

SAMOA COUNTRY REPORT

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Introduction

The value of mangroves to social and economic development have been increasingly recognised nationwide, however there is still limited effort to directly conserve or regenerate the remaining mangrove areas in Samoa. There are several conservation strategies being promoted in the country which either indirectly include or specifically target some considerations for the protection and sustainable use of mangrove areas.

The Department of Lands, Surveys & Environment in partnership with the IUCN (World Conservation Union) is working with the Districts of Safata (9 villages) and Aleipata (11 villages) to establish two multi-use community based marine protected areas. Its objective is to empower the local communities of these districts to effectively protect and manage coastal marine biodiversity and help them achieve sustainable use of marine resources.

About 64 village-based Fisheries Reserves have been established in Samoa so far within a Fisheries Division programme supported by AUSAID. This programme focuses on promoting village or community involvement in the management of these fisheries reserve in an effort to conserve the fishery resources to enable it to replenish and recover to a more sustainable state. A similar approach is currently being promoted around the Pacific regions through the South Pacific Biodiversity Conservation Programme (SP13CP) of SPREP, and there are two areas established under this programme, the Uafato Conservation Area and the Saanapu - Sataoa Conservation Area. This approach tries to create a balance between nature and the need to provide for the daily livelihoods of people. Conservation and the sustainable use of mangrove areas is also reflected in the overall vision of the Samoa's National Biodiversity Strategy & Action Plan 2001-2005.

There was no detail survey undertaken for mangrove wetlands in Samoa but it has been estimated to be about 1,270 hectares or less than one percent of the land area of Samoa (Zann 1991). Two mangrove communities can be distinguished in Samoa, mangrove scrub and mangrove forest. Both are dominated by salt-tolerant trees with specialized breathing roots. Mangrove scrub is dominated by *Rhizophora mahgle*, a tree that rarely reaches a large size.. Mangrove forest is dominated by *BOguiera emnorrhiza*, large trees of which form closed canopy forests in estuaries and bays, especially on the south coast of Upolu.

Mangrove is scattered in distribution, and is typical of bays and estuaries on most of Upolu except the northern portion, and on the eastern part of Savaii (See Map 1). The best remaining example of mangrove forests in Samoa is at Saanapu/Sataoa on the South coast of Upolu. Another good site of mangrove forests is at Mulivai Safata and Lefaga Bay; which was seriously hit by the 1990 and 1991 cyclones. The best example of a remaining mangrove scrub is at Vaie'e/Tafitoala, Moataa and Vaiusu bay on either side of Apia, which was identified during the Survey for the Conservation of Biological Diversity in the Coastal Lowlands of Samoa 1992.

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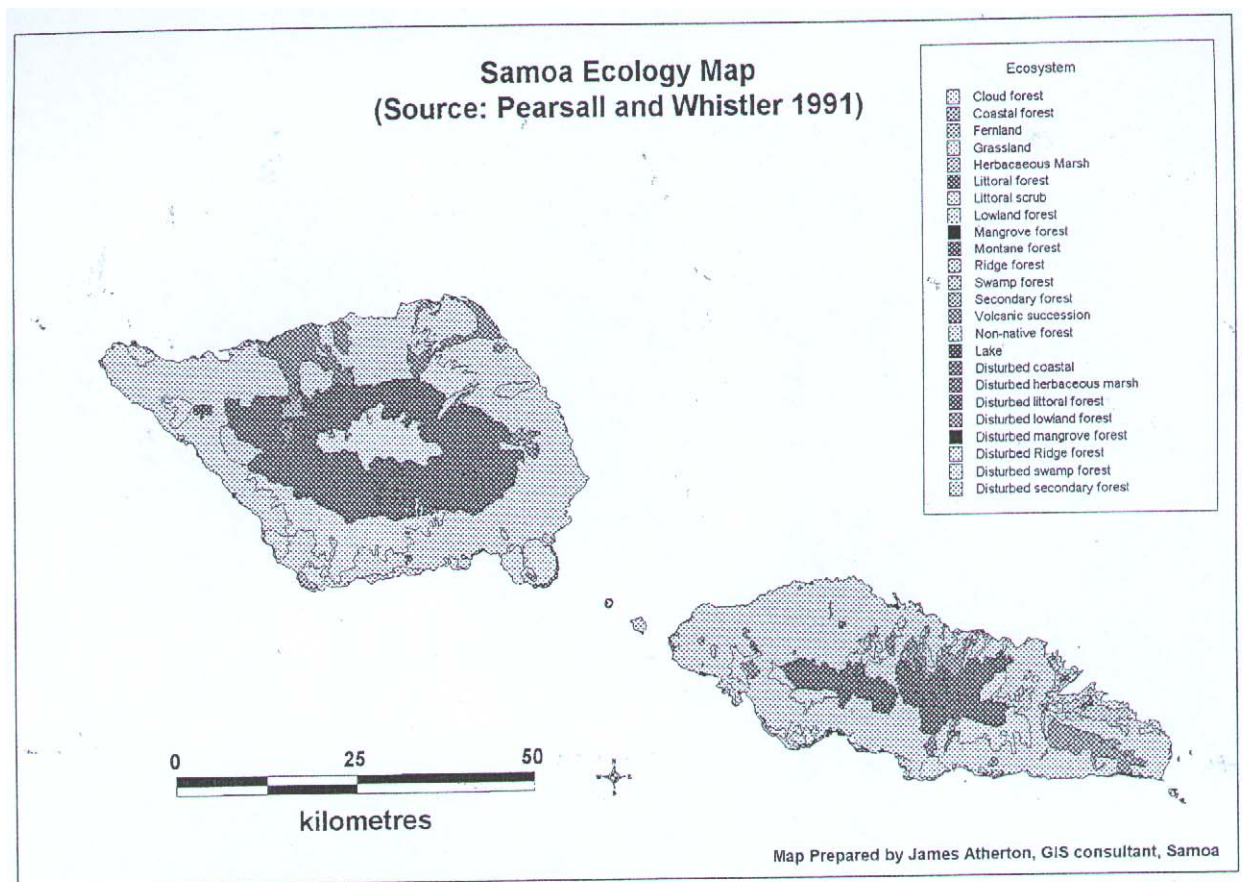
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A small unique mangrove forest dominated by *Xylocarpus moluccensis* is found on the south coast of Savaii just east of Salailua village. The *Xylocarpus* mangrove is unique to Samoa, perhaps the Pacific. Although small in extent, and not in immediate danger, it is worthy of protection.

Mangrove have largely featured (especially in village communities with mangrove areas) as important fishing grounds for a variety of fish and shell fish, and sites for collecting plant material for medicines, handicraft, building and firewood supplies in the livelihood of traditional village communities from the past up to now.

With spreading modern developments around the country, mangroves have been made mainly out of ignorance into common sites for waste disposal and most of the country's land reclamation for building purposes. The best example of this is the continuing reclamation and the disposal of waste towards the remaining mangrove areas in and close to the capital of Apia. In spite of a significant decision by the Government to relocate its urban dumpsite that was established since the middle of the last century at the largest mangrove area in the country-termed "Vaiusu Bay" located west of Apia to an inland site termed "Lafi Tafaigata" in the last decade.

Another crucial example of declining in mangrove habitats is happening and will be continuing to happen at Moataa mangrove scrub. The 1954 aerial photo has been compared with 1999 photo of the same area shows a decrease from 62 hectares to 28 hectares. Threats mainly caused by reclamation and over-harvesting of mangrove for fuelwood and as building material.



Map 1: Mangrove Areas of Samoa 1991

Legislation

There are no specific legislation on the protection of mangrove wetlands in Samoa mainly due to the fact that is not seen as a high priority need. The Lands and Environment Act 1989 covers the management areas deemed by the Government to be important for conservation. Other legislation, such as the Forestry Act 1967, Fisheries Act 1988 and the Water Management Regulations 1992 also assists in the management of wetlands and assessment of wetland importance.

Policies

Policies relating to the management and conservation of Mangrove wetlands in Samoa are generally lacking. The fourth and fifth National Development Plans (DP4 & 5) specified policies setting guidelines for land-use, water resource conservation and environment conservation. The protection of the Environment and conservation of natural resources are included in the objectives and strategies of the DP5. The primary goal of the DP5 is however increased production in the Agricultural sector.

The Tourism Master Plan (1983-1984) and the Samoa Tourism Development Plan (1992-2001) give important consideration to the conservation of Samoa's archaeological and historic sites, cultural patterns and natural environment although cultural and historic attractions are special consideration in view of their importance to the tourist industry.

The National Forest Policy approved by the government in 1994 aims at restoring the balanced multi-use functions for forestry, strengthening forestry administration and encouraging customary owners to become more committed to the protection of the remaining indigenous forests and reforestation activity. Ideally the Land Use, Waste Management, Population and Water Management Draft Policies have been drafted by an inter-agency task team as part of the National Environment and Development Management Strategies (NEMS) are mend to include conservation and sustainable use components. They are currently awaiting cabinet endorsement.

Administration

The management and conservation of Mangrove wetland ecosystems have been the responsibility of the Ministry of Agriculture, Forests, Fisheries and Meteorology. However, the Lands and Environment Act 1989 provides the protection of the natural resource and the environment of the country including the prevention and conservation of its foreshore and coastal areas from pollution.

Fauna

Birdlife

1991 survey in the Saanapu-Sataoa region recorded 14 bird species. They included the Samoan broadbill, crimson crowned fruit dove and the Samoan Whistler, species normally only common in large forest areas. Herons, waders and grey ducks were reported an the rare and elusive sooty and white browned rails also found. There is apparently a white-rumped swiftler population in at least one important lava tube cave and it is suspected that other caves have populations of the sheath-tailed bat, a species is in danger of extinction and whose status is of concern.

Non Fishery Marine

The lagoon of Saanapu and Sataoa are frequented by the hawksbill turtle which is a threatened species in the Pacific region.

Flora

Because mangrove communities are dominated by a single species, most of the species diversity is in the epiphytes, which are most common on *Bruguiera* trees. Some of the sites had 26 epiphytic species. One species of note is an epiphytic *Trichomanes* fern which does not match any other *Trichomanes* found in Samoa or apparently in Fiji. Other species associated with mangrove include species *Inorcarpus fagifer*, *Hibiscus tiliaceus*, *Pandanus turtus* and *Acrostichum* coastal marsh vegetation.

Tenure Ownership of Mangrove Wetlands

Traditionally, village's bordering lagoon or shallow water was a special preserve in which the village maintained rights of use and access in much the same way as it controlled its lands. The lagoon, inshore areas (as far as the reef) were considered to be the property of those near whose village it was situated (Bell 1985). Ownership of lagoons, reefs and their surrounding resources is traditionally vested with the *matais* of each village.

Presently, Article 104 of the constitution of the Independent State of Samoa provides that all land lying below the line of high-water mark is public land and that all citizens have a right to fish, harvest or use any of the resources there in. However, this public right must be exercised reasonably and so as not to damage the fishery or any of the resources.

As far as the ownership of mangrove wetlands is concerned, three systems seem to exist.

- (a) The state by law owns the land below the high water mark giving all citizens the right to the resources.
- (b) Freehold lands along the coast since the colonization era where the low-water mark was recognized considered the mangrove wetlands as part of these lands.
- (c) The village or family which has adjacent mangrove areas claim ownership over such.

Other Sectors Involvement

The Fisheries Division

The Fisheries Division of the Ministry of Agriculture, Forests' Fisheries and Meteorology serves to promote the sustainable management and development of fisheries in Samoa. Its role centers on the scope of the Fisheries Act 1988 outlining the following purposes as its mandate,

- Promote the conservation, management and development of fisheries of Samoa
- Promote the exploration of the living resources of fishery waters
- Promote scientific research
- Promote the protection and preservation of the marine environment.

The Division of Environment and Conservation (DEC)

The DEC of the Department of Lands, Survey and Environment's functions as identified under the Lands and Environment Act 1989 are as follows:

- Advise government on all environmental management and conservation matters
- Ensure and promote the conservation and protection of Samoa's natural resources and environment.
- Assist in ways of preventing, controlling and correcting pollution of the air, sea and land, Promote public awareness as to the importance of the environment and its conservation.

The DEC is also responsible for the management of national parks such as the Palolo Deep Marine Reserve and the Sataoa/Saanapu Mangrove Conservation area.

Le Sisosiomaga Society

The society is a non-governmental organisation that promotes public awareness, education and information dissemination on environmental issues.

Faasao Savaii Samoa Society

Another non-governmental organisation that promotes public awareness on environmental issues.

Regional Organisations

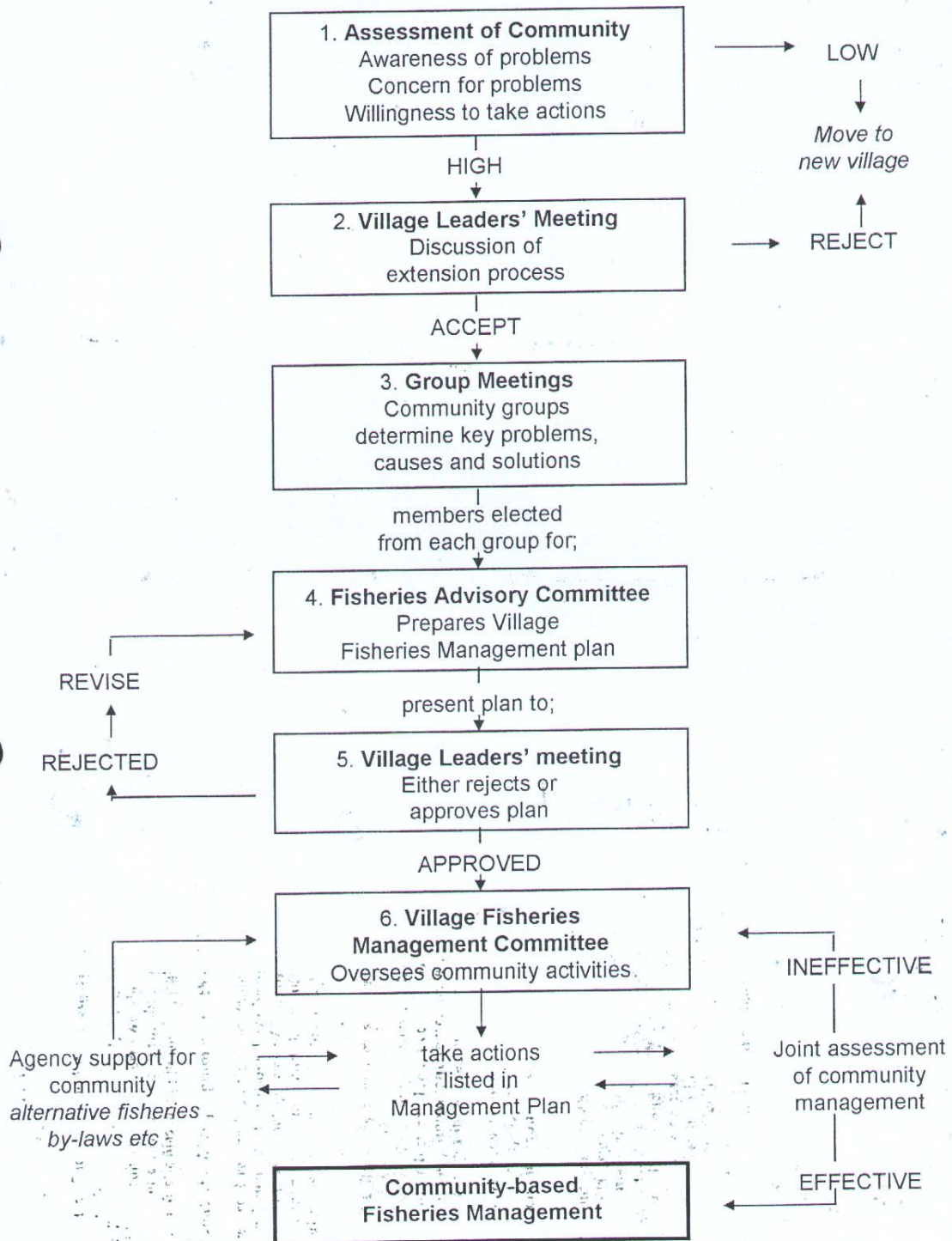
South Pacific Regional Environment Program (SPREP). SPREP functions to promote the conservation of the environment on a regional scale. It has funded several projects concerning marine conservation management and also provides technical assistance to the Pacific region on environmental conservation matters.

Food and Agriculture Organisation of the United Nations - Sub Regional Office for the Pacific Islands (FAO-SAPA). FAO-SAPA provides technical assistance on marine conservation management issues.

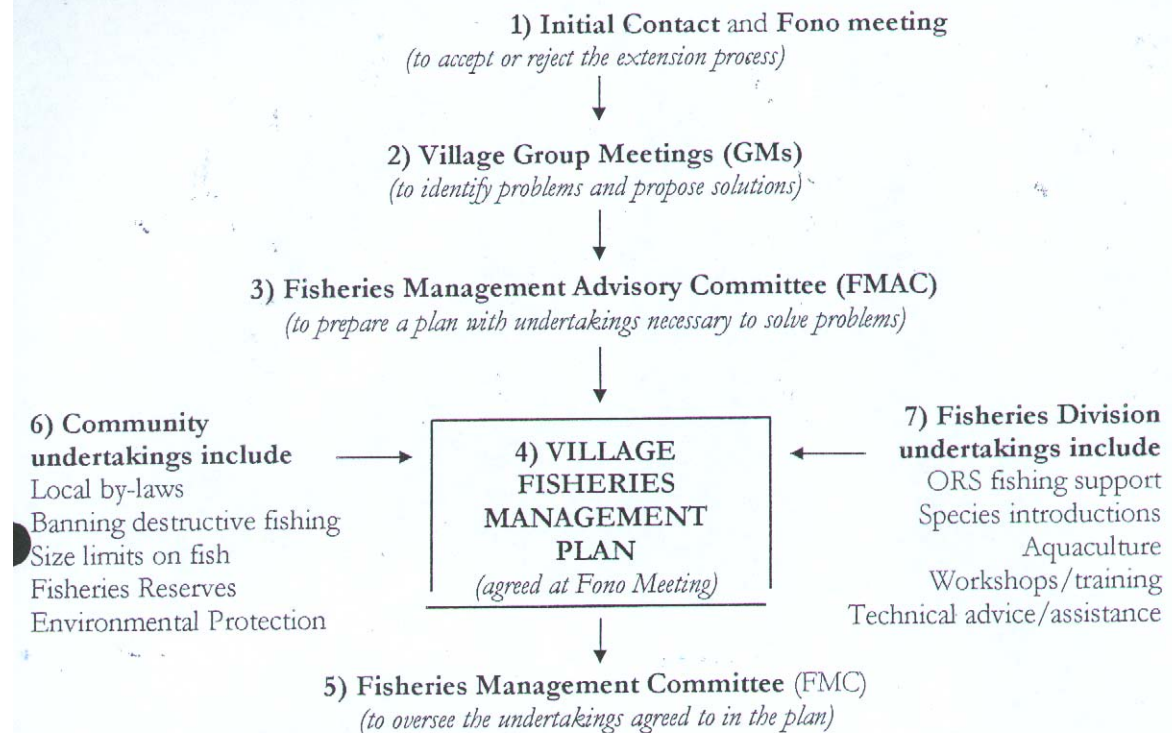
IX. Community Involvement

The AusAID funded Fisheries Extension and Training Project in its second phase continued to support the community/village-based fisheries management program. This program was established in 1995 and invented the process of community/village-based fisheries management in Samoa. The underlying philosophy of the project is to promote *bottom-up* planning and to create a lasting village infrastructure that will have the confidence, ability and motivation to tackle its problems. The stages are described briefly below and in more detail in the following diagram.

The Community Extension Process.



The process can also be simplified as;



The Fisheries Extension Process in Samoan villages

The strategy used in the program is based on the belief that the primary responsibility for the marine environment lies with the village itself. The overall objective of the process is to promote the participation of village communities in the management of their marine environment and fishery resources. The medium term goal of the project is to prevent a further decline in village near-shore fisheries resources. Reasons for this decline include, overexploitation, the use of destructive fishing methods, and environmental disturbances.

The process of community involvement in the management of fisheries resources is achieved when:

- People of such community is aware of the problems with the marine environment and fisheries resources,
- There is a concern for these problems and their effects on the community
- There is a desire and willingness to take actions to address these problems
- There is an assumed control over adjacent fishing areas and,
- The community should have the power to make and enforce their own rules and regulations.

The village extension process employed is simply known as the 'bottom-up' approach. This approach is designed in a way where the various groups of the community voiced the problems, possible solutions to the problems, what should be done to reduce or eliminate the problems and, who should be responsible for these actions.

The process culminates in each community producing its own Village Fisheries Management Plan including the resource management and conservation undertakings of the community, and the support undertakings of the Fisheries Division.

Village Management Plans

The plans contain a range of community undertakings designed to conserve and rebuild fish stocks and to protect the marine environment. Undertakings have differed from village and the most common are summarized below:

- Banning the use of dynamite and poisons to kill fish
- Banning smashing of corals to catch sheltering fish
- Minimum size limits on fish
- Banning underwater torches for spearfishing at night
- Collecting crown of Thorns starfish
- Banning removal of beach sand and dumping of rubbish
- Establishment of fish reserves
- Production of village By-Laws
- Preserve the mangrove wetlands.

Conclusion and Recommendations

The loss of Samoa's limited mangrove wetlands and resources due to human activities such as land reclamation, garbage disposal and harvesting for firewood and construction materials should be controlled and be given high priority by the government and agencies responsible for their management.

The management of mangrove wetlands in Samoa seems to be the responsible of a few government departments that has provisions for such areas in their Acts, Regulations and Policies. However, no one particular department takes it as their mandate.

The involvement of communities in the decision-making process should be encouraged to ensure the successful implementation of managing mangrove wetlands and/or any inshore fisheries resources.

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