

Samoa

Country Environment Profile

September 2006

Prepared and compiled from existing published reports, as part of the of the Country Support Strategy for the 10th European Development Fund programming under the Cotonu Agreement in line with the EU Pacific Strategy focusing on strengthening cooperation to address the management of natural resources and environmental challenges.

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Preface

Emphasising a "blue-green" theme the renewed "*EU relations with the Pacific Islands: A Strategy for Strengthening Partnership*" focuses on strengthening cooperation with Pacific ACP countries to address the sustainable management of natural resources and environmental challenges. 10th EDF programming requires that the environment is integrated into all Country Strategy Papers ensuring that future actions are appropriately targeted. An important step in this process is the preparation of an environment profile for each Pacific ACP country.

The main objective of the Samoa Country Environmental Profile is to identify and assess environmental issues to be considered during the preparation of a Country Strategy Paper, which will directly or indirectly influence EC co-operation activities. The Samoa Country Environmental Profile provides decision-makers in Samoa, and in the European Commission with clear information on the key environmental challenges, the current policy, legislative and institutional framework and the strategies and programmes (including those of the EC and other donors) designed to address them. This information will ensure that the EC co-operation strategies systematically integrate environmental considerations into the selection of focal sectors and co-operation objectives/strategies, and also establish the necessary environment safeguards for all co-operation activities undertaken in Samoa. The Profile establishes the key linkages between the environment and poverty reduction. It constitutes an important source of baseline information and will contribute to focusing political dialogue and co-operation with Samoa on key areas of concern including sustainable development as well as raising awareness among policy-makers.

This Profile has been prepared and compiled from existing published reports, including in particular the following:

- **Samoa's National Environment and Development Management Strategies (NEMS), 1994.**
- **Samoa's National Assessment Report for the 10-Year review of the Barbados Programme of Action for Small Island Developing States, 2004.**
- **Samoa Draft Country Diagnostic Report for the Global Environmental Vulnerability Project compiled by UNEP and SOPAC, 2005.**
- **People's Report on Progress Towards the MDGs in Samoa prepared by O Le Siosiomaga Society Incorporated, 2005.**

In the very short time frame to produce this Profile, no attempt has been made to update the information contained in existing reports, and editing has been minimal. One next step in the EDF 10 process should/could be to update and revalidate the information contained herein.

1. Summary

This Samoa country environment profile provides the background information from a national perspective, and suggests possible areas for intervention with EDF 10 resources.

Samoa is made up of two main islands, Upolu and Savai'i and seven small islands. The country has a total land area of 2,850 km² and an Exclusive Economic Zone (EEZ) of 120,000 km².

The Samoan islands are composed almost wholly of volcanic rocks with coral reefs forming in some coastal areas. Over 35% of Samoa's natural forests still remain however continuing land clearing for agriculture is a major threat to vegetation cover and water catchments. Overfishing, destructive fishing practices, waste, pollution, and coastal development are some of the key environmental issues. Government has made substantial gains in environmental management from designating national parks to the preparation of a coastal infrastructure management plan in consultation with the village communities. However the Government has yet to implement environmental impact assessment legislation to reduce the potential negative impacts of development.

Samoa has faced a challenging decade since the publication of its National Environment and Development Management Strategies (NEMS) in 1994, which is based upon the principles agreed to at the Earth Summit on Environment and Development held in Rio, 1992.

The NEMS states that for Samoa, *"It has become increasingly apparent that our natural resources are deteriorating due to the pressures we are placing on them. As the resources deteriorate, other problems arise. For example, our forests are being cleared at a rapid rate for agricultural use and for their timber; among the consequences are loss of water quality and supply, and loss of biodiversity."*

In the NEMS, and in order to emphasise the integrated, complex interactive nature of environmental issues and problems across traditional sectors, twelve environmental components were identified for priority consideration.

- Management of population dynamics and trends.
- Protection of quality and supply of freshwater.
- Protection of the sea and marine resources.
- Management of waste.
- Combating deforestation.
- Development of appropriate land use practices.
- Conservation of biological diversity.
- Protection of the atmosphere.
- Planning for climate change.
- Preservation of traditional arts, culture and history.
- Development of human resources.
- Promoting sustainable economic growth.

Samoa's progress over the last decade has laid the platform for necessary mechanisms to implement all its environmental obligations under international and regional environment conventions since the Barbados Programme of Action in 1994. These include; amendments of existing legislation (Lands and Environment Act 1989), national environment policies, action strategies, regulations and management plans which have all contributed to Samoa's national efforts of sustainable development and natural resource management. Despite progress over the years, new concerns have emerged together with imperative issues of special needs that require immediate assistance from the international community on the sustainable management, protection and conservation of Samoa's natural, ecological, cultural and human resources. These emerging concerns are seen as the next stepping stone for Samoa to consider in the coming decade if it is to fully realise a balance between development and natural resource management.

Climate Change and Sea level Rise

The necessary instruments to combat the impacts of climate change are in place, however there are emerging issues that need to be addressed, and for which financial assistance to start the implementation process for these plans is crucial in order to support community development efforts in sustainable management of their natural and cultural assets /resources. These include:

- to ensure full participation by communities in the execution of community coastal adaptation projects based on their management plans, the Government needs to find ways and means for communities to better access funding assistance for micro projects, that can contribute to communities efforts to sustainable management of Samoa's resources;
- there is an urgent need for technical assistance in terms of resources required for the development and digitising of maps to better identify vulnerable areas that are highly impacted by climate change such as; inland floods, watershed areas, and land degradation;
- there should be more collaborative programmes for all relevant government agencies that target the impacts of climate change in their sectors;
- there is a need to review climate change programmes in order to include national adaptation measures as mitigation measures are not enough to combat climate change; and
- developed countries through advance technological resources and skills, should promote more capacity building programmes for Samoa, in terms of CDM projects on appropriate technology transfer.

Natural and Environmental Disasters

The impacts of natural and environmental disasters are becoming increasingly common in Samoa ranging from long periods of droughts to devastating tropical cyclones. Issues remaining to be addressed include:

- national disaster plans need to be reviewed and more emphasis put on mitigation and readiness, this would ensure the minimisation of the aftermath damages caused by disaster events;
- national disaster management legislation to be the main guide for enforcement of standards that can reduce damages on natural resources, government and community assets from impacts of natural and environmental disasters must be developed; and
- there is limited public awareness of natural and environmental disaster issues, and there is an imperative to start national public awareness and educational campaigns using the media (television, radio and newspaper), community road-shows and educational programmes in schools.

Management of Waste

Much progress has been achieved in waste management with the implementation of programmes such as national waste management collection covering both the urban and rural areas, as well as the waste separation project within the main waste disposal area of Tafaigata Landfill. Needs outstanding include;

- capacity building within Ministry of Natural Resources and Environment in the preparation and production of public awareness materials in order that there is continuity in making these available for educational purposes;
- small grant funding assistance if available can help achieve community waste management projects in the areas of composting, reuse, recycling and waste separation at source; and
- the progress on waste management, has led to new initiatives that can be implemented through the development of projects on waste recycling, as there is a vast amount of waste that can be recycled.

Coastal and Marine Resources

In Samoa, people are very much dependent on the coastal and marine resources for their livelihoods. The following remain key:

- population pressures along coastal settlements has led to the increase in reliance on coastal and marine resources for food and subsistence income and a subsequent decrease in marine resources and loss of coastal habitat areas for marine organisms to breed, and there is an urgent need to seek funding through appropriate partnership arrangements to set-up marine protected areas enabling the conservation of coastal and marine resources; and

- more technical assistance for research or studies on coastal and marine resources is required which can assist communities in better decision making on ways to manage projects and improve the protection of coastal and marine resources.

Freshwater Resources

Samoa is endowed with freshwater resources, however the freshwater resources of the country are at a critical level, as seen in the number of dry springs and rivers around the country during drought periods. This issue should be a priority concern for the government, and all relevant stakeholders to address by actions including:

- legislation for the protection of watershed areas and public access to water resources needs to be in place, with the Ministry of Natural Resources and Environment being responsible for its enforcement and regulation of the utilisation of existing freshwater resources;
- the community to be supported in the implementation of projects to protect and improve watershed areas and water resources projects such as the planting of trees along river banks and springs for forest rehabilitation and to stop soil erosion caused by flooding;
- early implementation of the National Water Resource Policy approved by Cabinet in 2001, and the establishment of a Water Resource Conservation division within the Ministry of Natural Resources and Environment are key factors to addressing the current shortage of freshwater supply;
- development of the technical capacity to assess and monitor water resources is essential;
- there is an urgent need to develop maps of national watershed areas that will enable the identification of areas that are in a critical condition and requiring emergency rehabilitation programmes; and
- there is a need to develop appropriate mechanisms to regulate the allocation of water resources.

Land Resources

The proper utilisation of land resources, bearing in mind the vulnerabilities, holds the key to improved land use management in Samoa. Little progress has eventuated over the years with regard to the sustainable management and proper utilisation of land resources due to conflicting issues to do with land ownership especially as the majority are under customary tenure. Land assessment activities need to be undertaken including:

- develop and update existing land resource use technical maps;
- identification of areas of land degradation in Samoa, through the development of maps of areas that are in deteriorating condition, such as fallow and dry lands;
- develop national land use capability plans to assess the mechanisms required for sustainable land use management in Samoa;
- develop a national policy on customary lands to enhance the Ministry of Natural Resources and Environment programmes on improving access to land use resources;
- conduct an inventory assessment of customary land to find out the percentage of lands that are currently utilised and those left unused and determine the impact of customary ownership on such a distribution pattern, government plays an important role in developing appropriate mechanisms that should be in place to utilise customary lands for the benefit of stakeholders;
- the Ministry of Natural Resources and Environment to develop technical databases on soil types and geology of the islands, based on existing and updated information on land use maps of Samoa to better find means of addressing issues on land use in terms of fertile land, wetlands and swampy areas and land degradation.
- the Land Management Division of the Ministry of Natural Resources and Environment together with relevant stakeholders to establish mechanisms for the sustainable use of sand, aggregate, gravel and rock; and
- the government to develop innovative ways for funding housing for low income people through the use of customary lands as collateral.

Energy Resources

It is important that Samoa develops the means of better utilising existing natural energy resources available in-country such as solar energy, wind, wave and biomass. Issues include:

- the energy sector needs to be all inclusive of a division for sustainable energy, incorporating climate change programmes, in this way the full potential of programmes to implement ways of promoting the use of energy resources in Samoa can be realised and will also avoid duplication of national activities that are similar;
- enabling the collection of data on sustainable energy needs and potential use;
- a need to promote public awareness programmes on renewable energy and cost-effective means of saving non-renewable energy use in the homes and work places;
- support to be given to develop small scale pilots project on renewable energy for selected communities who have an interest in renewable energy and the potential to manage such projects;
- further development of projects on renewable energy is necessary for sustainable energy management;
- develop CDM projects on renewable energy to assist Samoa in technology transfer from developed countries on the best methods used in utilising renewable energy resources; and
- to meet the subsistence needs of a communal lifestyle the development of efficient wood stoves for cooking have the potential for cost effective means to avoid the use of non-renewable energy.

Tourism Resources

The tourism industry in Samoa has experienced gradual growth over the years supporting other major sectors of the economy such as agriculture and remittances from Samoan families overseas. A key issue is that:

- although tourism contributes significantly to Samoa's economy the real cost of its development on the environment has not been fully established, and there is a need to better understand the impact of tourism at its various levels on the cultural, social, and ecological implications on Samoa's environment.

Biodiversity Resources

Similar to progress in waste management in Samoa, the biodiversity area has received much attention over the past decade with the development of relevant instruments to implement the protection and conservation of biodiversity programmes, such as the National Biodiversity Strategy Action Plan, the draft National Biodiversity Policy, the draft Bio-prospecting regulations, the National Environmental Management Strategies for Sustainable Development in Samoa (NEMS – 1994), and the Lands and Environment Act 1989. Outstanding issues are as follows:

- more support for community conservation project initiatives, which are important indicators of grass root level support for conservation efforts to sustainably use and manage biodiversity resources;
- further assistance is required for the implementation of pilot activities on other aspects of the NBSAP programme; and
- the development of the National Invasive Species Strategy is a crucial outcome for the Ministry of Natural Resources and Environment in its effort to address the pressing concern on the domination of alien species which has become a major problem for land owners, and financial support needs to be given to implement pilot projects identified under the Strategy.

The conclusions and recommendations of the Samoa Country Environment Profile are as follows.

Conclusion 1: It should be highlighted that this Samoa environmental profile has been compiled as a desk study. Nonetheless, it has benefited from access to reporting on environmental issues by Samoa produced over the past decade, since 1992 at UNCED in Rio (Agenda 21), and in 1994 at the Barbados International Meeting on Sustainable Development for Small Island Developing States (BPoA). Most recently, Samoa has had the opportunity to produce national assessment reports for the 10-year review of both Agenda 21 (the World Summit on Sustainable Development in 2002), and the BPoA (the International Meeting on SIDS in 2005). Furthermore, the first 5-year national report of progress on achieving the MDGs was due for completion in September 2005.

Conclusion 2: The EU has supported Samoa along with all Pacific ACP countries during recent global environmental processes, and in particular in regard to environmental issues such as climate change,

water and sanitation, renewable energy, food security, and how to improve livelihoods of island people by addressing the “special case for SIDS” in regard to vulnerability and addressing poverty through establishing poverty reduction strategy papers and national sustainable development strategies, or the like. Samoa needs support for implementation from the EDF 10.

Conclusion 3: Notwithstanding the current Country Support Strategy (refer Section 4.1) for EDF 9, together with assistance being provided through the Regional Indicative Programme, it should be noted that along with other Pacific ACP countries, Samoa has agreed to the new Strategy for Strengthened Partnership between the EU and the Pacific Islands which has a *“blue-green” theme within the context of sustainable management of natural resources and environmental challenges*. Within this broad theme specificity is needed to ensure the activities to be supported by the NIP deliver tangible and concrete benefits at national level that demonstrably contribute to strengthening the environmental pillar of national sustainable development and poverty reduction. In this context also, improved and strengthened links need to be demonstrated with the activities to be carried out at national level by the regional organisations supported by the Regional Indicative Programme.

Conclusion 4: Samoa’s environment is no exception to the reality that it provides the basic goods and services, such as water, energy and food security, upon which people live. Improvements and sustainability in these areas are essential to underpin generation of economic wealth. Samoa acknowledges that environmental considerations are inextricably linked across their national development planning efforts, but there is a need to strengthen these interlinkages to ensure improved decision-making supports efforts to achieve sustainability.

Conclusion 5: The state of the Samoa environment over the past decade has deteriorated and remains highly vulnerable. Over the past decade much has changed with internal shocks from increasing population, concentration of that population through urbanisation and urban drift, and external shocks such as globalisation, HIV/AIDS, climate change and most recently increasing fuel prices. All are putting increased stress on the environment. Key examples of improvements needed are; secure safe water supply and sanitation; developing access to affordable renewable energy resources; food security from fishing and agriculture, to support sustainable development, improve lifestyles and reduce poverty. The urban and rural population, urban centres and outer islands must be targeted. Improvements in these “sectoral” areas will also have a positive impact on reducing Samoa’s vulnerability to climate change and natural disasters (many of which are weather-related).

Conclusion 6: Over the past decade some progress in many areas has been made in improving environmental sustainability through institutional strengthening. Although not as significant as Samoa would have liked. Much of the progress has been at the initiative of the Samoa and with its own financial resources. But much remains to be done to improve the efficiency and effectiveness of the national environmental machinery including strengthening the role of the NGOs. Development partners, including regional organisations, need to harmonise and coordinate their assistance more closely with Samoa needs and efforts, and amongst themselves. This will make both existing and new resources more efficient and effective.

Conclusion 7: In order to provide a platform to facilitate closely cooperation with its development partners, and improve governance, Samoa has developed an overarching planning policy/regulatory and institutional arrangements in the National Strategic Plan 2005-2007 which embeds the principles of sustainable development, including issues of environment concern. There is much room for supporting capacity building and technical assistance in this context.

Conclusion 8: Samoa’s capacity needs to be strengthened to manage its large marine environment compared with the generally small island land areas. In reality, as the marine “blue environment” and land “green environment” are an environmental continuum across the coastal zone. Samoa needs a spatially integrated management approach, similar to “island system management” promoted by the EU through one of the EDF8/9 regional projects.

Conclusion 9: Samoa, like many other of its neighbours, recognises the opportunities of improved information and communication technologies, in particular in regard to getting more up to date data and making it readily available to support the decision-making process.

Conclusion 10: Samoa needs to develop and strengthen its own national setting of indicators and targets, and monitoring arrangements to track progress, and link these to international development goals agreed at for example the WSSD, the Mauritius International Meeting on SIDS, and contained in all relevant MDGs and targets, not just MDG7 on environmental sustainability.

Recommendation 1: Concerning the selection of the focal sectors and response strategies for Samoa, within the overarching “blue-green” theme of sustainable management of natural resources and environmental challenges, key areas to consider are: securing safe water supply and sanitation; developing access to affordable renewable energy resources; and improving food security from fishing and agriculture.

Recommendation 2: As a governance issue in regard to national institutional capacity to improve the management of natural resources and the environment, consideration needs to be given to supporting Samoa address institutional capacity assessment and needs for all its line ministries. Specifically:

- there is an immediate need to promote the participation and involvement of NGOs at the national and community level and be supported through capacity building;
- additional financial assistance is required to implement priority human capacity building needs of the country; and
- the recognition of integrating environmental consideration into national economic planning is a critical issue that requires priority attention. The further development of a national policy on economic growth and sustainable development must strengthen the integration of environmental issues into economic planning.

Recommendation 3: Improve Samoa’s national environmental information systems, and ensure environmentally-relevant indicators to be used in the EDF 10 National Indicative Programme, are integrated into these systems.

Recommendation 4: Samoa’s access to the use of EC horizontal budget lines (such as Environment and Forests) and facilities (EU Water Facility - EUWF and the EU Energy Facility - EUEF), and the EU/ACP Natural Disaster Fund are limited by national capacity constraints. Each of these opportunities of additional financial resources are important and should these funds/facilities be ongoing consideration needs to be given to assisting Samoa prepare the bulky and complex applications.

Recommendation 5: In order to ensure effective and efficient support to Samoa, it is important for the EU to develop new and strengthen existing opportunities for co-ordination on natural resources and environmental issues with other donors (including regional organisations) seeking to achieve complementarities and synergies.

2. Samoa State of the Environment

2.1 The Development Context

Samoa has faced a challenging decade since the publication of its National Environment and Development Management Strategies (NEMS) in 1994, which is based upon the principles agreed to at the Earth Summit on Environment and Development held in Rio, 1992.

The NEMS states that for Samoa, *“It has become increasingly apparent that our natural resources are deteriorating due to the pressures we are placing on them. As the resource deteriorate, other problems arise. For example, our forests are being cleared at a rapid rate for agricultural use and for their timber; among the consequences are loss of water quality and supply, and loss of biodiversity.”*

In the NEMS, and in order to emphasise the integrated, complex interactive nature of environmental issues and problems across traditional sectors, twelve environmental components were identified for priority consideration.

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- Protection of the atmosphere.
- Planning for climate change.
- Preservation of traditional arts, culture and history.
- Development of human resources.
- Promoting sustainable economic growth.

The following brief sections on environment, economy and social and human development are taken from the Country Diagnostic Report prepared at the completion of the Environmental Vulnerability Project (SOPAC UNEP 2005) and the Country NGO Report on the MDGs 2005.

2.1.1 Environment

Samoa is made up of two main islands, Upolu and Savai'i and seven small islands. The country has a total land area of 2,850 km² and an Exclusive Economic Zone (EEZ) of 120,000 km² (refer maps in Appendix 1).

Samoa is situated around 14 degrees south of the Equator and experiences a mild tropical climate influenced by the tradewinds. There are two distinct seasons. The cool and dry season from May – October has an average monthly rainfall of 150mm with temperatures averaging between 20.8 - 30.6°C. In contrast the wet season from November to April has an average monthly rainfall of 340mm and temperature range of 22.1 - 31.8°C.

The Samoan islands are composed almost wholly of volcanic rocks with coral reefs forming in some coastal areas. Over 35% of Samoa's natural forests still remain however continuing land clearing for agriculture is a major threat to vegetation cover and water catchments. Overfishing, destructive fishing practices, waste, pollution, and coastal development are some of the key environmental issues.

The Government has made substantial gains in environmental management from designating national parks to the preparation of a coastal infrastructure management plan in consultation with the village

communities. However the Government has yet to implement environmental impact assessment legislation to reduce the potential negative impacts of development

2.1.2 Economy

Samoa's economy is dependent largely on agriculture with the manufacturing and services sectors developing rapidly. The country experienced major economic disruption in the early 1990s, due to poor economic management and successive natural disasters, particularly cyclones. Strong political leadership and pragmatic economic policies, have recently resulted in positive performance of the Samoan economy. Economic performance measured in real GDP, has improved consistently reaching growth rates of 6.8% in 2000. These were driven mainly by the construction sector, commerce industry including tourism, and the export sectors. Economic growth slowed in 2002 to 1.3% but overall the average growth rate over the last 5 years to 2003 has been 4%.

The agricultural sector (taro, coconut, copra, cocoa, bananas) accounted for approximately 7% of GDP in 2003. Agriculture is characterised by a large subsistence base which continues to provide a source of livelihood for over 80% of the population and a high level of domestic food security. Fisheries are important for both subsistence and cash income and has developed into a major export earner. The sector has in recent years been characterised by a growing offshore tuna long-line fishery.

Remittances from Samoans abroad continue to play an important part in the economy and is associated with the strong growth in the commerce industry. The commerce industry accounted for 19.3% of total GDP making it the most important contributor. Its continued expansion has been fuelled by the prominence of wholesaling and the continuous proliferation of small stores around the country, assisted by a micro-credit scheme. Manufacturing is the second major contributor to the economy with a share of 13.3% of GDP. The tourist industry contribution to the economy has increased in recent years and is expected to continue to grow. Generally, the performance of the economy is constrained by distance to markets, a small local market, a skills base that has difficulties competing with Asian countries in labour-intensive production, and vulnerability to natural disasters.

Within the United Nations, Samoa is recognised as a small island developing state, and a least developed country, although the 2006 graduation review of LDCs has recommended Samoa for graduation.

2.1.3 Social and Human Development

Samoa had a population of 176,710 (2001 census) with about 22% of the population living in the capital urban area of Apia. The estimated population in 2004 was 181,000 with a natural growth rate between 1991 and 2001 of 0.87% per annum.

One of the most startling realities of the past decade has been the shift in the geographical distribution of the total population. The absolute population total has increased by 9.64% over the period between the last two censuses, 1991 and 2001, although this figure is in turn influenced by net out-migration.

The most significant development relates to the increase in the overall number of people residing in the North-West Upolu area, with an increase of 35% over the reference 10-year period. Together with the designated Apia Urban Area, the area of northwest Upolu is now home to 51.8% of Samoan residents. This has major implications for social and economic infrastructural development needs. It also has a direct and tangential social impact, as more and more people reside outside a strictly village setting with its related traditional village administration and social governance.

The relatively stable, albeit slow, growth in population numbers for the rest of Upolu, and a comparatively significant decline in the numbers residing in Savai'i, also have some serious developmental implications and creates some options. For one, the slow or negative population growth in some areas of the country should make land resources available for development. However, customary and traditional rights, especially those that affect land tenure, and related weaknesses in individual property rights, will be a continuing challenge.

The population distribution trend also has implications for the costs of development. The Government of Samoa has a laudable goal of providing similar infrastructural and social services for all people, wherever they reside in the country; a strategy which tends to raise the prices of affected goods and services for everyone, as those in the densely populated areas of the country pay higher prices to subsidise remote areas.

Nevertheless, the above policy and approach has made basic goods and services broadly available. It has also provided a development platform that unites the nation, and has been the cause of social, cultural and national stability.

Samoans enjoy a relatively good standard of living with a life expectancy of 69.8 years and an adult literacy rate of 98.7%. Samoa has a Human Development Index (HDI) score of 0.769 in 2004 and ranked globally 75 of 177 countries. However, although this places Samoa as a country with middle human development the 1998 Samoa Household Income and Expenditure Survey found that one in three households could not properly meet their basic needs and, therefore, were poor relative to standards of living in Samoa. This is reinforced by a score of 8.6 on the Human Poverty Index.

2.2 State of the Environment as Reported in 2004

In 2004, Samoa produced a National Assessment Report for the 10-year review of the Barbados Programme of Action (BPoA) for Sustainable Development of Small Island Developing States. Section 2.2 is taken from this national assessment and has been abbreviated as necessary. The order and naming of the sections has been retained, as it conforms to the BPoA, the globally accepted blue print for sustainable development of SIDS. It is also consistent with the recent (January 2005) internationally agreed Mauritius Strategy for Further Implementation of the BPoA.

2.2.1. Climate Change and Sea Level Rise

In the area of climate change the BPOA called for the ratification of or accession to the United Nations Framework Convention on Climate Change (UNFCCC) and others related to the protection of the world from changes in atmospheric equilibrium. As a result Samoa ratified the UNFCCC in 1994 and the Kyoto Protocol in 1997.

A number of actions were taken at the national and community levels to implement the climate change international agreements. At the same time, the goals and objectives of national economic development strategies and policies remain closely integrated in the development and implementation of these programmes and projects. These actions started with monitoring, surveying and data collection on observed climate change and variability, sea level rise and their impacts on local social, environmental and economic sectors.

The data and information collated were then used as baselines for development of Climate Change Adaptation Strategies and Measures. The strategy and action plan development process contributed to a better understanding of the range of issues associated with the development of methodologies, approaches and specific action oriented facilities that enabled adequate adaptation to climate change and its impacts.

A number of key institutional mechanisms were set up to facilitate this development. They include the establishment of a permanent National Disaster Council to coordinate programmes and strategic response actions to extreme events, Establishment of the National Climate Change Country Team, the formalisation of the Climate Change Unit within the Ministry of Natural Resources and Environment and an ongoing climate change projects steering committee that oversees and provides technical advice for all climate related programmes and projects.

All initiatives and actions taken by the government in partnership with the private sector and communities had an associated public awareness component. This was to ensure common

understanding by all stakeholders of the issues and potential impacts of climate change initiatives, objectives, goals and expected involvement of all players in the implementation of assessment and adaptation actions.

While a number of assessment reports, Action Plans and National Communications exist, there still remains the challenge of filling information and data gaps in the area of greenhouse gas inventory and qualifying certainty of adaptation measures' impacts on the social and economic livelihoods of the local population.

2.2.2 Natural and Environmental Disasters

Samoa has strived to strengthen its disaster preparedness and management institutions. Disaster management and awareness policies and plans including building codes, regulatory and enforcement systems have been prepared and codified. These instruments have been framed as responses to the need for strengthened preparedness, response and mitigation that improves the resilience of the country's people, infrastructure and economy to the increasing range and frequency of natural and environmental disasters.

The promotion of early warning systems and facilities for the rapid dissemination of information and warnings has equipped the National Meteorological Office with modern computerised disaster early warning systems. In 1990 a National Disaster and Emergency Management Council was established by Cabinet to coordinate the different roles of government departments and institutions, private sector groups and NGOs in a way that harmonises the delivery and performance of each member's responsibilities in the three core stages of disaster management; namely disaster preparedness, disaster response during an event and disaster mitigation in post-disaster reparation.

A National Disaster and Emergency Management Plan (NDEMP) was endorsed in 1991 and later reviewed in 1997. The plan spells out the goals and objectives for disaster management at the national level, the institutional requirements, and council membership (or stakeholder) roles in response to all kinds of disasters likely to threaten Samoa. For instance a specific Cyclone Response Plan has been established by the National Meteorology Office which is the first line of information and defence for cyclones, tidal waves, and flooding, while the Fire Department are first in line for execution of the Fire Response Plan that are part and parcel of the NDEMP. Cyclones are the most common natural disasters in Samoa and expected to be an annual phenomenon during the wet season, although there has only been record of three extreme events of such magnitude since 1990.

A permanent National Disaster Management Officer was appointed in the Prime Minister's department in 1997. The recent restructuring of government ministries saw the shifting of this central disaster management role to the Planning and Urban Management Agency (PUMA) of the Ministry of Natural Resources and Environment in early 2003.

The capacity of local broadcasting has been strengthened to assist remote rural and outer island communities and among neighbouring countries during disaster events.

A national disaster emergency fund has been planned for natural disasters. This fund is kept at the Ministry of Finance with expected support and input from other ad hoc sources during and after a national disaster event. There is joint private and public sector support for areas where insurance is not available in the commercial market, taking into account the relevant experience to be gained from the operation of similar funds.

Non government Organisations such as the Samoa Red Cross fundraises to assist Pacific Island Countries that suffer severe disasters. The village women's committees undertake implementation of non-governmental organisation programmes (including the Red Cross) in disaster management. This is effected through the storage and dissemination of first aid kits as well as information dissemination via the women's centre, which is also the location of the Red Cross box of first aid supplies.

Long term planning for disaster management is evidenced in the integration of natural and environmental disaster policies into national development planning processes. Encouraged are the development and implementation of public and private sector pre- and post- disaster recovery plans.

In the preparatory stages for natural disaster and emergency management, a number of integrated actions have been developed. These have been promoted to improve resilience to risk of natural hazards. The Coastal Infrastructure Management Strategy established under the Infrastructure Asset Management Project expanded to 15 electoral districts with completed Coastal Infrastructure Management Plans. The public and communities are also made aware of the vulnerabilities of areas that they inhabit with the completion and dissemination of a national series of hazard maps estimating the extent of flooding, landslip and coastal erosion threats. A GIS database now contains a significant pool of information on a range of hazards.

While the scope of National Disaster and Emergency Management Plan covers all types of natural and environmental disasters, its implementation has concentrated mainly on extreme weather events such as cyclones and tidal waves as well as bush fires. This is unarguably the case given the frequent occurrences of these two types of environment disasters. Recently however, other types of disasters are also becoming more important hence the much wider expansion to health, pollution, agricultural, cultural and economic disasters.

A Draft Oil Spill Contingency Plan has been completed, with consultation being undertaken to develop a Marine Pollution Legislation. The intention is to establish a legal framework that can prevent pollutant spill disasters in Samoan waters, along the lines of international Maritime Global Agreements.

The Ministry of Health has also developed its own response strategies against any health epidemic of significance, while day-to-day programmes promote the preparedness and preventive measures against any outbreaks of diseases such as HIV/AIDS and those deemed contagious such as SARS and Rubella.

Samoa's agricultural sector has suffered setbacks in its taro production throughout the 1990s due to a virus (phytaurus virus) outbreak and the proliferation of the African snail pest. The research centre of the Ministry of Agriculture has conducted research and put in place response strategies to address these pressures, and as a result taro production has recovered in more recent times.

Continuing efforts are made in strengthening cultural and traditional systems that improve the resilience of local communities to disaster events. The women's committee in every village is an active group in national efforts on disaster management programmes and public awareness is continuously enhanced through ongoing consultations with communities and the annual commemoration of the annual Disaster Awareness day in October at the beginning of the cyclone season.

2.2.3 Waste, Drainage and Sanitation

The Government has developed fiscal and policy incentives and other measures to encourage environmentally sustainable imports and local products with low waste or degradable waste content. Cabinet passed a directive that calls for the ban of importing non-ozone friendly goods, for example refrigerators. Government has also reinforced the ban of pre-1995 made vehicles. The Ministry of Transport (MOT) also bans the importation of right-hand driven vehicles by codification of its relevant 2003 Regulations. Import duties on all imported drink in cans, plastic and glass containers, where a portion of the duty is reimbursed if the importer re-exports the containers. The government through MNRE introduced a disposal fee at the Tafaigata Landfill site for commercial and industrial solid wastes as means to recover operation and maintenance costs.

Data and information that reflect baselines for the waste situation and the management approaches in Samoa to control pollution, monitor waste generation, emissions for both sea and land based sources of pollution has reached a number of milestones. Waste Characterisation Studies were conducted and

documented 1991, 1994 and 1999. Time and motion studies were also conducted together with the characterisation studies. The same studies also assessed and recommended a competent authority in the country that will be responsible for the on going coordination of waste management issues at the national level in the MNRE. Land based sources of pollution were investigated in 1994. Estimation of Persistent Organic Pollutants and identification of contaminated sites in Samoa was conducted in the first half of 2003.

The development and implementation of appropriate regulatory measures, including emission discharge and pollution standards, for the reduction, prevention, control and monitoring of pollution from all sources; for the safe and efficient management of toxic, hazardous and solid wastes, including sewage, herbicides, pesticides and industrial and hospital effluent; and for the proper management of waste disposal sites have all been taken up with the relevant government agency.

A number of guidelines, draft standards, codes of environmental practice, and legislation have been developed some of which already have the force of law. The approved policies and guidelines include the National Environment Impact Assessment Guidelines, Urban Planning and Management Strategy 2002 which sets up the Planning and Urban Management Agency (PUMA) within the Ministry of Natural Resources and Environment, the National Waste Management Policy 1996. Also approved is the Healthcare Waste Management Strategy 1999.

The Planning and Urban Management Strategy (2002) and its Implementation Plan (2003) set the framework for better management of sewage and drainage systems in Samoa. An incremental approach is taken to lessen the burden of high costs associated with large-scale conventional sewage treatment systems with ocean outfalls.

Samoa does not have environmental standards for most of technology and pollution sources emitting contaminants into the environment. However, international standards of the World Health Organisation (WHO), relevant standards and procedures of New Zealand and Australia National Environment Agencies, and the USEPA have been selectively applied where appropriate. Codes developed and operationalised to address waste management needs include the National Codes of Environmental Practices 2002, and the National Building Code 2002.

The proposed National EIA Regulation is still under consideration by Cabinet, awaiting the codification of the Planning and Urban Management Bill (2003). A proposed draft exists for an Integrated Waste Management Plan for Apia (1999), but implementation did not wait until its formal endorsement. Hence the upgrading of the Tafaigata Disposal Landfill since the beginning of 2003 that also saw the establishment of an Anaerobic Digester Plant and Waste Separation Facility at Tafaigata 2003. A second landfill was established on the island of Savai'i at Vaiaata in 1999. Its planning included the undertaking of an EIA. The solid waste Collection (municipal) service was extended to rural areas on both Upolu and Savai'i in 2000.

Samoa has ratified and implemented relevant Multilateral Environmental Agreements (MEAs) or conventions relating to waste and pollution control. They include the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal signed in 2002, the convention on the Prevention of Marine Pollution by dumping of wastes and other matter (London Convention 1972), the Rotterdam Convention on Chemicals acceded to in 2002, and the Stockholm convention on Persistent Organic Pollutants (POPs). Samoa has also given due recognition other international conferences such as the Global Programme of Action for the Protection of the Marine Environment from Land Based sourced of Pollutants. Samoa is also a signatory to the Vienna Convention for the Protection of the Ozone layer, its Montreal Protocol for the Control of Ozone Depleting Substances (ODS) and all of its Amendments.

Implementation of these conventions at the national level started immediately after the submission of Samoa's instruments of ratification for each convention. For some of these MEAs national enabling legislative environment already exists, while others needed new initiatives.

Public awareness and education campaigns in waste management, sanitation and drainage have been designed to gain local recognition of the need to control wastes at the source, the value of reuse, recycling, renew, and of the possibilities for converting wastes to resources in culturally appropriate ways particularly packaging. A number of capacity building and awareness programmes have been implemented with some still ongoing.

A number of institutions (both public and private sector) have contributed to the effectiveness of these programmes. Most prominent from government are the MNRE waste management services and the Samoa Tourism Authority's National Beautification Committee. The utilisation of cross sectoral committees and task team are recognised as an excellent means of ensuring better coordination and sharing of resources in the public sector programmes. A number of NGOs are also involved in the committees. A National Waste Awareness Day is commemorated in March as an annual event since 2001.

In addressing sewage and sanitation problems that are threatening the environment, clean technologies and treatment of waste at the source and appropriate technology for solid waste treatment have been introduced. These range from basic experimental pilots to large-scale projects attracting Government investment. Samoa has experienced construction of compost toilets at villages, schools and some government organisations. A number of organic waste composting projects at the community level were piloted in ten villages on Upolu in 2002 by the MNRE, while the MAFFM contributes with continuing research of compost in association with the JICA. The main hotels and an increasing number of government offices in the central business district have connected to onsite sewage treatment systems.

2.2.4 Coastal and Marine Resources

The coastal and marine resources are fundamentally important for the well-being of the Samoan people, as they provide food, shelter and protection as well as other basic needs for their socio-economic development. The protection, conservation and development of marine resources has been a high priority for the Samoan Government since independence in 1962, and remains a major focus of sustainable development efforts.

The Palolo Deep Marine Reserves and the terrestrial O le Pupu Pu'e Parks and Reserves were established in 1979. In the late eighties and early nineties, several marine and terrestrial ecological surveys and inventories had been conducted to assess and evaluate the status of these natural resources on which socio-economic development depends. Coordinated activities among the Government agencies, non-governmental organisations and the private sector through active consultations took place. The Ministry of Agriculture, Forests, Fisheries and Meteorology (MAFFM) in collaboration with the Ministry of Natural Resources and Environment (MNRE) established community inshore fisheries reserves that were managed by the communities. These community inshore fisheries reserves have been expanded to cover 117 villages of the Samoan main islands. The Government in partnership with the World Bank and IUCN and selected communities set up pilot projects in some districts (Aleipata and Safata) to verify the concept of Community-Based Marine Protected Areas (CBMPA) which if successful, will then be replicated in other parts of Samoa.

Samoa has ratified the UN Convention on the Law of the Sea, the Convention on Biological Diversity, and the Cartagena Protocol on Biosafety.

In 2002, Cabinet approved the dedication of its entire Exclusive Economic Zone (EEZ) for a National Marine Sanctuary for sharks, dolphins, turtles and whales. The finalisation of the management plan for the sanctuary is work in progress for the Division of Environment and Conservation of MNRE and the Fisheries Division of the MAFFM. Since Samoa's EEZ is the smallest in the region and the resources therein are vulnerable to illegal fishing, it is vital that there is efficient management and control of these marine resources. Work is in progress in the delineation of Samoa's EEZ with the assistance of the Commonwealth Secretariat and the SOPAC.

The development and formulation of the Marine Resources Use Policy has been progressively undertaken as part of the National Environment Management Strategy (NEMS 1994).

Public awareness methodologies and techniques have been developed and tested for effectiveness. Effective coordination and collaboration among the key stakeholders have been integrated into the implementation of various programmes and projects, at the community level as well as harnessing the strengths of the traditional social structures. An all pervasive approach has been taken in public awareness campaigns to include all levels of stakeholders on the importance of nature and the environment and the limited natural resources that Samoa has, in order to instigate collective efforts in sustainable management and utilisation of these resources.

2.2.5 Freshwater Resources

Samoa supports the sentiments that people all over the world are increasingly realising that water is a finite and vulnerable natural resource. Beside the basic needs for drinking, hygiene and food production, water is also required for hydropower generation, manufacturing and other industries. Unfortunately, sufficient water is not always available to meet all these competing needs due to the limited water resources, as well as wasteful use of water resources. In other cases, sufficient water may be available, but is not suitable for the intended use due to poor quality.

In 1982 a 'Watershed Evaluation' was carried out by FAO in collaboration with the Division of Forestry, Parks & Reserves of MAFFM. Since then more and more activities have been directed to improve the status of identified watershed areas in Samoa up until 1990. Government approved the establishment of the Watershed Management Section under the Forestry Division of the MAFFM which activities mainly focused on the most immediate needs of the Vaisigano and Fuluasou Watershed areas feeding the main supply for the township of Apia and the surrounding villages as well as those at Faleaseela and Palauli in Savai'i. Rehabilitation forest plantations have been established at the Vaisigano and Fuluasou degraded watershed areas and assessments of other watershed areas were undertaken. Community tree planting on customary lands have been encouraged and facilitated by the Watershed Section through public consultations and awareness raising activities. This activity has now been replicated on Upolu and Savai'i.

The Watershed Regulation was approved by Cabinet in 1992 and in July 1994, the Samoa Water Authority was set up under the Water Authority Act 1994. The Samoa Water Authority (SWA) has since been working very hard on the improvement of water services and the effective control of water consumption and related uses.

The realignment of ministries as part of the public sector reform programme by the Samoa Government in 2002 resulted in the transfer of the Watershed Section from the MAFFM to the MNRE under the Division of Environment and Conservation (DEC). The current review of the Principal Act of Lands, Surveys and Environment 1989 (LSE Act 1989) has accommodated this transfer, which will be tabled in Parliament as the Ministry of Natural Resources and Environment Act 2003 (MNRE Act 2003). Since the MNRE is given the full responsibility for water resources, it is in the process of developing and formulating a proposal for a Water Resources Division for the approval of the Government. "Water for all Samoa" is the theme of the national water resource policy approved by Government in 2001 under the MNRE as well as the national water services policy currently developed by the SWA. There is a need to ensure that there is coordination on the implementation of responsibilities of all parties involved in the sustainable management of freshwater resources especially when such responsibilities span a number of ministries and government corporations as well as civil society.

The introduction of water tariffs and a user pay system will go a long way to control excessive water utilisation and wastage. There are currently 13 bottled water ventures in the country, providing quality water as well as imported sources.

2.2.6 Land Resources

The development of land resources has principally been in the establishment and improvement of national databases and the dissemination of information to relevant groups, especially local communities, youth and women, for land-use planning and management. Information on estimates of the carrying capacity, economic and environmental value of land resources, along with appropriate decision-making tools, such as land/geographic information systems have all been part of the assessment and dissemination process. In the latter half of the last decade, management and control mechanisms such as policies and legislation came to the fore.

Government through MNRE has developed national land information databases and attempts have been made starting with internal networking that links various databases for easy access within the Ministry of Natural Resources and Environment that is mandated with the generation and storage of land related information. A website including relevant publications for the purpose of national and international awareness on the progress of Samoa's implementation of Multilateral Environmental Agreements and the ministry's core functions and services such as land management, technical land services (surveying, mapping, valuation and drafting), planning and urban management, and conservation has been established.

There is work in progress on the land capability/zoning systems for Samoa and the need to establish mechanisms for the sustainable allocation of land-based resources such as sand, aggregates, rocks etc. Traditional management systems, government institutions and development projects have been taken into consideration in the process of sustainable management and development of limited land resources.

Land in Samoa is divided into three main tenure categories; customary (81%), freehold (3%) and government lands (16%). In the rural communities, land remains primarily under customary ownership and a large proportion of it is under cultivation. A study conducted in 1990 produced land use capability maps of the whole country. The maps categorised Samoa's land into four main classes:

- land with few limitations to agricultural use (39,600 ha);
- land with moderate limitations to agricultural use and few limitations to forestry (121,700 ha);
- land with severe limitations to agricultural use and moderate to severe limitations to forestry (59,400 ha); and
- land unsuitable for agriculture or forestry (69,000 ha).

Samoa has acceded to the United Nations Convention to Combat Desertification (UNCCD). Reporting requirements under this convention have already been met with two reports submitted in the last two years consecutively.

Samoa has prepared and/or reviewed land-use plans in conjunction with agricultural, forestry, mining, tourism, traditional land-use practices and other landuse policies, with a view to formulating comprehensive land-use plans and zoning so as to protect land resources, ensure sustainable and productive land-use and guard against land degradation and pollution that exceed the island's carrying capacity. It is widely understood that the tenure system in Samoa, which gives more than 80% of land ownership to the Chiefs and Orators complicates any commitment from financial agencies to use these as collateral for lending. Absentee owners who could be residing overseas or in town may caveat the exchange of use of land in the rural areas or traditional villages. This has resulted in some of the customary land being left unattended to. Disputes over ownership of some land result in these areas becoming overgrown. Fortunately though, when the village council conducts its clean-up for beautification of the village these overgrown lands are also maintained. There are also village based reserves particularly in forestry where the village are charged with maintenance of the forests.

A Sand Mining Policy was formalised in 2001 to provide guidance for management of sand and aggregate extraction from the foreshore of Samoa. Existing legal requirements are contained in Part VIII of the Lands Surveys and Environment Act 1989, which prohibits removal of sand or any

aggregate from the foreshore, as well as disallowing any construction including reclamation within the foreshore without the prior consent of the Minister of MNRE. The Coastal Infrastructure Management Plans also provide guidance for the responsibilities of villages, and districts as well as the government, in ensuring that the sand resources are not being extracted beyond the carrying capacity of the foreshore.

The Planning and Urban Management Bill (PUMB) 2003, which went through a national consultative process to ensure wide public support and adherence, provides a legal framework for the management of and control of unsustainable types of land use.

Appropriate forms of land tenure are encouraged, improved land administration and a greater appreciation of the integrated nature of land development is promoted in order to facilitate sustainable land-use, with the establishment of the National Land Use Policy.

In addition, the Land Management Division of MNRE administers the extraction of land resources such as; the reclamation of land from the sea and river banks and extraction of sand and aggregate. Coastal-based communities are increasingly becoming more aware of the effects of unsustainable sand mining, and are addressing this issue through traditional governance. The increasing application of Environment Impact Assessment procedures to proposed sand extractions has meant that such could be carried out in a more sustainable manner.

2.2.7 Energy Resources

Samoa's energy needs are mostly dependent on external or overseas supply of fuel. Fuel for transportation and technology are oil dependent although there has also been an increase in renewable hydropower energy generation with the establishment of the Afulilo hydropower plant. This improvement is coupled with strategic promotion of a more efficient use of energy sources in development planning and use of appropriate methods to minimise the adverse effects of climate change on the sustainable development of those resources. These are reflected in the incorporation of renewable energy in Samoa's National Energy draft policy.

More than 75% of Samoa is now covered by electricity. While access has been improved dramatically, the quality of electricity has been haphazard with breakages or outages becoming common in remote as well as heavily populated areas due to a demand that is higher than the capacity of the supply.

A draft National Energy Policy has been completed and being taken through a consultation process. One of the main components of the policy has been reserved for renewable energy. The development of this part of the policy involved the promotion of public awareness of renewable energy, collection of data on sustainable energy needs and potential, development of pilots on renewable energy, development of projects on renewable energy, development of Clean Development Mechanisms (CDM) projects on renewable energy, and development of efficient wood stoves for cooking.

At the same time, except for the development of hydro electricity generation, there is limited action to date on sustainable energy. Nevertheless, actions at the national level for the development of energy resources are expected to lead to the establishment of a division for sustainable energy, incorporating climate change and other energy related projects such as the organic waste biogas generation project being piloted at the national landfill at Tafaigata on the island of Upolu. The main focus of the energy sector in Samoa is for the development of renewable energy, such as solar, wind, heat, biogas and wave energy. There has been a pilot study conducted for the potential of renewable energy in the small island of Apolima and findings have proven it to be costly and unaffordable. Geothermal power has been explored by overseas developers, but no drilling carried out.

2.2.8 Tourism Resources

Tourism development and environmental management are mutually supportive. This is the principle that has been given great recognition by the Government of Samoa as well as its private sector and

community tourism stakeholders in efforts to capitalise on this growing sector. Strategic development in tourism has gone through various planning stages that take into account the three pillars of development in social, environmental and economic considerations. This is reflected in the successive National Statements of Economic Strategies identifying the Tourism Sector as developing attractions and activities with respect to nature, culture, adventure and coastal tourism

The Tourism Development Plan 2002-2006 provides a framework for sustainable tourism development which focuses on conserving and enhancing the country's natural and built environment. Its goal is to provide a framework and a process that ensures a balanced, coordinated, practical and efficient approach to the sustainable development of tourism in Samoa.

As a result tourism in Samoa has enabled the sustainable development of cultural and natural heritage sites, including conservation areas. Since 1994 tourism earnings have been the largest source of foreign exchange.

Samoa has adopted integrated planning and policies to ensure sustainable tourism development, with particular attention to land-use planning and coastal zone management activities requiring environmental impact assessments for all tourism projects. The continuous monitoring of the environmental impact of all tourism activities and the development of guidelines and standards for design and construction taking into account energy and water consumption, the generation and disposal of wastes and land degradation, the proper management and protection of ecotourism attractions, and the carrying capacity of areas for tourism have all culminated in assurance that tourism is not being developed at the expense of the social and environment resources.

Integration of sustainable development objectives in tourism are evidenced by the Samoa Tourism Authority (STA) adopting the EIA Guidelines 1998 and draft EIA Regulation 1998 for evaluation of all tourism projects. The National Policy for Cultural and Natural Heritage has been drafted. The National Landuse Policy was approved by Cabinet in 2001 and so was the Coastal Infrastructure Management Strategy 2001 for the protection of government and community coastal assets.

The Samoa Tourism Authority has and continues to work with private researchers to design and implement the Sustainable Tourism Indicators programmes to be used in monitoring cultural, economic, and environmental impacts of tourism development.

The development of tourism facilities have been encouraged to meet specific niche markets, particularly in ecotourism, nature and cultural tourism, and involve the local community in the identification and management of natural protected areas set aside for ecotourism. Since 1994 development of ecotourism through nature based activities and cultural experience had increased awareness of tour operators and visitors on the importance of a balance in environment and environment ecotourism activities.

The Tourism Taskforce was established by Cabinet to promote an enabling environment for tourism investment, facilitate upgrading and expansion of accommodation, identify potential premium sites for development, and to attract in the near-term investment in a quality-room hotel/resort. Samoa has an increasing number of protected areas, some of which are also popular with visitors. All these areas have associated tourism activities and most have considerable potential for further tourism use and improved management interpretation. Tourism awareness is improved at the village, public and private sector levels through strengthening the consultative process.

2.2.9 Biodiversity Resources

The biodiversity of Samoa is particularly important. A review of the conservation value of a total of 226 South Pacific Islands ranked three of the islands of Samoa highly, Savai'i at number 23, the Aleipata islands at 30 and Upolu at 46. The flora is one of the most diverse in Polynesia with about a quarter of the plants endemic. The importance of the country's birdlife, particularly the proportion of endemic species (23%), and the threat to it have been recognised by the International Council for Bird

Preservation (ICBP) who have listed the Samoan Islands as one of the world's 'Endemic Bird Areas' that is in need of urgent conservation attention.

Because of the potential danger of loss of heritage, there continues to be concentrated effort to ensure that Samoa sustains its wealth of biodiversity for socio-economic and ecological development. Policies and legislation have been developed and formulated such as the National Biodiversity Policy (NBP), National Deforestation Policy (NDP) and the National Heritage Policy (NHP).

Samoa has placed great importance on the Multilateral Environmental Agreements (MEAs), and has been instrumental in leading the region in ratifying various biodiversity-related agreements such as the Convention on Biological Diversity (CBD), the Cartagena Protocol, the Convention on Migratory Species (CMS), the CITES, the Convention on Wetlands (RAMSAR) and the Convention on World Heritage (CWH). These international agreements have been very useful for Samoa to access both financial and technical support for the implementation of various activities to achieve sustainable development and at the same time enhance the awareness of our people and the local communities of common concerns and issues and elicit appropriate responses. Also as a party to these MEAs, Samoa has been very focused on the priorities set-up in its policies and plans, and various enabling activities have been prepared and approved through UNDP, World Bank and the Global Environment Facility (GEF) to achieve sustainable development.

A National Biodiversity Strategy and Action Plan (NBSAP) was completed in 2001 and now serves as the guiding blueprint for the protection and conservation of the environment. The National Project for the formulation of the National Biosafety Framework was initiated in 2001 and work is progressing towards finalising the framework for the consideration of the National Coordination Committee (NCC).

Various community-based conservation areas both marine and terrestrial have been established and managed by the local communities. Community-based training activities on various environmental issues have been promoted and carried out in villages, districts, schools and with special groups. A transparent and close working relationship is essential with the media and educational and research institutions on the value of our biodiversity and its importance to socio-economic development.

2.3 Emerging Concerns

Samoa's progress over the last decade has laid the platform for necessary mechanisms to implement all its environmental obligations under international and regional environment conventions since the Barbados Programme of Action in 1994. These include; amendments of existing legislation (Lands and Environment Act 1989), national environment policies, action strategies, regulations and management plans which have all contributed to Samoa's national efforts of sustainable development and natural resource management. Despite progress over the years, new concerns have emerged together with imperative issues of special needs that require immediate assistance from the international community on the sustainable management, protection and conservation of Samoa's natural, ecological, cultural and human resources. These emerging concerns are seen as the next stepping stone for Samoa to consider in the coming decade if it is to fully realise a balance between development and natural resource management.

2.3.1 Climate Change and Sea level Rise

The necessary instruments to combat the impacts of climate change are in place, however there are emerging issues that need to be addressed, and for which financial assistance to start the implementation process for these plans is crucial in order to support community development efforts in sustainable management of their natural and cultural assets /resources. These include:

- to ensure full participation by communities in the execution of community coastal adaptation projects based on their management plans, the Government needs to find ways and means for

communities to better access funding assistance for micro projects, that can contribute to communities efforts to sustainable management of Samoa's resources;

- there is an urgent need for technical assistance in terms of resources required for the development and digitising of maps to better identify vulnerable areas that are highly impacted by climate change such as; inland floods, watershed areas, and land degradation;
- there should be more collaborative programmes for all relevant government agencies that target the impacts of climate change in their sectors;
- there is a need to review climate change programmes in order to include national adaptation measures as mitigation measures are not enough to combat climate change; and
- developed countries through advance technological resources and skills, should promote more capacity building programmes for Samoa, in terms of CDM projects on appropriate technology transfer.

2.3.2 Natural and Environmental Disasters

The impacts of natural and environmental disasters are becoming increasingly common in Samoa ranging from long periods of droughts to devastating tropical cyclones. Issues remaining to be addressed include:

- national disaster plans need to be reviewed and more emphasis put on mitigation and readiness, this would ensure the minimisation of the aftermath damages caused by disaster events;
- national disaster management legislation to be the main guide for enforcement of standards that can reduce damages on natural resources, government and community assets from impacts of natural and environmental disasters must be developed; and
- there is limited public awareness of natural and environmental disaster issues, and there is an imperative to start national public awareness and educational campaigns using the media (television, radio and newspaper), community road-shows and educational programmes in schools.

2.3.3 Management of Waste

Much progress has been achieved in waste management with the implementation of programmes such as national waste management collection covering both the urban and rural areas, as well as the waste separation project within the main waste disposal area of Tafaigata Landfill. Needs outstanding include;

- capacity building within Ministry of natural Resources and Environment in the preparation and production of public awareness materials in order that there is continuity in making these available for educational purposes;
- small grant funding assistance if available can help achieve community waste management projects in the areas of composting, reuse, recycling and waste separation at source; and
- the progress on waste management, has led to new initiatives that can be implemented through the development of projects on waste recycling, as there is a vast amount of waste that can be recycled.

2.3.4 Coastal and Marine Resources

In Samoa, people are very much dependent on the coastal and marine resources for their livelihoods. The following remain key:

- population pressures along coastal settlements has led to the increase in reliance on coastal and marine resources for food and subsistence income and a subsequent decrease in marine resources and loss of coastal habitat areas for marine organisms to breed, and there is an urgent need to seek funding through appropriate partnership arrangements to set-up marine protected areas enabling the conservation of coastal and marine resources; and
- more technical assistance for research or studies on coastal and marine resources is required which can assist communities in better decision making on ways to manage projects and improve the protection of coastal and marine resources.

2.3.5 Freshwater Resources

Samoa is endowed with freshwater resources, however the freshwater resources of the country are at a critical level, as seen in the number of dry springs and rivers around the country during drought

periods. This issue should be a priority concern for the government, and all relevant stakeholders to address by actions including:

- legislation for the protection of watershed areas and public access to water resources needs to be in place, with the Ministry of Natural Resources and Environment being responsible for its enforcement and regulation of the utilisation of existing freshwater resources;
- the community to be supported in the implementation of projects to protect and improve watershed areas and water resources projects such as the planting of trees along river banks and springs for forest rehabilitation and to stop soil erosion caused by flooding;
- early implementation of the National Water Resource Policy approved by Cabinet in 2001, and the establishment of a Water Resource Conservation division within the Ministry of Natural Resources and Environment are key factors to addressing the current shortage of freshwater supply;
- development of the technical capacity to assess and monitor water resources is essential;
- there is an urgent need to develop maps of national watershed areas that will enable the identification of areas that are in a critical condition and requiring emergency rehabilitation programmes; and
- there is a need to develop appropriate mechanisms to regulate the allocation of water resources.

2.3.6 Land Resources

The proper utilisation of land resources, bearing in mind the vulnerabilities, holds the key to improved land use management in Samoa. Little progress has eventuated over the years with regard to the sustainable management and proper utilisation of land resources due to conflicting issues to do with land ownership especially as the majority are under customary tenure. Land assessment activities need to be undertaken including;

- develop and update existing land resource use technical maps;
- identification of areas of land degradation in Samoa, through the development of maps of areas that are in deteriorating condition, such as fallow and dry lands;
- develop national land use capability plans to assess the mechanisms required for sustainable land use management in Samoa;
- develop a national policy on customary lands to enhance the Ministry of Natural Resources and Environment programmes on improving access to land use resources;
- conduct an inventory assessment of customary land to find out the percentage of lands that are currently utilised and those left unused and determine the impact of customary ownership on such a distribution pattern, government plays an important role in developing appropriate mechanisms that should be in place to utilise customary lands for the benefit of stakeholders;
- the Ministry of Natural Resources and Environment to develop technical databases on soil types and geology of the islands, based on existing and updated information on land use maps of Samoa to better find means of addressing issues on land use in terms of fertile land, wetlands and swampy areas and land degradation.
- the Land Management Division of Ministry of Natural Resources and Environment together with relevant stakeholders to establish mechanisms for the sustainable use of sand, aggregate, gravel and rock; and
- the government to develop innovative ways for funding housing for low income people through the use of customary lands as collateral.

2.3.7 Energy Resources

It is important that Samoa develops the means of better utilising existing natural energy resources available in-country such as solar energy, wind, wave and biomass. Issues include:

- the energy sector needs to be all inclusive of a division for sustainable energy, incorporating climate change programmes, in this way the full potential of programmes to implement ways of promoting the use of energy resources in Samoa can be realised and will also avoid duplication of national activities that are similar;
- enabling the collection of data on sustainable energy needs and potential use;
- a need to promote public awareness programmes on renewable energy and cost-effective means of saving non-renewable energy use in the homes and work places;

- support to be given to develop small scale pilots project on renewable energy for selected communities who have an interest in renewable energy and the potential to manage such projects;
- further development of projects on renewable energy is necessary for sustainable energy management;
- develop CDM projects on renewable energy to assist Samoa in technology transfer from developed countries on the best methods used in utilising renewable energy resources; and
- to meet the subsistence needs of a communal lifestyle the development of efficient wood stoves for cooking have the potential for cost effective means to avoid the use of non-renewable energy.

2.3.8 Tourism Resources

The tourism industry in Samoa has experienced gradual growth over the years supporting other major sectors of the economy such as agriculture and remittances from Samoan families overseas. A key issue is that:

- although tourism contributes significantly to Samoa's economy the real cost of its development on the environment has not been fully established, and there is a need to better understand the impact of tourism at its various levels on the cultural, social, and ecological implications on Samoa's environment.

2.3.9 Biodiversity Resources

Similar to progress in waste management in Samoa, the biodiversity area has received much attention over the past decade with the development of relevant instruments to implement the protection and conservation of biodiversity programmes, such as the National Biodiversity Strategy Action Plan, the draft National Biodiversity Policy, the draft Bio-prospecting regulations, the National Environmental Management Strategies for Sustainable Development in Samoa (NEMS – 1994), and the Lands and Environment Act 1989. Outstanding issues are as follows:

- more support for community conservation project initiatives, which are important indicators of grass root level support for conservation efforts to sustainably use and manage biodiversity resources;
- further assistance is required for the implementation of pilot activities on other aspects of the NBSAP programme; and
- the development of the National Invasive Species Strategy is a crucial outcome for the Ministry of Natural Resources and Environment in its effort to address the pressing concern on the domination of alien species which has become a major problem for land owners, and financial support needs to be given to implement pilot projects identified under the Strategy.

2.4 Summary Report of the Environmental Vulnerability Index Study

As part of an ongoing study by UNEP and SOPAC, to develop a global environmental vulnerability index, a draft country diagnostic report was completed in 2005.

The natural environment of the Samoa is Highly Vulnerable (Appendices 2 and 3) to damage and loss of function, having an EVI score of 341. (Scoring criteria established during the EVI study determined: Extremely vulnerable 365+, Highly vulnerable 315+, Vulnerable 265+, At risk 215+, and Resilient less than 215). This evaluation of the EVI is provisional because it has been generated using only 78% of the required data (EVI requires $\geq 80\%$ data for a valid evaluation). These results should be taken as indicative trends on overall environmental vulnerability in the country. However, the results given for individual indicators and most of the thematic sub-indices that do have $\geq 80\%$ of their data are valid assessments of vulnerability.

The high vulnerability of the environmental support system of the country is related to both natural and human influences. There is a range of inherent structural factors such as small size, isolation, geological features, extremes of weather and a large proportion of low-lying land which open the country to environmental damage. These factors mean that Samoa has low resistance to damage and a poor ability to recover when there is damage. Hazards to the environment are moderate and include

geographic, high rainfall variability and geological factors. A significant part of the country's environmental vulnerability comes from damage to its biodiversity and water systems, particularly through loss of vegetation, agricultural methods and other human activities.

There are aspects of Samoa's environment that show good resilience and that could be preserved to prevent further increases in overall vulnerability, as a first step towards vulnerability management. The country has high resilience in the areas of biotechnology, some aspects of biodiversity, sulphur-dioxide emissions, spills, mining and population growth as well as little inherent risk associated with climate temperatures and a range of geological hazards including earthquakes and slides.

Overall, there is only limited resilience in Samoa's environment and the risks of further damage are high. It is strongly recommended that the missing data required for a complete evaluation of the EVI be collected as a matter of priority and that an action plan for sustainability of the environmental support system be developed for the country as a priority, as the EVI can assist efforts for developing sustainably by highlighting those environmental risks, resources and services that may need attention, and which may be the subject of trade-offs against economic and social needs of development whilst ensuring the overall well-being of the country.

Hazards to the environment in Samoa are moderately high (Hazards Sub-index = 3.09) implying that vulnerability in the country derives partly from hazards and their potential to damage the environment. Vulnerability is also derived from damage sustained in the past, particularly on ecological services. The Damage Sub-index (3.38) indicates vulnerabilities which are related to natural resources and ecosystem services, development and population. These include high vulnerability associated with endangered species and loss of vegetation cover.

These results also do not discount cases where localised impacts are very high and localised vulnerability is great, as the EVI has been applied at a national scale to examine overall priorities, but could be applied at the scale of provinces, islands or other geographical scales. Such application of the EVI would allow decision-makers to examine localised issues of vulnerability which may differ from the overall picture.

The following recommendations from the EVI Country Diagnostic Report, could serve as a starting point for mainstreaming issues of environmental vulnerability within the country's development strategies:

- Samoa could consider developing an overall policy on vulnerability and its role in promoting sustainable development. This should include elements of all three pillars of sustainable development: economy, society and environment and interactions among them. Such a policy could focus on an understanding of the trade-offs and the real costs and benefits of development options.
- Samoa could consider adopting the EVI and other measures (e.g. Economic Vulnerability Index, support the development of a Social Vulnerability Index, and use the Human Development Index, Environmental Sustainability Index and others) as part of its monitoring of sustainable development and meeting its Millennium Development Goals.
- Indicators missing in this evaluation could be evaluated as a priority, as they may identify further vulnerability or resilience issues that need to be addressed.
- Samoa could take steps to preserving its existing resilience as the most cost-effective and efficient first step in overall vulnerability management and promoting sustainable development. Using the EVI's thresholds, Samoa could set limits on the risk to damage that accumulates in the country for issues that can be affected by direct interventions. There is resilience in the environmental support system of the country, some of which can be used to promote development without exceeding limits of sustainability.
- Samoa could also consider establishing data collection mechanisms in the country and a way of re-evaluating the EVI regularly either through a regional clearinghouse or in-country. The results of such evaluations might have feed-back mechanisms to allow for adjustments to policy as necessary.

3. Environmental policy, legislative and institutional framework

3.1 Current sectoral status

At the sectoral level an assessment of the recent/current national environmental policy and legislation, institutional structures and capacity, and the involvement of civil society in environmental issues is well covered in Section 2.2.

There is no national sustainable development strategy or poverty reduction strategy paper *per se*, but Government relies on the National Strategic Plan 2005-2007 to facilitate integration across sectors and support efforts to meet global commitments.

The national institutions and administrative capacities have gone through a major restructuring process. Institutional realignment of government agencies came into effect in January 2003. It reduced 26 departments to 14 ministries. The build up to this new public sector structure involved institutional strengthening of the public service for more transparency and accountability through ministry specific institutional strengthening projects. Coupled with these reforms are institutional strengthening training and corporate governance workshops to enhance capacity of public sector chief executives, assistants and even to the officer level on management of ministries, divisions and sections.

The mandate for the protection and management of the environment also resulted in institutional restructuring from the former Department of Lands Surveys and Environment to the new Ministry of Natural Resources and Environment (MNRE), incorporating: lands, natural resources, environment, planning, disaster management and supporting technical services. Capacity for corporate and business planning was developed.

Processes for the management of natural resources and environment were also developed which saw the draft procedures for EIAs implemented, and its enabling legislation in progress.

Government established transparent tendering procedures for contracting-out services and approved policies on population and sustainable development. The new legislation for the MNRE incorporates MEAs into national laws. The Aid Coordination Division has been moved from the Ministry of Foreign Affairs and Trade to Treasury.

3.2. Integration of environmental concerns into the main sectors

Between 1962 to 1992, a total seven development plans were produced, they were comprehensive (had both national, sectoral, corporate objectives and strategies), but were prepared with minimal consultation and thus had little ownership. Since 1996, five Strategic Plans have been developed the latest being 2005-2007 with a theme - *Enhancing peoples choices*.

Key areas of the reforms/changes implemented in early 1990's included: developing a comprehensive planning framework and partnership approach to planning, linking planning and finance (resource allocation- budgetary process including external assistances), developing a conducive private sector environment, implementing an appropriate taxation policy, well planned privatisation programme focusing on private sector areas of expertise, improve public sector efficiency, and strengthening areas of potential comparative advantages.

Key areas of change in the late 1990s included: greater emphasis on social issues – redistribution of wealth, acknowledging the culture as an important mechanism in developing and implementation phases, using established networks for output delivery (for example using established NGOs for health and environmental services delivery as well as village councils for maintaining law and order and social harmony).

The planning framework, the National Plan sets the broad economic scenario, the sector plans detail key priority areas for each sector, and corporate plans identifies how each bodies contribute to the achievements of sector targets. All these levels of planning are interlinked. The planning/monitoring framework includes: the Cabinet Development Committee which ensures projects and programmes proposed are inline with Plan priorities; the Aid Coordination Committee which harmonises development partners efforts with the Plan.

The SDS process was determined through the review of previous SDS, sectoral consultations of key issues drawn for their respective sectoral plans, and specific consultation with influential stakeholders – church leaders, and village majors.

Key features of the national plan are clear vision and theme, key priority sectors/areas identified, desired outcomes, and policy statements to support the achievements of desired outcomes. The current vision is for *“Samoa to lead the region in structural and public sector reform, good governance and increasing per capita incomes, growth in employment and improved health and education standards while incorporating social and cultural values and environmental sustainability”*

Lessons learnt included; ownership/nationalism leads to greater commitment and participation especially during implementation, plans are only effective if implemented, need to consider action plans when formulating strategies, sequencing is very important, and mitigating short term demand and political pressures.

Main challenges remaining include scarcity of resources, engaging with marginalised groups, and monitoring/measuring achievements.

Envisaged outcomes include the flexibility to allow the country to have an established planning framework which mainstreams sustainability issues at the national as well as sectoral levels, is more action oriented, and secures regional and global cooperation in resource sharing.

Mainstreaming environmental issues has not been an easy exercise for Samoa, taking into account its infrastructure, limited capacity in both financial and human resources and most importantly the limited support and assistance by the international community.

The Ministry of Natural Resources and Environment (MNRE) for the last ten years has undertaken reviews of its structure in order to determine the most relevant, effective and efficient organisation to deliver what would best meet the needs of our people in sustainable environmental protection, conservation and security.

The agency of the Government responsible for the environment has yet to reach a level of capacity that would confidently provide effective services. Its budgetary allocation remains minimal and insufficient, specialised skills and knowledge are lacking and the number of staff is still not enough to cater for the current work load. Environmental facilities and tools are lacking, technology transfer is rudimentary and there is a lack of scientific and technical support from the educational and research institutions.

3.3 Global and Regional Agreements or Conventions (from the Samoa NAR for the BPoA Review and Pacific Environment Outlook, 2005)

Activites in regard to Samoa’s commitments to specific multilateral environmental agreements are described in Section 2.2. The following table summarises the status of Samoa’s commitments, both at the global and regional levels.

Global Agreements or Conventions	Status
Basel Convention = Basel Convention on Hazardous Wastes	A
Cartagena Biosafety = Cartagena Protocol on Biosafety	R
CBD = Convention on Biological Diversity	R
CITES = Convention on International Trade in Endangered Species of Wild Fauna and Flora	R
Kyoto Protocol = Kyoto Protocol to the UNFCCC	R
MARPOL = International Convention for the Prevention of Pollution from Ships	
Migratory Species = Agreement on the Conservation and Management of Straddling Fish Stocks and Highly Migratory Species	
Montreal Protocol = Montreal Protocol on Substances that Deplete the Ozone Layer	A**
POPs (Stockholm) = Stockholm Convention on Persistent Organic Pollutants	R
Ramsar = Convention on Wetlands of International Importance Especially as Waterfowl Habitat	R
Rotterdam Convention = Rotterdam Convention on the Prior Informed Consent for Hazardous Chemicals and Pesticides in International Trade	A
UNCCD = United Nations Convention to Combat Desertification	A
UNCLOS = United Nations Convention on the Law of the Sea	R
UNFCCC = United Nations Framework Convention on Climate Change	R
Vienna Convention = Vienna Convention for the Protection of the Ozone Layer	A
World Heritage Convention = UNESCO World Heritage List of sites of cultural, natural beauty, and/or ecological significance	R

R=Ratified; S=Signed; A=Accepted

** Acceded or accepted or ratified all amendments to the Montreal Protocol (London, Copenhagen, Montreal, Beijing).

Regional Agreements or Conventions	Status
Apia Convention = Convention on the Conservation of Nature in the South Pacific	R
Pacific Tuna Convention = Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean	S
SPREP Convention = Convention for the Protection of the Natural Resources and Environment of the South Pacific Region	R
Waigani Convention = Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region	R
Whaling Treaty	

R=Ratified; S=Signed; A=Accepted

4. EU and other donor co-operation with Samoa from an environmental perspective

4.1 European Union

This section is based upon the Samoa country page accessible through the EUROPA website of the EC. The country has received over € 80 million from the European Community in development assistance under successive Lomé Conventions from 1975 to 2000. These include EDF-funded programmes and projects, Stabex transfers, emergency assistance and EIB resources.

EDF co-operation programmes are focussed on economic and social infrastructure and micro-project programmes in rural areas. The energy sector was the focus of the first three Lomé Conventions. The emphasis shifted to rural water supply under Lomé IV. The objectives of past National Indicative Programmes fit in well with the development strategy of the Government. Most basic infrastructure (roads, electricity, telecommunications) has been completed.

Samoa was allocated a total € 27.1 million under the 9th EDF. (€20m under the A-envelope and €7.1m under the B-envelope). The focal sector is public health enhancement through water supply and sanitation projects, which is largely a continuation of previous involvement in the water sector. A non-focal sector on micro-projects in support of village economy is also under implementation.

Samoa also benefited from STABEX resources, estimated at a total of € 26 million, for coconut oil, copra and cocoa beans. The funds were used for rehabilitation and maintenance of basic infrastructure, rural revitalisation and agricultural diversification. An evaluation was undertaken in early 2001, and the results are generally positive. Samoa has not applied for any budget line funded projects.

The European Investment Bank has funded so far eight operations in Samoa with a total value of € 14.0 million. The major client is the Development Bank of Western Samoa (DBWS) with three global loans (€ 4.3 m) and one capital increase operation (€ 0.8 m). An additional global loan to DBWS of € 3.0 million was decided in July 2000 and is implemented through productive investment of small and medium scale enterprises.

The Country Strategy Paper and National Indication Programme of Samoa (2002-2007) identifies a coherent water sector support programme. Approximately 75% of the NIP resources are earmarked for this sector. Improved access to quality water has a strong impact on improved health standards which in turn can be considered a necessary pre-condition for productive education. The development of water supply will eventually lead to improved quality of life in the beneficiary communities. It will also provide one of the necessary infrastructure components to support the development of the private sector and small-scale industries, e.g. in the area of tourism.

4.2. Co-operation funded by other donors from an environmental perspective

The Government has highlighted the need for improved coordination given the demands arising from its interaction with a large number of donors. This section is derived largely from the ADB and WB Samoa Country pages.

ADB The Country Strategy and Program Update 2005-2006 (August 2004) identifies the following priorities for ADB assistance: enhancing access to and quality of education; enhancing the environment and public health of Apia; meeting the growing demand for power; ensure sound fiscal and macroeconomic policies; rationalizing state-owned enterprises and; improving the institutional

and policy framework for the private sector. The ADB has two active lending operations in Samoa: Sanitation and Drainage Project (US\$8.3 million ADF Credit; approved 10/27/2003; closing 06/30/2009) and the Small Business Development Project (US\$3.9 million ADF Credit; approved 11/21/2003; closing 08/31/2006). Two lending operations totaling US\$ 15.0 million (ADF Credits) are proposed for 2005: Education Sector Project II (US\$5.0 million) and Savai'i Renewable Energy Project (US\$10.0 million). No lending operations are currently scheduled for 2006.

Australia In 2003-04 Australia provided bilateral aid (estimated at A\$ 11.8 million for 2003-04 plus supplementary funding of A\$2 million provided through the Policy & Management Reform Fund), concentrated in the areas of economic reform and governance (including assistance to the Public Services Commission, Immigration Division, Samoa Police Force and Treasury Department); education and training (including scholarship programs for Samoans to study in Australia, assistance to the Department of Education); health services, environment and natural resources (including improvements to management of the Ministry of Agriculture, Fisheries, Forestry and Meteorology).

Japan In FY03 (April 1, 2003 to March 31, 2004) Samoa received US\$6.08 million in grant funds from the Ministry of Foreign Affairs. In addition, over the same period, JICA provided TA totaling US\$5.4 million in the environment, infrastructure and agriculture sectors. Volunteers were involved in programs that included: livestock management; fish farming; port management; telecommunications; and income generation for women. Total development assistance from Japan amounted to US\$11.48 million. The Government of Japan has no active lending operations in Samoa at present.

New Zealand The NZAID Samoa program in 2004/05 was \$8.29 million. NZAID's program focuses on education and training (52% of funds) which includes: secondary curriculum policy and resource development, a national assessment framework, NZ and regional tertiary scholarships and short-term in-country training/vocational training. In health (14% of the allocation), NZAID has supported child health initiatives, nurse training, outreach service delivery and secondary and tertiary medical treatment. New initiatives include the Public Sector Improvement Facility which is a 5 year harmonized activity with AusAID (NZAID contributes NZ\$1 million per year) and a \$1.5 million institutional strengthening project in the justice sector. In addition, NZAID is working with GoS and AusAID to develop a six-year Joint Samoa Program Strategy.

World Bank in recent years has funded a large coastal infrastructure project.

Samoa, like all Pacific island countries, receives funding from the UN family of organisations, and in particular for environment related projects, and especially those linked to MEAs, is eligible for Global Environment Facility (GEF) funding, both bilaterally and through regional organisations, from UNDP and UNEP, as well as the WB. Samoa, continues to be disappointed at the delivery rate of GEF-funding due to the protracted procedures.

5. Conclusions and Recommendations

5.1 Conclusions

Conclusion 1: It should be highlighted that this Samoa environmental profile has been compiled as a desk study. Nonetheless, it has benefited from access to reporting on environmental issues by Samoa produced over the past decade, since 1992 at UNCED in Rio (Agenda 21), and in 1994 at the Barbados International Meeting on Sustainable Development for Small Island Developing States (BPoA). Most recently, Samoa has had the opportunity to produce national assessment reports for the 10-year review of both Agenda 21 (the World Summit on Sustainable Development in 2002), and the BPoA (the International Meeting on SIDS in 2005). Furthermore, the first 5-year national report of progress on achieving the MDGs was due for completion in September 2005.

Conclusion 2: The EU has supported Samoa along with all Pacific ACP countries during recent global environmental processes, and in particular in regard to environmental issues such as climate change, water and sanitation, renewable energy, food security, and how to improve livelihoods of island people by addressing the “special case for SIDS” in regard to vulnerability and addressing poverty through establishing poverty reduction strategy papers and national sustainable development strategies, or the like. Samoa needs support for implementation from the EDF 10.

Conclusion 3: Notwithstanding the current Country Support Strategy (refer Section 4.1) for EDF 9, together with assistance being provided through the Regional Indicative Programme, it should be noted that along with other Pacific ACP countries, Samoa has agreed to the new Strategy for Strengthened Partnership between the EU and the Pacific Islands which has a “*blue-green*” theme *within the context of sustainable management of natural resources and environmental challenges*. Within this broad theme specificity is needed to ensure the activities to be supported by the NIP deliver tangible and concrete benefits at national level that demonstrably contribute to strengthening the environmental pillar of national sustainable development and poverty reduction. In this context also, improved and strengthened links need to be demonstrated with the activities to be carried out at national level by the regional organisations supported by the Regional Indicative Programme.

Conclusion 4: Samoa’s environment is no exception to the reality that it provides the basic goods and services, such as water, energy and food security, upon which people live. Improvements and sustainability in these areas are essential to underpin generation of economic wealth. Samoa acknowledges that environmental considerations are inextricably linked across their national development planning efforts, but there is a need to strengthen these interlinkages to ensure improved decision-making supports efforts to achieve sustainability.

Conclusion 5: The state of the Samoa environment over the past decade has deteriorated and remains highly vulnerable. Over the past decade much has changed with internal shocks from increasing population, concentration of that population through urbanisation and urban drift, and external shocks such as globalisation, HIV/AIDS, climate change and most recently increasing fuel prices. All are putting increased stress on the environment. Key examples of improvements needed are; secure safe water supply and sanitation; developing access to affordable renewable energy resources; food security from fishing and agriculture, to support sustainable development, improve lifestyles and reduce poverty. The urban and rural population, urban centres and outer islands must be targeted. Improvements in these “sectoral” areas will also have a positive impact on reducing Samoa’s vulnerability to climate change and natural disasters (many of which are weather-related).

Conclusion 6: Over the past decade some progress in many areas has been made in improving environmental sustainability through institutional strengthening. Although not as significant as Samoa would have liked. Much of the progress has been at the initiative of the Samoa and with its own financial resources. But much remains to be done to improve the efficiency and effectiveness of

the national environmental machinery including strengthening the role of the NGOs. Development partners, including regional organisations, need to harmonise and coordinate their assistance more closely with Samoa needs and efforts, and amongst themselves. This will make both existing and new resources more efficient and effective.

Conclusion 7: In order to provide a platform to facilitate closely cooperation with its development partners, and improve governance, Samoa has developed an overarching planning policy/regulatory and institutional arrangements in the National Strategic Plan 2005-2007 which embeds the principles of sustainable development, including issues of environment concern. There is much room for supporting capacity building and technical assistance in this context.

Conclusion 8: Samoa's capacity needs to be strengthened to manage its large marine environment compared with the generally small island land areas. In reality, as the marine "blue environment" and land "green environment" are an environmental continuum across the coastal zone. Samoa needs a spatially integrated management approach, similar to "island system management" promoted by the EU through one of the EDF8/9 regional projects.

Conclusion 9: Samoa, like many other of its neighbours, recognises the opportunities of improved information and communication technologies, in particular in regard to getting more up to date data and making it readily available to support the decision-making process.

Conclusion 10: Samoa needs to develop and strengthen its own national setting of indicators and targets, and monitoring arrangements to track progress, and link these to international development goals agreed at for example the WSSD, the Mauritius International Meeting on SIDS, and contained in all relevant MDGs and targets, not just MDG7 on environmental sustainability.

5.2 Recommendations

Recommendation 1: Concerning the selection of the focal sectors and response strategies for Samoa, within the overarching "blue-green" theme of sustainable management of natural resources and environmental challenges, key areas to consider are: securing safe water supply and sanitation; developing access to affordable renewable energy resources; and improving food security from fishing and agriculture.

Recommendation 2: As a governance issue in regard to national institutional capacity to improve the management of natural resources and the environment, consideration needs to be given to supporting Samoa address institutional capacity assessment and needs for all its line ministries. Specifically:

- there is an immediate need to promote the participation and involvement of NGOs at the national and community level and be supported through capacity building;
- additional financial assistance is required to implement priority human capacity building needs of the country; and
- the recognition of integrating environmental consideration into national economic planning is a critical issue that requires priority attention. The further development of a national policy on economic growth and sustainable development must strengthen the integration of environmental issues into economic planning.

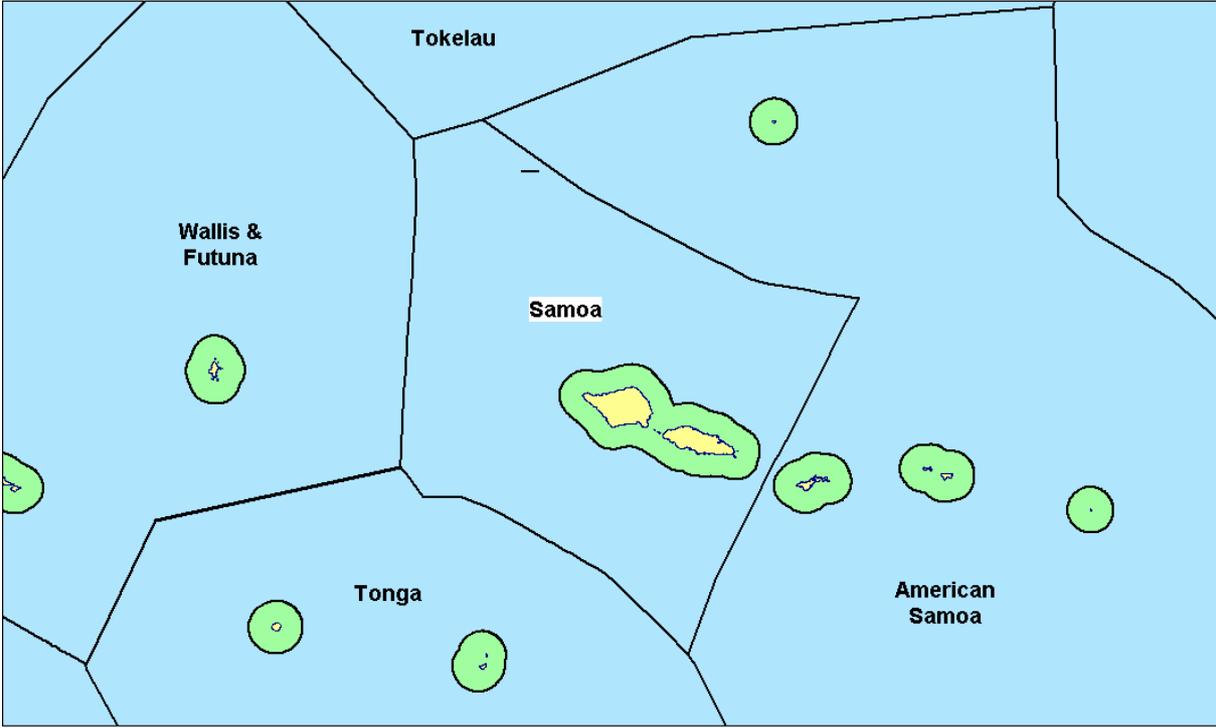
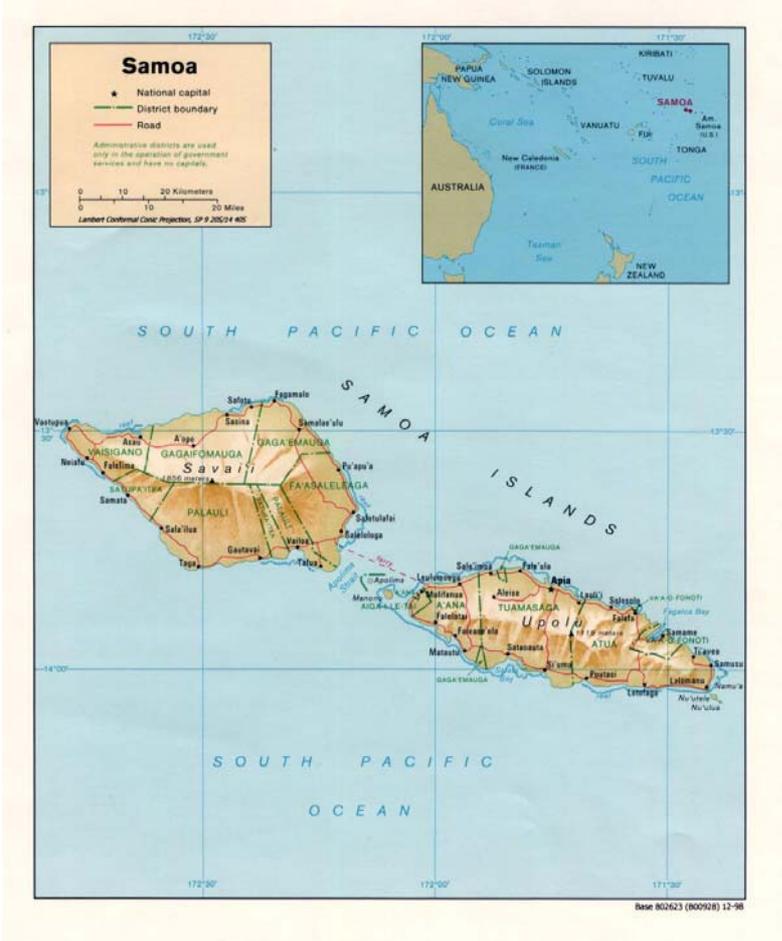
Recommendation 3: Improve Samoa's national environmental information systems, and ensure environmentally-relevant indicators to be used in the EDF 10 National Indicative Programme, are integrated into these systems.

Recommendation 4: Samoa's access to the use of EC horizontal budget lines (such as Environment and Forests) and facilities (EU Water Facility - EUWF and the EU Energy Facility - EUEF), and the EU/ACP Natural Disaster Fund are limited by national capacity constraints. Each of these

opportunities of additional financial resources are important and should these funds/facilities be ongoing consideration needs to be given to assisting Samoa prepare the bulky and complex applications.

Recommendation 5: In order to ensure effective and efficient support to Samoa, it is important for the EU to develop new and strengthen existing opportunities for co-ordination on natural resources and environmental issues with other donors (including regional organisations) seeking to achieve complementarities and synergies.

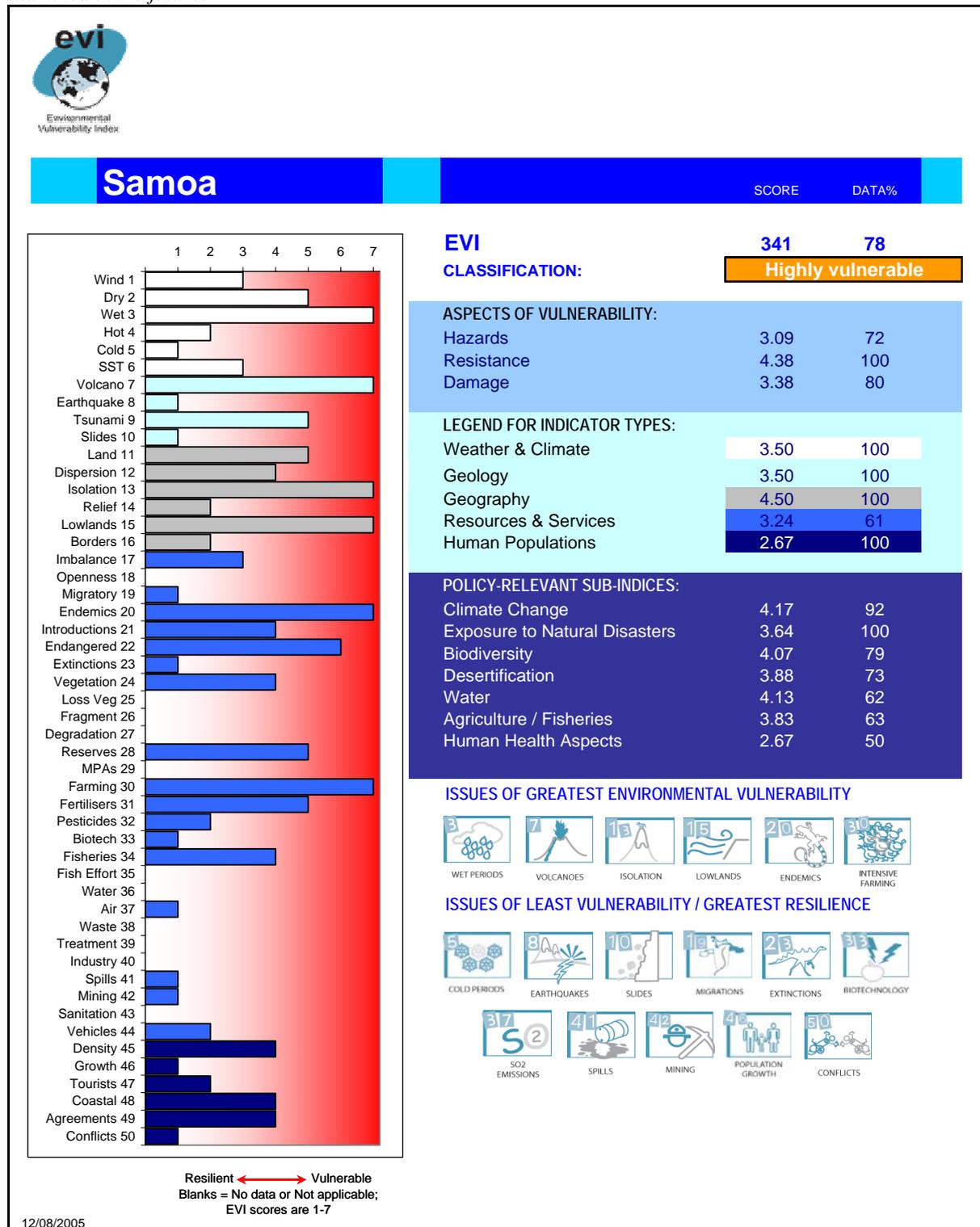
Appendix 1. Top: Map of Samoa (from University of Texas Library free Website). Bottom: Map of Samoa provisional EEZ (from Pacific Islands Maritime Boundaries Project, SOPAC (Unpublished)).



Appendix 2: Summary Environmental Vulnerability Index Report Sheet for Samoa.

This is **NOT a VALID evaluation**, as it is based on <80% of indicators. Although results for individual indicators are valid, any index or sub-index values should only be read for trends unless the data on which they are based is greater than 80% of those required (e.g. there are sufficient results for the Resistance and Damage sub-indices). Data are primarily from international public data sources; see

www.vulnerabilityindex.net for full access to all reports and technical background. Note that some indicators could not be evaluated – some of these may represent significant vulnerability issues that need to be examined in the future.



Appendix 3: Samoa's Environmental Vulnerability Index profile, emphasising the highest priority issues

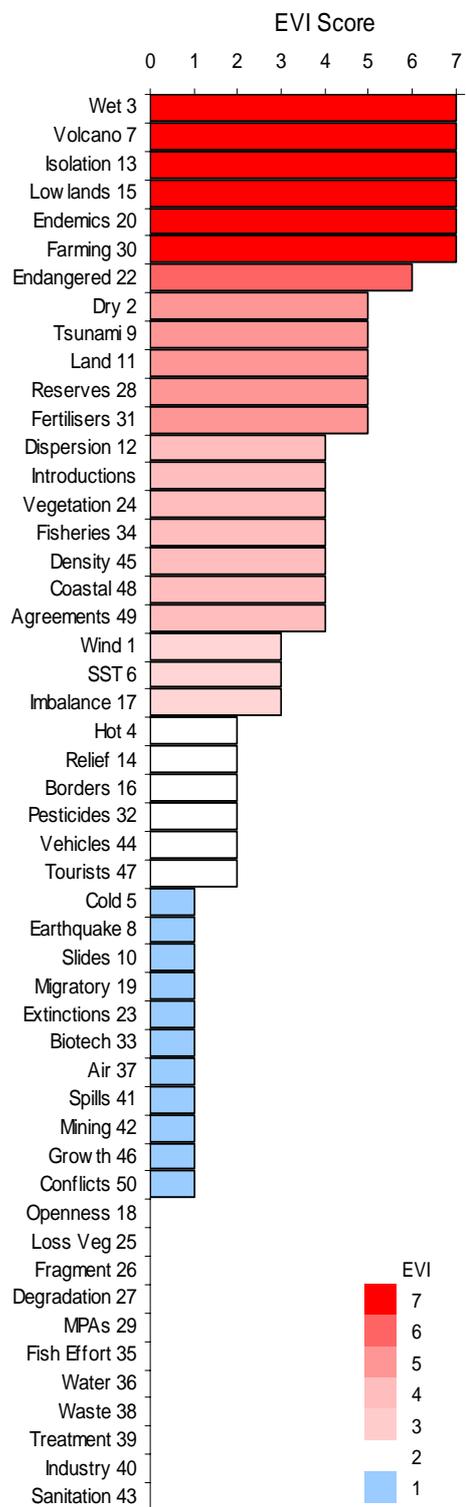


Figure 3. Samoa's EVI profile with indicators ranked to emphasise highest priority issues.

Appendix 4: References

Pacific Environment Outlook: Published by the United Nations Environment Programme (UNEP) 2005.

People's Report on Progress Towards the MDGs in Samoa prepared by O Le Siosiomaga Society Incorporated, 2005.

Samoa National Environment and Development Management Strategies (NEMS), 1994.

Samoa National Assessment Report for the 10-Year review of the Barbados Programme of Action for Small Island Developing States, 2004.

Samoa Draft Country Diagnostic Report for the Global Environmental Vulnerability Project compiled by UNEP and SOPAC, 2005.

Samoa Provisional Exclusive Economic Zone Map: Pacific Islands Maritime Boundaries Project, South Pacific Applied Geoscience Commission (SOPAC), Unpublished data.

University of Texas Library Free website: www.lib.utexas.edu/maps