEF R2R STAR and GEF International Waters R2R Projects, including programme support activities which focus on science-based planning, human capital development, policy and strategic planning, results-based management, and knowledge sharing.

Marc Wilson

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INTRODUCTION

Given the close inter-connections between land, water and coastal systems in Small Island Developing States (SIDS), the integration of freshwater watershed management with coastal area management is considered essential to foster effective cross-sectoral coordination in the planning and management of land, water and coastal uses. In Pacific SIDS, such integrated approaches to freshwater and coastal area management have been termed 'Ridge to Reef' to emphasise the inter-connections between the natural and social systems from the mountain 'ridges' of volcanic islands, through coastal watersheds and habitats, and across coastal lagoons to the fringing 'reef' environments associated with most Pacific SIDS. Inherent in the approach is the philosophy of cross-sectoral coordination in the planning and management of freshwater use, sanitation, wastewater treatment and pollution control, sustainable land use and forestry practices, balancing coastal livelihoods and biodiversity conservation, hazard risk reduction, and climate variability and change.

Similarly, the integration of communities, stakeholders, and national governments within such a cross-sectoral planning framework is described by Pacific SIDS as a 'Community to Cabinet' approach. The following sections summarize achievements to date in the development of 'Ridge to Reef' and 'Community to Cabinet' approaches to integrated natural resource and environmental management in Samoa. An overview of the purpose of the Ridge to Reef Programme, its GEF R2R STAR Projects and GEF International Waters Projects is also provided.



1. RIDGE TO REEF CONTEXT

This section provides a brief background of the geography and environmental threats in the Samoa. This information has been used as the basis for the identification of priority activities for the testing of 'Ridge to Reef' approaches to integrated land, water, forest and coastal management in Samoa.



2. COMMUNITY TO CABINET APPROACH

Community to Cabinet is a multi-stakeholder approach adopted in the Pacific Small Island Developing States to foster strengthened coordination and stakeholder involvement in the planning of investments in integrated natural resource and environmental management. This section outlines existing mechanisms for 'Community to Cabinet' coordination in Samoa.



3. RIDGE TO REEF RESULTS

Pacific leaders have called for a strengthened emphasis in results-oriented sustainable development planning. This section benchmarks the main results of efforts to develop integrated management approaches in Samoa to date.



4. DOING IS SEEING THE NEED

The GEF Pacific Ridge to Reef programme embraces the 'Doing is Seeing the Need' philosophy adopted by the GEF Pacific R2R Programme. A story board of images is presented to provide examples of best practices in integrated natural resource and environmental management.



5. LESSONS FROM INTEGRATION

Human resources are central to the sustainable development of Pacific SIDS. This section presents experiences and lessons learned in integrated management by practitioners and stakeholders. The focus of these lessons is on the capacity built for integrated management and the related results.



6. GEF PACIFIC R2R PROGRAMME

An overview of the "Pacific Islands Ridge-to-Reef National Priorities – Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods" (or GEF Pacific R2R Programme) is provided in this section. Information about the interlinked GEF R2R STAR and GEF International Waters R2R Projects, and Programme Coordination Unit, is also presented.



7. SAMOA'S NATIONAL LDCF PROJECT

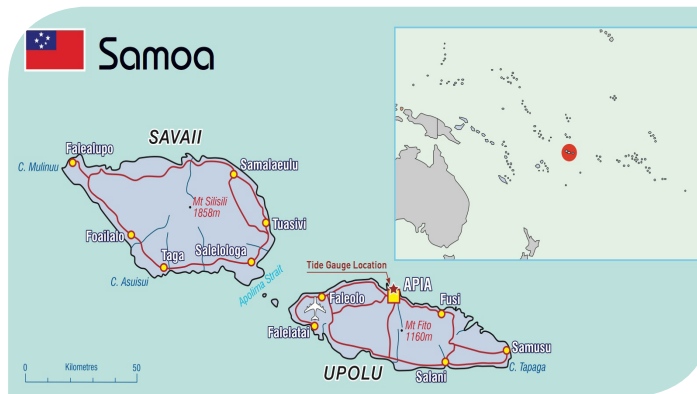
A summary of Samoa national project to be financed through the GEF Trust Fund is provided in this section. The planned contribution of this STAR project to the achievement of the targets for the regional Ridge to Reef program is outlined. The management arrangements for this project are also provided.



8. INTERNATIONAL WATERS R2R PROJECT

Priority actions identified for testing the integration of water, land, forest and coastal management to preserve ecosystem services, store carbon, improve climate resilience and sustain livelihoods in Samoa are outlined. A brief strategy for Samoa IW R2R national pilot project is provided along with the logical framework matrix. Key assumptions and risks are summarized to guide planning during the project's inception period.

1. RIDGE TO REEF CONTEXT



Country:	Samoa
Size:	2,994km ²
Population:	180,000 +
Population growth:	0.8%
Density:	64.97/km ²
GDP:	USD 3.5 billion
Growth Rate:	1.2%
Gross National Income:	USD 3,160

Samoa consists of two main islands, Upolu and Savaii, 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 are still covered with montane forests, and in the case of the highest altitudes on Savaii, cloud forest. 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. 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. During a consultative Hot Spot Analysis, stakeholders identified the Apia Catchment as the site for the IWRM demonstration project because of the severe degradation and serious water quality issues.

Water supply in northern, eastern and southern Upolu is from surface water intakes, where as that for western Upolu 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.

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 Apia, 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 the uplands of 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.

The Apia Catchment area was considered an appropriate pilot project given its national and regional significance, relative 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 eco-systems. The integrated approach in water resources management is consistent with integrated principles already being practiced in urban planning and the tourism industry.

The above issues have begun to be addressed through the cross-sectoral planning and management initiatives of the GEF Pacific IWRM Project. Needs still exist and have been identified within a Ridge to Reef context.

These needs include enhancing access to information regarding the status and locations of vulnerable coastal areas; and strengthened linkages between watershed management plans and coastal zone assessments. It also includes increasing capacity for effective environmental stress reduction practices and sustainable watershed management in Apia.

2. COMMUNITY TO CABINET APPROACH

There is a growing recognition in the Pacific region of the need for partnerships, alignment of donor support with national priorities, and country ownership in the development of results-oriented programs and projects. The Pacific leaders recently emphasized these needs noting the well-known challenges Pacific Island communities face in fashioning sustainable futures. These include geographical isolation, high levels of dependence on natural resources for nutritional security and livelihoods, and a highly variable environment characterized by numerous coastal hazards.

The above combined with considerable variation in island geomorphology, socio-economics and politics make locally-driven solutions to key issues influencing island sustainability and resilience a necessity. Of particular note are the complex land and marine tenure systems and institutional relationships between national and community-based governance structures.

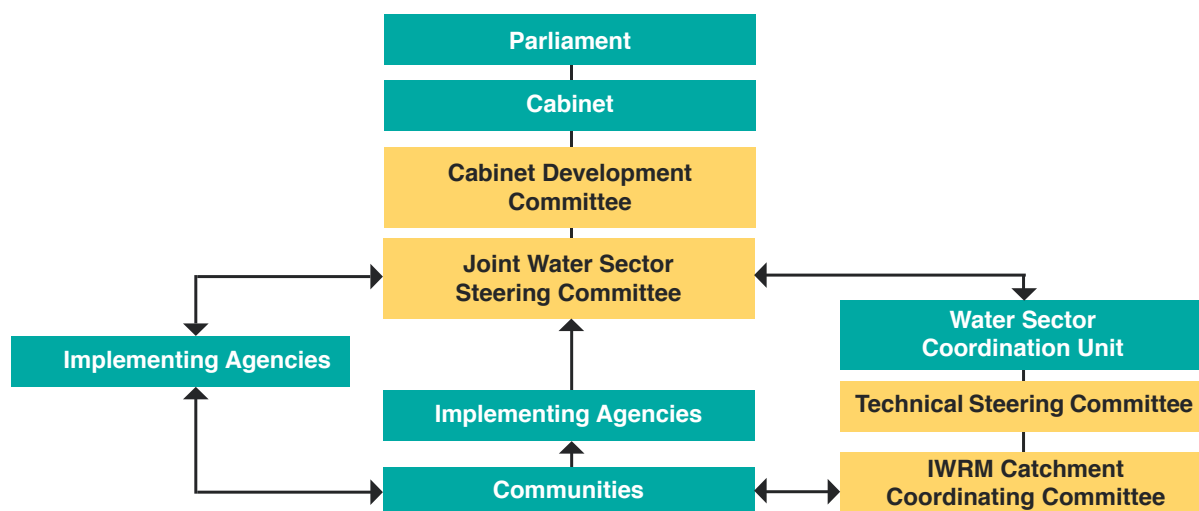
While the Pacific SIDS have largely adopted western-style constitutions and legal systems, such community-based governance and leadership arrangements remain highly influential at all levels. Accordingly, the participation of civil society organizations and community leaders in development planning is essential to increase the local relevance of management actions and their results in SIDS. The following outlines existing cross sectoral coordination arrangements and efforts to engage stakeholders in sustainable development planning.

Strengthening Cross-sectoral Coordination and Planning

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.

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.

As a Water Sector and part of a sector wide approach for the Samoa country, there is 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."



National governance arrangements are shown for the water sector.
National committees are highlighted in yellow

Linking Local and National Coordination

In Samoa a Water Sector Steering Committee (WSSC) had been functional since 2006 and 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. Its members comprise cross-sectoral senior government officials. 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.

The IWRM Demo Project Coordinating committee also known as CCC and IWRM stakeholders contains many other cross-sector organisations such as private sector businesses, NGO's, Finance, Tourism, and Health. This committee sits underneath the Technical Steering Committees as a Water Resource Sub-sector committee.

Stakeholder Engagement

Samoa's national pilot project of the regional R2R IW project will work to: generate local and national support for integrated R2R approaches; establish linkages, synergies and mechanisms for learning exchange, particularly between and among community leaders and project stakeholders of the national GEF System for Transparent Allocation of Resources (STAR) projects planned under the broader Ridge to Reef programme; develop local experience in linking IWRM to coastal area management; and stimulate cross-sectoral participation in the planning of coordinated investments in land, forest, water and coastal management in the participating countries.

Given the range of stakeholders identified above, the preparation phase of the regional R2R IW project in Samoa has been based on a consultative process involving national government agencies, community representatives, and civil society organizations. Stakeholder inputs elicited during the preparation phase have been incorporated in the results framework for the pilot project included in the final section of this document.

Ridge to Reef stakeholders

- Ministry of Natural Resource & Environment
- Samoa Water Authority
- Ministry of Health
- Ministry of Women, Community & Social Development
- Ministry of Agriculture
- Electric Power Corporation
- Land Transport Authority
- Economic Planning & Policy Division
- Aid Management & Coordination Division
- Chamber of Commerce
- Independent Water Schemes Association
- University of the South Pacific
- Samoa Tourism Authority
- SPREP

3. RIDGE TO REEF RESULTS

PROCESS

National strategy in place

At the time the IWRM Project started 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.

Apia Water Safety Plan

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.

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.

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.

Lessons learned incorporated into other projects

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.

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.

National IWRM indicator framework embedded in 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.

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.

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.

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.

Stress Reduction

Increase in land protected and rehabilitated over the catchment

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.

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.

Reduction of water leakage losses 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.

Increased population with access to improved 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 new ones modified to prevent seepage into the ground.

4. DOING IS SEEING THE NEED

The GEF Pacific IWRM project acted as a valuable entry point for strengthening integrated approaches to natural resource management in Pacific SIDS. Existing national coordination mechanisms involving operation of inter-linked national APEX bodies for IWRM and local coordinating committees for IWRM demonstration projects have been effective in guiding stress reduction in the water and sanitation sector and driving reform of national IWRM policy and planning. That project also acted as a valuable entry point for capacity development, helping to foster application of inter-disciplinary skills and local knowledge and integrating this into monitoring and evaluation to ensure that causes of environmental stresses and the results of interventions are understood by stakeholders.

A need exists, however, to scale up the GEF Pacific IWRM approach to strengthen the integration of land, water and coastal management to better accommodate issues associated with biodiversity conservation, to build on synergies between investments in IWRM and sustainable forestry practices, and to strengthen the sustainable management of coastal 'blue forests' from the perspectives of hazard risk reduction, ICM application, and livelihoods. The Pacific Ridge to Reef programme embraces the 'doing is seeing the need' philosophy adopted by the IWRM project via the promotion of pilot activities aimed at generating local and national support for integrated Ridge to Reef and Community to Cabinet approaches and to establish linkages, synergies and mechanisms for learning exchange, particularly between and among community leaders and project stakeholders.

Pilot activities will also develop local experience in linking IWRM to coastal area management and will stimulate cross-sectoral participation in the planning of coordinated investments in land, forest, water and coastal management in the participating countries. The related and linked national STAR projects will deliver the targets of the overall programme relating to strategic objectives of the GEF biodiversity, climate change mitigation and adaptation, land degradation, and sustainable forestry management focal areas.

5. LESSONS FROM INTEGRATION

Building capacity leads to successful catchment protection

By Sam Semisi, IWRM Project Manager

At the summit of Gasegase catchment behind Apia, is an area of 2000 acres of native forest owned by the Catholic Church. This land is at the beginning of all the river sources in the catchment that flow to Apia providing water for the population. The Catholic Church Land Board (CCLB) had decided to sub-divide the land and sell to the public for housing and farming. Through persistent engagement at all levels of the CCLB we were able to negotiate the protection of over 400 hectares of the area, endorsed by the Samoan Government.

The concern with the decision to sub-divide was that when people moved to the area they may inadvertently degrade the natural environment through development, farming, agriculture and deforestation, impacting on the quality and quantity of water downstream.

The Ministry of Natural Resource and Environment (MNRE) learned of the subdivisions once they had already started and under the guidance of the IWRM project formed a Research Technical Team (RTT) to investigate the development. We found that the subdivision was occurring on a protected water catchment area and had already begun to be degraded with most trees cut down, infrastructure in place.

The RTT became aware that though the CCLB were asking for 40 acres to subdivide in their applications, they were actually developing beyond this and encroaching on protected land. We asked the CCLB for an environmental impact assessment (EIA) for the whole development area and put a halt to any new subdivision plans approval until the EIA was complete. Development that had already started was difficult to halt and we had to change tactics to engage land-owners and the CLB.

We understood then that we were going to have to find a convincing way to deliver the message of conservation to the CCLB to change their mindset about watershed protection. Fortunately during this time I was studying through the IWRM Graduate Certificate and was learning a lot more about the technical aspects of watershed processes and what was required to protect any area for sustainable use and rehabilitation. Equipped with technical knowledge and the negotiating skills to deliver the right message we developed a new strategy to engage the CCLB.

We developed a presentation that highlighted the essential catchment processes, the impact that deforestation and excavation has on a catchment both locally and downstream and most importantly the necessity of conserving what was left and rehabilitating the already damaged areas. Organising meetings with the proper church leaders and upper management of the CCLB we presented this to them. The head of the church exclaimed "You should have told me

about this earlier. We need to protect our water resources so this land has got to be preserved". Those in attendance were unaware of the environmental implications of the subdivision in the upper catchment area and once informed they agreed to stopping any future subdivision. From this hugely successful meeting we organised a follow up meeting with the whole management of the CCLB and proceeded to propose a solution that would allow them to subdivide some land but leave the vulnerable watershed regions to be administered by us.

Using GIS based land mapping that showed the areas that needed to be protected in order to conserve environmental integrity we showed what areas needed to be protected and what was suitable for development. We gave the CCLB two options; to sell the protected areas to the MNRE for management or manage the protection of the areas themselves. To our great relief the CCLB agreed to sell the protected areas to the MNRE for environmental stewardship.

The final outcome of this process is that the Government of Samoa has committed to the purchase of 485 hectares of land required to protect the watershed. This is an unexpected achievement that has brought the issue of catchment management to the forefront of the political agenda. Once protected land is purchased it is planned that the area will be replanted to return it to its natural state.

The whole process from initial knowledge of the subdivision to gaining government approval of land purchase took over two years and I have learned a great deal throughout. Initially I was overwhelmed and frustrated by encounters with the CCLB and felt I needed greater technical knowledge to fully express the importance of the situation. I gained this through the IWRM Graduate Certificate Program and learned the skills to confidently develop and present acceptable options for the protection of the watershed.

This allowed us as a team to make great progress identifying what land needed to be protected and what was acceptable for development. It became clear to us midway that we needed to be approaching the right people, which is when we organised a meeting with Church leaders and management. This was a turning point for the project and a great lesson to us in negotiating agreements.

It has been a relief and delight to see the CCLB change their mind completely about the catchment area. From being very reserved about the idea of ceasing subdivisions to agreeing to sell their land and recognising the importance of catchment management and watershed conservation. This has shown our team that with the right know-how and messaging we can make a change in our communities.

Successful community engagement cleans up the rivers

By Fiasosoitamalii Siasoi, IWRM Assistant



River before and after community clean up

To ensure the improved quality of life for communities through the sustainable management of the Apia Catchment, the River Ecosystem Health Monitoring (REHM) activity was planned and implemented to monitor the health of four main rivers in the Apia Catchment, namely Fuluasou, Gasegase, Loimata o Apaula and Vaisigano Rivers.

This activity was designed as a result from the previous river cleaning campaign as conducted in the four main rivers during the implementation of the project and on World Water Day celebrations in the past two years.

The aim of this monitoring river health exercise was to provide information on the ecological state and functioning of a river system and to detect the impacts of perturbation.

This information will guide national river management decisions and actions throughout the rest of the country and the data collected will act as a baseline for future control measures of water resources management.

The focus of the activity was not only on removing rubbish and informing people of correct rubbish disposal but also to monitor the species present in the river, water quality and quantity, and the vegetation cover of the buffer zones. The project also aims to encourage tree planting activities on river banks, and to provide seedlings if needed. It will be also beneficial to give rubbish bins where possible to poorer families to help them to stop disposing rubbish in the rivers.

During the 1st visit to the four selected rivers, there were sites of rubbish disposal on the river banks and in the river or streams. We noted the families, consulted them on the spot regarding the aim of the monitoring. They were given warning letters and two weeks' time to clean and take action. During the follow-up visits, we were amazed with the response from the warned families. They cleaned their rubbish and started to re-plant trees on the river banks to restore canopy coverage and to re-vegetate the naked buffer areas.

It feels good to know that the reason the reaction from the river communities was successful was because, through our

efforts of consulting, they have realised that their actions affect the cleanliness and flows of the water in their backyards. In the same way, what they throw in the river will affect families downstream and the species in the ocean. So, to keep this programme ongoing and to repeat the successful outcome, we need to extend the monitoring to the people living inland and to monitor every two months.

As this programme is designed as an ongoing activity, it is important for the community to be involved in contributing to the development effort, and share equitably in the benefits derived from keeping rivers clean and healthy. Another objective is to encourage both the local community and stakeholders to provide support to maintain the importance of healthy ecosystem in rivers and streams.

It was proud of the support and response from the community as we did monitoring visits. We put a lot of energy into planning and organising this event so that it might achieve positive results. I have learned a lot about the importance of involving key community members like village mayors, government representatives during the visit.

A village mayor of Sinamoga and Moamoa villages within the Gasegase community said that he is happy to participate with the visit team, to walk along the river and to identify families that used the river channel as a dumping site.

The owner of one business, Faleata Design in the Fuluasou community appreciated the programme very much and said that they will not dump their rubbish especially plastics into the river. Vaitapu Sani an engineer living along the river in the village of Lepea dumped his wrecked cars and unused metals in the river, and when this activity took place, he was consulted and warned. He responded well and removed all his rubbish from the river, and he is planning to replant his river banks.

To keep our rivers healthy and clean, the implementing agency would like to persist with this programme and to broaden with other rivers in the country, to reinstate the good quality condition of rivers and streams in Samoa.

6. THE GEF PACIFIC RIDGE TO REEF PROGRAMME

The GEF Pacific Ridge to Reef (R2R) Programme was developed to guide the strategic investment of GEF grant and national funding in actions aimed at achieving the sustainable development of Pacific SIDS within a truly integrated environmental and natural resource management framework.

A GEF Multi-Focal Area Approach

Initiatives of the R2R programme aim to deliver tangible and quantifiable global environmental benefits by focusing on a more cross-cutting approach to water, land and coastal management that captures the complementarities among the following GEF focal areas



A Multi-GEF Agency Approach

The GEF Pacific Ridge to Reef Programme is a multi-agency initiative involving the United Nations Development Programme (UNDP), the United Nations Food and Agriculture Organization (FAO), and the United Nations Environment Programme (UNEP) as GEF implementing agencies. Coordination support is provided by the Pacific Community (SPC), a regional intergovernmental organisation that works with Pacific Nations across a wide range of areas relevant to programme implementation, including water resource management, geoscience for development, public health, forestry, fisheries, disaster management, youth, gender and culture.

R2R Programme Goal and Components

The goal of the GEF R2R programme is “to maintain and enhance Pacific Island countries’ ecosystem goods and services (provisioning, regulating, supporting and cultural) through integrated approaches to land, water, forest, biodiversity and coastal management that contribute to poverty reduction, sustainable livelihoods and climate resilience”. Programme activities are organised under the following components:



GEF R2R STAR Projects

Significantly, the programme involves the execution of 13 GEF R2R STAR¹ projects which address national priorities and development needs while delivering global environmental benefits in line with the abovementioned GEF focal area strategies.

These UNDP, UNEP and FAO implemented projects are executed nationally on a bilateral basis in partnership with local stakeholders. To ensure cohesion, complementarity and efficiency of GEF investments under the R2R programme, each GEF R2R STAR project has been provided US\$175,000 of International Waters (IW) funding in addition to their national STAR allocations.

The intent of this IW funding increment is to enable effective linkages with the GEF International Waters R2R project, the adoption of integrated approaches aimed at addressing critical water-related issues, and intra-regional capacity building and knowledge sharing.

GEF International Waters R2R Project

The operation of the R2R programme is supported in areas of science-based planning, human capital development, policy and strategic planning, results-based management, and knowledge sharing through the International Waters R2R project which is executed regionally by the Pacific Community. R2R pilot projects, to be implemented through the R2R IW project, are designed to strengthen R2R integration by establishing synergies among the work of the various sector agencies and the GEF R2R STAR Projects, between governments and communities, and civil society and the private sector.

Programme Coordinating Unit

The Programme Coordinating Unit (PCU), hosted by the Pacific Community's Geoscience Division in the Fiji Islands, is tasked with the provision of technical, operational, reporting and monitoring support as requested by the participating Pacific Island Countries. The PCU also facilitates the consolidation and sharing of sectoral knowledge and expertise to support the uptake of best-practice management approaches in policy-making and planning. Led by the Regional Programme Coordinator, the PCU possesses multidisciplinary expertise, including administration and financial management officers, to support programme coordination.

7. SAMOA'S NATIONAL LDCF PROJECT

Strengthening Multi-Sectoral Management of Critical Landscapes

In mid-2013, the GEF Chief Executive Officer endorsed a national project in Samoa entitled 'Strengthening Multi-Sectoral Management of Critical Landscapes'. This project, financed through the GEF Trust Fund under the land degradation focal area, is working to strengthen local capacities, incentives and actions for integrated landscape management in order to reduce land degradation and greenhouse gas emissions and promote nature conservation whilst enhancing sustainable local livelihoods. Key anticipated results of this initiative include:

- Critical landscapes of over 160,000 ha under integrated SLM management by local communities, where indices of ecosystem health, diversity and condition remain the same as baseline or improve and is mainstreamed into local development plans (forest and tree cover; maintenance of wetlands; no net increase of agricultural land under mono cropping)
- Area under vegetative cover increased by 24,430 ha (with average tree density of 111 trees/ ha)
- 128000 ha of forest cover under effective management – including no net loss due to land use conversion
- 5000 households' incomes increased by 10% on average by project end through increased land productivity
- Avoided emission of 689333 CO₂-eq for 4 years and sequestration of store additionally 10,755 tCO₂eq.

INFORMATION BOX

GEF Agency:	UNDP
National Lead Agency:	Ministry of Natural Resources and Environment
Funding Source:	GEF Fund Source
GEF Focal Area:	Land Degradation
Indicative Grant Amount:	\$4,872,727
Indicative Co-financing:	\$13,117,908
Approval Date:	October 2013

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The Global Environment Facility's System for the Transparent Allocation of Resources (STAR)

Economy-wide integration of Climate Change Adaptation and Disaster Risk Management to reduce climate vulnerability of communities in Samoa

In mid-2013, the GEF Council approved the preparation of a national project in Samoa as part of the regional UNDP/UNEP/FAO Pacific Ridge to Reef programme entitled 'Economy-wide integration of CC Adaptation and DRM/DRR to reduce climate vulnerability of communities in Samoa'.

This project will establish an economy-wide approach to climate change adaptation in Samoa, aimed at efficient integration and management of adaptation and DRR/DRM into national development planning and programming and enhancing the resilience of communities' physical assets and livelihoods across Samoa, to climate change and natural disasters. The components of this project and their anticipated outcomes are summarized below.

Component 1: Strategic integration of climate change adaptation and DRM in national policy frameworks and development planning through an economy-wide approach

Outcome 1.1	Policy Strategies/Institutional Strengthening: CC Adaptation, DRR, and DRM mainstreamed in relevant policies, sectoral strategies, sub-national strategies and budgeting processes through enhanced coordination of government institutions
Outcome 1.2	Public finance management at the national, district, and village level. Capacity to access, manage, implement and monitor use of climate change funds is enhanced at the national and village level.

Component 2: Enhance resilience of communities as first responders of climate change – induced hazards

Outcome 2.1	Protection of communities' physical assets and livelihoods. Increased resilience, and decreased exposure and susceptibility of communities to climate change and natural disasters by protection of household and community assets and promoting resilient livelihoods.
Outcome 2.2	CCA/DRR plans and implementation. Increased adaptive capacity of communities for implementation of effective risk management and protection of household and community assets

Component 3: Monitoring and Evaluation and Knowledge Management

Outcome 3.1	Knowledge about CCA and DRR is captured and shared at the regional and global level
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INFORMATION BOX

GEF Agency:	UNDP
National Lead Agency:	Ministry of Natural Resources and Environment
Funding Source:	GEF Trust Fund
GEF Focal Area:	Climate Change
Indicative Grant Amount:	\$12,522,936
Indicative Co-financing:	\$90,000,000
Approval Date:	March 2013

8. GEF PACIFIC INTERNATIONAL WATERS R2R PROJECT

This regional project will support 14 Pacific Island Countries in the development of “Ridge to Reef” and “Community to Cabinet” approaches designed to guide the integration of water, land, forest and coastal management required to fashion sustainable futures for island communities.

The project also aims to address the recent high-level recognition and calls for results-based approaches to the management of development assistance programmes and projects, and will provide support in areas of coordination, capacity building, technical assistance, and monitoring and evaluation for the operation of the GEF Pacific Ridge to Reef Programme. Components and outcomes of this programme are:

<p>Component 1: National Demonstrations to Support R2R ICM/IWRM Approaches for Island Resilience and Sustainability</p> <ul style="list-style-type: none"> • Successful pilot projects testing innovative solutions involving linking ICM, IWRM and climate change adaptation • National diagnostic analyses for ICM conducted for prioritizing and scaling-up key ICM/IWRM reforms and investments • Community leader roundtable networks established for strengthened ‘community to cabinet’ ICM/IWRM
<p>Component 2: Island-based Investments in Human Capital and Knowledge to Strengthen National and Local Capacities for R2R ICM/IWRM approaches</p> <ul style="list-style-type: none"> • National and local capacity for ICM and IWRM implementation built to enable best practice in integrated land, water, forest and coastal management and CC adaptation • PIC knowledge on climate variability, coastal area planning in DRM, integrating ‘blue forest’ and coastal livelihoods consolidated and shared to support evidence-based coastal and marine spatial planning • Incentive structures for retention of local ‘Ridge to Reef’ expertise and inter-governmental dialogue on human resource needs for ICM/IWRM initiated
<p>Component 3: Mainstreaming of R2R ICM/IWRM Approaches into National Development Planning</p> <ul style="list-style-type: none"> • National and regional strategic action frameworks for ICM/IWRM endorsed nationally and regionally • Coordinated approaches for R2R integrated land, water, forest and coastal management and CC adaptation achieved in 14 PICs • Physical, natural, human and social capital built to strengthen island resilience to current and emerging anthropogenic threats and climate extremes
<p>Component 4: Regional and National ‘Ridge to Reef’ Indicators for Reporting, Monitoring, Adaptive Management and Knowledge Management</p> <ul style="list-style-type: none"> • National and regional formulation and adoption of integrated and simplified results frameworks for integrated multi-focal area projects • National and regional platforms for managing information and sharing of best practices and lessons learned in R2R established
<p>Component 5 - Ridge-to-Reef Regional and National Coordination</p> <ul style="list-style-type: none"> • 5.1 Effective program coordination of national and regional R2R projects

R2R pilot projects, to be implemented through the R2R IW project, are designed to strengthen R2R integration by establishing synergies among the work of the various sector agencies, between governments and communities, and civil society and the private sector. The following pages present the results framework for Samoa’s IW pilot project.

INFORMATION BOX

GEF Agency: UNDP
 Regional Executing Agency: SPC - GSD
 National Lead Agency: Ministry of Natural Resources and Environment
 Funding Source: GEF Trust Fund
 GEF Focal Area: International Waters

R2R IW RESULTS FRAMEWORK

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 Demonstrable use of best practice in natural resource planning	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 Relevant agencies are willing to cooperate in coastal assessments
	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 practices 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	Limited inter-agency 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 Willingness to incorporate PM&E findings in future watershed planning
	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 approaches to catchment management and stress reduction measures captured, documented and communicated nationally	Catalogue of best practice approaches and measures Communications on best practices published and syndicated	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 Continuity of participation of target audience in training events
	3.2 Improved national results reporting through development of harmonised monitoring and evaluation frameworks for National Environment Sector Plan	Status and continuity of the data collected through PM&E Plan Extent of uptake of recommendations from PM&E	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 meeting documents, published PM&E plan, monitoring results, annual implementation reports, NES assessment reports	PM&E framework sufficiently well designed to stimulate results reporting improvements



The GEF unites 182 countries in partnership with international institutions, non-governmental organizations (NGOs), and the private sector to address global environmental issues while supporting national sustainable development initiatives.

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