



Forests and the Biodiversity Convention

**Independent Monitoring of the
Implementation of the Expanded Programme
of Work
in Samoa**

**Ole Siosiomaga
Society**



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Cover:

Uafato bay in Upolu island, Samoa.
Photographer: Fiu Mataese Elisara

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EXECUTIVE SUMMARY

The Samoa report was prepared by Fiu Elisara of O Le Siosiomaga Society in conjunction with SUNGO (Samoa Umbrella NGOS)

The Samoa analysis showed that while there was some general awareness of the expanded programme of work the level of work being undertaken by the Samoan government related to structural changes like the development of a NBSAP (National Biodiversity Strategic Action Plan) and tended to revolve around the reporting elements of the programme and there was further no evidence of a programme specifically to address the expanded programme of work. Like many countries Samoa was doing some work around the conservation of biodiversity and specifically around forest conservation but there appeared to be lacking an integrated action plan that could be said to be addressing the POW.

Samoa as a developing nation tends to be highly dependant on foreign aid from developed nations with significant contributions from New Zealand, Australia and Japan (all members of the JUSCANZ Alliance) It should therefore come as no surprise that Samoa relies heavily on the same scientific paradigm that is prevelant in these countries. In the analysis of forest cover for example there is reference to a surprising increase in forest cover but no mention of what definition fo forests was used in the analysis and without the source documents, it is impossible to judge how much of the increase was due to recovery and how much due to a change in definition. Very little was mentioned in the Samoa analysis of any attempt to address an ecosystem approach to conservation.



Rainforest waterfall Samoa
Photo: Fiu Mataese Elisara

On the issue of Indigenous Peoples involvement it should be noted that as a small Pacific Island State Samoa has a significant majority Indigenous population and did indeed conduct some level of consultation and involvement of community leaders. In such a country it would be hard indeed to develop a programme without involving the community in some way. What is not quite so clear is the level of capacity building of stakeholders was being undertaken by the Government in order for this consultation process to be meaningful.

While not as yet being utilised as a plantation area for the production of agrofuels, Samoa is a small island state highly vulnerable to the impacts of both climate change and climate change mitigation strategies especially through any increase in climate disasters due to an increase in climate gas emissions.

Samoa has a strong and well developed network of Protected Areas as its major contribution to forest conservation and while there is involvement of Indigenous Peoples in the process, there is little evidence of indigenous methodologies being employed.

INTRODUCTION

Samoa is a small island state highly vulnerable to the impacts of both climate change - especially sea level rise and extreme weather events - and climate change mitigation strategies.

The Samoan analysis showed that while there was some general awareness of the expanded Programme of Work, the level of work being undertaken by the Samoan government related to structural changes like the development of a National Biodiversity Strategic Action Plan. The

only relevant activities tend to revolve around the reporting elements of the Programme. Like many countries Samoa is doing some work around the conservation of biodiversity and specifically around forest conservation, but there seems to be no integrated action plan that could be said to be addressing the POW.

As a developing nation, Samoa tends to be highly dependant on foreign aid from developed countries, especially New Zealand, Australia and Japan (all members of the JUSCANZ Alliance). It should therefore come as no surprise that Samoa relies heavily on the same scientific paradigm that is prevalent in these three countries.

In considering forest cover, for example, the report refers to a surprising increase in forest cover, but there is no mention of what definition of forests was used in the analysis. Without the source documents it is impossible to judge how much of the increase was due to recovery and how much due to a change in definition. There seems to be little evidence of any attempt to adopt an ecosystem approach to conservation.

On the issue of Indigenous People's involvement it should be noted that as a small Pacific Island State Samoa has a significant majority Indigenous population and did indeed conduct some level of consultation and involvement of community leaders. However, in such a small country it would be hard to develop a programme without involving the community in some way. What is not quite so clear is the level of stakeholder capacity-building being undertaken by the Government.

Samoa has a strong and well developed network of Protected Areas as its major contribution to forest conservation. However, whilst there is involvement of Indigenous Peoples in the process, there is little evidence of indigenous methodologies being employed.

1. TOGETHER WITH THE RELEVANT GFC FOCAL POINT, DEVELOP AND DISTRIBUTE AN ADEQUATE QUESTIONNAIRE AMONG THE RELEVANT OFFICIAL AND SOCIETAL ACTORS.

The draft questionnaires received from GFC were amended to reflect the situation in Samoa and were circulated at the end of March 2007 to those in government, NGOs, FAO, SPREP, and others in Samoa who have been involved in the CBD process with particular interest in the forest sector. It was evident from the low response that there is little understanding about the EPoW and subsequent discussions with the CEO of the MNREM and government officials that attend the related global process confirmed this. Responses to the questionnaires trickled in around the end of April/May 2007 after some consistent follow-up with those concerned. Other than this modicum of data collection, the avenue through national consultations with the participants of the Samoa Forest Outlook study was also helpful. Field workshops and seminars in a number of villages in the islands of Savaii and Upolu which included the national council of churches provided additional insight into this work. This is therefore a result of a participatory process that could have benefitted more from additional community consultations, but resource constraints prevented this. However, given the evidence shown earlier in the process with regards the general lack of understanding about the content and issues addressed in this project, it was prudent that the level of engagement was limited, although adequate in the way we had structured it. The data gathered, the analysis of baseline data, the questionnaire, and desk reviews of existing reports have contributed to this draft report.

First, I summarize the responses that were received on the questionnaire:

Programme element 1 – Conservation, sustainable use and benefit-sharing

Actions being undertaken by Samoa to protect forests from identified threats include:
For the loss of forest biodiversity in general – the government has approved its NBSAP as the guiding document for national activities to reduce the loss and achieve the sustainable

management of the country's indigenous forest biodiversity. It has also enforced a Protection of Wildlife Regulation in 2004 to ban the hunting of forest wildlife – fruit eating bats and all native birds.

For logging – the government has enforced in 2006 a ban on all commercial logging.

For watershed management – the government did demonstrations on the sustainable management of watershed areas on both government and community lands in the 1990s under an FAO funded project and in 2002-2006 it carried out pilot community watershed managed areas under the SPREP Regional International Waters Programme. Its currently implementing as a main component its Water Sector Support Program funded by EU a national water resources management strategy

For invasive species – the government is currently formulated in addition to the NBSAP a National Implementation Action Strategy for Invasive Alien Species and has formed an action oriented invasive task team the Samoa National Invasive Task Force to prevent and eradicate new invasive species and contain the established invasive species.



*In the fringes of a crater lake in the middle of Upolu Island.
Photo: Fiu Mataese Elisara*

The actions in (a-d) above are being undertaken by Samoa to restore, mitigate and eradicate those identified threats. The ecosystem approach, however, is not formally taken but the frameworks in place were formulated with a view of conserving the priority ecosystems in the country and in harmony with the country's development priorities – agriculture, tourism, and infrastructures for utility services (electricity, water, transport, telephone). The ecosystem approach being applied as part of national environment frameworks – with relevant forest conservation and sustainable management provisions with the effect that key communities have experienced and appreciated the value of integrating the conservation of their indigenous forests with eco-tourism and less degrading agricultural activities. However more effort is needed to improve and sustain this experience, and strong integral component of community development.

Sustainable use of forest biological diversity is a strong policy issue of Samoa as reflected in its relevant national environmental management frameworks.

Programme element 2 – Institutional and socio-economic enabling environment

On forest biodiversity as an important economic factor for people in Samoa, responses were positive and the government has definite agencies with corporate responsibilities for the sustainable management of the country's forest resources. There are also key environmental NGOs pursuing forest conservation objectives with grass root communities. On forest tenure, access and property regimes in Samoa, more than 80% of the country lands are under customary land tenure. Only a small percentage of this area have had experienced forest management by their village communities in the '90s and to date. Government's lands have had a significant level of area under forest protection – three (3) national parks which account for close to half of all government lands. However the future of the country's PA expansion is

on customary lands. On how forest biological diversity contributes to the welfare of all segments of national society in Samoa, this provides for the maintenance of key ecological services – maintenance of watersheds, maintenance of soil fertility, pollination and regeneration of indigenous forests, supply of quality timbers, contribution to carbon sinks and clean air. Forest biodiversity also provides opportunities for tourism, education and research, and genetic resources for agriculture, food, traditional medicines, bio-prospecting, handicrafts, culture and traditions, and other potential uses to industrial interests of the country and its peoples.

On the question about what actions are being undertaken by the Samoa government to create an enabling environment in the institutional and socio-economic fields, the responses above on the development of environmental management frameworks and development of institutions with responsibilities for forest management and sustainable use are relevant. As to how are the different actors being engaged in this process, the Samoa Development Strategy is a three year term development framework which is the over-arching framework for the sustainable development of Samoa. It provides the basis for the allocation of national resources annually to the different sectors of the country economy including those with responsibilities and programs relevant to forest biodiversity issues.

Programme element 3 – Knowledge, assessment and monitoring

The priorities for research on forest biological diversity in Samoa in the '90s were mainly to establish baseline for prioritising conservation and sustainable management of indigenous forest biodiversity. Currently research priorities are on the potential of forest areas and genetic resources for improving livelihoods and income generation in environmentally sound and sustainable ways, as well as the restoration of the ecological services forested areas provide as the basis of key economic productions of the country. As to how this knowledge is linked to assessment and monitoring, these have been to date carried out when decided by the government and when opportunities are there to do them. In general regular monitoring has not been established yet. There is current plans to make this exercise a more regular – periodic responsibility of key government agencies. The challenge is the lack of capacity, commitment and leadership to achieve this. National resources are not adequate to carry this out and it requires the cooperation and contribution from grassroots communities who own most of the resources to monitor forest cover, forest health, forest structure and composition, forest classification and definitions, forest protection, and forest rehabilitation and restoration. This knowledge is reflected in policies and measures developed to curb forest loss, deter the degradation of forests, and protecting forests.

On forests definition in Samoa, it was evident that the understanding about grassroots community forest refers to existing un-cleared areas of forests, or otherwise referred to as secondary forest areas. Nationally the government has from past ecological research and forest inventories (most recently the 2004-5 forest inventories) established a Samoa Forest Resource Information System (SAMFRIS) which have divisions of definite forest types based on dominant species and other prominent ecological factors. Traditional knowledge is considered in definitions associated to policy making. This is strongly defined and addressed in the Samoa NBSAP & forest policies – especially traditional biological knowledge associated with the use of forest resources in traditional uses such as in buildings, handicrafts, canoes, utensils, & medicines.

On this knowledge being reflected in policies and measures to curve forest loss and degradation it is in all areas where forest conservation has been trialled from the '70s up to date and where traditional knowledge is a key component included in management planning for protection and sustainable forest use. Traditional knowledge is indeed being used in policy making and in the assessment and monitoring of the status of Samoa forests as is reflected in the major ecological surveys of forests in the '90s where the first forest conservations in Samoa were on customary lands, and in the first and only forest resource economic valuation that was carried out in 2001.

2. PROVIDE A BRIEF DESCRIPTION OF THE ENVIRONMENTAL, GEOPHYSICAL AND SOCIOECONOMIC ASPECTS OF THE COUNTRY.

As the larger and western part of the Samoan Archipelago, Samoa lies in the south-west Pacific between 13° 25' and 14° 05' south of the equator, and between 171° 23' and 172° 48' west longitudes. It comprises two main islands, seven smaller islands, and islets and rocks. Its total land area is about 2,820 sq km, with the two main islands of Upolu and Savaii containing 1,115 and 1,700 sq km respectively. The capital Apia is located about midway on the north coast of Upolu, and lies about 130 km from Pago Pago, American Samoa, 3,000 km from Auckland, New Zealand, and 4,500 km from Sydney, Australia.

The topography of Samoa is rugged and mountainous, with about 40 per cent of Upolu and 50 per cent of Savaii characterised by steep slopes and 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, corresponding to the rain shadow areas as mentioned below.

The highest real growth rate (5.1%) was recorded in 2005. remittances continue to be the largest contributor to the country's economy and were largely responsible for the increase in the commerce industry. Agriculture rebounded in 2005, after a downturn in 2004 due to cyclone Heta. But fish exports, which used to be a major contributor to economic growth, continued to decline, primarily as a result of adverse weather conditions and over fishing. However, nonu exports have climbed over the last three years. Public administration, personal services, tourism, manufacturing and construction industries continued a steady growth in 2005.

The latest SDS provides data with regards to employment creation, total formally employed population increased from 19,879 in 2001 to 20,404 in 2003. The 2.6% increase was accounted for largely by Transport and Communications, Commerce, Hotels and Restaurants and Personal Services. Employment in the primary and secondary sectors declined.



*Cloud forest
Photo: Fiu Mataese Elisara*

The economy is expected to continue heading upwards for fiscal year 2005/07. Assuming that monetary policies remain relaxed, real GDP will likely grow by 5.0 percent, boosted by a continued upswing in construction activities, tourism and private remittances. The slower economic growth rate would help contain the high demand for imports, thus reducing the expected overall balance of payments deficit from \$50 million to \$30 million. Inflation would also fall from over 3 percent to the preferred target rate of 3.0 percent.

3. PROVIDE A CHARACTERIZATION OF FORESTS OCCURRING IN SAMOA.

Samoa's total land area is about 285,000 ha, and more than 171,000 ha is total forest area, consisting of major forest types (mangrove and forested wetlands). These figures estimated

from the recent forest survey, SamFRIS¹ are a little more than 60 per cent of the total land area, which is more than earlier mappings assumed or predicted.

Medium forest covers the biggest area size with 72, 563 ha. There is virtually no more closed forest left, except for a small area found on Nuutele. Open forest makes up for a sizeable portion, covering some 20% of the total land area. Pure stands of secondary forest already cover 13% of the total land area; not including large swaths of abandoned coconut plantations encroached by secondary scrub or forest.

Agricultural plantation area (non-forest) makes up the largest portion with more than 53,000 ha covering almost 19% of the country. While tree plantation area is almost evenly distributed between Savaii and Upolu, there are clear discrepancies for mixed crops, grassland and built-up area, which all dominate on Upolu. Barren land almost exclusively occurs on Savaii on recent lava flows and landslides on the slopes of the main volcano (Mt Silisili).

The mapping results provide area size figures for all eight islands covered by the aerial photos. The Table below recapitulates area sizes for the 16 main forest and land cover categories.

Upolu still has a forest cover of approximately 47%, while 69% of the total area of Savaii is still under forest. However, discrepancies become evident when looking at the distribution of forest types where there is no medium forest left on Upolu, while 402 ha are situated in northern Upolu. Medium forest on Savaii still covers an area of 72, 150 ha. Upolu has the largest forest category of open forest with more than 33,000 ha.

Some difficulty has been encountered with the various sources of total "forest" plantation area. The aerial photo interpretation rendered a total area of 5,102 ha, which comes relatively close to the existing Samoa Forestry Division records of 5,653 ha. Available forest compartment maps, however, showed an area of only 3,551 ha. An explanation given by SFD was that inconsistencies may have been caused by writing-off cyclone damaged plantations, which still figure in some of the records.

Area sizes of forest types and land cover categories (ha)

Main Category	Savaii	Upolu	Total Samoa*	% of Samoa land area
Closed forest	0	0	82**	0.0
Medium forest	72151	403	72563	25.5
Open forest	22272	33049	55348	19.5
Secondary forest	19800	17296	37173	13.1
Scrub	15065	7000	22115	7.8
Forest plantation	3798	1305	5103	1.8
Mangrove	16	353	370	0.1
Wetland	148	597	745	0.2
Plantations	26158	26770	53114	18.7
Mixed crops	2463	7706	10228	3.6
Grassland	5193	12299	17494	6.2
Barren land	1973	30	2005	0.7
Built-up	1772	5292	7098	2.5
Infrastructure	32	432	463	0.2

¹ The Samoa Forestry Division / FAO project "Strengthening the Institutional Capacity of the Samoa Forestry Division (SFD) to Effectively Plan and Manage Forest Resources" in 2004 - 2005 established the 'Samoa Forest Resources Information System'. This was a necessary planning data to manage Samoa's natural forest resources and plantation forests in a sustainable way. And essentially, providing the SFD with the necessary equipment and training to upgrade its capacity to assess, manage and monitor the remaining forest resources of Samoa. The SamFRIS project began in mid 2003 and has now completely re-mapped the country's forest resources based on 1999 aerial photographs into a MapInfo based GIS. In addition, a comprehensive forest survey involving more than 400 survey plots has been conducted to gather data about the structure and quality of Samoa's forests.

Lakes	16	203	219	0.1
Rivers	22	42	64	0.0
Total	170879	112777	284184	100

*includes all 8 islands **sizeable areas of closed forest occur only on Nuutele Source: FAO, 2005

The biggest proportion of Upolu's forest area is made up of open forest (62%). The total remaining forest area of Upolu (95%) consists of open forest and secondary forest, proving clearly the high degree of forest depletion. Savaii's medium forest makes up for the largest portion (61%) of the total forest area, more than open forest and secondary forest combined. Plantations make up only for a very small portion if compared to the total remaining forest area of Upolu (2%) and Savaii (3%) as illustrated in the Table below.

Area proportions of forest types on Upolu and Savaii

Category	% of total forest area of Upolu	% of total forest area of Savaii	% of total forest area of Samoa
Closed forest	0	0	0
Medium forest	1	61	42
Open forest	62	19	32
Secondary forest	33	17	22
"Forest" plantation	2	3	3
Mangrove	1	0	0
Wetland	1	0	1

Source: FAO, 2005.

The upland of Upolu is covered with a large area of open forest that stretches along the central ridge from NW to SE. It reaches the coast only in a few, isolated locations, such as south of Togitogiga National Park and along the north eastern shore. On Savaii, the open forest is rather situated in the lowland coastal areas, especially on the north eastern and the southern coastal strip. Two more patches of open forest exist on the south eastern tip of Savaii and on its northern shore near Fagamalo.

Secondary forest category is especially concentrated on the northern flanks of Upolu where it covers large areas of formerly cleared land now covered with secondary growth forests dominated by *Albizia spp.* Other isolated patches do occur in the coastal areas practically all around Upolu. On Savaii, the secondary forest covers predominantly the northern and north western lowlands intersected by volcanic scrubs on recent volcanic lava flows.

Coast-bound mangrove forest almost exclusively occurs on Upolu where it is confined to small pockets on the northern shore near Apia and on the south coast near Salamumu.

Forested wetlands of forested marshes and swamps are confined to small and isolated areas, e.g. depressions on the eastern tip of Upolu and in a few inland craters on Upolu and Savaii.

Tree plantations usually occur as either large scale or compact plantations or small-scale village owned woodlots. Due to the scale of the forest mapping, only compact plantations have been mapped where identifiable from the aerial photos completed by existing forest compartment maps. There are three main tree plantations on southern coast of Upolu and two more on the northern flanks of Mt. Vaea. Tree plantation area is almost three times larger on Savaii where large tracts have been planted in the northwest of the island. Other plantations are situated in the south (Lefaga area) and in the east of Savaii (Puapua area).

Although not counted into forest area, the scrub vegetation represents, at least in some parts, recovering vegetation that develops towards a secondary forest. It constitutes natural vegetation in other areas as seen on recent volcanic lava flows. Large swaths of scrub are therefore found on the northern slopes of Savaii where 20th century eruptions left two major and widespread lava flows. Other areas in the southeast of Savaii are caused by degradation.

On Upolu, a large coherent block of scrub vegetation is found on the south eastern end of the central mountain ridge, where it is supposed to be edaphic (of or relating to soil) in the first place and further degraded by cyclone-induced damage (FAO, 2005).

4. DESCRIBE THE LAND TENURE REGIME AND FOREST MANAGEMENT SITUATION IN THE COUNTRY.

The 81% of land is owned by the extended indigenous aigas or families under customary ownership as stated in the 2004 Samoa National Assessment Report that was submitted to the Mauritius Conference in January 2005 reviewing the Barbados Programme of Action after ten years. The alienation of customary land is prohibited by law under the Alienation of Customary Land Act 1965. Customary land cannot be transferred nor made freehold, although lease arrangements are possible. Eleven percent of the land is government owned, whilst five percent remains under the Samoa Trust Estates and Samoa Land Corporation which are more and more being sold or leased to the public.

There is a growing trend towards the individualism of customary lands and this change is significant for two reasons: (i) it shows that the indigenous Samoan traditional way of life and their indigenous status is unfortunately slowly eroding, and forcing people to adapting to changing and introduced economic circumstances; (ii) the security of indigenous Samoan land rights are threatened with increased assignment of land tenure to individuals who clear the land and the inheritance rights are assigned exclusively to their children.

The three primary types of land tenure in Samoa are also present in the urban town of Apia. Public land or land vested in Samoa constitutes 16% and is free from customary title and from any estate in fee simple (freehold). It also includes all land lying below the line of the high water mark which is line reserved for public purposes. Public land also includes land vested in the Samoa Trust Estates Corporation (STEC) and more recently the Samoa Land Corporation (SLC).

Leased land could be considered the fourth type of land tenure. Land that can be leased includes Government land, freehold and customary land, which must be registered upon application under the Land Registration Act 1992/93. When land is registered it means that it has a unique legal description, its boundaries have been determined or defined, and that the owner(s) are known. One of the prerequisites for land development is that title to the land is secured as this enables long-term use of the land and provides the possibility for security (GOS/ADB 2001b).

Land is central to the economic and cultural structure of Samoa with land of productive potential in ample supply. However in areas of heavy population concentration, shortages of land under customary land tenure are becoming evident pressure to develop land of marginal value for village sector production. Within central Apia, settlement has been replaced with commercial and other non-residential uses such as the produce market by the conversion of government leasehold lands to freehold. Other land has come from reclamation and informal land filling.

Samoa's NPAS now covers approximately 11% of its terrestrial territory. The idea of protected areas has only relatively recently begun to be put into practice in the South Pacific region. In 1978, with the establishment of O Le Pupu Pue, Samoa became the first Pacific Island nation to create a National Park. One year later, at Palolo Deep, the country established one of the region's first marine reserves. Since 2000, two new national parks have been established, including Mauga o Salafai, the first to be located on Savaii.²

Despite the above progress, there are clear limitations to a national-park-based approach to biodiversity conservation in Samoa. Foremost among these is the fact that the vast majority of

² Section C-2.2.1 below provides details concerning Samoa's National Protected Area System (NPAS).

the country's ecologically important areas are under the customary ownership of village communities. On the whole, approximately 79% of Samoan territory remains under customary ownership.³ While it is possible under Samoan law to change the status of some of these lands, i.e., to bring them under Government control and declare them as nationally protected areas,⁴ both the country's Constitution and Government policy tend to discourage such steps in practice.

As a result, responsibility for the conservation of Samoa's globally significant and other biodiversity, and for the continuing productivity of its forest resources and ecosystems, rests overwhelmingly with local communities – a situation that is likely to remain constant for the foreseeable future. An effective community-based approach is thus a *sine qua non* for conservation and sustainable use of Samoa's globally significant ecosystems.

Given the above, the development of a sustainable network of Community Conservation Areas (CCAs) is a primary mechanism and opportunity, not to interfere with the implementation of the CBD/PoW, but enhancing it for expanding and strengthening the conservation effectiveness and sustainability of Samoa's forests and National Protected Area System (NPAS). In the Samoan context, CCAs may be defined as ecologically important land areas belonging to local communities where conservation and sustainable development initiatives are applied by local community members, usually in co-operation with a combination of national government agencies and external development partners. CCAs have typically been established in areas identified as national priority forests areas and ecosystems for conservation as recommended in ecological surveys undertaken in the 1990s⁵ and subsequently endorsed by Government as priority conservation sites.

Samoa has developed a comprehensive policy and institutional framework for the sustainable development and management of its forests, environment and natural resources. While it started much earlier as part of its conservation programmes under the Ministry of Agriculture and Forests in the 1970s, major changes started in 1993 with the inception of the National Environment Management and Development Strategy, which resulted in the formulation of national policies for addressing 13 Target Environment Components. Policies addressing issues such as population, water resources, land use, biodiversity conservation, forest development, waste management, climate change and ozone protection have been approved and currently operational.

5. DESCRIBE THE STATUS OF FORESTS AND FOREST PEOPLES BEFORE AND AFTER THE ENTRY INTO FORCE OF THE CBD/POW.

Conservation or Protected Forest Areas have only recently begun to be put into practice in the South Pacific region. In 1978, with the establishment of O Le Pupu Pue, Samoa became the first Pacific Island nation to create a National Park. Since 2000, two new national parks have been established, including Mauga o Salafai, the first to be located on Savaii on community lands, and Lake Lanoto'o on government land.

The total protection forest area consists of existing and proposed national parks and nature reserves, community conservation areas, areas of more than 30% slope⁶ and water catchment areas defined as critical. All forest area outside protection forest is by definition considered production forest. This does not imply that production is possible and will effectively be carried

³ Figures provided by the Samoa Forest Resource Information System (SAMFRIS)

⁴ The Taking of Land Act (1964) empowers the Government to take any land, including customary land, for public purposes (roads, hydropower schemes, airport, township, parks, reserves, etc.) and includes procedures for providing fair compensation to the affected landowners.

⁵ Government of Samoa, Terrestrial Ecological Mapping of Western Samoa, 1990-1991; Department of Conservation, New Zealand, Conservation of Biological Diversity in the Coastal Lowland Forests of Western Samoa (National Ecological Survey of Lowland Forests of Samoa) 1991-1992; Schuster, Cedric. et. al, Conservation of Biological Diversity in the Upland Forests of Western Samoa (National Ecological Survey of Upland Forests of Samoa), 1997-1998.

⁶ The criterion of >30% terrain slope angle for the definition of protected forest areas is not yet official for Samoa. However, there is a wide consensus between MAF/SFD, MNREM and conservation NGOs that this value should be applied. FAO equally defines this value as a general rule (see: FAO Guidelines on the management of tropical forests No. 135, p. 108, ch. 2.2)

out, as other criteria still apply to define the merchantability of a production forest area, and to first obtain the consent of the community owners of most of these lands. Almost half of the total remaining forest area of Samoa has been determined as protection forest, but with the caveat of community involvement as land owners and as managers. Altogether 83,805 ha of forest correspond to the protection forest criteria, more than 70% of which are situated on the big island of Savaii. The total area of potential production forest covers some 87,269 ha, two thirds of it is again found on Savaii (FAO 2005).

Forest surveys results seem to indicate that natural regeneration is less diverse on Upolu, where only 50 different tree species have been found to regenerate compared with 69 species on Savaii. Only 70-80% of all tree species surveyed for both islands is indicated as undergoing the tree regeneration process. Interestingly, as data seem to suggest, the general proportion of commercial species is higher for regenerating tree. While the one-third proportion of regeneration consisting of mature trees indicates that more than 40% of all species counted are commercial.

6. COMPARE PREDOMINANT FOREST MANAGEMENT PRACTICES (INCLUDING LEGAL FRAMEWORK) BEFORE AND AFTER THE INCEPTION OF THE CBD/POW.

Earlier in the 1980s, it was recorded that of the total land area of 2, 935 sq. km or equivalent to about 285, 000ha, about half was in forest. And of the 150, 000 hectares (ha) of forests, about 55, 000ha fall under protection forests as National Parks and Reserves and 95, 000ha are regarded as commercial forests, with a small area as re-afforested land (Samoa, Dept. of Economic Development, 1985). The ADB report (1985) estimated in the same period the total area under tree crops, mainly coconut and cocoa at 77, 211 ha.

The trend with land use patterns in the 1990s records is slightly different with additional land uses and variations observed in the land use type. The following land use tables reflect this variation and the situation with land use change to Samoa's land cover.

Table Estimates of Landuse in Samoa, 1991

Landuse Type	Area (ha) '000	%
Plantation forests	10.7	3.8
Indigenous forests	104.0	36.8
Agricultural Use (Crops & Pastures)	139.2	49.4
Other (lava flows, towns, etc)	28.1	10

Source: NEMS, 1994 p. 34

NEMS (1994) estimated land use in 1991, as Table above shows, under four categories with land under forest cover at 36.8% followed by land under agricultural use at 49.4%. Other land use types comprising the remaining land cover are plantation and other which includes some other type of land uses.

The Table below presents further approximate figures for early 1990s of which 34.7% of total hectares are predominantly under agricultural use with merchantable forest and protected forest under village conservation areas at 4.6% and 1.1% respectively. Other land uses, which are more or less forest-based, comprise the remaining percentages with unproductive forest areas standing at 39.4%. This implicates an unfavourable situation with the land terrain soils predominantly porous and and/or rock-strewn.

Estimates of Land Uses in Samoa 1993

LAND USE TYPE	AREA (ha)	(%)
Merchantable Forest	13,574	4.6
Forest Protected / Village Conservation Areas	3,089	1.1
Watershed Areas	31,992	11.3
National Parks/Reserves	2,880	1.0
Land Available for Reforestation	10,000	3.6
Agriculture / Cropland	98,000	34.7
Recent Lava Fields	11,433	4.1
Unproductive Forest Areas	111,112	39.4
Totals	282,000	100.0

Source: Extracted from Climate Change Synthesis Report 2004

SamFRIS has greatly enabled the comparison of forest maps with results of earlier assessments and mapping in analyzing effective forest cover change over the last decades. Area size data are available for the years 1954, 1977, 1987, 1990 and 1999. However, it was difficult to attain direct comparison of the forest area figures due to different definitions and methods used. Effective quantification of forest cover change therefore has to be interpreted with some caution. Table below informs about the area proportion under forest for the whole of Samoa as well as for Savaii and Upolu.

Historical forest cover in Samoa (% total land area)

Year	Upolu	Savaii	Total Samoa	Data Sources
1954	65	79	74	Fox and Cumberland 1962
1977	44	61	54	Olsen & Co. 1978
1987	43	63	55	ANZDEC 1990
1990*	25	50	40	SFD 1994
1999	46	69	60	SFD/SamFRIS 2004

*

The 1990 figures are not directly comparable with the other figures. Source: FAO, 2005.

Moreover, the following Table indicates the remaining forest resources of Samoa. The total forest area composed of all major forest types including mangrove and forested wetlands amounts to more than 171,000 ha which still makes up for slightly more than 60% of the total land area and therefore larger than earlier mappings assumed or predicted. Of the non-forest categories, agricultural plantation area makes up the largest portion with more than 53,000 ha covering almost 19% of the country. While plantation area is almost evenly distributed between Savaii and Upolu, there are clear discrepancies for mixed crops, grassland and built-up area, which all dominate on Upolu. Barren land almost exclusively occurs on Savaii on recent lava flows and landslides on the slopes of the main volcano (Mt. Silisili). The island of Upolu still has a forest cover of approximately 47%, while 69% of the total area of Savaii is still under forest. However, discrepancies become evident when looking at the distribution of forest types. There is virtually no medium forest left on Upolu, with only 402ha situated in northern Upolu. Medium forest on Savaii still covers an area of 72,150ha. On Upolu, on the other hand, the largest forest category is open forest with more than 33,000ha.

Land-cover categories of Samoa (based on 1999 aerial photos)

	Area (ha)
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Category	Description	Savaii	Upolu	of Samoa land area
Forest	Land with a tree crown cover of more than 10% and a minimum size of 1 hectare. Includes man made plantation forests, mangrove forests and other natural forests	118,037	52,406	60.0
Agricultural Land	Plantations – permanent agricultural plantations, mostly tree crops or continued/repeated planting of e.g. coconuts or bananas (agro-industrial) Mixed Crops – land currently and recently cultivated with a mixture of herbaceous and tree crops such as root crops, taro, yam, cassava, breadfruit etc. This includes areas of current cropping and adjacent areas recently abandoned and now overgrown with secondary shrub and tree species	28,621 (Plantations - 26,158) (Mixed Crops - 2,463)	34,476 (Plantation - 26,770) (Mixed Crop - 7,706)	22.3
Wooded Land (Scrub)	Areas with dominance of woody perennial shrubs of less than 5-7m height and without a definite crown	15,065	7,000	7.8
Built-up Area	All settlement areas, encompasses continuous developments, industrial or commercial built-up areas and scattered isolated houses including gardens and inner-city parks	1,772	5,292	2.5
Barren Land	All land lacking any vegetation cover except for infrastructure and built up areas	1,973	30	0.7
Infrastructure	All roads (hard surfaced or loose) and infrastructure related facilities (e.g. airports/airstrips, ports, wharves, sports compounds etc.)	32	432	0.2
Other	Includes grass land, lakes, rivers and wetlands	5,379	13,141	6.5
Total		170,879	112,777	100

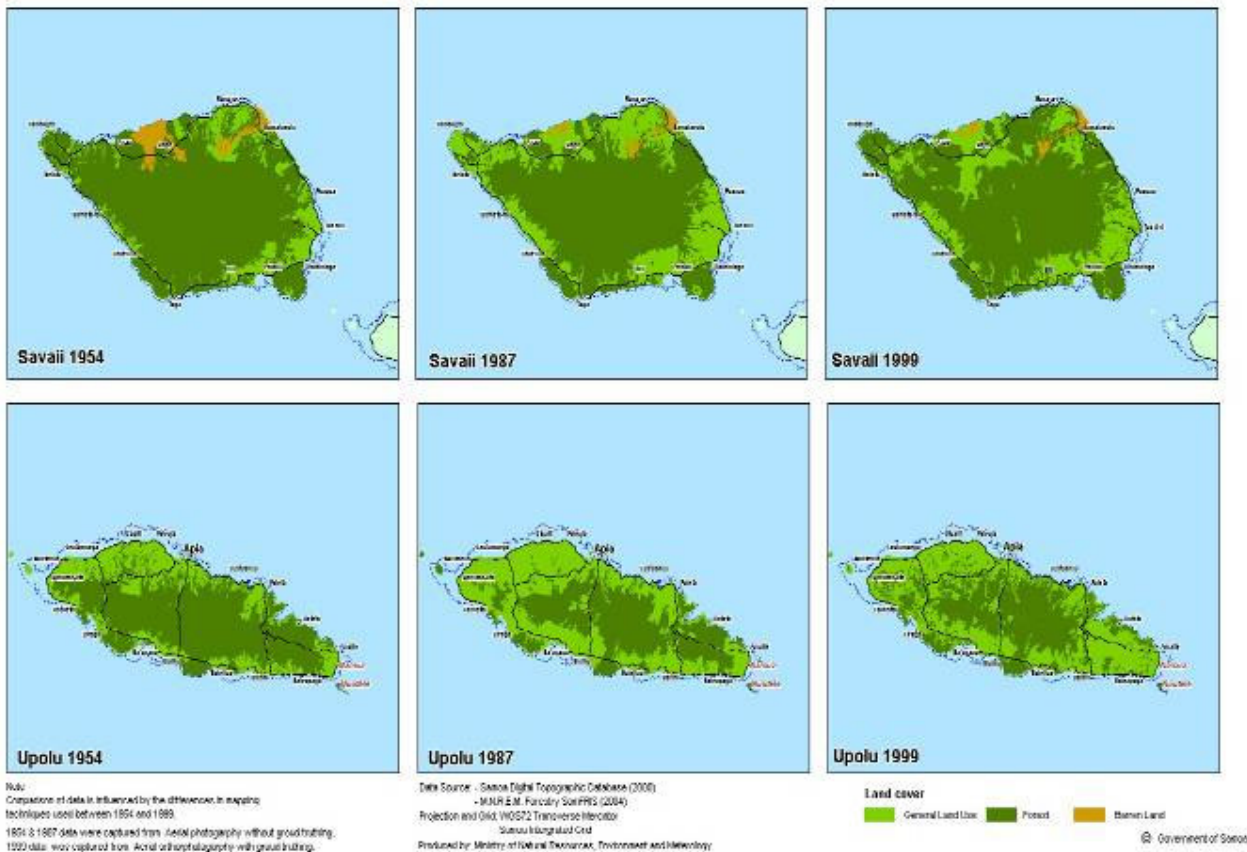
Source: SamFRIS (2004) p. 13

Consequently, considering the magnitude of the current conversion of the landscape from forest to various other uses, there has been numerous changes in the way land is used in Samoa in the last decade which continues to this century particularly in Apia for an urban area, and land under agricultural development or use in rural areas. Land that used to be under forest cover has been extensively altered to allow for all other uses in particular agricultural expansion. In the rural communities, land remains primarily under customary ownership and a large proportion of it is currently under cultivation more so at the expense of native forests.

Significantly and considering the overall context of forest change for Samoa, figures from 1954 to 1987 seem to support the general notion of a serious decline in forest area, from a national forest cover of 74% down to 55%. Although figures derived from the 1977 forest

inventory are slightly lower than the 1987 data, they do indeed confirm the general trend of a serious decline in total forest area. Recent figures seem to imply that there has been an increase in national forest cover from 55% to 60% over the period of 1987 to 1999, which is probably open to future sampling, as earlier assessments did not map with same level of detail. It is more likely that forest cover has been slightly reduced since 1987. The fact that 32% of the total forest cover in 1999 was classified as open forest (less than 40% tree cover) and less than 0.05% was classified as closed forest indicates that the Samoan forest is now extremely open and patchy. Another 24% of the forest cover is classified as secondary re-growth forest.

Samoa Forest Cover Change



Data Source: Samoa Digital Topographic Database (2000)/ MNREM Forestry SamFRIS (2004)

Although available data do not allow for a historical comparison of forest quality, historical descriptions and observations point out that Samoan forest used to be mostly closed canopy with a smaller element of secondary forest. Substantial damage to the forest

structure seems to have been caused by recent cyclones (Ofa in 1990 and Val in 1991), which locally had devastating effects on the vegetation. Even though total forest area has not decreased substantially, contrary to earlier prediction, the overall quality of the remaining forest is supposed to have declined seriously. The analysis of the forest survey data reveals a high degree of invasive species in open forest category, especially on Upolu. This suggests a high vulnerability of the natural forest once the forest structure becomes disturbed and the canopy is opened up, be it by natural causes (cyclones) or man-made (logging). Open forest and secondary forest account today for already 60% of the total forest area of Samoa, emphasizing the need to prevent the remaining medium dense forest from a further qualitative degradation (FAO, 2005).

7. IN SOUTHERN COUNTRY CASE STUDIES, DESCRIBE AND ANALYZE HOW MARKET-BASED CONSERVATION MECHANISMS INTERFERE WITH THE IMPLEMENTATION OF THE CBD/POW.

The upland ecological status of mid-slope and upland forests showed a slow recovery of the forests at higher elevations of Savaii and at lower elevations of Salega, Gagaifomauga and Asau Savaii. The damage to the montane forests is much more extensive in Upolu than Savaii. This is largely due to human induced activities such as the exploitation of the Savaii forests by logging companies which is ongoing to date. The vegetation in most areas is dominated by introduced species through market-based conservation approaches, contrary to the focus of the CBD/PoW. Plans were envisioned to deal with the preservation and management of potential upland sites of significant biodiversity value identified in the survey.

To protect and preserve sites of significant biodiversity potential, especially those identified as the minimum required representing the types of ecosystems found in Samoa is the most important priority in ecosystem management as enshrined in the CBD/PoW. These include the lowland or coastal forests of: Uafato-Tiavea; Aopo-Letui-Sasina; Vaoto; Saleapaga-Lalomano; Taga-Lata-Salailua; Siuvao Point and Mulinuu-Tufutafoe; and Aleipata Islands; and the coastal wetlands of: Sataoa-Saanapu; Apolima-uta; Vaiee-Tafitoala Peninsula; and Vaipu (MNRE, 2004a).

The creation and management of sites to protect rare and endangered species in line with the CBD/PoW include the creation of a bird sanctuary in the islands of Aleipata and upland forests of Savaii. As well, the protection of ecological systems invasive species of plants and animals and other general priorities which require the commitment of individual developers and village communities, such as the protection of ecological systems which are sources of food and materials for daily sustenance such as lagoon and reef systems, wetlands and the rest of terrestrial systems which support agriculture, fisheries and other grassroots social and economic development.

8. ASSES THE ROLE OF INTERNATIONAL INSTITUTIONS, SUCH AS THE WORLD BANK, UN FOOD AND AGRICULTURE ORGANIZATION, UN CONFERENCE ON TRADE AND DEVELOPMENT, WORLD TRADE ORGANIZATION, AND OTHER RELEVANT REGIONAL ONES IN HELPING COUNTRIES IMPLEMENTING THE CBD/POW.

Samoa has been doing its best to participate in international and regional efforts to address key issues related to environmental conservation and sustainable development. Domestically the government has also implemented conservation programmes in an integrated manner with its economic and governance reforms. Samoa continues its participation in regional and international collective efforts to address environmental and sustainable development issues and pursue cooperative arrangements between the government and private sector and non-

governmental organizations. All these efforts culminate in advancing environmental integrity and achieve sustainable development for the benefit of future generations.

Samoa has learnt valuable lessons in incorporating environmental values into decision-making and actions on development, particularly in areas of infrastructure development, vulnerability of coastline, and resilience building within coastal areas which the World Bank and Asian Development Bank have been in the forefront in the last few years. Despite these efforts, mainstreaming of natural resources management and environmental issues as underpinning the CBD/PoW implementation, as well as FAO initiatives, remains a challenge particularly in relation to the most recent Samoa Statement of Development Strategy (SDS) at the national level. The push by the government of Samoa to join WTO with strong relation to the activities of UNCTAD already show signs that these market driven organizations will not help the implementation of the activities of the CBD/PoW. Samoa is already aligning itself to capitalize on the opportunities for development funding from CDM sources with a focus on renewable energy options. While it is recognized that no single approach can be adopted universally to achieve sustainable development, selective application would yield tangible benefits by integrating the three pillars of sustainable development; namely socio-political aspects of the country, economic features and environment aspects and cultural aspirations.

Apart from that the key environmental agency, MNREM, has increasingly taken up opportunities for accessing financial and expertise resources outside Samoa or from inter-governmental, bilateral, and multi-lateral donors to fund forest related initiatives since the late '90s – among these is the GEF, NZAID, ADB, AUSAID, FAO, and JICA, UNFCCC, Kyoto Protocol, World Bank, MEAs, etc..

9. ASSESS THE ENVIRONMENTAL CHANGES OCCURRING IN THE COUNTRY SINCE THE ENTRY INTO FORCE OF THE CBD/POW.

More recently, detailed action oriented strategies and action plans have been developed and implemented to address key environmental concerns such as Conservation of Biological Diversity (NBSAP), Adaptation to Climate Change (NAPA), Scarce water resources, NIP (POP's) and national Compliance Action Plan Ozone Protection Biosafety, Invasive species, NAP, national water resource management strategy, forestry strategy(list all). Environment protection directed policies have also been invoked by the PUMA Act 2004 which include the National Parking Policy, EIA Policy, Development Consents Policy and National Building Guidelines. Moreover, a national Coastal Infrastructure Management Strategy is in place with its own policy statements, as well as CIM Plans for 20 out of 42 districts that contain plans of action for each village in the district.



Wed prep tanu
Photo: Fiu Mataese Elisara

10. ON BASIS OF THE INFORMATION AND DATA GATHERED, CONDUCT A COMPARATIVE ANALYSIS OF THE SITUATION OF FOREST AND FOREST PEOPLES BEFORE AND AFTER THE INCEPTION OF THE CBD/POW.

Parts of the EPoW are being implemented as reported in the Samoa's 3rd National Report 2006 to the CBD and the process in place to specifically implement the EPoW in Samoa included:

The government's annual budgets include provisions for corporate services by the Division of Forestry of the Ministry of Natural Resources & Environment – its leading forestry agency – for promoting and demonstrating best practices for the conservation and sustainable use of remaining native forests, promotion of secondary forest regeneration and reforestation, and the development of diverse forest products.

The government and NGO's largely external funded projects for supporting individual and collective forest conservation and reforestation initiatives; and undertaking research and demonstration to address forest threats such as invasive species, agricultural clearance and logging.

The enforcement of relevant regulations such as the Commercial Logging Ban 2006.

The establishment and development of effective management of forest reserves under government lands.

The EPoW has been incorporated in the sectoral policies in sector/s, relevant strategies and activities in the country's existing national environment frameworks. As the country's economic planning is starting to take a sectoral approach and few of the economic sectors now have in place sectoral plans, some have strategies relevant to the EPoW such as the water sector with a water resources component which include for instance the conservation and regeneration of native forests on water catchments.

Resources had been allocated to the implementation of the EPoW under annual budgetary allocations to the key agencies of government who have EPoW relevant responsibilities such as the Division of Forestry, Division of Environment, Division of Water Resources and Division of Land Management of the Ministry of Natural Resources and Environment. Personnel charged with EPoW implementation approximate 300+ staff in the above stated Government agencies with responsibilities relevant to EPoW / forest biodiversity conservation and sustainable development work.

The underlying causes of forest biodiversity loss and degradation were identified and addressed through pressure from WTO in areas like commercial logging, agricultural clearance, development in native rainforests and on water catchments, forest fires & infrastructural developments (roads, damming for hydro-schemes, & quarry mining for roads), the hunting of wildlife and the spread of invasive species as underlying causes identified. Actions taken to address the underlying causes through strategic actions under the existing environment frameworks – NBSAP, NAPA, NAP, Forest & watershed management policies and forest related legislations. Commercial logging ban was imposed by the government in 2006. There are also funded projects/programmes for the conservation of rainforest as well as biodiversity/establishment of rainforest reserves from the 1990s to date. Establishment of Protected Areas in 3 Government National Parks & 3 Community Conservation Areas (CCA) which accounts for 11% of the country terrestrial area on remaining indigenous forests have also been important activities as also in the finalizing of the National Code of Logging Practices 2005.

11. WRITE AN EXECUTIVE SUMMARY OF NO MORE THAN 800 WORDS.

An analysis of the information and data gathered suggested that there was some awareness of the existence of the EPoW and they considered the EPoW useful to enhance the status of forest biological diversity in their communities and in Samoa because it underpins the global value and benefits of existing efforts by the country to save much of its remaining indigenous forests and to develop the potentials of forests in the development of the country. It was an opportunity for the country to leverage financial assistance to implement its forest conservation and development strategic priorities. It provides further clarifications for Samoa's forest biological obligations under the CBD and a clearer global framework for integrating the conservation of forest biodiversity to social and economic needs of communities which own much of the remaining indigenous forests of the country.

On the EPoW being implemented in Samoa, there were existing strategic actions implemented in the country's approved NBSAP, NAPA, NAP, as well as the approved Forest Sustainable Development Policy that are highly relevant to key provisions of the EPoW on Forest Biological Diversity and whilst the government conducted activities in the programme on public consultation and discussion for the design, implementation and monitoring of the CBD generally, there was no Government program specifically for the EPoW. However, the related government terrestrial biodiversity, land management, water resources management, coastal assets management, and forestry programs all included strong components of consultations and dialogues with the public, grass root communities and selected sectors of the society, on the design, implementation and monitoring of forest biodiversity conservation and utilization activities, which are highly relevant to the EPoW.

Finally, while Samoa has not formally made the connection to the CBD Program on forests (as in other CBD/EPoW programs) the NBSAP of Samoa clearly define the links of the country's strategic actions for biodiversity that are relevant to its CBD obligations for the conservation and sustainable use of forest areas and indigenous forest genetic resources. The government's leading environment agency is anticipating a review of the country's NBSAP in the near future and one of the key objective of this review is to further clarify and elaborate the linkages between the country's NBSAP and the CBD in terms of the latter's program of works such as the EPoW on forest biodiversity. Other than that, a more recent effort on this issue was made in the National Capacity Self-Assessment NCSA project, in which the linkages of the NBSAP and forest related actions of Samoa to the CBD were explored.

The overall trend in the state of the forests, biodiversity and environment in Western Samoa is one of progressive decline of a way of life that is sustainable and based on indigenous natural resources. This trend is towards a way of life that is only sustainable with continued and increasing inputs of capital and products from external sources (notably remittances and aid). The state of the Samoan forests, biodiversity and environment is cause for considerable concern. While claims have been registered of recovery for parts of the forests, biodiversity, environment, terrestrial and marine habitats since the devastations of extreme cyclones in the early 1990s, most critical forests and environments still exhibit levels of degradation and exploitation that are in excess of the capacity of natural processes to sustain.

If no conscious change is made, the current trend is likely to continue with concomitant further loss and degradation of the natural capital, which constitutes the essential base for truly sustainable national development. This would represent a fundamental break with the 'faa-Samoa', which had developed in the context of an abundant forests stands and natural environment.

Legislation for the protection of forests and the environment have been progressed with polices and institutional mechanisms to drive conservation and sustainable management of natural resources that key sectors of Samoa's economy depend on. The impacts of conservation programmers and community initiatives to contribute to the national efforts for the sake of the

remaining forests stands and environment are sporadic and successes have been reflected in a number of community projects, the actual level of effectiveness is yet to be ascertained.

The challenge of the current forests, natural resources, and environment management process, and indeed for Samoa itself, is to deal appropriately with the issues pertaining to the recent reforms in government institutions, the role of civil society in natural resources, and environment management, management of watersheds, water supply and sanitation and related environmental health concerns, land resources including forestry, marine resources, energy and tourism then steer them towards the strategies and policies already in place for effective implementation.

Samoa's vision for the future is a nation that is characterised by macroeconomic stability, a thriving and competitive private sector and an efficient public sector; adequate employment opportunities, best practices for good governance, quality health and education services, dynamic development of its key agriculture, fisheries and tourism sectors, vibrant socio-cultural values and sustainable management of the natural resources including forests and environment.

To achieve its vision, there is a need to foster development by bringing people into the process through initiating policies that make development more participatory and equitable, involving all stakeholders in decision making at all levels particularly in natural resources management, improving incentives for people to manage resources sustainably, enhancing opportunities for low income earners to enter the formal economy, promoting a greater role for NGOs in development and using information technology for awareness raising.



Mount Alava
Photo: Fiu Mataese Elisara



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