

DEMONSTRATION PROJECT CONCEPT PAPER

Country: SAMOA

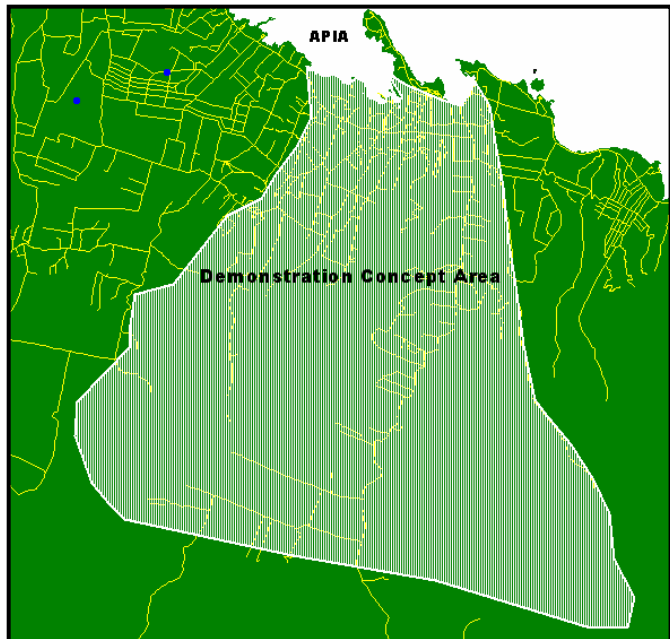
Title: Rehabilitation and Sustainable Management of Apia Catchment

Project Description:

Located on Upolu, the Apia catchment covers 85km² and includes Lake Lanoto'o and its two subcatchments, Vaisigano and Fuluasou. It is essential for the provision of water supply as well as hydropower generation to the growing urban area of Apia, the capital city of Samoa, and other villages along the North West coast of Samoa. All surface water from this catchment drain into the Apia town area – a large floodplain. This area accounts approximately 40% of the population of Samoa, which is 177,000 people according to the 2001 Census.

Lake Lanoto'o is Samoa's first site to be protected under the Ramsar Convention, as well as its second national park. Its associated forests is home to rare endemic bird species including the Manu Ai Pa'u La'au (Red Headed Parrot Finch), Manumea (Tooth Billed Pigeon) and Manutagi (Crimson Crowned Fruit Dove). The lake is also the breeding home to gold fish introduced into the lake by German settlers in the late 1800s. Three natural plant formations have been identified in the area. These are upland rush and reed swamps, upland swamp forest and primary high forest.

The Vaisigano subcatchment, located in the North Central Upolu Island near the growing capital city of Apia, covers an area of 2300 hectares (23 km²) and is being tapped to meet the increasing demand of drinking water and hydropower for the capital city and the surrounding villages. Siltation is a common problem causing not only interruption to power generation and quality of water supply, but also causes considerable environmental damage, threatening both inland and marine aquatic life.



The Fuluasou subcatchment covering 4500 hectares (45 km²) is located south west of Apia. It supplies drinking water to the North-West Upolu and a part of Apia. It features significant agricultural activities (cattle

farms , taro, banana and vegetable productions) as well as residential areas. Steep slopes are cultivated, causing erosion while the use of pesticides threaten the quality of the water supply.

Continued land clearance for agriculture, cattle farming and land development for residential and business purposes affect water quality and quantity as well as the natural ecosystem in the Apia catchment area. Poor sanitation infrastructure in the capital city coupled with industrial and agriculture practices in the catchment area have led to fresh and coastal water pollution and soil erosion. During the wet season (October to March), this area is prone to flooding and experiences dirty water supply. During the dry season, unusual low river/stream flows and water shortages occur regularly and are particularly heightened during droughts. These irregularities can also be linked to the effects of climate change.

The objective of the project is to rehabilitate and manage 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 achieve this, a rehabilitation component will look at the revegetation of degraded areas with suitable native species, encouraging farmers within the watershed catchment to adopt sustainable agriculture practices, assessing the practicality of relocating cattle farms outside the catchment area, assessment of soil/water retention and groundwater recharge, implementing appropriate soil conservation measures to stabilize or improve landslides, gullies, road slopes and protect river banks and improving the road drainage to divert excess surface runoff at appropriate locations.

The conservation component will include the review of the 1990 watershed management plan, the implementation of a land use plan and a targeted education and awareness programme about the importance of the water catchment and sustainable practices for conservation, the review of the national water resources and water service policies for effective water conservation, allocation and provision; the development of a water safety plan for surface and groundwater and a monitoring programme including a watershed database (including land use, vegetation, hydrological and meteorological data). To generate revenue for the sustainability of the project, eco-tourism activities will be developed in the Lake Lanoto'o and "Loimata o Apaula", as well as the Robert Louis Stevenson (museum and gravesite) reserve areas. In line with the IWRM approach, the project will foster water users involvement and participation in the management and conservation of the catchment.

Delivery:

- Revegetation and reforestation of degraded areas
- Approval of a land use plan
- Drainage improvement
- Watershed Management Plans (Vaisigano and Fulusou) reviewed

- National Water Resources Policy reviewed
- National Water Service Policy approved
- Watershed Conservation Policy and Plan developed
- Approval of a water safety plan for surface and underground water
- Appropriate eco-tourism activities implemented
- Relocation practicality of cattle farms (including fencing) assessed
- Soil retention/conservation measures implemented
- Soil/Water retention assessment completed
- Water demand management training programme implemented
- Soil, water and land use monitoring programme and database developed and implemented
- Awareness and education programmes towards watershed users implemented.

Eligibility:

The demonstration concept is in line with the following GEF operational programmes:

OP 2: coastal, marine and freshwater ecosystems

OP 9: Integrated land and Water multiple focal area program

OP 14: program for reducing and eliminating releases of Persistent Organic Pollutants

OP 15: sustainable land management

It meets the following strategic priorities in the context of the GEF business plan:

BD-1: Catalizing sustainability of protected area

IW-3: Undertake Innovative Demonstrations for reducing contaminants and addressing water scarcity

SLM-1: Targeted Capacity building

SLM-2: Implement innovative and indigenous sustainable land management practices

EM-1: Integrated approach to ecosystem management

* BD – Biodiversity, IW – International waters, SLM – Sustainable Land Management, EM – Integrated approach to Ecosystem Management

Replication:

This approach can be replicated in Savaii, Samoa with catchments experiencing similar problems and water quality and quantity being a grave issue for residents within those areas. Moreover, given Samoa's size and similarity in geographical and climate features with other small island states, it is perceived that the replicability of this type of project is practical.

Potential Execution:

A Task force comprised of key stakeholders (governmental agencies and ministries, NGOs, professional associations and community) with key water responsibilities and interests is proposed to coordinate and monitor the project implementation. It is envisaged that the Task Force will be composed of a sub-committee formed under the auspices of the National Water Sector Steering Committee and led by the National IWRM focal point (MNRE). Gender balance will be sought in this composition. Given the focus of this proposed demonstration project, the task force may be referred to as the 'Catchment Coordinating Committee' and may be retained for such a period of time, should the project be replicated in other areas of Samoa.

Daily implementation of the project activities will be executed from relevant implementing agencies, ie Ministry of Natural Resources and Environment (MNRE), Samoa Water Authority, Ministry of Agriculture and Fisheries, Samoa Tourism Authority, Electric Power Corporation, Ministry of Works, Infrastructure and Transport, Ministry of Education, Sports and Culture, Ministry of Health, Ministry of Women, Community and Social Development and where appropriate, the Samoa Umbrella of NGOs (SUNGO).

Predicted cost:

In US\$, (staff and equipment inclusive)

	<u>GEF</u>	<u>Co-funds</u>
Revegetation and reforestation of degraded area	70,000	50,000
Land use plan development	30,000	20,000
Road drainage improvement and access road upgrade	125,000	1,000,000
Watershed Management Plans (Vaisigano and Fuluasou) review	5,000	15,000
National Water Resources Policy review		15,000
National Water Service Policy finalization and approval		15,000
Watershed Conservation Policy and Plan development	20,000	20,000
Water demand management training implementation	20,000	75,000
Water safety plan for surface and underground water development	10,000	30,000
Appropriate eco-tourism activities implementation	40,000	40,000
Relocation practicality of cattle farms (including fencing) assessment	35,000	5,000
Soil/water retention assessment for drought management	30,000	40,000
Soil conservation measures implementation	55,000	55,000
Soil, water and land use monitoring programme and database development	30,000	150,000
Awareness and education programmes towards watershed users implementation	30,000	50,000
Total	500,000	1,580,000

Potential co-funding: EU-WaSSP, the World Bank, ADB, Government of Samoa, Ramsar convention fund, JICA, AusAid, Public Sector Investment Facility