MESCAL

Mangrove Ecosystems for Climate Change Adaptation and Livelihoods

Review of Policy and Legislation Relating to the Use and Management of Mangrove Ecosystems in Samoa

MANGROVE ECOSYSTEMS FOR CLIMATE CHANGE ADAPTATION AND LIVELIHOOD

IUCN

GOVERNMENT OF SAMOA

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

Pacific Mangroves Initiative

Supported by:

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

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NB: The legislation referred to in this Review is from the Consolidated Acts of Samoa 2012 found at www.paclii.org and www.ecolex.org

ACRONYMS AND ABBREVIATIONS

CBA	Community-Based Adaptation
EIA	Environment Impact Assessment
GEF	Global Environment Facility
GIS	Geographic Information System
IUCN	International Union for the Conservation of Nature
LTRA	Land Titles Registration Act
MAF	Ministry of Agriculture & Fisheries
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships
MEA	Multilateral Environmental Agreement
MESCAL	Mangrove Ecosystem for Climate Change and Livelihood
METI	Matuaileoo Environment Trust Inc.
MNRE	Ministry of Natural Resources and Environment
NAPA	National Adaptation Programme for Action
NATPLAN	National Marine Spill Contingency Plan
NBSAP	National Biodiversity Strategy Action Plan
NEMS	National Environment and Development Management Strategies
NGO	Non-Government Organisation
PEAR	Preliminary Environment Assessment Report
PMI	Pacific Mangrove Initiative
PUMA	Planning and Urban Management Agency
SDS	Sustainable Development Strategy
SMP	Sustainable Management Plan
SOE	State of Environment
TEC	Target Environment Components
WRM	Water Resource Management

Executive Summary

The Review of Policy and Legislation Relating to the Use and Management of Mangrove Ecosystems in Samoa is one of the key activities under the Mangrove Ecosystem for Climate Change and Livelihood project (MESCAL), a government initiative supported by the German Federal Ministry for Environment, Nature Conservation and Nuclear Safety, administered through the International Union for the Conservation of Nature (IUCN), Oceania Regional Office. The MESCAL Samoa project is one of the projects currently being implemented in the five Pacific Island countries under the Pacific Mangrove Initiative (PMI).

Samoa, like many of its neighbouring Pacific states does not have a specific policy for the protection of mangroves, but policies for the protection and sustainable development of the environment. Likewise, Samoa does not have a specific piece of legislation for the protection of mangroves, but legislation has been enacted for the conservation of natural resources, the protection and sustainable development of the environment. This report presents the findings of the review mangrove-related policies and legislation for Samoa and proposes options and recommendations which would contribute to increase the resilience to climate change of the coastal ecosystems and of the people whose livelihood depends on it, including through adaptive co-management of mangroves and associated ecosystems.

Policy Review

Despite the importance of mangrove and mangrove ecosystems in Samoa, it is also one of the diverse ecosystems that continue to face increasing threats from human activities and also from climate change. It can be seen that government promotes sustainable development, conservation and protection of biodiversity of the coastal ecosystems, marine ecosystems in general, all of which are interlinked to the mangrove forests and ecosystems. However, the specific mention of mangrove as an ecosystem and/or forest is not addressed separately in the various policies reviewed. It can also be seen that mangrove conservation is not regarded as being part of the climate change adaptation activities.

There is no specific policy on mangroves and none that addresses the use and management of mangroves and mangrove ecosystems. However, environmental policies such as the National Biodiversity Strategy Action Plan (NBSAP), National Environment and Development Management Strategies (NEMS) briefly cover mangroves.

There are a number of government departments and ministries such as the Ministry of Natural Resources and Environment (MNRE), Ministry of Agriculture and Fisheries that have some role to play on mangrove conservation and management. This often leads to overlapping roles being played by these Ministries and, at times, may cause confusion since there is no clear directive in the responsibilities of these ministries. There needs to be a clear demarcation of roles if these arrangements continue or a specific ministry tasked to look after all mangrove issues.

The Government of Samoa, given the country's vulnerability to climate change, should seriously look at protecting and conserving its mangrove resources. Mangroves act as natural buffer systems in the

coastal areas, and play an important role in providing food security for local populations. Replanting and rehabilitation programs should be encouraged at all levels. The discovery of new mangrove sites by the Samoa MESCAL team should be an incentive to communities and efforts in maintaining these sites should be enforced.

Legislation Review

The review of the legislation relevant to mangroves revealed that in spite of the availability of some legal tools for their protection, mangroves in Samoa have not been well protected. This is in part due to a lack of awareness and understanding of their significance, but also to the fragmentation and some flaws in the legislative framework for mangroves, and to the weakness of law enforcement.

Lack of clarity regarding ownership or responsibility for the foreshore is an issue and it is critical that should be addressed as a priority. The measures to be taken to improve the management of mangroves, detailed in the Review, depend upon who owns the above high water mark foreshores. Villagers tend to assume that the coastal waters and foreshore are customary land and may be perceived as 'belonging' to a particular *matai*. However it is clear from the Constitution that the land below the high water mark is public land, while the strip of land extending to a distance of 5 m above the high water mark may be customary land over which the Government of Samoa holds management and control rights. The land within 5 m of the bank of a river or stream similarly appears to be subject to the management and control of the Government.

The Review of legislation identifies a range of tools for the protection of mangroves available under the current legislative framework.

The findings of the review of legislation suggest that management of coastal areas is best achieved through integrated management, at the village level. This shift could be achieved through law reform. Two options for law reform are proposed. The first is to pass specific legislation (law or regulations) for mangroves, which would articulate the objectives of mangroves management in the context of integrated coastal management and clarify the roles and responsibilities over mangroves management. It would also provide a framework and guidance for the interpretation, implementation and amendment of the legislation relevant to mangroves, particularly with regards to development control. The other option is to dispense of new legislation but amend existing legislation to – inter alia - provide for systematic consideration of mangroves in decision-making, promote the use of existing legal mechanisms to benefit mangroves, and underpin integrated management of coastal natural resources, including mangroves, at the village level through the empowerment of the village *fono*s.

In any case, it is imperative to increase awareness and strengthen compliance and enforcement of the law, through measures including increasing resources and capacity, and other measures such as the appointment of authorized officers at national and village levels.

PART 1: INTRODUCTION

The overall goal of the Mangrove Ecosystem for Climate Change and Livelihood project (MESCAL) in Samoa is to increase resilience of the Samoan people to climate change through adaptive co-management of mangroves and associated ecosystems.

The review of policy and legislation relating to the use and management of mangrove ecosystems in Samoa ('the Review') is one of the key activities undertaken to support the Government in achieving this goal.

1.1 Background of the Review

The MESCAL project, a German Federal Ministry for Environment, Nature Conservation and Nuclear Safety-funded project is administered through the International Union for the Conservation of Nature Oceania Regional Office (IUCN ORO) in collaboration with the Government of Samoa, as being one of the five countries included in the project. MESCAL is envisaged to increase the climate change resilience of Pacific islanders, as well as improve their livelihoods through selected capacity support in adaptive co-management and restoration of mangroves and associated ecosystems.

The Government of Samoa, through the Ministry of Natural Resources and Environment (MNRE), is the focal point of the MESCAL project in Samoa. One of the components under the MESCAL project is the mangrove policy and legislative review which has been conducted by IUCN ORO.

MESCAL is part of the broader Pacific Mangroves Initiative (PMI) which has the key goal, *'to assist the Pacific island countries and territories (PICTs) to implement sound practices and capacity building in mangrove management, including raising awareness of and maintaining high biodiversity values and ecosystem goods and services that can sustain or even improve the livelihoods and wellbeing of the local population depending of these coastal ecosystems'.*

1.2 Purpose, Scope and Methodology of the Review

Purpose of the Review

The purpose of this Review is to contribute to the goal of the MESCAL project to "*Increase resilience to climate change and improve livelihood in Pacific Island countries through adaptive co-management of mangroves and associated ecosystems"* by proposing options and recommendations towards policy and law reform for consideration by the Government of Samoa.

Scope of the Review

The review undertakes (i) a stock take and an overview of policies and legislation relating to mangroves, mangrove use, protection, management and mangrove ecosystems; (ii) an analysis of the extent to which the protection, use and management of mangrove ecosystems are reflected in existing policies, plans and legislation; and (iii) to articulate options and recommendations for reforming the policy and legislative framework in support of sustainable practices and management and towards MESCAL goal.

Methodology of the Review

The review process consisted of three phases.

The first phase was a desktop review of mangrove-related policies, legislations, and of literature on mangroves, and the drafting of a first draft of the Review.

The policy and legislation 'ground-truthing', forming the second phase of the review exercise, was conducted on November 26-28, 2012. This in-country consultation with key stakeholders was conducted through one-to-one meetings and a workshop. It aimed to collect additional information and the stakeholders views on the review process, mangrove policies, legislation, management, conservation, co-management of projects and thus to verify the findings of the desktop review. It resulted in a second draft of the Review.

The draft Review was then widely circulated internally and externally for comments, and the Review revised and finalised to integrate these comments.

1.3 Structure of the Review

Following this Introduction in Part 1, an overview of the mangrove resources and ecosystems in Samoa is presented in Part 2, including some background on the governance of mangroves in Samoa. Part 3 presents and attempts to make an assessment of the key policies influencing the mangrove ecosystems and activities which impact upon it. Part 4 of the Review analyses the legislation relevant to mangroves, starting with the system of land tenure, land law and mechanisms for conservation. The legislation regulating sectoral activities which may impact on mangroves is thereafter explored, followed by the analysis of the cross- sectoral legislation for their relevance to the protection and management of mangrove ecosystems. Part 5 of the Review provides a summary of the findings of the policy and legislation review and options and recommendations for policy and law reform which would support the sustainable use, conservation and management of mangroves in Samoa.

PART 2: MANGROVES IN SAMOA

Key Messages: Mangroves in Samoa

- Mangroves in Samoa are estimated at 1270 hectares. Three types of mangrove species are found in Samoa *Bruguiera gymnorrhiza, Rhizophora samoensis and Xylocarpus moluccensis*
- Mangrove area has been, and still is, an important resource for catching fish, mud crabs, shellfish, peanut worms, freshwater eels, beach crabs and for obtaining firewood
- The most prevalent impact activities in Samoa include coastal reclamation, sand mining and reclamation of mangrove forests
- Traditional marine tenure remains important in the islands and this extends to the mangroves. With over 75% of Western Samoa's land under customary ownership, the majority of wetlands are administered by village councils and individuals
- Several government departments, ministries have a formal jurisdiction over the mangroves as ecosystems and forests. The Ministry of Natural Resources and Environment is the lead Government agency responsible for all environmental matters in Samoa which includes mangrove ecosystems
- There are existing initiatives and projects on mangroves by government, the non-government organisations and communities

2.1 Mangrove Area

Three mangrove communities have been recognized in Samoa. The most common mangroves are *Bruguiera gymnorrhiza* and the red mangrove *(Rhizophora samoensis)*. These mangroves typically occur adjacent to each other — the *Rhizophora samoensis* on the seaward fringe below the high water mark and *Bruguiera gymnorrhiza* on the landward side at about the high water mark. A very small and rare occurrence of the *Xylocarpus moluccensis* mangrove has also been found at Sala'ilua on the south coast of Savaii. Generally, most mangroves are found on Upolu.

The total extent of mangrove communities in Samoa has been estimated to be about 1270 hectares, or less than one per cent of the land area of Samoa. The World Atlas of Mangroves (2010) gives an estimate of 3.70 square kilometres of total area of mangroves in Samoa.

2.2 Mangrove Uses

Mangroves can contribute towards reducing vulnerability as they provide a natural barrier for protection and also work effectively in stabilising soils and coastal land in intertidal areas (Allen&Duke, 2006). Wetlands such as mangroves therefore play a critical role in the physical buffering of climate change as well as for mitigation of climate change impacts (Millenium Ecosystem Assessment, 2005b).

Mangrove communities in Samoa are important, not only as refugia for biota, but also for the following reasons. Firstly, the complex root system of the mangrove trees trap sediments and act as an agent of land reclamation, forming natural breakwaters, which protect the land from wave action and coastal erosion. Secondly, nutrients in land-based runoff may be retained within the mangrove

ecosystem before they reach the reefs and cause damage. Thirdly, many fish species inhabit the mangrove areas at some stage during their life cycle, especially prior to spawning. Fourthly, they provide multiple resources to the local village economies. For example, they are the source of mangrove crabs, mangrove wood for fuel and outriggers of small canoes, and bark which is used to make a dye for tapa cloth. The crab fishery contributes significantly to the subsistence and income of families living adjacent to mangrove areas.

Suluvale (nd) conducted a study on environmental change of selected mangrove areas in Samoa and found that the mangroves are being used as nursery grounds for many species of fish. According to oral testimony of villagers interviewed in the study, the mangrove area had been, and still is, an important resource for catching fish, mud crabs, shellfish, peanut worms, freshwater eels, beach crabs and for obtaining firewood.

2.3 Mangroves in Samoa

Mangroves cover an estimated 752ha of Samoa's two larger islands of Upolu and Savaii.[1] However, Vaiusu Bay mangal on the western side of Apia is considered to be the largest mangrove area in Eastern Polynesia.[2] Samoa has only 5 of the 80 globally known species of mangroves. An exercise, undertaken by the MESCAL Samoa team, which maps the recorded mangrove areas in January and February, 2013 recorded sixty (60) new mangrove sites. This has increased the national record to 78 known sites.

Mangrove ecosystems fulfil multiple functions relating to climate change and livelihood. They provide a buffer zone protecting the flora and fauna, and coastal population from coastal erosion, storms and other extreme weather events, and as such have an important role in mitigating the impacts of climate change. They facilitate retention of nutrients from land-based run offs, a habitat for fish species and provide multiple resources to local village economies like fuel, wood, crabs and fish as sources of food and income generation, amongst other uses and benefits.

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.

2.4 Key Threats to Mangroves

Although mangroves are valued for their role in fisheries and as a source of timber and other products, human impacts leading to their destruction have included over-harvesting, degradation as a result of solid waste disposal, and clearance for agriculture and coastal development, including resort development. The most prevalent in Samoa includes coastal reclamation, sand mining and reclamation of mangrove forests. Mangrove forests are one of the several unique ecosystems that are under threat among wetlands and coastal forests (Seseg, S. 2009).

[1] Siamomua-Momoemausu, M, 'Samoa Mangroves Audit Report' prepared for the MESCAL Project November 2010

[2] Ministry of Natural Resources and Environment, 'Mangroves in Samoa' *Our Environment Our Heritage* (Apia, Samoa) 15 April 2007 http://www.mnre.gov.ws/documents/newspaper/april%2015.pdf (Accessed on 26th October 2012.)

Unfortunately, all of Samoa's mangrove areas show signs of damage mainly from human activity. Mangrove areas are viewed as foul smelling and unhealthy area therefore, waste disposal at these sites are common. Moreover, there is the constant threat from development, including tourism development, overharvesting, roads, reclamation for businesses and residential subdivisions amongst other forms of development. However, there is a growing global trend to recognize the importance and significance of mangrove ecosystems and of the need to provide them with legal protection in the wake of climate change, societal, economic and societal pressures.

2.5 Mangrove Management and Governance

Traditional marine tenure remains important in the islands and this extends to the mangroves. With over 75% of Western Samoa's land under customary ownership, the majority of wetlands are administered by village councils and individuals. The Lands and Environment Act (1989) gives the right to the Government to take customary land for conservation purposes if there is a need to protect specific sites, but this right has not yet been used for wetland conservation. The two small wetlands in 0 Le Pupu Pu'e National Park are administered by the Division of Environment and Conservation and Department of Lands. Land below the high water mark is public land held by the state, thus avoiding disputes on ownership of reefs that have arisen in other Pacific island countries (AusAid 2008).

A new system for the protection of biodiversity is being developed whereby villages manage and monitor the conservation of their customary land with government assistance instead of setting up National Parks. Four villages are already involved in this new method of conservation.

"The issue of ownership of mangroves remains unclear in Samoa leading to overlaps in mandates and management frameworks," (Malama).

There have been a number of recent efforts to improve natural resource management, including the development of village fisheries management plans and community-based conservation, many of which have included establishing formal protection in mangrove areas.

Several government departments and ministries have a formal jurisdiction over the mangroves as ecosystems and forests including the Department of Lands and Environment, the Division of Environment and Conservation who are responsible for administration of the *Lands and Environment Act* (1989), *National Parks and Reserves Act* (1974) and all matters concerning the protection and conservation of the environment.

The Ministry of Natural Resources and Environment is the lead Government agency responsible for all environmental matters in Samoa which includes mangrove ecosystems. It includes the Planning and Urban Management Agency which institutionalizes environmental planning and management for sustainable development. Since the 1993 State of Environment (SOE) Report, Samoa has continued to embark on a climate change mitigation and adaptation programme, including climate proofing (the latter is an adaptation initiative). The MNRE is implementing the National Adaptation Programme for Action (NAPA) Programme as one immediate adaptation measure to help combat locally global climate change impacts. In addition, climate change impacts are one of the three main environmental issues being targeted in Samoa under the Global Environment Facility (GEF) Programme of funding for environmental restoration and protection.

The Ministry of Agriculture and Fisheries (Fisheries Division) also holds general responsibility for mangrove management and this is mostly implemented through the community-based fisheries management programme where several participating villages include mangroves in their fisheries management initiatives as part of fisheries management undertakings.

The Village councils and communities have and are making a significant contribution to the daily management of mangrove ecosystems through the development and enforcement of related village rules.

Other non-government organisations involved in similar work, programmes and activities on mangroves and mangrove ecosystems include the O Le Siosiomaga Society; Faasao Savaii; Matuaileoo Environment Trust Inc. (METI); and Aleipata and Safata Society. Other stakeholders include the Polynesian Explorer Ltd. and Mangrove Tour Operators.

2.5.1 Initiatives/Projects on Mangroves

Re-planting Programme on 14 January 2011

Fasito'otai is facing severe coastal erosion from both local and climate change induced stresses. The project aims to build coastal resilience in the face of climate change by planting mangroves. This not only protects the coastline but is also a key ecosystem which the village relies upon for subsistence fishing and livelihoods.

The Community-Based Adaptation (CBA) works with MNRE and the Fasito'otai community in to the planting of 5,000 square metres of eroded area with mangroves, renovate village water resources and establish mangrove and coral reef protection areas."

The coastal clean-up and mangrove planting event not only brought together community members from the village, but also voluntary groups from the capital, Apia, and the neighbouring villages. The event also gathered foreign volunteers from Australia, China, France, Italy, Japan, New Zealand, Sweden and the USA.

Mangrove Conservation/Restoration Project – Matafa'a Village

This project is an effort by the residents of Matafa'a village to conserve the local mangrove ecosystem in response to fears that the growing population of the village will encroach upon the mangrove. The village wishes to protect the mangrove because of its ecological value and its role in protecting the community from strong storm surges. Components of the project include: (1) development of a policy for protection of the mangrove conservation area; (2) an inventory of the biodiversity of the mangrove ecosystem; (4) income-generating programmes for the community; (5) capacity-building; (6) conservation of culturally significant sites located in the village that hold strong heritage value to the village people; and (7) development of a management plan for the project and a long-term plan for sustainability when the funding assistance completes.

With 74% of its people and infrastructure in low-lying coastal areas, Samoa is likely to be severely impacted by future sea level rise. In response, O le Si'osi'omaga Society Incorporated (BirdLife in Samoa), is working with the Matafa'a indigenous village community to protect their coastal mangroves. This will help protect the islands agricultural land from cyclone and tsunami-related

flooding and erosion, predicted to increase in frequency and intensity with climate change. The mangrove conservation project also helps the local people to enhance benefits from existing natural resources such as herbal medicine plants (the primary form of health care), fuel and fibre, fish, and associated biodiversity.

Conservation of the Mangrove Ecosystem – Moata'a Village

Moata'a Village is located near the town of Apia and has a mangrove area. The mangrove ecosystem is the last of the many mangroves that used to exist within the town area of Apia but all have been reclaimed for developments. The mangroves of Moata'a have been thought to present the last stance of mangrove in the Apia town area. Of all the mangrove ecosystems found in Samoa, the Moata'a mangrove is considered to be the most affected by developments. Reference to previous studies conducted in the area showed (1997); the reclamation of mangroves for an aborted Hotel project in the Taumesina region (north of the proposed conservation site) decreased the total area occupied by mangrove from 9.1 hectares to 5 hectares from 1970 to 1990 (approximately 45%).

According to the Legal System and the Lands and Environment Act 1989 all wetland areas, freshwater resources and where the watermark starts these areas belong to government. However, in terms of enforcement of law the village by-laws and traditional system of land ownership is more enforceable and observed.

This project is aimed initially at raising the awareness of the villagers of Moata'a about the blight of the mangroves. By declaring the mangrove area as a conservation site, it would be allowed to grow back, bringing back food species etc., as well as revenue to preserve this site for future generations of Moata'a and Samoa.

2.6 Mangrove Governance in Samoa

Traditional marine tenure remains important in the islands and this extends to the mangroves. With over 75% of Western Samoa's land under customary ownership, the majority of wetlands are administered by village councils and individuals. The two small wetlands in 0 Le Pupu Pu'e National Park are administered by the Division of Environment and Conservation of the Ministry of Natural Resources and Environment.

A new system for the protection of biodiversity is being developed whereby villages manage and monitor the conservation of their customary land with Government assistance instead of setting up National Parks. Four villages are already involved in this new method of conservation.

There have been a number of recent efforts to improve natural resource management including the development of village fisheries management plans and community based conservation, many of which have included establishing formal protection of mangrove areas.

Several government ministries having a formal jurisdiction over the mangroves as ecosystems and forests include the Ministry of Natural Resources and Environment (MNRE), in particular their Division of Environment and Conservation.

MNRE is the lead Government agency responsible for all environmental matters in Samoa which includes mangrove ecosystems. It includes the Planning and Urban Management Agency (PUMA) which institutionalizes environmental planning and management for sustainable development.

The Ministry of Agriculture and Fisheries (Fisheries Division) also holds general responsibility for mangrove management and this is mostly implemented through the community-based fisheries management programme where several participating villages include mangroves in their fisheries management initiatives as part of fisheries management undertakings.

The Village councils and communities have and are making a significant contribution to the daily management of mangrove ecosystems through the development and enforcement of related village rules.

Other non-government organisations (NGOs) involved in similar work, programmes and activities on environment management and conservation, of which mangroves and mangrove ecosystems are a part. These NGOs include the Le Siosiomaga Society; Faasao Savaii Samoa Society and the Aleipata and Safata MPA Society. Other stakeholders include the: Polynesian Explorer Ltd.; and Mangrove Tour Operators, regional organisations such as South Pacific Regional Environment Program (SPREP), Food and Agriculture Organisation of the United Nations - Sub Regional Office for the Pacific Islands (FAO-SAPA).

Ropeti and Foliga in their country report on Samoa (nd) suggested 3 systems to exist in relation to mangroves wetlands as follows:

(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; and
(c) The village or family which has adjacent mangrove areas claim ownership over such

PART 3: POLICIES RELATING TO MANGROVE ECOSYSTEMS, USE AND MANAGEMENT

Key Messages for Policies

- There is no specific mangrove policy in Samoa
- Policies covering mangroves are fragmented and mangroves are covered either directly or indirectly in the existing policies and, in particular, the environmental policies
- NEMS report and the recommendations of it should be reviewed by MNRE and possibly considered. Key coastal wetlands and sites throughout the coastal lowlands to protect were identified. These areas include Sataoa – Saanapu coastal wetlands (mangrove forest) Upolu; Aopo-Letui-Sasina coastal forests, Savaii; Apolimafou coastal wetland; Saleapaga-Lalomanu coastal forest, Upolu; Mulinuu-Tufutafoe coastal wetland, Savaii among other identified coastal lowlands

Samoa has become party to a number of Multilateral Environmental Agreements (MEAs), particularly all the main Conventions and Protocols for conservation and protection of biodiversity, climate change, Ozone Protection, pollution from hazardous substances and persistent organic pollutants, and land degradation and desertification. Samoa's participation in international Conventions and Treaties is important as they provide an international forum in which to voice local concerns over global environmental issues which are beyond the country's control. Additionally, Samoa formulated related policies and legislations to meet some of its obligations to these international conventions and treaties.

There is no specific policy on mangroves or one that addresses the use and management of mangroves and ecosystems in Samoa. For the purpose of this report, key policies relating to or have some relevance to mangroves, its use and management have been reviewed. These policies are presented and assessed in this section.

Development Policy

3.1 Samoa's Sustainable Development Strategy (SDS) 2012-2016

The Sustainable Development Strategy presents the key development strategies and priority sectors for the development of Samoa in the next four years. The SDS presents the key development strategies and priority sectors for development in Samoa in the four years from 2012 and is guided by the theme "Boosting Productivity for Sustainable Development". Moreover, the 2012-16 SDS takes a dedicated focus at strengthening economic resilience through increasing investment in the productive sectors of the economy.

A number of key strategic outcomes have been identified to be achieved in the SDS. These include: maintaining macroeconomic stability; scaled-up investment in tourism to promote Samoa as an attractive tourist destination; promoting a healthy and an educated Samoa; improved business environment; strengthening social cohesion and stability; improved infrastructural services; and

recognising the importance of the environment through sustainable management of natural resources, increased investment in renewable energy sources, and mainstreaming climate change and disaster resilience.

Additionally, four broad sectors of the SDS 2012–2016 had been identified and include the Economic sector, Social sector, Infrastructure sector and the Environment sector. Priority Area 4 on "Environment Sector" consists of two outcomes; **Key Outcome 13 on Environment Sustainability** and **Key Outcome 14 on Climate and Disaster Resilience**.

Government is committed to ensuring environmental sustainability, making it a core sustainable development outcome and making sure that it remains a priority focal area of the MNRE work programme. This work is underpinned by the development and implementation of appropriate legislative frameworks and policies to guide sustainable development and management of natural resources.

The document sees community engagement in environmental management as vital and is still regarded highly because of the importance of balancing their needs against environmental sustainability, for instance; enhanced public awareness of the impact of agriculture development around watershed areas will result in better land use and conservation practices. Sustainable land use management practices will focus on the proper utilization of land resources, according to capabilities and vulnerabilities.

One of the identified indicators of environment sustainability in the policy document is to **"increase the number of terrestrial and marine areas and critical ecosystems and species protected".** This may indirectly see the inclusion of mangroves and mangrove ecosystems being protected, should they be regarded as critical ecosystems.

On climate and disaster resilience outcome, the importance of integrating climate change and disaster risk management into core national and sector plan policies ensures that appropriate response mechanisms become a part of the implementation framework. More importantly, the plan recognizes the use of an ecosystem-based approach to adapt to potential climate change impacts, which will be encouraged. Government and responsible agencies emphasize the importance of strengthening awareness and consultations on climate change and disaster risk management at all levels, so as to improve community engagement and understanding of future potential impacts and proposed adaptation and risk reduction strategies. One of the indicators of the climate and disaster resilience outcome is to see that the coastal infrastructure management plans is being implemented. This could further ensure some management measures to the use of mangroves as being part of the coastal ecosystems.

The overall message of sustainable development portrayed as the core focus of the SDS should ensure that any developments undertaken of any nature, scale and scope are not detrimental to the environment or are at the cost of the environment. This supposedly takes care of any developments that will and may affect the use and management of mangroves and its ecosystems, ensuring their sustainability. The monitoring, enforcement and compliance of projects and development to be sustainable will have to be stepped up by the Ministry of Natural Resources and Environment and relevant government Ministries.

3.2 National Environment and Development Management Strategies (NEMS) 1994

The National Environment and Development Management Strategies aim to identify the major environmental issues in Western Samoa and the priority environmental programmes which are required to address them. NEMS provide further stimulus to the integration of environmental considerations into the national process to ensure the planning and management of development in a sustainable manner. The document is envisaged to provide a planned and systematic approach to the integration of development and environmental concerns. The implementation of NEMS will promote the use of a consistent and sound set of principles and guidelines that will guide and assist the development process along a sustainable pathway.

Twelve Target Environment Components (TEC) were identified for priority consideration and include the following: **(1) management of population dynamics and trends; (2) protection of the quality and supply of fresh water; (3) protection of the sea and marine resources; (4) management of waste; (5) combating deforestation; (6) development of appropriate land use practices; (7) conservation of biological diversity; (8) protection of the atmosphere; (9) planning for climate change; (10) preservation of traditional arts, culture and history; (11) development of human resources; and (12) promoting sustainable economic growth.**

The management of mangroves has been covered on the biological diversity section of NEMS. NEMS highlighted a study by Park in 1992 whereby in order to safeguard the basic range of natural ecological diversity, he had identified fourteen (14) key sites throughout the coastal lowlands as the very minimum to protect. These areas included Sataoa – Saanapu coastal wetlands (mangrove forest) Upolu; Aopo-Letui-Sasina coastal forests, Savaii; Apolimafou coastal wetland; Saleapaga-Lalomanu coastal forest, Upolu; Mulinuu-Tufutafoe coastal wetland, Savaii among other identified coastal lowlands.

In the protection of the sea and marine resources, one of the activities of objective 2 is **"to conserve and protect marine breeding and feeding areas including the protection of remaining wetlands and mangrove swamp areas, preventing the pollution of lagoons and coastal areas from domestic and industrial activities".** Objective 3 stating, **"to integrate the sustainable development of marine resources into environment planning and assessment"** has one of its activities providing planning controls to protect wetlands and mangrove areas. Objective 5 is **"to create public awareness of the need for sustainable development of marine resources"** and it will also promote public understanding of the importance of mangrove swamps to marine life.

The conservation and protection of wetlands, coastal areas and specifically mangrove areas have been highlighted, recognized and emphasized in the NEMS. The identification of key coastal lowlands protection sites provides a good basis towards the management of mangroves and its ecosystems. For instance, Sa'anapu Sataoa mangrove forest was estimated at 90 ha in 1993 (Scott, D.A. 1993) and was one of the approved projects as a conservation area. This should be followed up by MNRE as a monitoring process and further assessment and evaluation made on this. Similar mangrove

conservation areas should be established and declared in areas where mangroves still remain in Samoa and in new locations where mangroves were discovered by the MESCAL Samoa team. A mangrove mapping exercise in Samoa by the MESCAL Samoa team discovered 60 new sites (Malama, 2013).

3.3 Samoa's National Biodiversity Strategy and Action Plan (NBSAP): Keep the Remainder of the Basket (2001)

The Strategy outlines the state of Samoa's biological resources and actions to curb their degradation and achieve sustainable development.

The NBSAP sets out the following vision: **"Samoa's biological and genetic resources are protected, conserved and sustainably managed so that they will continue to flourish and regenerate, for present and future generations."** In pursuit of this vision, the NBSAP defines objectives, goals, and actions organized under the following eight themes: **(1) mainstreaming biodiversity; (2) ecosystem management; (3) species management; (4) community — empowerment, awareness, involvement, ownership and benefits (5) access and benefit sharing from use of genetic resources; (6) biosecurity; (7) agro biodiversity and (8) financial resources and mechanisms.** Sections of the Plan that relate to the use and conservation of mangroves are highlighted below.

THEME 2: ECOSYSTEM MANAGEMENT provides the Strategy Goal: **"To increase the percentage of Samoa's protected and conserved areas from the existing 10 per cent of total land, including coastal areas".** The richness and diversity of Samoa's biodiversity, including mangroves in providing for the needs of the Samoan's in the past has been highlighted in the Plan.

Theme 2 has as its **Objective 2: on Conservation Areas: "To enhance the management of existing protected areas and establish new ones to increase coverage of protected areas to 15 % and achieve a full representation of Samoa's ecosystems.** This objective monitoring goal is reflected in the total land area under conservation or sustainable management framework.

Moreover, the actions identified to achieve this goal are:

2.1 Develop and implement management plans for the existing protected areas in Samoa.

2.2 Establish conservation areas in underrepresented ecosystems, e.g. mangrove areas.

2.3 Establish large conservation areas which include more than one ecosystem, in high priority sites identified in lowland and upland ecological surveys such as Aopo, Sili, Salailua, and Eastern Upolu, utilizing community management approaches.

2.4 Encourage the development of a representative system of marine protected areas built upon the existing programmes.

2.5 Develop appropriate information systems such as Geographic information systems (GIS) to store and share information of ecosystems and protected areas.

2.6 Extend the watershed programme to all the priority areas and the smaller village-based water-catchment areas.

2.7 Develop and implement programmes for the restoration of degraded ecosystems, such as the Vaitoloa rubbish dump, mangrove area and watershed areas.

2.8 Formalise the conservation of biodiversity in traditional sites identified as important to tourism.

Activity 3.8 of Objective 3 on sustainable use and management of species is to "Identify significant species important for the ecotourism industry and develop programmes that promote their sustainable use, (e.g. game fishing, whale watching, bird watching, medicinal tours, mangrove tours, tropical agriculture tours)".

A number of implementation priorities together with on-going activities and strategies were identified in the plan. A further categorization of priorities into short term (3 to 5 years) and long term (10 to 15) years which see the conservation and sustainable use of wetland resources (Lakes, marshes, and mangroves). The goal of this priority is **"to initiate the conservation and sustainable use of wetland resources being classified as a long-term priority".**

The issue of biodiversity in general which is the main focus of the plan indirectly benefits and applies to the mangroves and its biodiversity. However, it could serve a much better purpose if a separate section is dedicated to mangroves and its related issues which are then covered in detail. This could be considered in the current review process of the NBSAP. The conservation of biodiversity, integration of traditional conservation knowledge, formulation of related policies and amendments to legislation, mainstreaming, research, establishment of conservation and protected areas would also foster a much more concerted effort toward conservation of biodiversity in general. The establishment of conservation areas in mangrove ecosystems should be implemented and enforced in Samoa with whatever available mangrove forests and resources. Aggressive education and awareness of these biodiversity issues and its importance at all levels in the community should be enforced.

3.4 Safata Marine Protected Area Management Plan 2008-2010

The Plan is a collaborative approach and partnership between the Government of Samoa and all the villages of Safata district to the sustainable use and protection of the marine resources and environment. The plan's vision is "*Safata's marine environment is critical to our way of life. We commit to taking care of our marine environment and establishing a solid foundation for our marine protected area, which we hope will both sustain and bring new opportunities for our people and generation*[3]".

The plan contains eight (8) priority goals and includes:

1. Christianity, culture of the Faasamoa and cooperation
2. Fisheries and coastal areas
3. Special biodiversity mangrove forests of Safata
4. Tourism
5. Aquaculture and reef re-stocking
6. Marine education in our schools

[3] Page 4 of the Safata marine protected area management plan

7. Awareness and education
8. MPA Zonation

The goal for the special biodiversity mangrove forests of Safata is "*by the end of 2010, our mangrove areas will have improved in quality, will not have decreased in area due to any human activities and will be a useful tourism and academic resource*[4]". It has been recognised in the plan that the Safata Marine Protected Area (MPA) contains a special range of biodiversity and one of the largest areas of mangrove forests left in Samoa.

The Safata marine protected area supports mangrove conservation by:

- Banning clearance and reclamation without proper assessment and village approval
- Preventing pigs from going wild
- Banning of rubbish dumping in mangrove areas and the marine environment
- Developing mangrove-base tourism
- Conducting environmental impact assessment for any mangrove-based development activity

The plan and its implementation directly impacts mangroves through the inclusion of mangrove conservation as one of the key priorities. The plan should be closely monitored by MNRE and the MPA district committee. It could be replicated in other districts of Samoa having mangroves.

Climate Change Policy

3.5 National Adaptation Programme of Action (NAPA) 2005

NAPA provides a country-wide programme of immediate and urgent project-based adaptation activities that address the current and anticipated adverse effects of climate change, including extreme events. It further reflects the priority measures identified by Samoa in its implementation of climate change adaptation activities. It also provides a brief summary of the direct and indirect impacts on various sectors identified and considered to be most vulnerable to climate change impacts such as agriculture, biodiversity, culture, energy, forestry, health, tourism, water and even the built environment with all its vital public amenities and public services.

The Samoa NAPA Vision is: **"To achieve a high level of community capacity for adaptation to adverse impacts of climate change"** and the mission which **"aims to communicate urgent and immediate adaptation needs and the activities to address these needs to deal with the adverse impacts of climate change; and to develop the strategies for capacity building amongst stakeholders and village communities"**.

The main four objectives of Samoa's NAPA are: **(1) To develop and implement immediate and urgent project-based activities to adapt to climate change and climate variability; (2) To protect life and livelihoods of the people, infrastructure and environment; (3) To incorporate adaptation measures and goals into national and sectoral policies, and development goals; and (4) To increase awareness of climate change impacts and adaptation activities in communities, civil society and government.**

[4] Page 9 of the Safata marine protected area management plan

Nine immediate and urgent project-based priority activities in order from one to nine in assigned project profile names and, in particular, twenty one (21) adaptation needs/activities **include (1) Securing Community Water Resource; (2) Reforestation, Rehabilitation and Community Forestry Fire Prevention; (3) Climate Health Cooperation Program; (4) Climate Early Warning System; (5) Agriculture and Food Security Sustainability; (6) Zoning and Strategic Management Planning; (7) Implementation of Coastal Infrastructure Management Plans for Highly Vulnerable District; (8) Establishment of Conservation Programmes in Highly Vulnerable Marine and Terrestrial Areas of Communities and (9) Sustainable Tourism Adaptation.** Although being ranked as priorities of low importance, activities 6, 7 and 8 benefit the management and the use of mangroves and mangroves ecosystems as being part of coastal areas or zones. The identification and mapping of coastal hazard zones, the development of community-based sustainable biodiversity management plans and identification and establishment of priority conservation areas for priority species protection (both marine and terrestrial) should provide some management measures to the mangrove as forests and as ecosystems.

Project Profile 6 on the Zoning and Strategic Management Planning Project sees to the implementation of zoning and strategic management planning and highlights a range of environment issues arising from the unplanned expansion of Apia. The reclamation of coastal lands and destruction of mangroves; septic tank effluent flowing into the groundwater and coastal ecosystems; domestic and industrial waste disposal were identified as some of these issues.

The *Planning and Urban Management Act* 2004 (the "PUM Act") has provided legal grounds to implement an integrated system of urban management and planning for sustainable development and environmental management. It further considers a holistic approach to planning.

The identification and inclusion of specific adaptation activities relating to mangroves, its use and management could provide some clear measures and directives as to what specific activities need to be taken. One may argue that it is covered under the coastal ecosystems but its inclusion in such broad classification could also result in the specific ecosystem being ignored or accorded low priority. This may be evident in the current ranking system of the high priority activities identified in NAPA ranking coastal infrastructure management plans for Highly Vulnerable Districts; and establishing conservation programmes in highly vulnerable marine and terrestrial areas of communities as with (7) and (8) respectively.

Sectoral Policy

3.6 Samoa Tourism Development Plan 2009-2013

The Tourism Development Plan lays the foundation for the coordinated and sustainable development of tourism for Samoa. It recognizes the direct links between protecting biodiversity and tourism, and advocates for the protection of key sites against unsustainable resource use, including forest clearing, coastal pollution and waste management.

The primary aims of this Tourism Development Plan are:

- to establish and articulate common objectives and directions for the sector, industry, the community and government

- to develop strategies designed to achieve the common objectives and to determine organisational roles
- to provide a foundation for determination of priorities for strategic implementation
- to provide a foundation for determination of appropriate methods of monitoring progress and performance
- to provide an agreed framework for the long-term sustainable development of tourism for Samoa

The plan revolves around eight key themes as follows:

Operating themes are destination promotion and marketing; product, service and infrastructure development and resource management. The resource management key areas of focus are:

- to adopt, implement, establish monitoring systems and processes and report against Samoa's sustainable tourism indicators, interpret results and determine appropriate strategic responses
- to ensure on-going protection and management of key protected and conservation areas, and natural scenic and landscape sites
- to continue strengthening of community and public awareness of proper planning of developments with tighter development controls
- to provide continuing assistance in the development of attractive, safe and environmentally sound income-generating nature-based tourism products. This can be achieved through training, access to assistance and support and advisory services
- to assess tourism opportunities in Marine Protected Areas for further development and identify mitigation strategies for particular tourism pressure points on coral reefs and the marine environment
- to increase operator awareness of waste management and pollution control on tourist sites
- to strongly encourage and promote the use of effective water-saving measures by all existing and new hotel developments
- to strengthen community tourism awareness programmes and encourage tourist education programmes on the potential impacts of tourism on the Samoan culture

One of the goals that will be the focus of the continuing development of a sustainable tourism industry for Samoa is environmental. This goal sees the **preservation of environment and sustainable management of land and marine ecosystems of Samoa; minimisation of environmental impacts of tourism; adoption of environmentally sustainable and sensitive tourism infrastructure and design and operating standards.**

On the positive side, the increasing popularity of many ecologically sensitive forests such as mangroves as ecotourism destinations, village and community-based tourism is providing an incentive for their conservation by many communities. The establishment of conservation areas, marine protection areas/reserves is being recognized as one of the tourism products of Samoa. Given the inter linkages of the ecosystems, mangrove ecosystems would benefit indirectly as they will also be managed through these conservation areas.

3.7 Policy Statement on Forestry

The National policy on forestry for sustainable development is to "*support and encourage the sustainable development of forests in Samoa for their combined environmental, economic, cultural and social benefits for the people of Samoa*". The development of the forestry programme aligns with the Strategy for the Development of Samoa 2005-2007 to accelerate economic growth. Moreover, the community forestry programme will be developed and promoted as an alternative cash crop. The principle of enhancing livelihoods and environmentally sustainable development are enshrined in the policy.

The policy is guided by the following principles:

- Ecological sustainability
- Social and gender equity
- Individual and collective responsibilities (that is, both landowner rights and national interests to be considered)
- Community-based management
- Economic efficiency
- Good governance and transparency
- Observance of forest-related international treaty obligations

Five (5) key objectives guide the policy with related strategies. The objectives include: communities and landowners; forest conservation; plantation and farm forestry; industry development and forest administration.

The objective on forest conservation relates to and impacts mangroves. One of the objectives is to conserve protective coastal forests, especially mangrove ecosystems, and restrict any non-sustainable use of them.

The implementation of the forest policy would positively impact mangroves through sustainable forest management ensuring ecological sustainability. This could also contribute to the trading of carbon credits that Samoa wishes to explore and establish legal framework of. Mangrove forests store over three times more carbon per unit of surface area compared to other forest types, especially below ground. It has also been found that the organic carbon stored in mangrove soils can remain sequestered for thousands of years; these forests serve as highly effective carbon sinks (Van Laviern, H. et al.2012).

3.8 National Infrastructure Strategic Plan

The National Infrastructure Strategic Plan (NISP) outlines the Government's priorities and strategic directions for major initiatives in the economic infrastructure sector over the next 5-10 years.

The NISP priority themes for infrastructure development are tabulated in Table 1 below:

Sector	Strategic Direction
Energy	• Investing in renewable energy • More efficient use of energy
Telecommunications	• Improved domestic and international connectivity
Water	• Reliable, affordable water supply • Improved waste water management
Solid Waste	• Sustainable waste management
Roads	• Samoa economic corridor • Safe and resilient road network
Sea Ports	• Meeting international sea freight needs • Safer and better inter-island ferry facilities
Airports	• Supporting international air travel and trade
Multi-sector	• Climate change and disaster risk reduction • Streamlining government responses • Making better use of existing infrastructure • Improved planning and evaluation

The strategies for each of the infrastructure sectors reflect and place emphasis on enhancing quality of life, supporting a competitive economy, enhancing environmental sustainability and building a resilient and robust infrastructure system.

Challenges faced by these sectors include lack of central sewerage collection and treatment system, inadequate drainage, treatment of waste (disposal of grey water and septage), local dumping of waste, disposal of harzardous waste, vulnerability of roads to natural disasters, coastal and river protection through sea walls. The preparation of a National Coastal Protection Strategy was also recognised as one of the initiatives. The National Coastal Protection Strategy will ensure that coastal protection works are directed at the most vulnerable areas so that homes and land are protected, and ensure that construction is undertaken to a high and consistent standard.

The water, solid waste, road and sea ports sector impacts mangroves directly and indirectly. The NISP should and must ensure that the key challenges to these key sectors are addressed to ensure their detrimental impacts to the environment is minimised. On the other hand, the development of these key sectors must ensure that they are environmentally sustainable.

PART 4: REVIEW OF LEGISLATION RELEVANT TO MANGROVES

Key Messages for Legislation

- There is no specific mangrove legislation in Samoa
- The existing legislation provides some tools for the protection of mangrove ecosystems which are not optimally used. They include conservation mechanisms, and provisions in the sectoral and cross-sectoral legislation regulating activities which may impact on mangroves
- The fragmentation of the legislation relating to mangroves hinders their effective management and protection
- The ownership and responsibility over the foreshores requires clarification and will influence the legislative measures which will best achieve the sustainable management of mangroves
- It is suggested that management of coastal areas, including mangroves, is best achieved through integrated management, at the village level. This could be achieved by either:
  - Specific legislation (law or regulations) for mangroves, which would articulate the objectives of mangroves management in the context of integrated coastal management and clarify the roles and responsibilities over mangroves management. It would also provide guidance for the interpretation, implementation and amendment of the legislation relevant to mangroves, particularly with regards to development control
  - Amendments to existing legislation to - inter alia - provide for systematic consideration of mangroves in decision-making, promote the use of existing legal mechanisms to benefit mangroves, and underpin integrated management of coastal natural resources, including mangroves, at the village level through the empowering of the village *fonos*

The review of the legislation is presented in four sections. The first section (4.1) provides an overview of the legal and judicial systems of Samoa. The second section (4.2) explores the land tenure system and land laws which may affect mangroves in Samoa. It also highlights existing legal mechanisms which may be used for the conservation of mangroves. The sectoral legislation regulating activities which may impact on mangrove ecosystems is identified and analysed in section (4.3). Lastly, the cross-sectoral legislation regulating environmental management, waste management, pollution control and development control is presented and analysed in the last section (4.4) of this review of legislation.

4.1 Overview of the Legal and Judicial Systems of Samoa

The legal and judicial systems of Samoa are the product of its political history. Samoa, formerly Western Samoa, was a German colony from the beginning of the 20th century until the end of World War I.[5] Subsequently, Samoa was placed under the League of Nations mandate of New Zealand from

[5]Corrin J. C , *Introduction to South Pacific Law*, 3rd edition, p 15.

1919-1945 and remained under the control of New Zealand through the United Nations trusteeship from 1945-1962, until Samoa attained independence in 1962.[6]

Prior to independence, the laws of Samoa included German Decrees and New Zealand Ordinances specifically applicable to Samoa; Acts of the British Parliament and the British common law and equity that were in force in New Zealand and appropriate to circumstances in Samoa; and Samoan custom — for the purpose of ascertaining rights to customary titles and lands and the validity of marriages prior to 1921.[7]

The sources of law after independence include the Constitution; the Acts of the Samoan Parliament; existing Ordinances and Acts of New Zealand and the British Parliament not yet repealed; English common law and equity that were not inconsistent with the Constitution; legislation and subsidiary legislation in force in Samoa or appropriate to the circumstances of Samoa; and Samoan custom relevant to ascertain rights to customary titles and lands and the validity of marriage.[8]

The Executive branch of Government is modelled on the English 'Westminster model'.[9] The Head of State who is elected by the Legislative Assembly[10] is required to appoint the Prime Minister. It is the latter who commands the support of the Legislative Assembly.[11]

The Parliament of Samoa consists of the Head of State and the Legislative Assembly. It is the Parliament that is empowered to make laws for the whole or any part of Samoa and these laws have effect within Samoa and, to some extent, outside of Samoa also. The Samoan parliament consists of 49 members, 47 of whom are *matai* [chiefs] who are elected by its adult citizens (21 years or older).[12]

The Head of State appoints 8-12 other members of Parliament to be ministers and form the Cabinet.[13]General elections are held in Samoa every five years.[14]

The Supreme Court is the superior Court in Samoa with the Court of Appeal being the highest appeal court.[15] District Courts are subordinate courts of record, having limited criminal and civil jurisdiction, but they are excluded from hearing an action 'which in any way affects or is in relation to customary land'.[16] Matters affecting customary land must be heard by the Land and Titles Court, the existence and jurisdiction of which is established by the *Land and Titles Act* 1981.

A village *fono* (council) exercises power and authority in relation to the affairs of the village in accordance with the custom and usage of the village.[17]It may impose punishments.[18]The *fono's* jurisdiction is limited to *matai* and persons whose usual residence is in the village and does not

[6]Supra n 9.
[7] Professor Don Patterson, *Samoa: Sources of Law – Introduction* (1999) http://www.paclii.org/ws/sources.html (Accessed 26 October 2012).
[8]Supra, n 11.
[9]Supra n 9, p 83
[10]Art 18 *The Constitution of the Independent State of Samoa*
[11]Art 33 *The Constitution of the Independent State of Samoa*.
[12] Government of Samoa, official website: http://www.govt.ws/index.html(Accessed on 26th October 2012).
[13]Art 32, *The Constitution*
[14]Supra, n 15.
[15]Art 75, *The Constitution*
[16]s26*District Courts Act* 1969
[17]s3*Village Fono Act* 1990
[18]s6*Village Fono Act*

extend to persons who are not liable to render *tautua*[19]in custom.[20] Decisions may be appealed to the *Land and Titles Court*.[21]

4.2 Land Tenure, Land Law and Legal Mechanisms for Conservation

4.2.1 Land Tenure

The *Constitution of Samoa* categorizes land as either customary land, freehold land or public land[22]. More than 80 per cent of the land is customary land, 12 per cent is freehold land and 7 per cent public land[23].

Freehold land is held as an estate in fee simple[24]. It was registered in the Land Registry under a deeds system established before independence in 1962. The *Land Titles Registration Act (LTRA)* 2008, which came into force in 2009, adopts the Torrens registration of title system and requires the registration of public land, freehold land and customary land leases and licences. It also allows the registration of customary land in respect to which judgment has been made by the Land and Titles Court. The LTRA is criticised for creating new indefeasible freehold titles and for being repugnant with Article 102 and the Constitution preamble which safeguards customary land and culture. It is also argued that the Torrens system it establishes is incompatible with customary land tenure.

Public land is free from customary title and from any estate in fee simple.[25] The land below the high water mark[26] is public land and belongs to the State[27].

Customary land is held in accordance with Samoan custom and usage[28]. Accordingly, mangroves growing on customary land are held in the same manner. The titleholder (*matai*) of *customary land* has authority (*pule*) over the land to which it is attached[29] and determines how the land is distributed amongst family members for use[30]. Land can be taken by the Government, pursuant to the *Taking of Land Act* 1964, for a 'public purpose[31]'. Under customary law, the waters adjacent to a coastal village were considered part of the land of that village[32]. A coastal village maintained rights of use and access to the lagoon and inshore reef adjacent to the village[33]. However, the Constitution

[19] 'regular service and merit' as described in a speech by Tui Atua TupuaTamaseseTaisiEfi, the Head of State of Samoa, in a Public Lecture Address given at the University of Hawaii, 29 October 2007: http://www.head-of-state-samoa.ws/pages/speech_jurisprudence.html [accessed 21 March 2013]
[20] s9*Village Fono Act*
[21] s11*Village Fono Act*
[22] Article 101 of the Constitution
[23] Grant, C. Case Study: Accessing Land for Public Purposes, Vol 2. http://www.ausaid.gov.au/Publications/Documents/MLW_VolumeTwo_CaseStudy_13.pdfpp 268- 269 (Accessed March 27 2013)
[24] Art 101(3)*The Constitution*
[25] Art 101(4) *The Constitution*
[26] 'the line of median high tide between the spring and neap tides': Art 104(2) *The Constitution*
[27] Art 104 *The Constitution*
[28] Art 101(2)
[29] Grant, C. Case Study: Accessing Land for Public Purposes, Vol 2. http://www.ausaid.gov.au/Publications/Documents/MLW_VolumeTwo_CaseStudy_13.pdf p268 (Accessed March 27 2013)
[30] Grant, C. Case Study: Accessing Land for Public Purposes, Vol 2. http://www.ausaid.gov.au/Publications/Documents/MLW_VolumeTwo_CaseStudy_13.pdf p269 (Accessed March 27 2013)
[31] Ibid
[32] Techera E, 'Samoa: Law, Custom and Conservation', (2006) 10 *NZJEL* 365 http://www.vanuatu.usp.ac.fj/sol_adobe_documents/usp%20only/Pacific%20law/Techera%20Samoa%20law%20custom%20and%20conservation.pdf [accessed 24 March 2013]
[33] Ropeti E and Foliga, T, *Samoa Country Report,* 2008 (SPREP) at p4 http://www.sprep.org/att/IRC/eCOPIES/Countries/Samoa/6.pdf [accessed 24 March 2013]

changed the ownership of land below high water mark but, as it is silent concerning the foreshore land above high water mark, it is assumed that it remained customary land.

Unless the land adjacent and above the high water mark is freehold land, the coastal mangroves above the high water mark are on customary land, on the basis that all land is held according to custom, unless by law (either by lawful alienation or by the Constitution) it has become freehold or public (government) land. However, the provisions of the *Lands, Surveys and Environment Act* infer that the Government has the care and control of the foreshore lands (meaning those lands between the high water mark and a point 50 m above the high water mark, as well as the bed and banks of streams, rivers and lakes and the land extending to a distance of 5 m away from the banks[34]).

Article 102 of the Constitution, which is the only article the alteration of which requires a referendum[35], protects customary land by making it unlawful to alienate or dispose of an interest in the land except in accordance with a law enabling the grant of a lease or licence, or acquisition for public purposes. The grant of leases and licences over customary land is regulated by the *Alienation of Customary Land Act* 1965.

Customary land may effectively be alienated through *registration of authority* over land. Section 14 of the *Land and Titles Act* 1981 permits a Samoan who is not *matai* to register authority over customary land in the name of an individual[36]. Traditionally, authority would lie with the extended family and be attached to the *matai* title. Registration of authority entitles the holder exclusive rights to occupy and use the land, which may be inherited by the heirs of the registered titleholder. In other words, it is treated as freehold land[37].

4.3 Land Laws Which May Affect Mangroves

4.3.1 *Taking of Land Act* 1964

The *Taking of Land Act* 1964 is to provide for the taking of land for public purposes and for the payment of compensation and for stopping roads[38].

The Act enables Government to acquire both customary and freehold land compulsorily for public purposes[39]. Customary land is more commonly acquired under this Act[40].

A *public purpose* is defined under the Act to include the following: public recreation, forestry, the control of coasts and rivers, the safeguarding of water, soil and forest resources, and all lawful purposes and functions of the Government of Samoa[41].

[34]A management plan must be drafted for the protection, conservation, management, and control of the coastal zone which includes the foreshore lands (s116) and ministerial consent is required for any activity that may result in the alteration of the natural configuration of the foreshore (s 119).
[35] Art 109, *The Constitution* and see Chris Grant, *Accessing Land for Public Purpose in Samoa*, Making Land Work Volume II: Case Studies at p.270. http://www.ausaid.gov.au/Publications/Documents/MLW_VolumeTwo_CaseStudy_13.pdf (Accessed 18 November 2011).
[36] The Land and Titles Amendment Act 2012 prohibits people under 25 from being given a title of matai. It is also understood although the author did not access the Amendment Act, that art. 14 now refers to the intention to appoint a matai,
[37]Supra, n 30.
[38] Long title of the *Taking of Land Act 1964*
[39]S7 *Taking of Land Act*
[40]Supra, n 30 *of the Taking of Land Act*
[41] S2 *Taking of Land Act*

4.3.2 *Alienation of* Customary *Land Act* 1965

The *Alienation of Customary Land Act* 1965 is established to provide for the leasing and licensing of customary land for authorised purposes[42]. An 'authorised purpose' includes a public purpose, hotel, industrial, commercial, business, agricultural business, pastoral business, forestry, horticulture, fisheries or religious purpose.[43]

Applications for a lease or licence are publicly notified to allow interested stakeholders to lodge written objections to the proposed leasing or licensing[44]. There are no specified grounds for objections and so the conservation of mangroves for the livelihood of the communities that benefit from mangrove ecosystems may form the basis of an objection to a proposed lease or licence that could pose a threat to mangrove ecosystems.

4.3.3 *Alienation of Freehold Land Act* 1972

The *Alienation of Freehold Land Act* 1972 regulates the alienation of freehold land to persons who are not resident citizens and to overseas corporations.[45] Alienation of freehold land can take place through the sale or transfer of any estate or interest in freehold land, whether legal or equitable, leasing of freehold land or granting of an option to purchase or acquire any estate or interest in freehold land.[46]

The Head of State, acting on advice from the Minister must consent to the alienation of freehold land.[47]

4.3.4 *Land and Titles Act* 1981

Among other matters, the *Land and Titles Act* 1981 confirms the continued existence of the Land and Titles Court[48], which is a separate court with exclusive jurisdiction in all matters relating to claims in titles and disputes involving customary land[49]. Moreover, it may hear appeals as of right from the village *fono.*

The Court comprises the president, judges and assessors, and may impose fines, make orders and hear appeals. In all matters, the Court must apply custom and usage, and the law relating to custom and usage and otherwise must 'decide all matters in accordance with what it considers to be fair and just between the parties[50]'.

4.3.5 *Village Fono Act* 1990

The *Village Fono Act* validates and empowers the exercise of power and authority by the Village *Fonos* (councils) in accordance with the custom and usage of their villages[51]. The Village *Fono* is the

[42]Long title of the *Alienation of Customary Land Act 1965*
[43]S3 *Alienation of Customary Land Act*
[44]S8 (2) *Alienation of Customary Land Act*
[45]Long title of the *Alienation of Freehold Land Act 1972*
[46] S4 (1) *Alienation of Freehold Land Act*
[47] S6 *Alienation of Freehold Land Act*
[48]S 25*Land and Titles Act 1981*
[49]Supra n 9, Page 341
[50]S37 *Land and Titles Act*
[51] *Long title of the Village Fono Act 1990*

meeting of the body of those of chiefly status and the councillors[52]; that is the assembly of the *Alii* and *Faipule* of each village in accordance with custom and usage[53].

The Act applies only to village affairs and with respect to development, only village land[54]. It does not extend to *any person who does not ordinarily reside in its village; or any person who, not being a Matai of its village, ordinarily resides in its village on Government, freehold, or leasehold land and is not liable in accordance with the custom and usage of that village to render tautua to a Matai of that village*[55].

In addition to matters within the traditional custom and usage of the village, the Village *Fono* is empowered and may exercise authorities and functions as provided for by any other Act[56]. Any person guilty of village misconduct may be punished in accordance with the custom and usage of the village[57]. The power to punish in accordance with village custom and usage is deemed to include the following powers:

(a) *to impose a fine in money, fine mats, animals or food; or be party on one and partly in others of those things; and*
(b) *to order the offender to undertake any work on village land*[58].

It is not necessary to keep a written record of proceedings or of any decision of the Village *Fono*, including of any punishment imposed, and a person found guilty of village misconduct is not thereby guilty of a crime or offence under any other Act[59].

The powers under this Act could enable the Village *Fono* to make rules for the conservation and protection of mangroves and mangrove rehabilitation, where these matters constitute part of the affairs of the village within the traditional custom and usage of the village, or are within powers granted by new or separate legislation. The punishment for breach of a rule ('village misconduct') could extend to ordering the offender to undertake work in relation to the rehabilitation of mangroves to its natural state prior to their removal or merely just planting of mangroves, provided the mangroves are on village land.

The problem with this approach is that most mangroves will be in the coastal zone, at least part of which is clearly public land (below the high water mark), and any grant of powers to the Village *Fono* over public land adjacent to the village land would require new legislation or legislative amendment.

4.3.6 *Lands, Surveys and Environment Act* 1989

The purpose of the Act is broad in that, in addition to regulating all matters concerning government land[60], it endeavours to provide for the conservation and protection of the environment and the

[52]Te'oTuvale, *An Account of Samoan History up to 1918* (1968) page 2http://nzetc.victoria.ac.nz/tm/scholarly/tei-TuvAcco-t1-body1-d52.html (Accessed 1 November 2012).
[53]S2 *Village Fono Act*
[54]S2 *Village Fono Act*
[55]S9 *Village Fono Act*
[56]S3 *Village Fono Act*
[57]S5 (5) *Village Fono Act*
[58]S6 *Village Fono Act*
[59]S4*Village Fono Act*
[60]Does not include land that has been set aside for a public purpose: s2 *Lands, Surveys and Environment Act*

establishment of protected areas[61]. The provisions dealing with the environment and conservation will be dealt with in another part of this Review. This section will only deal with the provisions relating to land.

Part III allows the Land Board[62] to purchase freehold land or the interest of a lessee in government land for the purposes of settlement and any government purpose[63]. In order to prepare the land for settlement, with approval of the Minister, the Board may undertake activity as it sees fit, including reclamation and clearing[64]. Accordingly, areas of mangroves and the mangrove environment could be threatened as section 25 enables the Board with ministerial approval to undertake and carry out development works, including draining, clearing and reclamation. The development work required to prepare the land for settlement is not subject to the need for development consent or environmental impact assessment under *Planning and Urban Management Act* 2004 as that Act, although binding on public authorities, does not bind the Government[65] and so would not bind a Minister.

Part V of the Act deals with leasing of government land. The leases are subject to covenants and conditions which 'shall be in accordance with any relevant plan approved under the *Planning and Urban Management Act* 2004[66]*'.* For leases of farm land, there are implied covenants on the part of the lessee that he or she will comply with the following:

1. Keep all creeks, drains, ditches, and water courses upon the land open and free from growth and pollutants[67]; and
2. Without prior consent, shall not fell, sell or remove any timber or tree growing on the land unless it is required for the lessee's purposes[68].

It is to be noted that the Land Board, which has the power to grant leases of government land, may reserve from a lease, for the purposes of soil or water conservation, a strip of land along 'the mean high-water mark of the sea and of its bays, inlets and creeks', 'the margin of any lake' and 'the banks of any rivers or streams[69]'.

4.4 Legal Mechanisms for Conservation

This section will briefly outline the legislation that provides mechanisms for the conservation of land, waters, and species. When these mechanisms are applied to mangrove habitat, they can be utilised for the conservation of mangrove ecosystems.

4.4.1 *Lands, Surveys and Environment Act* 1989

Part VIII of the *Lands, Surveys and Environment Act* deals with conservation and environment. Among the principal functions of the Ministry of Natural Resources and Environment specified under

[61] Long title to the *Lands, Surveys and Environment Act 1989*
[62] s6*Lands, Surveys and Environment Act*
[63] s23*Lands, Surveys and Environment Act*
[64] s25*Lands, Surveys and Environment Act*
[65] s100*Planning and Urban Management Act*
[66] s49*Lands, Surveys and Environment Act*
[67] s63*Lands, Surveys and Environment Act*
[68] s64*Lands, Surveys and Environment Act*
[69] s34*Lands, Surveys and Environment Act*

this Part of the Act is *to ensure and promote the conservation and protection of the natural resources and environment of Samoa*, and *to act as the advocate for environmental conservation in Government, its agencies, and other public authorities*[70].

In Division 4, the Act empowers the Chief Executive Officer of the Ministry of Natural Resources and Environment to draft Management Plans for the protection, conservation, management and control of national parks, reserves, Samoa waters and water resources, coastal zones, indigenous forests, soil erosion, pollution, waste and litter disposal and 'any other matter relating to the environment which in the opinion of the Environment Board will benefit from the management plan[71]'. There must be consultation with the Planning and Urban Management Agency to ensure that no conflict arises in relation to plans[72].

In preparing the management plan, the Act expressly requires that regard be had to the following:

> *(a) In the case of a national park, the protection, conservation, and management of wildlife and natural features, and the encouragement and regulation of the appropriate use, appreciation, and enjoyment of the park by the public;*
> *(b) In the case of a reserve, the protection and regulation of the use of the reserve for the purpose for which it was declared;*
> *(c) The protection of special features, including objects and sites of biological, archaeological, geological, and geographical interest in those areas within the plan;*
> *(d) The protection of the water catchment values of those areas within the plan; and*
> *(e) The protection, conservation, control and management of soil resources, erosion, related works, and coastal zones of those areas within the plan.*[73]

The 'coastal zone' means all those areas comprising coastal waters and the foreshore. 'Coastal waters' means the area of water from the mean low water mark outwards to the limit of the territorial sea. The 'foreshore' means that area 50 metres landward of the low water mark, as well as the bed and banks of any stream, river and lake and that land extending for a distance of 5 metres from the banks[74].

4.4.2 *National Parks and Reserves Act* 1974

The *National Parks and Reserves Act* is 'to provide for the establishment, preservation and administration of national parks and reserves for the benefit of the people of Samoa[75]'. The Head of State, acting on advice of Cabinet may declare public land to be a national park or a nature reserve.

Any public land may be declared a national park provided that it is not set aside for any other public purpose and is not less than 1,500 acres in area, or is an island[76]. Each national park shall be preserved in perpetuity for the benefit and enjoyment of the people of Samoa, and shall be administered so that *it is preserved as far as practical in its natural state; the flora and fauna in the*

[70] s95 (b), (c)*Lands, Surveys and Environment Act*
[71] S116 *Lands, Surveys and Environment Act*
[72] s116 (1A) *Lands, Surveys and Environment Act*
[73] S116 (4) *Lands, Surveys and Environment Act*
[74] s2 *Lands, Surveys and Environment Act*
[75] Long title of the *National Parks and Reserves Act 1974*
[76] S4(a), (b) *National Parks and Reserves Act*

national park are preserved as far as possible; (and) the value as a soil, water, and forest conservation area is maintained[77].

Three types of reserves may be created; nature reserves, recreation reserves and historic reserves[78]. In addition, a reserve may be created for a specified purpose. A nature reserve is established for the conservation, protection and management of flora, fauna, or aquatic life, or the habitat of fauna or aquatic life within specified public land or a specified area of the territorial sea[79].

The Minister may prohibit or restrict persons from entering a reserve, and activities that would be detrimental to the reserve[80].

Perhaps consideration could be given to the creation of reserves for the purpose of protecting, conserving and rehabilitating mangrove ecosystems in coastal areas where the ecosystem has been damaged. The creation of a nature reserve for the protection of the rare species of mangrove, *Xylocarpusmoluccensis* is possible, as is the declaration of Vaiusu Bay as a historic reserve, on the basis of it being of national interest, given it is reputedly the largest mangrove area in East Polynesia.

4.4.3 *Planning and Urban Management Act* 2004

Section 3 of the Act establishes a Planning and Urban Management Agency ("the Agency"). The Agency consists of the Planning and Urban Management Board appointed under the Act, the Divisional Head and other officers and employees employed by the Agency.

The Agency may make a Sustainable Management Plan which may be national, regional, district, village or site-specific, to achieve the objectives of the Act[81]. Public consultation with all stakeholders is required, including providing relevant information on the environment for the planning area prior to the preparation of a draft plan.

A sustainable management plan may address the use, development, protection and conservation of land and, in the interests of sustainable management of land, may:

- include provisions relating to the protection or conservation of land in a specific area;
- regulate the use or development of any land;
- prohibit the use or development of any land; and
- designate land as being reserved for public purposes.

Sustainable management plans are publicly available documents[82] and must be considered by the Agency in determining a development application (an application for consent to carry out development[83])[84].

[77] S5 *National Parks and Reserves Act*
[78] See Ss 6,7,8 and 9 *National Parks and Reserves Act*
[79] S6 *National Parks and Reserves Act*
[80] S6 (2) *National Parks and Reserves Act*
[81] see Part IV *Planning and Urban Management Act* 2004
[82] s30 *Planning and Urban Management Act*
[83] includes the use of land, the erection of a building or structure, the carrying out of work and subdivision: s2 *Planning and Urban Management Act*
[84] s46 *Planning and Urban Management Act*

4.5 Sectoral Legislation Regulating Activities which May Affect Mangroves

Mangroves are said to have one foot in the land and one foot in the sea. Consequently, the health of mangrove ecosystems is affected by activities on land, foreshores and at sea. This part of the Review explores the regulation of these activities for their relevance to mangroves.

4.5.1 Legislation Affecting *Marine*, Shipping and Fisheries Activities

Legislation regulating maritime activities and associated infrastructures, including shipping, ports and fisheries could potentially contribute to preventing or mitigating adverse impacts of human activities on mangroves and maintaining a healthy environment and habitat.

4.5.2 *Ports Authority Act* 1998

The purpose of the *Ports Authority Act* 1998 is to establish the Ports Authority of Samoa[85].
The Act defines "*port" as meaning "any place in Samoa, and any navigable river or channel leading into such place, declared to be a port*..." by the Head of State[86]. There are no criteria to determine the suitability, with regard to the protection of the coastal environment, of a place as a port.

The Act regulates matters, including the movement and handling of dangerous goods[87], and makes it an offence to pollute the waters of a port[88]. Upon conviction of an offence, a person may be ordered by the Court to remove, clean up or disperse the '*harmful substance*[89].

4.5.3 *Shipping Act* 1998

The *Shipping Act* 1998 regulates matters relating to shipping, seamen, the registration, safety and manning of ships and gives effect to various international maritime conventions[90].

A vessel is unfit to go to sea if it is likely to endanger life, property or the environment[91] and if a vessel is wrecked on or near any Samoan island or in tidal waters, the owner of the vessel is likely to be directed to undertake specified acts, including removal[92].

The Act declares that certain international conventions have the force of law in Samoa. One such Convention is the *International Convention for the Prevention of Pollution from Ships*, known as "MARPOL 73/78"[93].

4.5.4 *Fisheries Act* 1988

Mangroves are essential nursery grounds and habitat for fish. Conversely, fish play an important role in the dynamics and health of mangrove ecosystems. Unsustainable fisheries practices, such as the use of explosives (prohibited by the *Fish Dynamiting Act 1972),* but also aquaculture, and the

[85] The long title of the *Ports Authority Act* 1998
[86] s2 *Ports Authority Act*
[87] s51 *Ports Authority Act*
[88] s57 *Ports Authority Act*
[89] s57 (3)(ii) *Ports Authority Act*
[90] The long title of the *Shipping Act 1998*
[91] s78 *Shipping Act*
[92] s176 *Shipping Act*
[93] S3 (2) (d) *Shipping Act*

development and operation of fish processing facilities may have particular detrimental effects on mangroves and their ecosystems.

The purpose of the *Fisheries Act*, set out in section 3 is to regulate the conservation, management and development of Samoan fisheries, and to promote the protection and preservation of the marine environment. Another purpose of the Act is to prepare and promulgate bylaws for the conservation and management of fisheries, following consultation with fishermen, village and industry representatives[94].

Land-based fisheries activities that could have impacts on mangroves include activities related to aquaculture operations. Aquaculture is defined under the Act as 'any activity involving or designed to involve the cultivation or farming of fish or marine plants.[95]. Aquaculture operations might possibly have impacts on the environment if their establishment included the clearing or removal of mangrove forests or if such operations hindered the survival of mangroves.

An aquaculture business or experimental operation requires a permit from the chief Executive Officer of the Ministry of Agriculture[96]. The permit may be subject to conditions or requirements relating to a number of matters, including the conservation, management and sustainable use of the aquatic environment[97].

In addition, development approval would be necessary under the *Planning and Urban Management Act* which might also necessitate environmental impact assessment, if the Planning and Urban Management Agency considers that the development could give rise (among other matters) to:

a) adverse impacts on a place, species or habitat of environmental importance; or
b) adverse impacts on or in the coastal zone[98].

An aquaculture permit could only be issued once development consent has been granted. Although the Act does not make it an offence to fail to comply with the conditions of an aquaculture permit, it is an offence under other legislation to fail to comply with the conditions of development consent[99]. As at 2001, aquaculture in Samoa was primarily village-level aquaculture for the harvesting of tilapia (fresh water), but there are a small number of primarily trial aquaculture sites[100].

4.5.5 Village Fisheries Bylaws (made under the *Fisheries Act*)

Village fisheries bylaws may be made for individual villages under the Fisheries Act[101]. They apply to villagers operating in the coastal waters over which a village has *de facto* control, the bylaws generally being developed after or as part of the preparation of a village fishery management plan[102].

[94] s3 (3)(d) *Fisheries Act*
[95] S2 *Fisheries Act 1988*
[96] S10A(1) *Fisheries Act*
[97] S10A(2) *Fisheries Act*
[98] s34, 42 *Planning and Urban Management Act;* Reg 5 *Planning and Urban Management (Environmental Impact Assessment) Regulations 2006*
[99] s84 *Planning and Urban Management Act*
[100] Tauaefa, Autalavou; 'Village Based Fisheries Management Approach – Samoan Experience', presentation to Community Management and Small Scale Fisheries Conference, Tonga, March 2007 http://www.tongafish.gov.to/documents/community%20conference/for%20web/tuesday/SamoaCEO_CommunityManagementSamoa/fish%20workshop.tonga/talavou.pdf [accessed 24 March 2013]
[101] s3(3)(d) *Fisheries Act*

Participation in village fisheries management programmes has steadily increased since the mid-1990s[103]. In 2007, there were 87 coastal villages with management plans and 57 sets of approved bylaws with 21 sets awaiting approval. The various management tools employed for fisheries by villages include (where mangroves exist) banning the removal of mangroves.

A Village *Fono* is empowered by this Act to impose a penalty on a person who commits a breach of a village fisheries bylaw, which can extend to undertaking 21 days' work on village land or waters[104].

4.6 Legislation Regulating Forestry Activities

Mangroves are trees and, as such, fall under the scope of the legislation regulating forestry activities.

4.6.1 *Forestry Management Act* 2011

The objectives of the *Forestry Management Act* 2011 include making provision for the effective and sustainable management of Samoa's forestry resources[105]. The Act is administered by the Ministry of Natural Resources and Environment.

Primarily, the Act is concerned with forestry resources and operations, but it should be noted that a 'forestry operation' includes the harvesting of forestry resources and the taking of forest produce for sale as firewood, and 'forestry resources' includes *all trees able to be utilised as processed timber, posts or firewood*[106]. Thus the harvesting of mangroves for commercial purposes is caught by the Act. Forestry operations may be undertaken on public land (which arguably includes the foreshore) where the government ministry or agency responsible for that land has designated it as being available for forestry operations[107]. Public land may be transferred to the Ministry for Forestry to become State forest land or for a forestry-related purpose[108].

The Minister is required to prepare a National Forest Plan to provide for the sustainable management of forest resources[109]. Forestry operations may only be undertaken on the authority of a licence or permit granted under Part V of the Act[110].

Among other purposes, the Act seeks to protect the environment and contains provisions to prevent and stop operations that adversely affect the environment[111]. 'Sustainable development' with respect to forestry operations means maintenance of the quality of the environment, as well as maintenance of the supply of forest resources, and the precautionary principle is embraced[112].

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[102]see King, M and Faasili, U 'Village Fisheries Management and Community-owned protected Areas in Samoa' in Naga, The ICLARM Quarterly issue April-June 1998 p36http://worldfish.catalog.cgiar.org/naga/na_2300.pdf[accessed 24 March 2013]
[103]Food and Agriculture Organisation of the United Nations, *National Fishery Sector Overview Samoa*, October 2009 at p3 http://fftp.fao.org/fi/document/fcp/en/FI_CP_WS.pdf [accessed 24 March 2013]
[104]s 3(6) *Fisheries Act*
[105]The long title of the *Forestry Management Act* 2011
[106]s2(1) *Forestry Management Act*
[107]s33*Forestry Management Act*
[108]s35*Forestry Management Act*
[109]s29*Forestry Management Act*
[110]s37*Forestry Management Act*
[111]s25 *Forestry Management Act*
[112]ss30, 31 *Forestry Management Act*

Under section 37 of the Act, the Minister may impose prohibitions or restrictions on the logging of a specific species of tree, in order to conserve the species or protect the environment[113].

An authorised forestry officer (an officer or employee of the Ministry so appointed) has extensive powers to investigate and enforce the Act, including the power to issue a notice to cease activity, under Division 5 of Part II of the Act. A forestry officer may also be appointed as a conservation officer under the *Lands, Surveys and Environment Act*, as both Acts are administered by the Ministry for Natural Resources and Environment[114].

4.7 Legislation Regulating Mining and other Extractive Activities

4.7.1 *Petroleum Act* 1984

The purpose of the *Petroleum Act* 1984 is to make provision for the supply, transport and storage of petroleum. The Act is administered by the Minister for Finance.

The Act empowers the Chief Executive Officer to acquire or take by notice:

- land;
- any existing storage facilities for petroleum;
- the lease of any land; and
- the lease of any existing storage facilities for petroleum[115].

The acquisition however, must be with the prior consent of the writer in writing and where appropriate, the lessee of the land[116]. The acquisition or leasing of land for purposes of petroleum storage, including the building of facilities and the process involved in the laying and placing of pipes on coastal land could result in mangrove removal or loss.

The requirement for environmental impact assessment would depend on the impact upon the environment.

4.7.2 *Lands, Surveys and Environment Act* 1989

While this Act in Division 5 of Part VIII ostensibly protects coastal zones, in fact with ministerial consent, it enables the following extractive activities and more to occur within the foreshore and coastal waters:

- The removal of silt, sand, gravel, cobble, boulders and coral
- Excavation, dredging, clearing, paving, grading, ploughing or other activity
- The placement of fill or other material
- The construction of a building or structure

The above activities would ordinarily fall within the meaning of 'development' in the *Planning and Urban Management Act* and thus without more, would require development consent and perhaps at

[113] s47 *Forestry Management Act*
[114] see s23 (1)(b) *Forestry Management Act*
[115] s5 (1) *Petroleum Act 1984*
[116] s5 (2) *Petroleum Act*

environment impact assessment (EIA) under that Act. However, the *Planning and Urban Management Act* does not bind the Government and thus is not binding on a Minister of the Government[117].

4.8 Cross Sectoral Legislation: Environmental Management, Waste Management, Pollution Control and Development Control

This part of the review addresses cross-sectoral legislation that affects mangrove ecosystems. Such legislation covers environmental protection laws, waste and pollution management laws and planning laws.

The Acts addressed in this section regulate activities across a range of areas that are not only related and relevant to mangrove ecosystems in general but also very important for the protection, preservation and conservation of mangroves. The importance of proper waste management, pollution control and planning cannot be over emphasised in relation to mangrove survival and preservation.

4.8.1 Environmental Protection Laws

Samoa is yet to enact the Environmental Management Bill 2010. Under environment protection laws, this Review looks at environment impact assessment laws and environment protection laws.

4.8.2 *Lands, Surveys & Environment Act* 1989

Part VIII of the Act deals with environment and conservation. The conservation aspect of this Act has been discussed in Section 4.3.1 above.

It is noteworthy that the Ministry for Natural Resources and Environment is responsible for the administration of this Act. Under this Part, the functions of the Ministry include the mainstreaming throughout government of an environmental conservation approach and promoting the protection and conservation of the natural resources and environment of Samoa[118].

Thus, the Ministry for Natural Resources and Environment has a vital role in ensuring the conservation and protection of mangrove ecosystems in Samoa.

Division 3 of Part VIII of the Act enables the appointment of conservation officers from within the ranks of the officers and employees of the Ministry[119]. Police officers have all the powers of conservation officers[120]. Where a conservation officer reasonably suspects the commission of an offence, he or she has powers of arrest, search and seizure, and within a national park or protected area, may give orders to a person including orders to leave the area[121].

[117] s100 Planning and Urban Management Act
[118] s95 *Lands, Surveys and Environment Act 1989*
[119] s106 *Lands, Surveys and Environment Act*

[120] s106 (3)*Lands, Surveys and Environment Act*
[121] see Division 3 of Part VIII

Division 5 of Part VIII addresses the protection of the foreshore and coastal zones, with provisions to protect both the foreshore and coastal waters. No activities may be carried out without the prior written consent of the Minister.[122] Breach of these provisions constitutes an offence and the offender may be ordered to take or pay for, reparation or restoration.[123]

4.9 Development and Project Activity Assessment

4.9.1 *Planning and Urban Management Act* 2004

The *Planning and Urban Management Act* embraces the EIA as a tool to assist the Planning and Urban Management Agency (PUMA) to determine whether development consent should be granted to a proposed development.

'Development' includes *the use of land, the erection of a building or other structure, the carrying out of a work, subdivision or any other activity*. 'Work' includes *any change to the natural or existing condition or topography of land, including the removal, destruction or lopping of trees and the removal of vegetation or topsoil*. 'Land' includes land covered with water. 'Environment' includes *ecosystems and their constituent parts, including people and communities; all natural and physical resources; amenity values; and the social, economic, aesthetic, and cultural conditions which affect the preceding matters or which are affected by those matters*[124].

A development requires the consent of the PUMA unless the relevant SMP provides otherwise. No SMPs have yet been made but there are now non-statutory transitional plans made towards SMPs in respect to all 41 districts, following consultation with traditional leaders. These are used as advisory documents in relation to development applications.

In some cases, a development plan which must show the existing environment and how the proposed development relates to the existing, likely use and development of adjoining and nearby land is required[125]. It follows that development plans for development adjacent to mangroves must take into consideration mangrove ecosystems and the effect on the people and communities.

In seeking consent of the PUMA, a developer may be required to undertake an EIA in relation to the development. A development application is open to potentially affected persons to make a submission, including objecting to the grant of consent. Moreover, in determining an application for development, the PUMA shall consider a number of matters[126], including submissions and any strategic plan adopted by a public authority; thus the relevant SMP (if any), water resource management plan, etc., must be considered. Development consent may be granted or refused in its entirety or be subject to conditions.

An authorised officer (employee or officer of the PUMA or other person authorised by the chief executive officer) may enter any place to enforce the Act, and investigate contraventions of the Act, including failure to comply with conditions of development consent[127].

[122] ss119, 120 *Lands, Surveys and Environment Act*
[123] s122 *Lands, Surveys and Environment Act*
[124] s2 *Planning and Urban Management Act*
[125] S41 *Planning and Urban Management Act*
[126] s46 *Planning and Urban Management Act*
[127] s82*Planning and Urban Management Act*

4.9.2 Planning and Urban Management (Environment Impact Assessment) Regulations 2006

There are two forms of EIA; a comprehensive EIA and a Preliminary Environment Assessment Report (PEAR)[128]. A PEAR is required for any development application that falls within the qualifying criteria specified in the Regulations[129], but which the PUMA considers as not likely to have a significant adverse impact on the environment[130]. An EIA will be required for any development application if the Agency considers that the proposed development is likely to have a significant adverse impact on the environment[131].

An EIA may be required where the Agency considers that the development application and its associated activities could give rise to adverse impacts on or in the coastal zone or adverse impacts associated with land instability, coastal inundation, or flooding[132].

The regulation specifies the content required in a PEAR and EIA. The Regulations also outline the process for review of and public consultation in relation to the assessments.

4.10 Water Resources Management

4.10.1 *Water Resource Management Act* 2008

The *Water Resource Management Act* provides comprehensively *for the management, protection and conservation of the water resources of Samoa*[133]. 'Water' includes any river, stream, watercourse, channel, lake, swamp and all ground water[134]. The Ministry has a duty to manage the water resources so as to achieve specified objectives, including the sustainable management of the water resource through planning and regulated water utilisation[135].

The Government reserves to itself all rights in respect of water resources. A water resource management plan (WRM Plan) developed by the Samoa Water Resources Board contains the assessment of the available water supply and safe yield of water from the sources[136]. The access to, drilling, digging for, and taking of water are regulated through the requirement to apply for a licence or permit to undertake these activities and the grant of licences and permits in accordance with the WRM Plan[137]. The WRM Plan must be considered in relation to the assessment of environmental impacts of proposed development under the *Planning and Urban Management Act*[138].

Part IX of the Act enables the making of village bylaws, which involve the village in conservation and management measures, for the conservation and management of water resources in the area of the village. The bylaws may include requirements or restrictions, including in relation to:

[128]Reg 4 *Planning and Urban Management (Environmental Impact Assessment) Regulations* 2006
[129]Reg 5 *Planning and Urban Management (EIA) Regulations*
[130]Reg 4(2) *Planning and Urban Management (EIA) Regulations*
[131]Reg 4(2) *Planning and Urban Management (EIA) Regulations*
[132]Reg 5(d) and (g) *Planning and Urban Management (EIA) Regulations*
[133] The long title of the *Water Resource Management Act* 2008
[134] s2 *Water Resources Management Act*
[135]s9 *Water Resource Management Act*
[136]ss16, 17, 18 *Water Resources Management Act*
[137]s12 *Water Resources Management Act*
[138]s19 *Water Resources Management Act*

a) the taking of water from a particular source;
b) the use of substances which may adversely affect a water source;
c) the grazing and keeping of animals which may impact on a water source;
d) the use of lands near a water source for recreation; and
e) activities which may adversely affect a water source or aspects/features of it[139].

There are various other enforcement measures available under the Act, including offence provisions. It is an offence to discharge, or cause, suffer or permit the discharge of a pollutant into a water resource[140].

4.10.2 *Samoa Water Authority Act* 2003

The *Samoa Water Authority Act* 2003 establishes the Samoa Water Authority, governed by a Board of Directors, the functions of which are to provide a water supply for the people of Samoa[141]. The Act is administered by the Ministry of Works, Transport and Infrastructure.

The Authority has broad powers to enable it to facilitate the supply of water, including the power to lay pipes across land and clear vegetation that may interfere with a water source or the Authority's works[142].

4.11 Waste Management and Pollution Control

4.11.1 *Waste Management Act* 2010

The *Waste Management Act* 2010 is established *to provide for the collection and disposal of solid wastes and management of all wastes*[143]. 'Waste' includes virtually all waste except human waste[144]. The Act provides for the licensing and registration of waste operators, sets out their powers and functions, expectations of operating plans and procedures, codes of practice, reporting and recycling requirements, etc.[145]

Waste may not be dumped or incinerated at sea without a permit and, to do so, constitutes an offence[146].

Village bylaws involving local communities in waste management measures may be made after consultation with village and community representatives, for the proper management of wastes in accordance with the Act[147].

4.11.2 *Lands, Surveys and Environment Act* 1989

Division 6 and 8 of Part VIII of the *Lands, Surveys and Environment Act* address the control of pollution and litter in Samoa.

[139] s33 *Water Resources Management Act*
[140] s42 *Water Resources Management Act*
[141] ss 3,4 *Samoa Water Authority Act 2003*
[142] ss 21, 22 *Samoa Water Authority Act*
[143] The long title of the *Waste Management Act* 2010
[144] s2 *Waste Management Act*
[145] ss9, 24 25, 33, 34, and 37 *Waste Management Act*
[146] s38 *Waste Management Act*
[147] s40 *Waste Management Act*

The only section in Division 6 makes it an offence to throw, discharge or deposit into Samoan waters (broadly defined) any refuse matter of any kind, from any place or vessel, or to deposit material in a place from where it may be washed into Samoan waters with polluting effect[148].

It is also an offence to discharge or permit the discharge without permission of *any oil, noxious liquid or solid substances or other harmful substances, by any method, means, or manner, into or upon any Samoan waters*[149].

Division 8 applies to the control of litter on land. It is an offence to deposit litter (widely defined to include refuse, rubbish and animal remains) in a public place and the offender may be ordered to clear up and remove the litter[150].

4.11.3 *Marine Pollution Prevention Act* 2008

The *Marine Pollution Prevention Act* provides *for the prevention of pollution to the marine environment and for responses to marine pollution incidents emanating from vessels and other matters related to the implementation of international marine conventions*[151].

The Act deals with pollution affecting the marine environment from vessels.

All vessels to which MARPOL 73/78 applies to must follow specifications listed in the convention regarding pollution prevention equipment, operation of vessels, discharge of pollutants and marine pollution emergency plans[152].

The Act requires the development and implementation of a National Marine Spill Contingency Plan (NATPLAN) that must correspond with relevant international conventions and applicable national laws[153]. All relevant stakeholders must adhere to requirements of both the NATPLAN and the *Disaster and Emergency Act*[154].

[148] s123 *Lands Surveys and Environment Act*
[149] s123 (1)(b) *Lands, Surveys and Environment Act*
[150] ss130, 132 *Lands, Surveys and Environment Act*
[151] The long title of the *Marine Pollution Prevention Act 2008*
[152] ss 7,8,9 and 21(4) of the *Marine Pollution Prevention Act*
[153] ss(1), (2)(a), (b) *Marine Pollution Prevention Act*
[154] s21(3) *Marine Pollution Prevention Act*

PART 5: NEXT STEPS

5.1 Summary of the Findings of the Review of Policy

Despite the importance of mangrove and mangrove ecosystems in Samoa, it is also one of the diverse ecosystems that continue to face increasing threats from human activities as well as from climate change. It can be seen that government promotes sustainable development, conservation and protection of biodiversity of the coastal ecosystems, marine ecosystems in general, all of which are interlinked to mangroves and mangrove ecosystems. However, the specific mention of mangrove as ecosystems and/or forests is not addressed separately in the various policies reviewed. It can also be seen that mangroves conservation is not regarded as being part of the climate change adaptation activities.

There is no specific or stand-alone policy on mangroves that address the use and management of mangroves and mangrove ecosystems. However, environmental policies, such as the NBSAP and NEMS briefly cover these mangrove issues.

There are a number of government departments and ministries like MNRE and Fisheries that have roles to play on mangrove conservation and management. This often leads to overlapping roles by these Ministries and, at times, may cause confusion since there is no clear directive in the responsibilities of these ministries. There needs to be a clear demarcation of roles if these arrangements continue or a specific Ministry should be tasked to look after all mangrove issues.

The Government of Samoa, given its vulnerability to climate change, should seriously look at protecting and conserving its mangrove resources. Mangroves act as natural buffer systems in the coastal areas. Replanting and rehabilitation programmes should be encouraged at all levels. The discovery of new mangrove sites by the Samoa MESCAL team should be an incentive to communities and efforts in maintaining these sites should be enforced.

5.2 Policy Recommendations

The following recommendations related to policy are made:

Government to promote sustainable development. 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. Government, in its current drive to encourage economic development should think more of the environmental impacts deriving from the development activities so as to minimize environmental degradation to mangroves, for instance.

Mangroves, its use and management to be mainstreamed in government policies relating to development and environment. Mangroves are not specifically addressed in the key sectoral policies being reviewed and also the overarching development policy.

To recognise the importance of mangroves at the national level, it is important that they be mainstreamed into government policies, relating to development and the environment.

Formulation of mangrove management plans, co-management plans. Given that there is no specific mangrove policy or plan that will provide protection to mangroves and guide activities that impact on mangroves, the Government could formulate mangrove management plans.

The formulation of co-management plan on mangroves could be explored by Government where communities would participate and work in partnership with Government on managing and seeing the sustainable use of mangroves. The Safata Marine Protected Area Management Plan could be used as a guide for the co-management plan on mangroves.

Community Based Conservation (CBC). Community based conservation of mangroves in Samoa had been examined in the past in Boon (2003). Any development project should come from within the community and if it is initiated by them they will ensure that the beneficial outcomes of the projects will be for them and not to meet international aid stipulations. Local government bodies as well should maintain follow up monitoring of any new project to ensure its sustainability. Park et al. (1992)6 distinctively wrote, 'if you want to protect the Samoan environment you must rely on the villagers to do the job.'

Clear demarcation of the Ministry responsible on mangroves. 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. A specific government department, for instance the Ministry of Natural Resources and Environment, should be mandated to be responsible for this.

MNRE should promote and ensure the conservation, protection and management of mangroves in Samoa and coordinate conservation activities related to mangroves.

Awareness on mangroves – all levels. Government, non-government and communities should be made aware of the importance of mangroves and related information should be disseminated to them. The MNRE organises community, school and environment week related programs and could use this to raise awareness on mangroves.

Government, in its awareness program could clarify with the communities ownership issues on mangroves; inform communities of processes, policy and legislation on mangroves and let the public know of Government's program on mangroves.

MESCAL findings to be communicated to government and communities. To ensure that all individuals in Samoa, all levels of decision making in government and to communities acknowledge the importance of mangroves and the need to protect it, all findings of the MESCAL project should be widely disseminated and shared. This includes findings of the socio-economic valuation/assessment, field surveys, mapping results and various activities undertaken for MESCAL which could also serve as baseline data on mangroves.

Community engagement. 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.

Communities have been engaged with the Department of Fisheries in the establishment of marine protected areas. They were further assisted with the development of management plans and by-laws providing some sense of ownership to these initiatives contributing to their success. Their involvement in the formulation and development of a co-management plan on mangroves is crucial in the successful implementation of the plan as they will take ownership.

5.3 Summary of the Findings of the Review of Legislation

5.3.1 Summary of findings

The purpose of the review of legislation has been to consider what, if any, legislative amendment is needed for the better management of mangroves and mangrove ecosystems in the future.

Mangroves in Samoa have not been well-protected despite the availability of legislative tools to address their protection. They include:

- Enforceable rules made by Village *Fono* to protect mangroves, if that purpose is within the custom and usage of that village
- Management plan which may be prepared for their protection and management, under the Lands, Survey and Environment Act, regardless of the tenure of the land
- Declaration of mangrove areas as protected areas under the power vested in the Ministry for Natural Resources and the Environment who is responsible for the management of forestry resources, (the law was amended to extend the declaration of protected areas beyond the 5-year current limit)
- Environmental Impact Assessment for the control of developments, including their impact on mangroves under the Planning and Urban Management Act (although the Act does not bind the Government) provided the EIA is adequate and there is compliance with and enforcement of conditions of any subsequent development consent
- Management plans made under pieces of legislation in Samoa, recognizing the need for sustainable development and requiring plans to be made the Lands, *Surveys and Environment Act* 1989,*Planning and Urban Management Act* 2004, Water Resources Management Plan 2008, *Forestry Management Act* 2011

The ineffectiveness of the law in protecting mangroves is in part due to a lack of awareness and understanding of their significance, but also to the fragmentation and some flaws in the legislative framework for mangroves, and to the weakness of law enforcement

Lack of clarity regarding ownership or responsibility for the foreshore is an issue and it is critical that should be addressed as a priority. The measures to be taken to improve the management of mangroves, detailed below, depend upon who owns the above high water mark foreshores. Villagers tend to assume that the coastal waters and foreshore are customary land and may be

perceived as 'belonging' to a particular *matai*. However, it is clear from the Constitution that the land below the high water mark is public land, while the strip of land extending to a distance of 5 m above the high water mark may be customary land over which the Government of Samoa holds management and control rights. The land within 5 m of the bank of a river or stream similarly appears to be subject to the management and control of the Government.

Presently, a village *fono* could make enforceable *rules* to protect mangroves, if that purpose is within the custom and usage of that village. If the foreshore is considered 'village land' and mangrove in the foreshore area is cut or damaged in breach of the village rules, the offender could be punished by the village *fono* and ordered to undertake work to replant mangroves in the foreshore area.

Assuming the mangrove areas are presently customary land, they could be acquired for a public purpose under the *Taking of Land Act* what with the Act being the control of coasts and rivers. Whatever the tenure of the lands, a management plan may be prepared for their protection and management, under the *Lands, Survey and Environment Act*. However, although it is a breach to contravene a provision of a management plan, thought would need to be given to the resources needed to ensure offences are detected, in the interests of enforcing the management plan.

No area of mangroves is likely to be sufficiently large to be declared a national park, as a minimum area of 1500 acres (607 ha) is required and the total area under mangroves across Samoa is estimated at 752 ha only, but it is open to the Government to declare areas of mangroves to be nature reserves, under the *National Parks and Reserves Act,* and thus prohibit or restrict entry or the harvesting or damaging of mangroves.

The Ministry for Natural Resources and the Environment is responsible for the management of forestry resources, which includes the commercial exploitation of mangroves for timber, firewood, etc. Land containing an area of mangroves could be vested in the Minister and declared protected land but, while protection may be for the purposes of protecting a forestry resource, the fact that land may be protected for a maximum period of only five years suggests that the Act does not presently contemplate the protection of the resource indefinitely for climate change adaptation. Of course legislative amendment could address this if the policy makers determined that the Forestry Division of the Ministry was best placed for the sustainable management of mangrove forests. In this regard, it is to be noted for enforcement purposes that officers and employees of the Ministry may hold dual authorizations as conservation officers and forestry officers.

Damage may be caused to mangroves through onshore and offshore sourced pollution. Legislation exists to outlaw pollution and provide for the management and control of waste, but an issue is whether sufficient resources exist to detect offences, investigate and proceed to enforce the legislation. Damage may also be caused through a change to the mangrove environment, which can be permitted by the Minister for Natural Resources and Environment under the settlement provisions of the *Lands, Surveys and Environment Act*.

Legislation presently controls most but not all forms of development (the *Planning and Urban Management Act* does not bind the Government) and through the provisions requiring environmental impact assessment, any likely significant impact on mangroves of proposed development may be identified and addressed, provided the EIA is adequate and there is compliance with and enforcement of conditions of any subsequent development consent.

A number of pieces of legislation in Samoa recognize the need for sustainable development and require plans to be made. There are requirements for the drafting of plans as follows:

- One or more management plans for the protection, management, conservation and control of national parks, reserves, water resources, coastal zones, indigenous forests, soil erosion, pollution, waste and litter disposal [L*ands, Surveys and Environment Act 1989*]
- Sustainable development plans relating to the use, development, protection or conservation of land in specific areas [*Planning and Urban Management Act 2004*]
- The Samoa Water Resource Management Plan [*Water Resources Management Plan 2008*]
- A National Forest Plan to provide for the sustainable management of forest resources [*Forestry Management Act 2011*]

Current legislation provides for compliance and enforcement officers from the Ministry of Natural Resources and Environment in the form of conservation officers and forestry officers. Authorized water resources officers (from MNRE) and authorized fisheries officers (from the Ministry of Agriculture & Fisheries (MAF)) may be appointed. Police officers may act as conservation officers as well as fisheries officers.

There is provision in legislation for governance at village level in relation to the protection and management of certain natural resources, through the making of bylaws, the breach of which can be addressed by the village *fono*. The areas in which bylaws can be made include fisheries (including for the protection of mangroves), the conservation and management of water resources and for the proper management of waste. Of course, there is a weakness in governance through village bylaws in that they can only be used to control those persons who come within the jurisdiction of the village *fono*. They will not apply and cannot be used to control or manage the behaviour of persons from neighbouring villages, or other visitors. Bylaws are enforced by the village *fono*.

5.4 Options and Recommendations for Law Reform

5.4.1 Options for Law Reform

One option is to draft a stand-alone mangrove-specific law, or a set of regulations designed expressly for the protection and management of mangroves. The regulations could be made under the *Lands, Surveys and Environment Act*, and/or the *Forestry Management Act*. Provision for authorized officers to raise awareness of, and enforce the legislation would be necessary. A mangrove-specific law (legislation or regulation) would focus attention on the subject and thereby raise awareness of it and the rationale for it. It would also provide clear guidance on the consideration of mangroves in the decision-making process, particularly when they relate to development control. Such legislation or regulation would also provide guiding principles for the interpretation, the implementation of sectoral and cross-sectoral legislation, and — where necessary — for law reform.

Another option is to determine that additional legislation is unnecessary, assuming that it is possible to have the integrated management of natural resources, including mangroves, at the village level through the empowering of the village *fono*s. With this approach, some legislative amendment might be necessary to empower village *fono*s to make and enforce bylaws (as envisaged by the *Village Fono Act*), with the goal of avoiding the passage of separate legislation and the creation of a new

institution. Other relevant sectoral legislation could also be amended to provide for specific consideration for mangrove ecosystems in all decision-making.

Integrated management of coastal areas at the village level by persons with appropriate knowledge and interest who are given supplementary training to raise awareness of the significance of mangroves for climate change adaptation and the benefit of the ecosystem services provided (in the context of the protection of natural resources, including the fishery), could provide the best outcomes for the protection and health of mangroves and mangrove ecosystems. Such an approach should engender cultural change in the best interests of the local village, the wider district and the people of Samoa. Already, village *fonos* may make bylaws across the areas of waste management, water resources and in the interests of the fishery, for the benefit of the natural resources that are part of or adjacent to the village area. Village *fonos* can instigate change. However, the issue over ownership of the foreshore lands must first be clarified. If the foreshore is not within the jurisdiction of the nearby village, the grant of bylaw-making powers to the village *fono* will not be beneficial nor assist the cultural change needed for mangrove protection and management.

5.4.2 Recommendations for Law Reform

The following recommendations are made:

1. Ownership of the foreshore as it is defined in the *Lands, Survey and Environment Act* be clarified in legislation.
2. For consistency and removing the risk of any development taking place without consideration of impact on mangroves, section 100 of the *Planning and Urban Management Act* be amended to provide that it binds the Government.
3. A policy decision be made as to whether the Division of Forestry or the Division of Environment and Conservation within the Ministry of Natural Resources and Environment is best placed to accept responsibility for the oversight of the management and protection of mangroves.
4. Separate legislation designed for the better management and conservation of mangroves would assist in highlighting the importance of mangroves and facilitate consistent consideration for mangroves in decision-making, but is not essential if other measures are taken to clarify and improve the management of mangroves within existing legislation.
5. The Environmental Management Bill 2010 to be enacted.
6. A Samoa mangrove management plan to be developed, including the mapping of essential mangrove ecosystems which would assist decision-makers and communities in assessing the importance of mangroves and valuing mangroves.
7. The assessment of development applications for developments which may impact on mangroves includes cumulative and 'ridge-to-reef assessment'.
8. If the ownership of the foreshore areas lies with the government:
    a. consideration be given to the power to make a regulation under either the *Forestry Management Act* or the *Lands, Surveys and Management Act* for the management and protection of mangroves (depending on the policy decision under 3. above);
    b. a regulation be made for the management and protection of mangroves, with:
        i. provision for its enforcement by authorized forestry officers or conservation officers, depending on the decision taken (see 3. above); and
        ii. power for the relevant officer to:

1. investigate breaches of the regulation;
2. issue 'cease activity' notices;
3. issue administrative penalties;
4. report the offender; and
5. order that mangroves be replaced or replanted by or at the expense of the offender as appropriate.

9. If the ownership of the foreshore areas is customary:
    a. The relevant legislation (the *Forestry Management Act* or the *Lands, Surveys and Management Act)* be amended to provide that a village *fono* has power to make, enforce and punish the breach of bylaws for the protection and management of mangroves within foreshore areas;
    b. If necessary, legislation be amended as follows:
        i. to enable relevant management plans to incorporate planning and directions for the protection and management of mangroves;
        ii. to provide that a contravention of a provision of a management plan is an offence (as per s118 *Lands, Surveys and Environment Act* and *s30 Water Resources Management Act*);
        iii. to authorize a conservation officer or authorized forestry officer (depending on the decision taken at 3. above) to investigate a suspected breach of the management plan; and
        iv. to give an authorized officer or a court (policy decision required) the power to order that mangroves be replaced or replanted by or at the expense of the offender as appropriate.

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