
**NATIONAL CAPACITY SELF-ASSESSMENT
PROJECT
[NCSA]**

**National Capacity Needs, Constraints and Priorities
for the Implementation of the United Nations
Convention on Biological Diversity (UN-CBD)**

Thematic Assessment

United Nations Convention on Biological Diversity



ACRONYMS

ABS&PTBK	Access and Benefit-sharing and the Protection of Traditional Biological Knowledge
ARNHP	Australia's Regional Natural Heritage Program
CBD	Convention on Biological Diversity
DBS	Development Bank of Samoa
DEC	Division of Environment & Conservation
EEZ	Exclusive Economic Zone
FSA	Faasao Savaii Inc.
GoS	Government of Samoa
IUCN	International Union of Conservation Nations
MAF	Ministry of Agriculture & Fisheries
MAFFM	Ministry of Agriculture, Forests, Fisheries & Meteorology
MCIL	Ministry of Commerce, Industries & Labor
MEAS	Multi-lateral Environment Agreements
MESC	Ministry of Education, Sports & Culture
METI	Matua i le Oo Environment Trust
MFAT	Ministry of Foreign Affairs & Trade
MNREM	Ministry of Natural Resources, Environment & Meteorology
MOF	Ministry of Finance
MOH	Ministry of Health
MOH	Ministry of Health
MWCSD	Ministry of Women, Community & Social Development
MWCSD	Ministry of Women, Community & Social Development
MWTI	Ministry of Works, Transport & Infrastructures
NCSA	National Capacity Self-Assessment Project
NCW	National Council of Women
NUS	National University of Samoa
OLSSI	O le Siosiomaga Society Inc.
PGRC	Pacific Genetic Resource Centre
PILN	Pacific Invasive Learning Network
SBEC	Small Business Enterprises Corporation
SCC	Samoa Chamber of Commerce
SLC	Samoa Land Corporation
SPREP	South Pacific Regional Environment Program
SPRIG	South Pacific Regional Indigenous Forest Genetic Regeneration Program
SUNGO	Samoa Umbrella for Non-Governmental Organizations
TSA	Taulasea Samoa
UNCCD	United Nations Convention for Combating Desertification
UNFCCC	United Nations Framework Convention on Climate Change
USPA	University of the South Pacific Alafua
WIBDI	Women in Business Development Inc

EXECUTIVE SUMMARY

Two decades before she ratified the CBD, Samoa was among the first of the small island states in the South Pacific to establish a system of both state and indigenous grassroots community managed terrestrial and marine protected areas; to launch public awareness and community action on the conservation of her biological resources; to establish policy and legislative measures and institutions for the management and sustainable use of components of her biodiversity components.

Samoa's ratification of the CBD in the mid-'90s was followed by the establishment of more comprehensive and intensive multi-sector stake holding structures and processes which addressed both the holistic and more specific aspects of her obligations and commitments under this Convention and other biodiversity related international and regional MEAs.

This report relates the assessment of the strengths and weaknesses of Samoa's capacities developed in the last thirty years which are currently utilized to meet her obligations and commitments under the CBD; the opportunities and constraints in the development of capacities for biodiversity work in Samoa; and priority recommended actions for strategic capacity building that will improve the country's implementation of the CBD.

Assessed in terms of existing systemic, institutional and individual capacity strengths the following are potential capacities which have been developed in the last three decades which are relevant to and have been utilized for the implementation the country's obligations under the CBD:

- Systemic capacities: National policy and legislative frameworks for the establishment and development of protected areas, the conservation of species and habitats, the management of invasive species, the management of biosafety issues, the assessment and monitoring of development impacts on biodiversity components, the development of national environmental and conservation institutions and the promotion of education and public awareness.
- Institutional capacities: The system of governmental, non-governmental, private and community based organizations which have both direct and indirect roles in the implementation of the CBD. More specifically this system is composed of a national political focal point which is the country's official representative to the CBD, a government agency that directly coordinate and manage national biodiversity planning processes, and several other government agencies, non-governmental organizations and community based organizations which are involved in managing specific biodiversity related work.
- Individual capacities: A small pool of individuals with experience, knowledge, and technical skills of biodiversity work in Samoa and the CBD requirements, which are directly, engaged in several national and local biodiversity programs. Most of this human resource is staff of national governmental and non-governmental agencies which are directly involved in biodiversity related work.

Assessed in terms of priority issues or program of works for implementing the CBD Samoa's existing capacities for biodiversity work were developed largely in the following priority issues or thematic areas of CBD work¹:

- management of protected areas,
- management of species and habitats of global value,
- management of invasive species,
- marine and coastal biological diversity, and
- forest biological diversity

Assessed in terms of capacity weaknesses the following are priority systemic, institutional, and individual capacity gaps which currently constrain the full implementation of the country's obligations and commitment to the CBD:

- Systemic capacity gap:

There are very limited human and financial resources available or currently committed to effectively monitor and implement policy and legislative frameworks now in place and to effectively mainstream biodiversity conservation priorities into current national economic and development planning processes.

- Institutional capacity gap:

The existing institutions with relevant roles in biodiversity (CBD) work are largely constrained by the lack of staff; staff expertise and material resources to cope with the level of commitments and obligations requirements at this stage, and their individual and collective contributions to biodiversity (CBD) work requirement is yet to be adequately appraised and strengthened. Moreover there are no institutional arrangements yet in place to address other key outstanding obligations to the Convention.

- Individual capacities:

There is an extreme lack of individuals with science and technical based knowledge and skills now in demand for national biodiversity conservation and development programs. The existing capacity building efforts such as public awareness and informal training are inadequate at developing the capacities of the grass root peoples which account for much of the country's human resources that are directly involved in biodiversity use for the sustainable management of the biological resources.

There are five areas or programs of work which were identified² in the analysis of this report and are cited below as relevant outstanding areas of the country's obligations and commitments to the CBD:

- biosafety;

¹ Samoa's Third National Report to the Convention on Biological Diversity completed in March 2006 have clearly identified these three areas of the CBD's program or works which the country has been exerting much of its resources in terms of annual budgetary allocations and largely external funded public sector investments projects and institutional strengthening since it's ratification of the CBD in 1994.

² Ibid., also identified these five areas or CBD program of works in which Samoa has either yet to initiate direct measures to fully address them or yet to implemented measure now in place to address them. For instance the

- access to genetic resources and benefit sharing and the related issue of the protection of traditional biological knowledge;
- agro-biodiversity;
- inland freshwater biodiversity; and
- mountain biodiversity

Priority actions therefore for capacity building to improve the implementation of the CBD identified from the analysis of this report were in general recommended to:

- significantly increase beyond current experience the workforce of trained, knowledgeable and motivated individuals and financial resources now required in the specialized fields of technical expertise and scope of governance to improve the monitoring and enforcement of national biodiversity policy frameworks and the implementation of biodiversity programs at all levels;
- strengthen collaborations among the national and local stakeholders of biodiversity work throughout the country; and
- to expand biodiversity work into initiatives for addressing the country's outstanding priority areas of obligations and commitments to the CBD.

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1. INTRODUCTION

1.1 Review of Samoa's Biological Diversity

1. Samoa is located east of the international dateline and south of the equator, about halfway between Hawaii and New Zealand in the Polynesian region of the South Pacific. The Samoan islands are of volcanic origin, with a total land area of 2,934 sq km. They consist of the two large islands of Upolu and Savaii, which together account for 96% of the total land area, and eight small islets. The main island of Upolu is home to nearly three-quarters of Samoa's population. The climate is tropical with an average annual temperature of 26.5°C, and a rainy season from November to April.
2. Samoa consists of two main islands, Savaii (159,657 ha.) and Upolu (100,084 ha.), along with seven smaller islands. Its terrestrial and marine (economic zone) areas cover approximately 293,000 ha and 12,788,000 ha respectively. Other than Hawaii, Samoa is the only Polynesian archipelago that is mostly covered with geologically recent volcanic basalt.

Terrestrial

3. The islands of the South Pacific, including those of Samoa, support some of the world's most threatened and vulnerable globally significant forest areas. Samoa itself is of particular importance, having the most extensive flora of any archipelago in Polynesia other than Hawaii.³ According to its Biodiversity Strategy and Action Plan,⁴ nearly 500 species of native flowering plants and about 220 species of ferns in 96 families and 298 genera have been identified in Samoa.⁵ Overall about 25% of the plant species are endemic to Samoa and 32% endemic to the Samoan archipelago.⁶
4. Savaii Island is of particular biodiversity significance. In a recent review of the conservation value of 226 South Pacific islands, Savaii was ranked in 23rd position.⁷ Savaii's forest ecosystem has been rated by Conservation International as one of two hotspots for conservation of globally significant biodiversity in Samoa.⁸ Central Savaii, ranks amongst the highest priority areas for conservation in Samoa. It stands as the most continuous area of relatively intact indigenous ecosystems left in Samoa and contains the highest levels of biodiversity, density of avifauna, and other forest species.
5. Samoa is a global conservation hotspot.⁹ In species terms, it supports the most extensive flora of any archipelago in Polynesia other than Hawaii.¹⁰ Its National Biodiversity Strategy and Action

³ While Hawaii has more species, Samoa actually supports a larger number of genera. Arthur. W, 2002. The Samoan Rainforest: A Guide to the Vegetation of the Samoan Archipelago, p8. published by Isle Botannica Hawaii.

⁴ NBSAP 2001

⁵ Whistler, 1992

⁶ The latter includes both the independent state of Samoa and the territory of American Samoa.

⁷ Two other Samoan islands, Aleipata and Upolu, were ranked 30th and 46th, respectively. Dahl, A.L.1986. Review of the Protected Area System in Oceania. IUCN Conservation Monitoring Centre. Cambridge. UK.

⁸ Report of the Workshop of Living Archipelagoes Polynesia/Micronesia Program (SPREP) – Apia, Samoa, April 23 & 26, 2004, page 10.

⁹ See Dahl, Arthur L. 1980. Regional Ecosystems Survey of the South Pacific Area, SPC/IUCN Technical Paper No. 179, South Pacific Commission, Noumea, New Caledonia.

¹⁰ However, Samoa actually supports a larger number of genera than Hawaii does. Add ref. Whistler, Arthur. W, 2002. The Samoan Rainforest: A Guide to the Vegetation of the Samoan Archipelago, p8. published by Isle Botannica Hawaii.

Plan,¹¹ nearly 500 species of native flowering plants and about 220 species of ferns in 96 families and 298 genera have been identified in Samoa.¹² Overall about 25% of the plant species are endemic to Samoa and 32% endemic to the Samoan archipelago.¹³ There is one endemic genus, Rubiaceae (*Sarcropygme*), with two species.

6. Some 500 species of plants have been introduced to the islands since the first Samoans brought the coconut, taro and other species for cultivation about 3,000 years ago. While some of these plants are beneficial for agriculture, others have become invasive and destructive weeds. Ten weed species were identified during the upland survey as having the potential for serious damage there.¹⁴
7. According to a review of the conservation value of 226 South Pacific islands, Savaii ranks in 23rd position.¹⁵ Savaii's forest ecosystems; and the Aleipata coastal islands, have been rated by the Conservation International, as two hotspots for conservation of globally significant biodiversity in Samoa.¹⁶ Central Savaii, ranks amongst the highest priority areas for conservation in Samoa. It stands as the most continuous area of relatively intact indigenous ecosystems left in Samoa and contains the highest levels of biodiversity, density of avifauna and other forest species. It extends from lowland forests, which were graded 1 and 2 by Park et al. (1992), through foothill forest, volcanic succession, montane forest and montane bogs to cloud forest.¹⁷ The area comprises globally and nationally significant and threatened ecosystems such as lowland tropical forests, volcanic vegetation, watershed areas and montane forests. The high altitude forest areas are of particular importance, given their abundant and diverse bird life and species richness.
8. Complementing its globally significant habitats, Samoa supports an important and diverse fauna:
 - i) *Birds*: Thirty-five species of land birds and 21 sea and shore birds have been recorded in recent times in Samoa. Eight of the land birds are endemic (there are an additional six endemic subspecies), while four species have been introduced. One native species, the Samoan Wood Rail or puna'e (*Pareudiastes pacificus*), sole representative of an endemic genus, is considered extinct, although a population may persist on upland Savaii.¹⁸ The Samoan storm-petrel (*Nesofregatta albigularis*) has only been recorded as a single specimen in recent years. Fourteen species were listed as "rare or endangered" in 1980¹⁹ prior to two devastating cyclones in 1990 and 1991 which would have reduced their numbers even further. However, the upland survey²⁰ and monitoring counts done by the DEC showed all to still be present and most to be increasing in number, albeit slowly. Samoa's most famous species, the Tooth-billed Pigeon or

¹¹ NBSAP 2001

¹² Whistler, 1992

¹³ The latter includes American Samoa.

¹⁴ Schuster et al., op. cit.

¹⁵ Dahl, A.L. 1986. Review of the Protected Area System in Oceania. IUCN Conservation Monitoring Centre. Cambridge. UK.

¹⁶ Report of the Workshop of Living Archipelagoes Polynesia/Micronesia Program (SPREP) – Apia, Samoa, April 23 & 26, 2004, page 10.

¹⁷ Park, G., Hay, J., Whistler, A., Lovegrove, T., and Ryan, P. 1992. The National Ecological Survey of Western Samoa: the Conservation of Biological Diversity in the Coastal Lowlands of Western Samoa. New Zealand Ministry of Conservation.

¹⁸ Bellingham and Davis, 1988

¹⁹ Dahl, 1980

²⁰ Schuster et al., 1999

manumea (*Didunculus strigirostris*), is a species of ancient origin with no clear lineage amongst existing pigeons anywhere in the world; Mayr²¹ regarded it as a possible relative of the extinct dodo of Mauritius. The species is still encountered in reasonable numbers in some upland forest areas, recorded at 10 of the 13 upland survey sites. Other pigeon and dove species declined dramatically as a result of the cyclones in the early 1990s, and their recovery appears threatened by hunting, particularly in the case of the Pacific Pigeon or lupe (*Ducula pacifica*). As for Savaii, it has been identified as one of the world's "Endemic Bird Areas" in need of "urgent" conservation attention.²² The island supports all 16 of Samoa's endemic bird species.²³

- *Mammals*: Of the 13 species of terrestrial mammal now present in Samoa, only three are native, two flying foxes (or fruit bats) - local name pe'a, the Samoan Flying-fox (*Pteropus s. samoensis*) and the Tongan or White-necked Flying-fox (*P. tonganus*), and a small insectivorous bat, the Sheath-tailed Bat - tagiti (*Emballonura semicaudata*). The flying foxes are important for the long-term survival of the forests for it has been estimated that almost one in three Samoan forest trees depend on bats in some way (Mickleburgh et al., 1993), principally as pollinators or seed dispersers.
- *Reptiles*: Fourteen species of lizards and one snake (Pacific Boa (*Candoia bibroni*)) have been recorded in Samoa. Most of the lizards appear fairly abundant and only one, the Samoan Skink (*Emoia samoensis*) is endemic to the Samoan archipelago
- *Invertebrates*: A checklist and bibliography recently produced by the Bishop Museum, Hawaii (Kami & Miller, 1999) listed 2,523 species of insect for the Samoan Islands and 251 species of other arthropods. The groups with most species were the *Lepidoptera* (moths and butterflies) with 548 species, *Coleoptera* (beetles) - 536 species and *Diptera* (flies) - 472 species. It anticipated that more species than this exist and new unreported specimens are held at the Bishop Museum and Landcare Research, New Zealand. The residency status of each species (endemic, indigenous or alien) was not identified in this report, nor is there any information on conservation status.
- *Land snails*: Land snails have undergone an extensive radiation throughout the islands of the Pacific (Cowie, 1992). While the land snail fauna of Samoa is still relatively poorly studied in comparison to that of American Samoa, there are more than 20 species known here including four post-European introductions. Recent collecting work by DEC in lowland and upland forests is currently being analyzed. The Samoan archipelago holds 19 endemic species, two endodontids, nine charopids and eight partulids. One endodontid species, (*Thaumatodon hystrellicoides*), is listed as threatened and five of the eight partulids are known to occur here

²¹ Mayr 1945

²² ICPB, 1992. Putting Biodiversity on the Map: Priority Areas for Global Conservation. International Council for Bird Preservation. Cambridge, UK.

²³ **Appendix 2** provides a list of these species and their conservation status.

(*Eua expansa*, *E. montana*) (*Samoana stevensonia*, *S. canalis* and *S. conica*) though their present status is uncertain

- *Ants*: Ants of this region have been of interest to ecologists because the native species on each island have been joined by many new species introduced by human activity, causing considerable competition among the different species. In their report on the ants of Polynesia, Wilson and Taylor (1967) listed 59 species for Samoa of which 12 were endemic. Seventy eight species are listed for the Samoan Islands by Kami & Miller, 1998. Introduced ants are implicated in local extinction of land snails and several snail species are now considered to be restricted to higher altitudes as a result (Pearsall, 1992).
- *Butterflies and moths* (Lepidoptera): Samoa has 21 species of butterflies all of which are shared with other islands, but two are endemic to the Samoan Group as a whole. These are the Swallowtail (*Papilio godeffroyi*) which is considered threatened and the more common *Hypolimnas thompsoni*. As an indication of the degree of endemism among the moths, 57% of 109 species collected during a brief survey in O Le Pupu Pue National Park were endemic.

Marine and Coastal Biodiversity

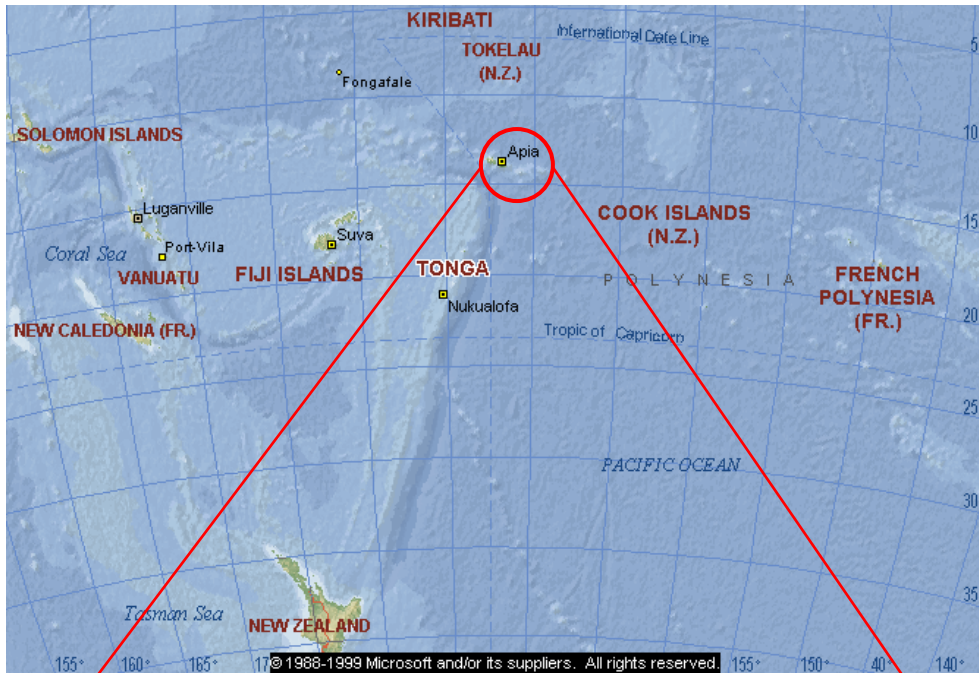
9. The marine biodiversity of Samoa ranges from coastal ecosystems and habitats to corals, fish and invertebrate resources.
 - *Mangroves*: Of the more than 80 species of plants which are identified as mangroves, only three are found in Samoa these being *Rhizophora mangle (samoensis)* [Red mangrove], *Bruguiera gymnorrhiza* (Oriental mangrove) and the rarest of the three, is *Xylocarpus moluccensis*. There are two main mangrove stands with a number of other stands scattered throughout the two main Islands. Although mangroves are not very common and only covering a small area of about 10km², the Vaiusu Mangal near Apia is considered to be the largest mangrove area in Eastern Polynesia.
 - *Sea-grasses*: Seagrass bed distribution in Samoa is limited with the best patches found around Manono Island and the Northern coasts of Upolu. Only two species of seagrasses occur in Samoa, *Halophila ovalis* and *Syringodium isoetifolium*. It is speculated that *H. ovalis* is probably endemic or belongs to another species, *H. minor*.
 - *Marine Algae*: A total of 287 species of marine algae are found in Samoa 128 of which occur in the Palolo Deep alone including one species only found there. Two species of seaweeds have been introduced into Samoa for aquaculture trials. These are *Kappaphycus alvarezii* and *K. denticulatum*. The status of these introduced seaweeds in our marine environment is unknown.
 - *Corals and coral reefs*: The coral reefs of Samoa's Archipelago contain approximately 123 species of hard coral. This is comparable to other larger islands such as Fiji which has a count of 163 species of hard coral. The coral reefs in Samoa are limited and fringing in

nature, due to the past volcanic activities and the subsequent sea level rise. Previous barrier reefs were covered by lava flow and deep-sided volcanic cones prevented coral reef formations. The shallow and usually murky lagoons on the northern side of the islands (to 2 m depth) are often encircled by fringing reefs, which can extend seaward to 3 km. On the southern, windward shores the lagoons are 2-3 m deep and clearer.

- *Mammals*: Several whale species and a dolphin species have been recorded in Samoa's water. The whale species include 2 baleen whales and 3 toothed whales. The Baleen whales include the Humpback (*Megaptera novaengliae*) and Minke whale (*Balaenoptera acutirostris*). Toothed whales recorded in Samoa are the Sperm whale (*Physeter macrocephalus*), Short-finned pilot whale (*Globicephala macrorhynchus*) and the False killer whale (*Pseudorca crassidens*). The Bryde's whale (*Balaenoptera edeni*) and the Killer whale (*Orcinus orca*) are most likely to also occur in Samoa. The Spinner dolphin (*Stenella longirostris*) also occurs in Samoa with the likely presence of the bottlenose dolphin (*Tursiops truncatus*) and the Pantropical spotted dolphin (*Stenella attenuate*
- *Marine Turtles*: Three species of turtles occur in Samoa, the Hawksbill turtle (*Eretmochelys imbricata*) and the Green turtle (*Chelonia mydas*) being more common and the Leatherback turtle (*Dermochelys coriacea*) which is very rare. The Hawksbill turtle is the only species which nests in Samoa while the Green turtle is known to only come for feeding.
- *Sea snakes*: Two species of sea snakes inhabit Samoa's waters, the banded sea snake (*Laticauda* sp.) and Pelamis ploturus but it is likely that there are more than two sea snake species found in Samoa.
- *Finfish*: Samoa's fish fauna is regarded as one of the richest on the globe. A total of 991 marine fish species have been recorded in Samoa of which 890 are shallow-water or reef-inhabiting, 56 deep-water bottomfish species and 45 pelagic [surface]. 31 fresh-water fish species have been recorded 26 of which are native species while 6 are introduced. It has also been reported that about 40 fish species are endemic to Samoa but it is believed that there is likely more endemic fish species in Samoa.
- *Marine Molluscs*: *Of the more than 50,000 species of living molluscs in the world, about 788 species of marine molluscs occur in Samoa. These species fall under 4 Classes (Bivalvia, Cephalopoda, Gastropoda, Polyplacophora), 6 Subclasses, 16 Orders, and 99 Families.*

- One of the two remaining species of native giant clams in Samoa, *Tridacna squamosa*, has been considered to be functionally extinct. A third species, *Hippopus hippopus*, is believed to have existed in Samoa before but became locally extinct. [Fortunately, giant clams can now be easily artificially propagated].
- Ten species of chitons have been recorded in Samoa with two having Samoa as their type locality. One species has been described as a new species and two species may be endemic to the Samoan archipelago.
- Crustaceans: There are about 40,000 known species of crustaceans in the world of which most are marine. The group includes animals such as crabs, lobsters, shrimps, prawns, copepods and barnacles. Current crustaceans species occurrence in Samoa has not been evaluated.
- Polychaetes: This is a large group of marine animals known widely as bristleworms. These are segmented worms and all species in the group possess an array of bristles on their many leg-like special appendages called parapodia. The most well known Polychaete species in Samoa is the Palolo. The palolo, *Eunice viridis*, is harvested in Samoa when its epitokous segment [hind reproductive segment of the worm] swarm to the sea surface during spawning in October and/or November, correlating with the third quarter of the moon. The name “palolo” originally referred to the Samoan species, *E. viridis*, but is now applied to a number of other polychaetes all of which exhibit a similar swarming behaviour. The Palolo epitokes containing eggs during spawning are blue-green in colour while those containing sperm are tan (brownish/creamy).

Map 1: South Pacific and Samoa



Map 2: Samoa Islands (Savaii and Upolu)



10. The 1993 National Environment and Development Management Strategy (NEMS) – Samoa’s first overarching national environmental policy framework for addressing environmental issues – identified ‘Combating deforestation’, ‘Conservation of biodiversity’ and ‘Protection of the quality and supply of freshwater’ as three of its Target Environmental Components for addressing biodiversity conservation issues.. Moreover, under the same framework the other relevant sector policies, such as the Forest Development Policy, the Watershed Management Policy and Land Use Policy were developed which stress the need to conserve Samoa’s remaining native forests and improve the management of its water and land resources, because of their close linkages to all other economic and development sectors and their value to the sustainability of Samoa’s culture and traditions.
11. Currently, two key national policies – the ‘Sustainable Development of Forests and the ‘Conservation of Biological Diversity’ – refer to the need to expand the number and size of conservation areas in order to conserve national biodiversity, forest and genetic resources, and emphasize the importance of community participation in this process.

1.2 Background to the UN-CBD

12. Samoa ratified the Convention on Biological Diversity on 9 February 1994. Two decades earlier, Samoa has achieved some significant milestones in conservation action such as the establishment of the first system of National Parks and Reserves in the South Pacific region among small island states; the development of reforestation program which started as early as the mid-60s; the establishment of a watershed management areas in the early ‘90s; the conduct of comprehensive species and ecological surveys during the ‘90s; the publication of several research papers and articles on the nature and status of components of Samoa’s biodiversity in the ‘90s; the ratification of several South Pacific treaties and conventions relevant to biodiversity conservation; the first among the nations to establish community-based conservation areas throughout the country; and the creation of key environmental conservation agencies and organizations.
13. Samoa’s ratification therefore of the CBD both reflects its continuing commitment to its conservation work, and more importantly the high level of priority it has accorded to international collaborations, that will provide the much needed assistance it require, in terms of financial and technical expertise resources, to improve the management and sustainable use of its biological resources.

1.3 Background to the NCSA Project

14. Under the Capacity Development Initiative Program instigated by the GEF and UNDP to harmonize the implementation by countries of the three main environmental conventions - UNFCCC, CBD & UNCCD - initial assessments were carried out of capacity needs of Samoa for meeting its obligations under these conventions. These assessments have indicated an extremely high level of human and financial resources required by the country to effectively meet her obligations under the three conventions in the context of its other pressing social and economic development needs.

15. Samoa's existing capacities for implementing the CBD and national biodiversity conservation priorities were generally built under the influence of several important developments, which took place in the last more than thirty years, which may be grouped under the following types:
 - The establishment by the state and civil societies of protected areas and the promotion of biodiversity conservation awareness;
 - The formulation of policy and legislative frameworks for biodiversity conservation and other related environment and development issues;
 - The implementation of bilateral and multi-lateral development aids of technical assistance which directly and indirectly benefited biodiversity conservation work in Samoa;
 - The implementation of regional and international biodiversity programs; and
 - The implementation of the government's institutional strengthening programs
16. The general outcome of these developments in terms of capacity building was the creation of a small pool of technical staff in governmental, non-governmental and private sector organizations, that is responsible for the country's obligations under the CBD, in addition to work related to the other two equally important Conventions – the UNFCCC and the UNCCD.
17. With relatively new agencies with very limited resources for biodiversity work, the country was however, able to develop the existing national frameworks – legislative, policy, information, and technical – to an important degree, for meeting its obligations under the CBD. However, significant capacity weaknesses still persist in the implementation of these frameworks as demonstrated in the analysis of past capacity building activities under these frameworks in the later sections of this report, and significant outstanding areas of the country's obligations have yet to be addressed at all.
18. Clearly efforts to address the need for sufficient individual, institutional and systemic capacities to strengthen existing capacities and especially to address outstanding aspects of the country's commitment and obligations to the CBD must also equally address the capacities needs for the other two equally important over-arching conventions –the UNFCCC and the UNCCD. It is in this light that the NCSA Project therefore is seen as an important opportunity – for its provides a framework that integrate and mainstream the needs for addressing the capacity requirements for all three Conventions in a more complementary and benefit-sharing manner.
19. This report therefore provides an analytical assessment of the strengths and weakness of Samoa's existing capacities; opportunities to improve capacities; important constraints in capacity building efforts; and as well as needed capacities to implement the country's outstanding obligations to the CBD.

2. METHODOLOGY DESCRIPTION

20. The assessment of capacities is structured according to the following three levels of capacity building and eight selected country priorities of biodiversity conservation work in Samoa, and the country's obligations and commitments to the CBD.

Levels of Capacity Building:

- Systemic,
- Institutional, and

- Individual

Country Priorities for the CBD:

- Management of Protected Areas;
- Management of Species & Habitats of High Global Value;
- Marine and Coastal Biodiversity;
- Forest Biodiversity;
- Management of Invasive Species;
- Bio-safety;
- Access to Genetic Resources and Benefit-sharing & Protection of Traditional Biological Knowledge;
- Agro-biodiversity;
- Inland Freshwater Biodiversity; and
- Mountain Biodiversity

21. Capacity assessment is carried out in two sessions of analysis: The first is an analysis of strengths and weaknesses or gaps of relevant existing capacities; the root causes of capacity gaps; and the opportunities and threats or constraints in the way forward for transforming weaknesses into strengths. This is followed by an analysis and recommendation of priority actions for addressing capacity gaps.

22. The assessment of capacity strengths and weaknesses was also carried out in relation to the following key attributes or frameworks for capacity building which are highly relevant to Samoa as a Contracting Party of the CBD:

- Reporting
- Policy measures
- Research and monitoring
- Training and education
- Public awareness and information sharing
- Stakeholder participation
- Financial mechanisms

23. The assessment activities were carried out by a multi-stakeholder team of technical experts who represent key national stakeholders of biodiversity conservation work in Samoa during a series of workshops and meetings which were organized by the team and the NCSA Coordinator. A major resource in the exercise was the CBD stock-taking report of national capacity building actions for biodiversity work in Samoa that was compiled and coordinated by the NCSA Coordinator (Refer to [Appendix 5](#)).

3. CBD IMPLEMENTATION FRAMEWORK

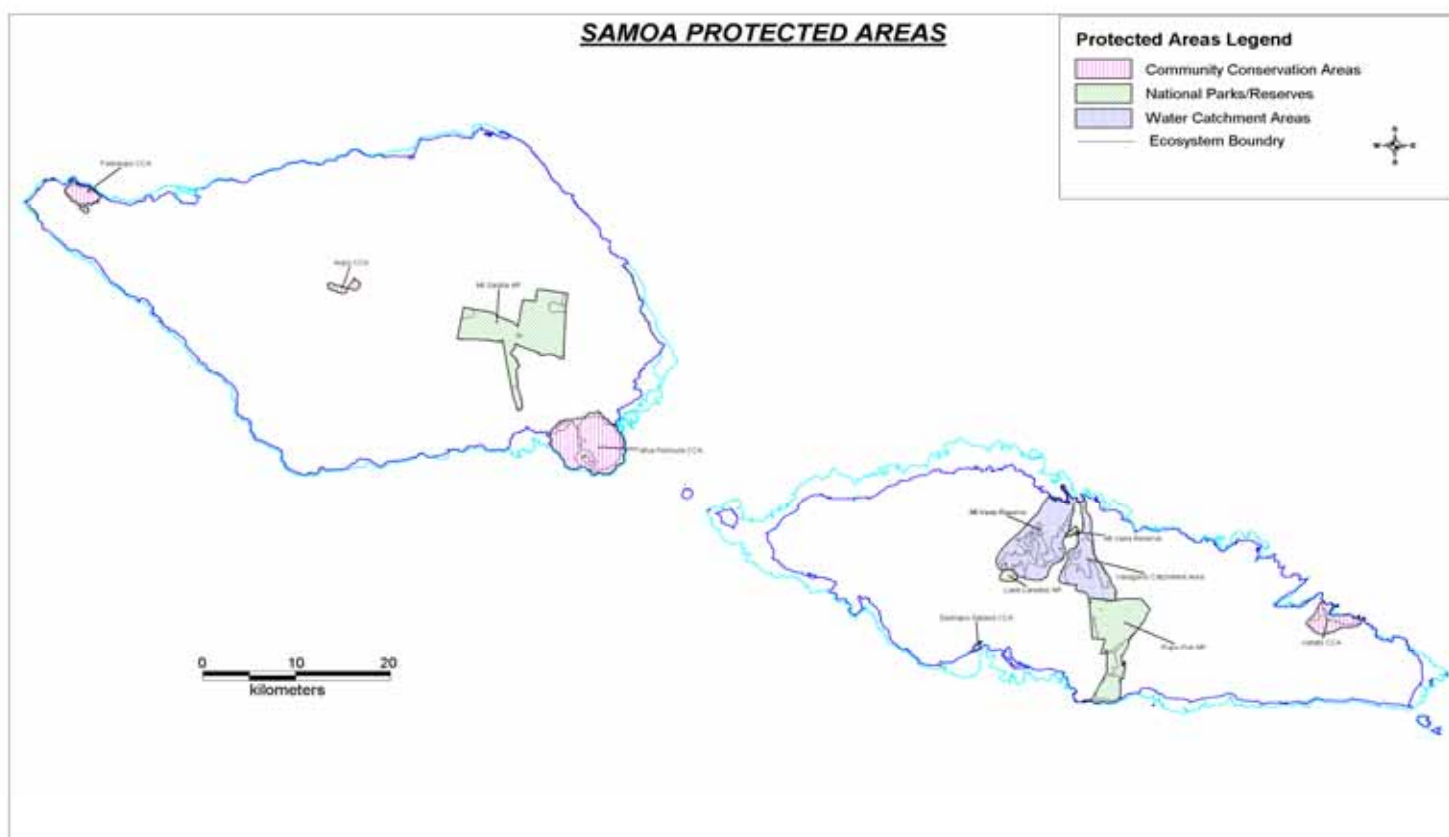
24. This section outlines the matrix of national and regional frameworks Samoa operates, for implementing its obligations to the CBD. The full list of these frameworks is in the stock-taking report on Samoa's implementation of the CBD (Refer to [Appendix 5](#)).

3.1 National Implementation Frameworks

25. The following are key components of national frameworks in place for implementing the Convention on Biological Diversity in Samoa:

- Legislations which covers the establishment of protected areas, the protection of wildlife, conservation of components of terrestrial and marine resources, and the establishment of national and local institutions for monitoring and enforcing these measures.
- The overarching policy framework the NBSAP, and other relevant policies (on forestry, biodiversity and watershed) for the management of Convention related biodiversity work in the country.
- The established system of state and community managed protected areas, which now cover more than 11% and 5% respectively of the country's terrestrial and marine (EEZ) territories.

Map 3: Samoa's Protected Areas



- Thirty percent 30% of the country's biodiversity (largely of bird species) and two key sites on its major islands of Savaii and Upolu of high global value which require urgent conservation action.
- Existing national and local institutions with legal mandates for the management of biological resources.
- National and regional educational, media and public awareness programs for building individual and collective capacities for biodiversity management.
- Available opportunities for the training of personnel of national conservation stakeholders and populations of local conservation communities in specific skills of biodiversity management.

26. The over-arching national policy framework for implementing the CBD is the NBSAP. Created through a multi-stakeholder process its eight thematic areas cover most of the key issues of the CBD articles and work programs. Next in importance to the NBSAP are the national biodiversity, forestry, and watershed management policies and the recently developed invasive action plan.
27. Key legislative frameworks include acts for the development and conservation of forests, the establishment of state-owned parks and reserves, the management of watershed areas, the development of fisheries, and regulations for the protection and sustainable use marine and terrestrial wildlife resources. Other relevant legislations deal with governing structures such as the village councils²⁴ who have major roles in the conservation and use of biodiversity components.

3.2 Regional & International Implementation Frameworks

28. Samoa is an active party in the development of regional frameworks for biodiversity conservation; in fact the key convention for the establishment of the South Pacific Regional Program was signed in Apia, Samoa (Refer to Table 1)
29. The following are the main components of regional frameworks for biodiversity work for which Samoa is an active participant:
 - All the regional conventions listed in the report which both directly and indirectly relates to enhancing conservation works of independent states and colonial territories in the Pacific.
 - The overarching strategy (AS) and other relevant strategies for the management of biodiversity issues in the Pacific.
 - The roles of the work programmes of regional institutions such a SPREP, FFA, SPC, etc. which assist in the mobilization of needed resources to assist Pacific countries in their biodiversity conservation and sustainable use issues.
30. Samoa is also a Party to other key international agreements and conventions which are highly relevant to its biodiversity work (Refer to Table 1)

²⁴ This refers mainly to the Village Fono Act 1996 which legally sanction the authority of the Traditional Village Chiefly Councils for administrating the affairs of their respective village communities.

Table 1: Multilateral Environment Agreements Samoa is a Party

Pacific Developing Member Countries	Global Agreements / Conventions															Regional Agreements / Conventions					
	Ramsar Convention	World Heritage Convention	MARPOL	CITES	Convention of Migratory Species	LINCLOS	Ozone Layer (Vienna) Convention	Montreal Protocol	Basel Convention	Rotterdam Convention	Convention on Climate Change	Kyoto Protocol	Convention on Biological Diversity	Cartagena Biosafety Protocol	Convention to Combat Desertification	POPs Convention	Waigani Convention	SPREP Convention	Regulation of Whaling Treaty	Apia Convention	Pacific Tuna Convention
Samoa	®	®		®	®	®	A	A	A	A	®	®	®	®	A	®	®	®		®	S

Legend:

® - Ratified

S- Signed

A - Acceded

4. COUNTRY LEVEL PRIORITIES IN RELATION TO THE UN-CBD

31. The thematic areas of Samoa's Biodiversity Strategy²⁵ (NBSAP) remain the country's capacity building priorities for meeting her obligations under the CBD, i.e. – mainstreaming biodiversity; species and ecosystem management; community development; access to genetic resources and benefit-sharing; bio-security; agro-biodiversity and financial mechanism.
32. The eight priority issues selected for biodiversity conservation capacity building assessment include the main biodiversity work of the CBD that were extensive pursued by GoS and its local conservation communities in the last three decades which now require urgent capacity strengthening; key issues of critical importance to the country's economic development; and the country's outstanding obligations under the CBD, which now require urgent capacity building efforts.
33. The first three priority issues are: the management of protected areas, indigenous species and native and habitats of high global value; and the management of invasive species. The management of invasive species is of critical importance to country's agriculture and food security. The last five priority issues are: biosafety; ABS&PTBK; inland freshwater biodiversity, mountain biodiversity; are key areas of the country's outstanding obligations under the Convention.

4.1 Institutional Framework

²⁵ Samoa's NBSAP was formulated in a prolong multi-stakeholder consultation process from 1999 until it was approved and officially launch by GoS in 2001.

34. The country's institutional framework for implement the CBD consists of the following key governing structures:
- The Convention's National Focal Point which represents the country in the CBD's main governing body the COP – the Ministry of Foreign Affairs & Trade
 - The Convention's National Implementing Agency which coordinate and facilitate country actions for meeting its obligations under the CBD – the Ministry of Natural Resources, Environment & Meteorology. In many respects, MAF is also extensively engaged in work which directly contributes to the implementation of the country's commitments to the CBD.
 - A National Multi-Stakeholder Committee which provide technical advice and mobilizes resources to assist the implementation of the country's biodiversity work – the National Biodiversity Strategy & Action Plan Stakeholders Committee
 - A National Executing Agency which manages external development aids provided to support the implementation of Samoa's biodiversity capacity enabling activities, and approves national finances for biodiversity work – the Ministry of Finance
 - Local Implementing Agencies which directly manage the conservation and use of most of the country's biological resources – the Village Chiefly Councils
 - National Biodiversity Conservation Stakeholders with significant and relevant involvement in the management and development of the country's biodiversity: GoS line ministries and corporations – AGO, MAF, MCIL, MOH, MWCSO, MWTI, SLC & SBEC. The existing non-governmental organizations – SUNGO, NCW, OLSSI, METI, FSA, TSA, WDCO, & WIBDI. National academic institutions – NUS & USPA, and private sector organizations – DBS, SBEC & SCC.
35. Important multi-stake holding structures and processes were established in the last decade for implementing biodiversity work in the country. The most important of all is the NBSAP Steering Committee which implemented the formulation and approval of the country's NBSAP from 1999 to 2001.
36. The implementation of obligations is directly under governmental agencies for a small percentage of the country's terrestrial area on state-owned lands, and under the authorities of customary landowners – Village Chiefly Councils – for 80% of the country's terrestrial territory under customary land tenure.
37. In the case of marine and freshwater resources, the national government by law owned all of the country's marine area or EEZ from the mean high-water mark and bodies of freshwater in the country – thus giving the government direct authority to implement its CBD obligations on the total marine territory and on freshwater bodies – lakes, swamps, marshes & streams – of the country. However, this authority is largely exercise through the Village Chiefly Councils for freshwater bodies on communal lands and coastal marine areas.
- 4.2 Convention Objectives and Requirements (Provisions of the UN-CBD)
38. The main purpose of the CBD is to reduce or reverse the loss of the planet's biodiversity through effective conservation; sustainable use and fair benefit sharing measures. These measures are articulated

in articles 2 to 21 of the Convention which are binding commitments and obligations on the Convention Parties.

39. To assist the Parties at achieving a more strategic and focused implementation of the Convention the Conference of the Parties has initiated thematic programs of work in seven priority areas of biodiversity work: agricultural biodiversity; forest biodiversity; inland water biodiversity; marine and coastal biodiversity; dry land and sub-humid land biodiversity; and mountain biodiversity. More recently, the Conference of the Parties has developed an Island Biodiversity Program of Work which island states such as Samoa are lobbying to become the over-arching framework, for the small island states' implementing and reporting requirements for the Convention.
40. In more recent years the Conference of the Parties has adopted the Cartagena protocol for progressing Parties' measures for implementing obligations on handling and use of biotechnologies and their products. Recently also, in relation to the UN Millennium Development Goals, the Convention's Conference of the Parties has adopted a 2010 global target and a framework of goals and targets to clarify and assess progress toward achieving this target²⁶.

²⁶ Decision of the CBD Conference of the Parties decision VI/26 adopted a 2010 global target and decision VII/30 established a provisional framework for goals and targets in order to clarify the 2010 global target and assess progress towards achieving it. Parties and Governments were invited to develop their own targets within this flexible framework. Please refer to the Samoa's Third National Report 2005 to the CBD pages 8-54 for full list of goals and targets and assessment of Samoa's relative position to these requirements.

4.3 Level of UN-CBD implementation in Samoa

41. Samoa has done extremely well in its efforts to implement its commitments and obligations under the UN-CBD. The following historical timeline shows a distinguish record of milestones achieved by Samoa in biodiversity conservation work within and beyond its borders, which demonstrates its high level of commitment to the biodiversity conservation prior to and when the CBD when the latter came into force:

1961 – 1970:

- 1965: Animal Ordinance 1965
- 1967: Parliament passed the Forest Act 1967
- 1967: Creation of the Division of Forestry under the Ministry of Agriculture
- 1967: Development of Exotic Forest Plantations in Savaii and Upolu on both State-owned and Customary-owned Lands
- Establishment of the Largest Logging & Milling Company at Vaitele for logging and milling in Upolu

1971 – 1980:

- Establishment of the Largest Logging & Milling Compancy at Asau for logging and milling in Savaii
- 1974: Parliament passed the National Parks & Reserves Act 1974 for the establishment of parks and reserves for the general public's benefit.
- 1978: Establishment of the first national park in a small island state of the South Pacific the 'O le Pupu National Parks' from the ridge to the coast in central south of Upolu
- 1978: Establishment of the Stevenson Memorial Reserve 1978 at Vailima
- 1978: Establishment of one of the first marine reserve in a small island state of the South Pacific the 'Palolo Deep Marine Reserve' in 1978 at Matautu-tai Apia
- 1980: Further establishment of several private logging companies for logging and milling at Gataivai, Taga, Pu'apu'a, Aopo, and Sasina – Bluebird Lumber, Tui Vaai Corporation, Strickland Brothers

1981 – 1990:

- 1988: Parliament passed the Plant Act 1984
- 1988: Parliament passed the Fisheries Act 1988
- 1988: Establishment of the first Community-based Conservation Area CCA in the South Pacific and Samoa the 'Falealupo Rainforest Reserve' in 1988 and the first ABS&PTBK covenant between an outside bio-prospecting party and a traditional indigenous village community at Falealupo.
- Establishment of the second CCA in Samoa the 'Tafua Peninsula Rainforest Reserve' in 1990 under a similar covenant between an outside party (SNF) and the villages of Fa'ala, Tafua & Salelologa in 1990.
- 1989: Parliament passed the Lands, Surveys & Environment Act 1989 for addressing pressing environment and conservation issues (mainly climate change, waste management, and biodiversity conservation).
- 1989: Creation of the first Government institution for environmental protection and conservation works the Division of Environment & Conservation and the Department of Lands, Surveys & Environment

- 1990: Destruction of Samoa's marine and terrestrial biodiversity by Cyclone Ofa in February of 1990
- 1991 – 2000:
- 1990-1991: The Terrestrial Ecological Mapping of Samoa implemented by SPREP and the University of Hawaii
- 1991: The destruction of Samoa's marine and terrestrial resources by Cyclone Val in December of 1991 (another short cyclone spell in 1995)
- 1991 – 1992: The National Ecological Survey of Coastal Lowland Forests of Samoa
- 1991: The establishment of first key environmental and conservation NGOs in Samoa – the 'O le Siosiomaga Society Inc.' in 1990
- 1991: The establishment of the second environmental and conservation NGO in Samoa - the 'Faasao Savaii' in 1991
- 1992: Samoa endorsed key international agreements proclaimed in the First Earth Summit at Rio de Janeiro – UNFCCC, CBD, Forest Charter, Earth Charter & Agenda 21 for Sustainable Development
- 1992: The establishment of the third environment and conservation NGO in Samoa – the 'The Natura Society Inc.'
- 1993: Cabinet approved the National Environmental & Development Strategies which 'biodiversity conservation' is one of the main targetted area
- 1994: The Manumea Conservation Campaign for the promoting the conservation of the tooth billed pigeons and Samoa's rainforests through educational, media and public awareness campaigns
- 1994: Samoa ratified the Convention on Biological Diversity
- 1994: Establishment of the First National Biodiversity Database of Samoa (this was destroyed in the later years)
- Recommended to start here:
- 1994: Samoa became an active participant of the South Pacific Biodiversity Conservation Programme - SPBCP – with the establishment of Sataoa-Sa'anapu Mangrove Conservation Area and the Uafato Coastal Rainforest Reserve
- 1995: Cabinet approved the Fisheries Regulation 1995 on limits to fish catches sizes and environmentally sound and sustainable fishing practices
- 1995: Start of the Village Fisheries Reserves Program with the establishment
- 1995: Year of the Turtle for the Conservation of the Sea Turtle in the Pacific region
- 1997: The National Ecological Survey of Upland Forests of Samoa
- 1998: Start of Samoa's Sustainable Indigenous Forest Utilization Program at Samalaeulu Savaii
- 1998: Samoa submitted its First National Report to the CBD
- 1999: The establishment of the fourth environmental and conservation NGO in Samoa – the 'Matua i le oo Environment Trust'
- 1999: Start of national stakeholder processes for the formulation of Samoa's Biodiversity Strategy & Action Plan
- 1999: Start of the Marine Protected Area Program at Aleipata and Safata districts of Upolu island

- 1999: Drafting of a Bio-prospecting Bill; institution of a DLSE bio-prospecting policy and the establishment of a National Herbarium at NUS as outcomes of ABS&PTBK issues raised by national stakeholders in connection with flora researches carried out by Japan's Nihon University and the National University of Samoa and the NBSAP formulation process
- 2000: Assessment of capacity needs of Samoa for meeting its obligations under the UNFCCC, CBD and UNCCD under the GEF-UNDP Capacity Development Initiative Program

2000 – 2005:

- 2001: First Economic Valuation of Marine and Forest Resources of Samoa
 - 2001: Cabinet approved Samoa's NBSAP
 - 2002: Samoa submitted its 2nd National Report to the CBD
 - 2002: Samoa become a key participant of the Seventh Pacific Nature Conservation Conference in the Cook Islands
 - 2003: Samoa established its third National Park and first Ramsar Convention site 'Lake Lanoto'o National Park'
 - 2003: DLSE became MNRE
 - 2003: National Capacity Needs Assessment on ABS&PTBK
 - 2003: Establishment of Samoa's Biodiversity Clearinghouse Mechanism
 - 2004: Samoa established its fourth National Park and first on the island of Savaii the 'Mauga o Salafai National Park'
 - 2004: Samoa ratified the Ramsar Wetland Conservation Convention
 - 2005: MNRE became MNREM with the addition of the Division of Forestry and Division of Meteorology that were once divisions of the Ministry of Agriculture
 - 2005: Samoa ratified the CITES – Convention on International Trade on Endangered Species
 - 2005: Samoa ratified the CMS – Convention on Migratory Species
 - 2006: Samoa submitted its 3rd National Report to the CBD
42. The period (2000-2005) of Samoa's third national report to the Convention has seen a continuation in the improvement of the health of the country's terrestrial and inshore marine ecosystems, since the severe damage caused by cyclones of the '90s and 2004. Widespread recovery of forest areas is evident and only a few sites were set back by Cyclone Heta in January 2004.
43. Samoa has at this stage a detailed knowledge of the best lowland and upland ecosystems remaining, based on surveys in the 1990s and more recently. Some of these key areas are either included in some of the country's established protected areas or are being proposed under various Governmental programs to be included under some form of protection.
44. A significant addition to protected areas systems on terrestrial and marine resources have occurred in the last ten years and the focus of forest development has shifted from the development of commercial plantations using exotic species, to watershed management, community forestry and sustainable indigenous forest development. However unsustainable logging has continued in some of the best remaining areas of primary lowland forest on Savaii. The annual harvest of indigenous logs was

expected to reach 12,000 cubic meters in 2004/05, similar to the previous two years, and it was recognized that there was a sustainability issue due to diminishing area of harvestable trees.

45. In the marine environment there is still some concern about the depletion of inshore fish stocks through over-fishing and the use of destructive fishing methods. However the past few years have seen very significant developments through two projects aimed at empowering local communities to manage this resource. The Samoa Fisheries Project, implemented by Fisheries Division with AusAID support, has assisted over 80 village communities to develop Fisheries Management Plans and 62 of these have set aside parts of their lagoons as reserves. An IUCN-supported project managed by the Division of Environment and Conservation is working with Aleipata and Safata Districts on the management of two Marine Protected Areas based on agreed plans.
46. The offshore tuna fishery is a major contributor to the economy and a Tuna Management & Development Plan was launched in 2005 to develop this in a sustainable way. Samoa has also participates in the Global Coral Reef Monitoring Network and also monitors periodic coral bleaching events.
47. Freshwater ecosystems have yet to be surveyed in detail. Samoa's project within the SPREP-managed International Waters Program is working with two villages, Lepa and Apolima, to improve their water supplies by better management of water catchments. A national Rural Water Supply project is underway.
48. Significant steps have also been taken for meeting obligations under other related CBD protocols and conventions with the ratification of the Cartagena Protocol for the safe handling and use of biotechnologies and biotechnological products or Biosafety issues and the ratifications of two other major biodiversity related conventions the Ramsar and CITES in 2004 and 2005 respective. A National Biosafety Framework policy was approved in 2005.
49. An increased effort has been put into surveys and monitoring of threatened species. A re-survey of nesting hawksbill turtles has been completed and a detailed study of two birds, the tooth-billed pigeon and the giant forest honey eater²⁷ underway. A planned program to eradicate Pacific rats from two offshore islands should benefit a variety of rare birds including the friendly ground dove. In the marine sector there are programs to re-establish giant clams as a food source.
50. Samoa ratified the United Nations Framework Convention on Climate Change in 1994 and has recently completed a National Adaptation Program of Action (2005) including a vulnerability study. This identified the country's vulnerability with 70% of the population and infrastructure located on low-lying coastal areas. A National Coastal Infrastructure Management Strategy has been commissioned through the World Bank funded Infrastructure Asset Management Project and two pilot projects established on adaptations in coastal and river sectors.
51. In spite of all these achievements there are still five key outstanding areas or priority issues of the country's obligations and commitments, which are yet to be effectively addressed²⁸. Even for what has

²⁷ First Quarter Report October – December, 2005, of the Government Development Project 'Saving the Ma'oma'o and Manumea' funded by ARNHP.

²⁸ As discussed in first three paragraphs of this chapter, these five priority issues are: biosafety, ABS&PTBK, inland freshwater biodiversity and mountain biodiversity.

been achieved under past implementation, major capacity building is required to strengthen and sustained these important achievements²⁹.

52. An in-depth examination of the strengths, weaknesses, and opportunities for strengthening further existing capacities in these eight capacity building priority areas will clarify a strategic way forward to improve the country's implementation of the CBD.

5. ANALYSIS OF CAPACITY STRENGTHS, WEAKNESSES, ROOT CAUSES OF WEAKNESSES, OPPORTUNITIES & CONSTRAINTS

53. This section outline the key findings from the analysis of the strengths, weaknesses or gaps, root causes of weaknesses, of existing capacities, and opportunities and threats or constraints for addressing the root causes of capacity gaps.
54. The analysis is done for each of the eight capacity building priority issues identified Samoa's implementation of the CBD. It is structured into three capacity building levels – systemic, institution, and individual. It was also conducted with respect to following seven capacity building areas, for improving the Parties implementation of obligations and commitments under the CBD – Reporting; Policy Measures, Research & Monitoring; Training and Education; Public Awareness & Information Sharing; Stakeholder Participation; and Financial Mechanisms. Details of these analyses are tabulated in Appendix 1.

5.1 Management of Protected Areas

Strengths Analysis

55. The country has achieved significant experience and commitment to the establishment of protected areas of both state-owned and community managed which now covers about 11% of its total terrestrial territory and 5% of its total marine territory or EEZ. It has also enacted definite legislations and has set out various relevant policies for protected areas and the conservation of biodiversity, under which it has established an expanding system of government and non-governmental organizations with mandates and extensive programs, for the management and the promotion of the sustainable use of biodiversity. These organizations and several indigenous village and district communities throughout the country have gained important and useful knowledge and experience during the last twenty years of protected area work. In general, the country's the priority areas for protection have all been amply identified, a significant size of which in terms of terrestrial area, are now included in the established protected areas.

Weaknesses/Gaps Analysis

56. Much of the established protected areas lack effective management and improvement, in order to prevent and remove human and natural threats affecting them, and to realize the full potentials of services these sites can provide, both for the conservation of indigenous biodiversity, and the enhancement of other social and economic activities, which can appropriate take place in there. Therefore threats such as invasive species and extraction of wildlife continues to affect most protected

²⁹ Ibid., these achievements are the three priority issues extensively pursued by the country of protected areas, species and habitat of high global value management, and the management of invasive species.

areas, and little has been done to restore their biological components, impacted by recent natural disasters.

57. Unlike state-owned protected areas, which enjoy some degree of law enforcement, most of the community managed areas depends on the prolong and difficult process of community consensus building, to upkeep the enforcement of rules and regulations for their protection – a delicate situation that has not endure in most of these areas. Moreover while there’s recognition of the fact that future extension of protected areas will be on communal lands, there’s been no long term plan in place to address this issue.

Root Causes Analysis

58. Basically there is a very small pool of individuals mostly staff of national organizations, with experience and skills relevant to the management of protected areas, which they have largely gained during many years of on the job training and practical initiatives.
59. Few of these groups are directly involved in protected area management, the rest with a range of other responsibilities beside this work. Thinly spread over a range of many activities, this small pool of individuals can not provide for much of the management needs of existing protected areas.
60. For most of the conservation communities or village communities with terrestrial and marine protected areas, they lack the knowledge and resources to systematically make and implement plans for the management of their sites, much less to mobilize the resources they need. Even efforts to empower them in the past have not generally endure or were incapable of addressing all pertinent technical, social, environment and economic issues, related to the management of their areas.
61. In spite of the extensive media promotion of Samoa’s natural features as an important element in the tourism industry, national development planning have not seriously considered the potential contributions protected areas may have on the country’s economy. As such the needs of these sites have not been sufficiently addressed in annual government budgets, and external development aid arrangements.
62. The absence also of definite plans for improving the management and development of these sites, is a situation that certainly has not progress forward their improvement and does not encourage the interests of potential donors to their needs.

Opportunities & Threats/Constraints Analysis

63. The fact that the national government and village communities have continued to extend protected areas on lands under their respective jurisdictions, is in itself an important opportunity for consolidating protected area systems in Samoa, that must be seriously considered for strengthening the implementation of the country’s obligations under the CBD.
64. In spite also of failures to sustain the empowerment of most conservation communities to a level of self-sufficiency in the sustainable management of their resources, these communities have the largest pool of untapped human potentials with some experience in conservation work, which needs to be revisited with more effective capacity building approaches. This situation is also critically important for the fact that future extension of priority areas for protection in the country, will have to be established on most

of these communities lands or with their full cooperation (as in the case of marine protected areas), where these priority areas are located.

65. The most critical constraint for protected areas is the lack of priority accorded to them in the government and conservation communities' allocations of human and financial resources for economic development. This means that any improvement for protected areas will for some time depend on funds and expertise from bilateral and multi-lateral aids.

5.2 Management of Species & Habitats of Global Value

Strength Analysis

66. Samoa has a significant level of species and habitats of high global value which require urgent priority conservation and sustainable management efforts. Current legislations and national policies provide for banning the hunting of birds and bats; limiting of fish and shell fish sizes; protection of turtles, sharks and cetacean species; and banning of illegal and destructive methods of fishing. Some of the key habitats for priority conservation are already included in the country's established protected areas.
67. There is a small pool of experienced and knowledgeable individuals in species and habitat management; most of them are in national and regional organizations. A wealth of data and information are in place from major national ecological surveys and individual studies in the last decade and earlier years of the last century, which provide a good description of the habitats and some of the key species for priority conservation. There also exist among indigenous peoples of local communities' valuable traditional biological knowledge and practices, which can contribute to the effective management of natural resources.
68. As in protected area management, some key national organizations, mostly of the government and several conservation communities have acquired some hands on experience and skills in species and habitat management.

Weaknesses/Gaps Analysis

69. Legislations and policies have not adequately addressed the different conservation status and needs of species and habitats. For instance, for bird species there are several conservation levels, such as abundance, vulnerability, critically endangered and near extinction, which are very important in the formulation of policies for their protection.
70. Monitoring and law enforcement for the protection of wildlife is very weak throughout the country. For instance the hunting of pigeons, destructive fishing and illegal logging are still practiced in various parts of the country. There is a huge gap in individual capacities in terms of expertise in specific areas of species and habitat management, such as botany, biology, ecology, taxonomy, etc., who can provide the needed research, monitoring and technical management services.
71. Existing valuable data and information on species and habitats especially in the government service have not been widely disseminated or used by the public let alone by the conservation communities. Moreover most of these data are too technical and incomprehensible to local conservation communities. On the other hand the potentials of traditional biological knowledge have not been sufficiently

appraised and incorporated in the management of species and habitats. Major information and data gaps also exist in freshwater species and invertebrates.

72. In spite also of the increase in protected areas, key sites of habitats of priority conservation status are not protected yet, some have been extensively altered by human activities, since they were identified and ranked more than thirteen years ago. For instance the Savaii lowland and upland forest, a global hotspot for conservation is yet to be under some form of protection.

Root Causes Analysis

73. The general public and national policy makers are not fully informed of the different conservation status or global conservation values of species and habitats. This is due in part to the lack of awareness raising, using the potential of available means such as the media, to familiarize them with these important specifics, and also the lack of information integration and sharing among national holders of valuable information. In terms of the lack of appraisal of traditional biological knowledge in national policies and conservation efforts, holders of this knowledge are not fully engage in policy formulation and conservation work.
74. For the lack of experts in specialized fields, this is due in part to the fact that most of the training in these capacities is on the job, and with individuals with wide ranging administrative responsibilities which too often lacks time and resources to fully commit to the required technical services. Moreover, the existing formal education and training – primary, secondary and tertiary – lacks students progressing along scientific studies that would lead to these fields of expertise.

Opportunities & Threats/Constraints Analysis

75. The current trend of multi-stakeholder policy formulations is a huge opportunity to raise integrated stakeholder efforts into more serious agreements that will enable them to rapidly access and share each others data and information, which can improve and strengthen the scope and effectiveness of policies and legislations for species and habitat management. The challenge is establishing fair and equitable formal basis for developing and sharing information together, among different stakeholders, especially between those of different sectors, with varying needs and priorities.
76. The existing formal education networks of schools and institutions of primary, secondary and tertiary levels, is an important potential resource for the long term development of experts in the specialized fields, now needed to improve the management of species and habitats. The challenge is the encouragement of a strong culture of scientific interests and studies from as early as the primary levels of education among the population, which will feed into the higher levels of education and career paths, individuals that will eventually increase the chances of available experts in the demanded fields of species and habitat management.
77. The untapped potential of indigenous local communities and peoples such as their traditional biological knowledge and practices, are valuable assets which should be fully appraised and integrated into national conservation efforts. The challenge is finding effective means of fully engaging this resource.
78. The most important constraint in the management of species and habitats of high global value is the fact that most of this work will have to take place on communal lands where these resources exist. A significant level of commitment from the government and its external aiding partners is required for

much more long term and effective engagement with indigenous communities if this work is to be advanced into the future.

5.3 Management of Invasive Species

Strengths Analysis

79. There are extensive policies and legislations in place for the management of invasive species in the country. These cover measures for preventing the introduction and spread of new invasive species and provide the basis of national action for the control and management of existing invasive species in the country.
80. Existing governmental and regional organizations with facilities, experts and programs, for researching and implementing methods to control and management of invasive species – these have a wealth of information and valuable experience from completed eradication and control programs in the past.

Weaknesses/Gaps Analysis

81. There is a continuing introduction and spread of invasive species in the country due to the lack of knowledge and inadequate border or port of entry control measures and law enforcement.
82. The general public and most local peoples and communities are not aware of most of the invasive species and their impacts and have therefore lack the level of concern and commitment required from them to address invasive control and management issues. For instance some of the invasive plants are grown in gardens and use as landscaping plant materials for public places such as golf courses.
83. Available information also are mostly on the characteristics of species, but what is extremely lacking is their distribution and impacts, which are also important parameters for their effective control. Significant information gaps exist in marine and freshwater invasives.
84. Again only a small handful of people in the country have some expertise and direct involvement with invasive species, and training and education opportunities in the country are extremely lacking in this field.
85. Priority for control and management of invasive is for the promotion of agricultural development and has not been adequately linked to the needs of protected areas and the conservation of endemic species and native habitats.

Root Causes Analysis

86. Weak border control is due not only to lack of commitment of border control government staff, but more so on the lack of staff and equipments to adequately screen and quarantine all potential chances for the introduction of new invasive species, and the non-compliance of peoples with quarantine rules and regulations.
87. The continuing increase of spread of existing invasive species is due both to he lack of human and financial resources to manage them, but is also due to native species becoming invasive once their natural control are absence, such as the case of the Pacific ship rat's increase in the islands of Nu'utele and Nu'ulua, where it has escaped its natural predators on mainland Upolu.
88. Again the lack of public awareness and experts in this field is due to the untapped potentials of existing networks of media facilities and formal education schools systems, for raising public awareness and to

develop the country's resources of individuals with the knowledge, skills and commitment, for required technical services in this field.

89. Apart from the search for effective methods of invasive species control, the full potentials and impacts also of various methods, have not be adequately assessed especially their impacts on native biodiversity. For instance the biological control of the African snail using a type of red flatworm is suspected to also impact severely on endemic snail species.
90. The full potentials also of local village communities have not been fully utilized in this cause, and no definite plan is yet in place to empower and encourage these communities to carry out invasive management on their own lands.

Opportunities & Threats/Constraints Analysis

91. The most obvious opportunities are in the existing governmental and regional institutions in the country which have had some extensive experiences in invasive species work from the past. The work of these organizations needs to be consolidated and expanded to cover much of the country, through access to training and financial assistance from potential donors and through the strengthening of their collaboration in terms of information sharing and program implementation.
92. Again as many of the country's terrestrial territory are under the direct stewardship of customary landowners, much of the invasive work should therefore take place at this level. This is a huge resource that if properly empowered with education and resources, it can greatly advance the effective management of invasive species in the country.
93. The main constraints in invasive species work are:
 - Invasive work in the country have mainly focus on agro-biodiversity with less priority place on the protection and conservation needs of native biodiversity and habitats in the wilds;
 - The impacts of the various methods of invasive species control – for instance toxic chemical use may become the most effective means of control, but would impact badly on the environment and peoples' health; and even many of the biological controls, have not been fully assured of undesirable impacts on native biodiversity; and
 - The non-compliance of the traveling public with quarantine measures at border controls for whatever reasons.
94. The next five issues are all relatively new with some initial national attempts taken either by the government or individuals in recent years to address them. Therefore capacity building on these issues is obviously therefore minimal, and thus the results their capacity analysis is presented together as such. Details however which comprehend the potential progress of work on these issues is provided on the tables in Appendix 1.

5.4 Bio-safety

95. The national policy framework (NBF) for addressing biodiversity issue was only recently developed and approved last year (2005) through a multi-stakeholder process which did help increase the knowledge and commitment of national stakeholders to the formulation of actions for addressing bio-safety issues.

96. While awareness raising were carried out which have initially informed the general public on the nature of the issue, much more time and effort is required to develop the understanding, capacities and commitment of the peoples and their institutions to the implementation of the established national biodiversity framework.

97. As a relatively new issue, the challenge is getting the financial resources required to start the implementation of its national policy. An application for donor assistance in this respect is currently underway for submission to GEF-UNEP to secure funding for initial implementation of the NBF.

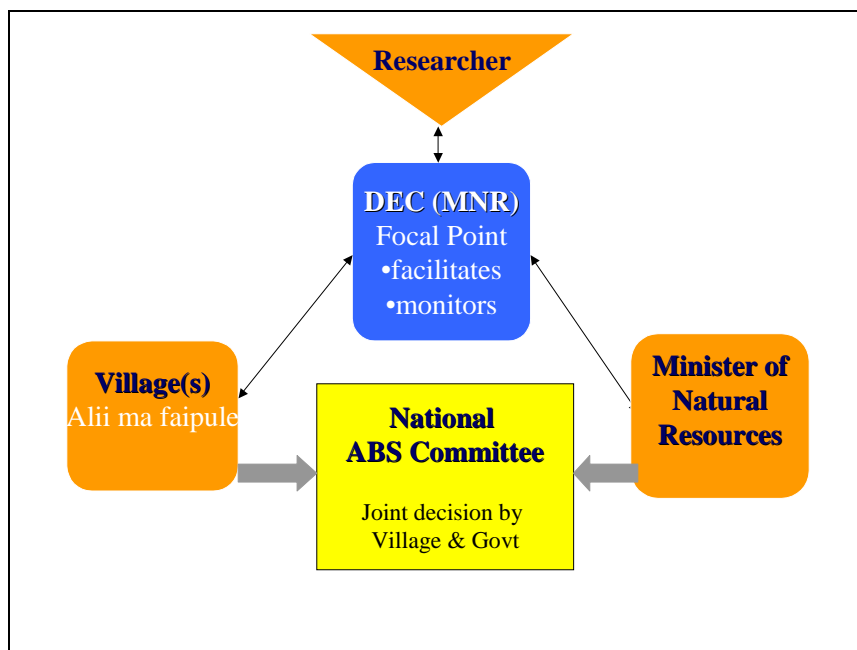
5.5 Access and Benefit Sharing & Protection of Traditional Biological Knowledge

98. In general there is no definite national policy framework in place for addressing issues of ABS&PTBK in Samoa, apart from experiences gained through incidences of bio-prospecting activities in the country within the last twelve years. These experiences have consequently resulted out of individual concern for the key governmental organizations to institute their own individual policies to partially address the issues.

99. Village communities strongly claimed the right to be key component of any national framework for addressing issues of ABS&PTBK, as in the proposed model below that came out of the national capacity needs assessment exercise of these issues in 2003.

100. Moreover while three government ministries have significant involvement in ABS&PTBK issues, none of them has an over-riding authority over the issues and hence collective cooperation for addressing the issues is very weak and opportunities therefore still exists for bio-piracy and abuse of the country's sovereignty over access and use of its genetic resources, and its people's traditional biological knowledge.

101. Below is a proposed model which encompasses a partnership between village and government to operate in accordance with *fa'a Samoa*. The process would be managed by a government focal point in DEC that would facilitate and monitor the operation of the scheme. Researchers would make applications to the DEC focal point. These would then be considered by a National Access and Benefit Sharing Committee that would provide the forum for consultation with key stakeholders in government, villages and NGOs. A consensus decision would then be made through this National Committee about the applications for access.



102. In spite of the lack of cooperation and commitment of key stakeholders to address the issues, local peoples and communities place a very high value on the country's genetic resources and their traditional biological knowledge. A regional project currently underway with funding assistance from GEF and co-coordinated by SREP and other inter-governmental organizations in the region, is an important opportunity for the country to undertake serious steps for establishing a definite national framework policy to address the issues.

5.6 Agro-biodiversity

103. While there is an extensive development of agro-biodiversity with the wealth of data, information, expertise and experience gained through it by the country's key governmental and regional organizations, there has been very little movement towards a more formal national policy, for the conservation and protection of these resources, except for national strategies that are in broad outlines, in the country's NBSAP.

104. This lack of attention to agro-biodiversity does not mean that there is no action on the ground that is relevant to the issue. In fact by virtue of continuing agricultural activities throughout the country for food and income that still maintain most of the country's native agro-biodiversity and Samoa participation through MAF in such regional programs as SPRIG and PGRC, it gives greater assurance of longer term maintenance of its agro-biodiversity.

5.7 Inland Freshwater Biodiversity

105. A definite and comprehensive policy and legislative framework is in place which provides also for the conservation of freshwater bodies and resources, however, much more efforts are required to establish baselines on the country's freshwater ecology and to develop strategies and policies for their conservation.

106. Apart from the largest water body in the country now under protection and as the country's first Ramsar Convention site – Lake Lanoto'o – the needs of other key priority freshwater areas for conservation have not been addressed, and the protection of biodiversity on water catchments on communal lands, is yet to be addressed.
107. Opportunities do exist from current externally funded projects to address these gaps, such as the GEF funded International Waters Program and the EU funded Water Sector Support Program each with strong components for the protection of freshwater ecosystems.

5.8 Mountain Biodiversity

108. This is another issue of outstanding obligations due to the lack of work at this stage to address it, apart from the inclusion of some of the key areas of the country's mountain biodiversity on the currently establish system of state-owned protected areas – mainly in the three National Parks of “O le Pupu Pu'e”, “Lake Lanoto'o” and “Mauga o Salafai” – and some areas under managed watersheds in Upolu.
109. The uniqueness and specific needs of mountain biodiversity is yet to be realized in current national policy and legislative frameworks.
110. Opportunities exists in the development of existing protected areas, currently approved externally GEF and EU funded projects, and as well as the currently proposed GEF funded project to not only address this issue but to more so increase the protection of key conservation priority mountain ecosystems.

6. RECOMMENDED PRIORITY ACTIONS

111. This section presents recommended priority actions to address the root causes of capacity building needs under each of the priority issues for improving Samoa's implementation of its commitments and obligations under the CBD.

6.1 Management of Protected Areas

112. The government and conservation communities should focus on mobilizing the human and financial resources required to improve the management of existing protected areas, and to extend protected areas into the remaining identified sites for priority conservation.

6.2 Management of Species & Habitats of High Global Value

113. In the short term, an intensive campaign of field survey is required to monitor and update the status of priority species and habitats for conservation, and increase public awareness and commitment to their sustainable management.
114. For the long term, strategies should be implemented to improve the development and increase the pool of Samoans with knowledge and training in the specialized fields that are now required in this area, through the country's network of formal education. This process will also benefit the other priority issues.

6.3 Management of Invasive Species

115. In the short term, priority actions should focus not only on the management of agricultural pests, but also their control in priority conservation sites, especially in the existing protected areas.

116. For the long term the work of existing organizations with involvement in invasive species work, should be consolidated and expanded.

6.4 Bio-safety

117. The main focus for bio-safety issues is the development of national capacities for implementing the established national bio-safety framework.

6.5 Access and Benefit Sharing & Protection of Traditional Biological Knowledge, Agro-biodiversity, Inland Freshwater Biodiversity & Mountain Biodiversity:

118. The above stated issues generally need the formulation of effective national policy and legislative frameworks to address their requirements – which should be the focus of their relevant national and local stakeholders - and using currently available opportunities.

7. CONCLUSION

119. This assessment has shown that Samoa was highly successful in the implementation of its obligations and commitments under the Convention on Biological Diversity, especially in the area of conservation policy and legislative frameworks, the establishment of protected areas, and the management of species (both endemic & invasive species) and habitats of global value. However, it is currently now need to increase capacities at all levels to improve the management of these achievements, and to immediately address its other outstanding priority issues, to fully progress forward in its CBD work.

APPENDIX 1: TABLES OF THE ANALYSIS OF CAPACITY STRENGTHS, WEAKNESSES, ROOT CAUSES OF WEAKNESSES, OPPORTUNITIES & CONSTRAINTS

1. Management of Protected Areas

<i>Systemic Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Legislative framework in place for the establishment and management of national protected areas (PAs) supporting community protected areas 	<ul style="list-style-type: none"> Continuing encroachment and extraction of wildlife in PAs Lack of legislative and policy monitoring & enforcement 	<ul style="list-style-type: none"> Limited human and financial resources to monitor and enforce national legislations and policies 	<ul style="list-style-type: none"> Training and financial opportunities do exist to implement regular monitoring and effective enforcement of legislations 	<ul style="list-style-type: none"> Low national priority on the development of PAs Non-compliance of individuals & communities Duplication of roles by collaborating organization
<ul style="list-style-type: none"> Continuing increase in the established PAs with 11% of terrestrial area and 4% of EEZ under different types of PAs³⁰. 	<ul style="list-style-type: none"> Continuing spread of invasive species and other threats into PAs No regular monitoring and effective management for most PAs 	<ul style="list-style-type: none"> Lack of human and financial resources to monitor and manage most PAs No effective appreciation of PAs in economic planning³¹ 	<ul style="list-style-type: none"> Untapped potentials of individuals and communities for improving the management of PAs Training and services can be accessed on reliable and proven methods for assessing the economic value of PAs or natural resources and integrating them into development planning processes 	<ul style="list-style-type: none"> Continuing severe natural disasters such as cyclones, coral bleaching, etc., lowers priorities on PAs in preference of urgent social & economic needs
<ul style="list-style-type: none"> Appreciation of the benefits and value of best conservation practices³² 	<ul style="list-style-type: none"> Encroachment and extract of wildlife resources from established No-Take Zones Most communities in priority conservation sites do not 	<ul style="list-style-type: none"> No effective services or mechanisms to promote and consolidate knowledge and skills of practical principles and practices of which harmonizes the conservation and 	<ul style="list-style-type: none"> Strong recognition of village councils' rulings and policies for the protection and conservation of heir resources There's a growing number of village who wants to develop 	<ul style="list-style-type: none"> Villages gives more priority to developments with immediate material benefits – such as tourism – than long term conservation

³⁰ Refer to **Map 3** of existing PAs in Samoa. Moreover under the recently established GEF-Samoa Small Grants Program, several villages are developing rainforest and marine reserves, such as the villages of Lailii and Ti'avea-tai which have started developing rainforest reserves under this program.

³¹ The first economic valuation of natural resources was carried out in 2000-2001 on forest and marine resources with some stakeholder training. Another training on economic valuation of natural resources methods was carried out in 2003 for staff of MNREM and a concept proposal is currently being formulated to seek funding for developing a national framework to integrate economic values of natural resources into development planning processes.

³² This refers to practices which restore and enrich biodiversity such as the establishment of 'no take zones' in village fisheries reserves and marine protected areas at Aleipata and Safata, where the villages have witness an increase recovery of fish and shell fish stocks and regeneration of coral reefs.

³³ Refer to footnote 23 above.

	commit to new sustainable resource use concepts and practices	development requirements	manage their own PAs ³³	
<ul style="list-style-type: none"> Extensive ecological information are in place from key studies on Samoa's terrestrial biodiversity in the last more than twenty years 	<ul style="list-style-type: none"> Very little of available information have been translated into effective management of PAs 	<ul style="list-style-type: none"> Little and weak mechanisms in place for effective information dissemination and use for the promotion and management of PAs 	<ul style="list-style-type: none"> Available extensive media, public awareness and education resources and networks throughout the country for promoting PAs and conservation 	<ul style="list-style-type: none"> Media, public awareness and education networks and resources gives more priority to economic and social development than conservation and PA development
<i>Institutional Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> National institutions are in place with definite mandates for the development and management of PAs 	<ul style="list-style-type: none"> Limited institutional services to resolve threats (exploitation, invasives & climate) on most of the PAs 	<ul style="list-style-type: none"> Little or weak institutional strengthening plan to expand and consolidate effective management of established PAs 	<ul style="list-style-type: none"> Development support are available for developing the degree of institutional framework require for the management of PAs³⁴ 	<ul style="list-style-type: none"> Funding assistance gives higher priorities for development needs than PAs and conservation needs.
<ul style="list-style-type: none"> Some village councils and non-governmental organizations have developed valuable experience and skills in PAs (CCAs) establishment and management in the past years.³⁵ 	<ul style="list-style-type: none"> No effective development and management system has endured in most of the established community owned PAs 	<ul style="list-style-type: none"> No effective capacity building plan was put in place for the effective long term management of community owned PAs. 	<ul style="list-style-type: none"> Most villages which have established PAs in the past have recently demonstrated a commitment to reactivate and continue their PAs New villages are interested in establishing their own PAs³⁶ 	<ul style="list-style-type: none"> The long term nature of benefits arising from conservation efforts makes it a lower urgent priority in institutional strengthening initiatives
<i>Individual Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> There is a pool of individuals in 	<ul style="list-style-type: none"> Current core group of 	<ul style="list-style-type: none"> Lack of an effective human 	<ul style="list-style-type: none"> There is an untapped 	<ul style="list-style-type: none"> Individual preference for

³⁴ Current national institutional strengthening program have largely focused on improving service delivery and performance of national institutions may not be able to provide for the need to significantly increase resources required to effectively manage existing and new PAs in the country in the foreseeable future. However, opportunities do exist with donors currently supporting effective capacity buildings for self-sustainable conservation initiatives.

³⁵ This refers to past and more recent CCAs established by NGOs and village councils such as the rainforest reserves at Falealupo, Aopo and Tafua peninsula in Savaii and at Uafato in Upolu.

³⁶ Refer to footnote 23 above.

national and local organizations who have had some experiences in the establishment and development of PAs in Samoa in the last thirty years ³⁷	experienced individuals can not cope with the management and development needs of most PAs <ul style="list-style-type: none"> • Very small pool of individuals with the specialized technical expertise necessary for improving PA management 	resources development plan (educational & training) in place to increase the level of expertise required to improve the management of PAs ³⁸	potentials of the population which can provide the human resources needed to expand and consolidate the management of PAs in Samoa	capacity building and services in economic and social development for immediate benefits and needs rather than the values of long term biodiversity management
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2. Management of Species & Habitats of Global Value

<i>Systematic Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> • Some relevant existing national legislative and policy frameworks for the protection of wildlife³⁹ • High level of species endemisms and existing habitats of high global value⁴⁰ 	<ul style="list-style-type: none"> • There is continuing exploitation of and impacts of threats⁴¹ on most endemic species and habitats of high global value which are largely in areas under customary landownership • Existing policies and 	<ul style="list-style-type: none"> • Lack of training, education and awareness on the needs and requirements of different global groupings and rankings of species and habitats • Lack of capacities to address underpinning governance issues for the conservation and 	<ul style="list-style-type: none"> • Existing conservation communities' experience and abilities that are useful for furthering an integrated management of species and habitats of high global value • Existing international and regional conservation 	<ul style="list-style-type: none"> • Local communities place low priority on conservation issues • Difficult international and regional donor agencies requirements delays urgently needed conservation and sustainable management

³⁷ This refers on the national level to MAFFM which from the sixties to the late eighties had the mandate to directly managed the country's then existing PAs then was transferred to MNREM in the nineties until now with additional state-owned PAs; and on the local level it refers to villages such as Uafato, Sa'anapu, Sataoa, Salelologa, Tafua, Faala and Falealupo which established the first community-based PAs from the late eighties to the nineties, the more than sixty villages which have established village fisheries reserves and the two districts of Aleipata and Safata which have established marine protected areas from the nineties until today. The experience, practices and lessons learned from these organisations and communities on PAs development is a useful resource of strengths and opportunities to further efforts for improving PA management in Samoa.

³⁸ There is an extreme lack of individuals with training and knowledge of PA management. For instance in MNREM only a handful have had some training related to terrestrial and marine reserves in fact only one staff has

³⁹ Animal Ordinance 1967, Plants Act 1984, Protection of Wildlife Regulations 1993 & 2004; NBSAP provisions under Thematic Areas 2 & 3 – Species Management & Ecosystem Management

⁴⁰ Overall about 25% of the plant species are endemic to Samoa and 32% endemic to the Samoan archipelago. Two sites of ecosystems which are global hotspots for priority conservation – central lowland and upland forests of Savaii & Aleipata district coastal islands of Nu'utele & Nu'ulua. Eight endemic bird species one of them the famous Tooth-billed pigeon refer to as the 'Little Dodo' of the world.

⁴¹ Anecdotal reports show that people still hunt wild pigeons and fruit eating bats in the villages and there has been no action by village authorities to curtail these practices in spite of the currently enforced regulations for the protection of wildlife.

⁴² Important considerations such as high global value and endemism are not sufficiently reflected in current legislations. For instance the two hotspots of high global value ecosystems – central Savaii rainforests and coastal islands of Aleipata – which require urgent and enduring conservation and protection is an important consideration that is not sufficiently reflected in existing legislations. Another example is the various global status of Samoa's endemic birds, some are 'critically endangered' compare to others that only 'vulnerable' yet this distinction is not made in the existing legislations or recent wildlife protection regulations.

⁴³ Besides our own SPREP, this also refers specifically to organisations such as Birdlife International, Conservation International, IUCN World Commission on Protected Areas, and others which have specific areas of conservation priorities they provide expertise and financial assistances. For instance Birdlife International deals mainly with the conservation of birds species, CI with hotspots of habitats of high global value and IUCN-WCPA with PAs. Effective engagement of these sources of assistance can enhance efforts to address the specific conservation status needs of species and habitats in Samoa.

	legislations do address the different global and national conservation priorities of species and their habitats. ⁴²	sustainable resources needs of species and habitats in communal land areas	organisations ⁴³ support for effective policy and legislative formulation	action <ul style="list-style-type: none"> Natural & human disasters
<i>Institutional Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Existing species and habitat information from extensive ecological surveys in the last thirty years and recent surveys by national and international experts⁴⁴. Strong traditions of biological knowledge especially on the use of plants and preservation of habitats⁴⁵ Regional, national and 	<ul style="list-style-type: none"> Limited use of available technical biodiversity data and information⁴⁷ Inadequate species and habitat management in most of the established PAs high global biodiversity sites under customary land tenure⁴⁸ Continuing degradations of key sites of significant global 	<ul style="list-style-type: none"> Lack of knowledge and skills to comprehend and use available technical data and information⁴⁹ Lack of effective promotion of information in formal education networks and public awareness opportunities⁵⁰ Lack of involvement of education, media and public awareness service providers in conservation work⁵¹ 	<ul style="list-style-type: none"> Undeveloped capacities of existing village governance⁵³ for biodiversity conservation and sustainable management work Untapped potentials of existing media, formal educational and public awareness networks and national programs for information sharing and training⁵⁴ 	<ul style="list-style-type: none"> Changing unsustainable traditional governing attitudes and practices takes time and generations to effectively take place

⁴⁴ Besides early researches on Samoa's ecology by Germans, English and US scientists from the late 19th century to the second half of the last century the major were carried out in the last ten years – the national lowland and national upland ecological surveys of the early and late nineties.

⁴⁵ Traditional biodiversity knowledge is a strong component of Samoa's culture – these include the knowledge and skills of traditional healers or taulasea, indigenous knowledge of species management and use and traditional measures such as taboos for on the use of certain ecological resources

⁴⁶ Refer to footnote number 30 above.

⁴⁷ While useful data and information are available from key organisations its not widely disseminated and appraised by most of the relevant national and local stakeholders of biodiversity work in the country, except for the few organisations who have developed these resources.

⁴⁸ Most of the country's terrestrial priority sites for the conservation of indigenous species and habitats of high global conservation value are on customary lands as approximately 80% of the country's lands are under customary land tenure. Refer to **Appendix ?** for the maps of priority sites for conservation identified in the two major national ecological surveys of the nineties. Even in the case of marine and freshwater habitats access to coastal marine habitats and most freshwater bodies is through the authorities of traditional village councils even though by law the government own resources from mean water mark and freshwater bodies.

⁴⁹ Comprehensive data and information some key ones in the latest valuable data set formats such as GIS mapping, spatial data and the like are only useful to a very small pool of individuals most in the governmental service with the knowledge and skills to use them. For instance at MNREM there exists land capability, landuse, forest inventory, and some key species GIS data. All of which are only useful to a handful of staff who are able to use them for monitoring and research purposes. There has been a real translation and sufficient utilization of these data sets' potentials in the formulation of policies, legislations, education and public awareness programs. This situation is more apparent in the case of local landowners who directly manages most of the country's terrestrial biodiversity resources.

⁵⁰ The school curriculum and course prescriptions for the main three levels of formal education system in Samoa – primary, secondary and tertiary have not fully utilized the available information and potential data resources available from key biodiversity conservation and resources use organisations such as MNREM and MAF.

⁵¹ Various independent or more autonomous media outlets are now available in Samoa in terms of television stations, radio stations and newspapers which have not been adequately utilized for propagating public awareness and education on biodiversity issues. Government ministries have limited staff and resources to utilize this opportunities but there is available sources of funding from international to regional and national sources to support effective media conservation activities. This implies the need to develop the knowledge and commitment of these potential outlets for promoting conservation and environment messages that would both benefit the public and themselves.

⁵² Integration of knowledge and information available among stakeholders of biodiversity work is one of the most important process required for effective management of the country's endemic species and habitats of high global conservation value. This issue is more that just the sharing and dissemination of information, but should develop further into the formulation of integrated systems on the state of the country's biological resources and integrated approaches to the formulation and implementation of solutions to resources management challenges.

⁵³ This 'governance' refers to the peoples, governing structures and governing processes of traditional village communities.

⁵⁴ Three (3) national public television stations; several newspapers; 6 radio stations; full fledged network of state and private formal school systems covering the whole country can all contribute to an effective biodiversity information sharing and training activities if their knowledge and skills to undertake these beneficial actions are developed.

local organizations' experience from species and habitat management in PAs initiatives in the last thirty years ⁴⁶	conservation value through human activities, the spread of invasive species and natural disasters	<ul style="list-style-type: none"> Lack of integration of information sharing and use among key conservation organisations⁵² 		
<i>Individual Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> An existing pool of trained and committed individuals in key biodiversity conservation and resource management national organisations A pool of local conservation communities with experience from gained within the past two decades of community conservation area efforts 	<ul style="list-style-type: none"> Weak individual biodiversity conservation initiatives and limited individuals with knowledge and training in key technical and policy areas of species and habitat management work Effectiveness of existing individual initiatives is weakened as the limited pool of able individuals are thinly spread over the increasing scope of required work 	<ul style="list-style-type: none"> Lack of effective formal, nonformal and information education and training programmes on key technical and policy aspects of biodiversity conservation and resource management work Lack of continuing training and education to increase the knowledge and upskill local conservation communities 	<ul style="list-style-type: none"> Existing network of formal primary, secondary and tertiary education systems for developing and increasing the pool of knowledgeable and trained individuals for both general and specific biodiversity work Increasing international, regional and national funding and expertise assistance and learning networks to train and build individual capacities 	<ul style="list-style-type: none"> The rapid increase in economic development priorities of education, media and public awareness service providers can lower priorities for biodiversity conservation and resource management needs

3. Management of Invasive Species

<i>Systemic Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Existing policy and legislative frameworks in place for the prevention, control and management of invasive species⁵⁵ 	<ul style="list-style-type: none"> Weak enforcement of policies and legislations⁵⁶ – especially at various ports people and material entry into the country 	<ul style="list-style-type: none"> Lack of education and public awareness of and commitment to policies and legislations on invasive species among relevant national and local 	<ul style="list-style-type: none"> Existing international and regional assistance to finance and provide technical support for improving the enforcement of invasive species 	<ul style="list-style-type: none"> Non-compliance of individuals & communities with extensive quarantine measures to prevent introduction and spread of

⁵⁵ Key policy and legislative frameworks include the NBSAP 2001, the Biosecurity Act 2005, the Biosafety Regulations 2004, the Quarantine Act and Regulations and other relevant pieces of legislation currently administered by MAF (basically MAF's Quarantine Division) and MNREM (includes the

	<ul style="list-style-type: none"> Continuing introduction of new invasives and spread of existing invasives – more critically in priority conservation areas 	stakeholders	<ul style="list-style-type: none"> policies and legislations⁵⁷ Untapped potential of local communities for effective invasive control and management⁵⁸ 	<ul style="list-style-type: none"> invasives Adaptation (immunity) of invasives to control and eradication measures Negative environmental and health impacts of available invasive control far outweighs their benefits⁵⁹
<i>Institutional Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Existing government ministries and academic institutions with experience, expertise and information resources on the state of invasive species, and their management⁶⁰ Past and existing national stakeholder collaborations with experience in invasive species control and management efforts 	<ul style="list-style-type: none"> Limited and irregular monitoring, assessment and management of the spread and impacts of invasives in most areas of the country 	<ul style="list-style-type: none"> The range and scope of needed invasive work far outweigh the existing capacities of relevant institutions and institutional arrangements to cope with them⁶¹ Past stakeholder collaborations have not endured beyond specific and limited invasive control efforts and current ones lacks the mandate to sufficiently integrate and mobilize resources required for increasing invasive work⁶² 	<ul style="list-style-type: none"> Existing educational and media networks and resources for raising public awareness and building the capacities of institutions and communities at the national, local and individual levels for addressing biodiversity work Existing collaborations can potentially be strengthened through more formal means for effective integrated approach to invasive species 	<ul style="list-style-type: none"> Priorities for quarantine and invasive work may focus more on agriculture for economic reasons than on endemic species and unique ecosystems of high global conservation value

currently formulated NIASIAP – National Invasive Alien Species Implementation Action Plan – which detail specific actions for implementing the NBSAP provisions on invasive species under its ‘Biosecurity’ thematic area).

⁵⁶ Most of the invasive related work is at the port of entry for people and materials and on agricultural lands. Very little work has done to address the needs of most of the priority conservation areas due to the lack of human and financial capacities and the lack of priorities for invasive control in these areas.

⁵⁷ For example the SPREP invasive management program for both terrestrial and marine invasives, more specifically its Pacific Invasive Learning Network PILN, and as well as relevant invasive programs of key international and regional conservation organisations such as CI, IUCN and others, which can all contribute to improving the knowledge and skills for needed invasive work in Samoa.

⁵⁸ Again as discussed in previous issues above, the most effective approach to address invasive issues for most the biodiversity areas of the country is by building the capacities of grassroots communities which govern the direct us of most of the country’s land resources (and even coastal marine resources), as it will directly benefit them.

⁵⁹ Most of the invasive control approaches at this stage is centered on the use of toxic chemicals with serious environmental and health implications and even the potentials of biological control is heavily debated for its impacts on the natural balance of nature in areas of applications, as its most bio-control agents are new introductions.

⁶⁰ These refers to the research stations and experts mainly of MAF and USP Alafua which from the past are continuing programs of research, monitoring and control of invasive species in the country.

⁶¹ Again as in previously discussed issues above this situation is especially true for local communities they with limited knowledge and skills largely depend on assistance and outreach efforts from already strained resources of government ministries and non-governmental organisations.

⁶² Multi-sectoral collaborations such as in the NBSAP and NIASIAP consultative processes and the more recent established Samoa National Invasive Task Team under the SPREP’s PILN is yet to develop into a stage where each and all may be able to formally mobilize the resources required for achieving much more enduring and effective invasive management services.

⁶³ An integrated approach is required in order to realize the benefits of including priority endemic species and habitats of high global conservation value besides agriculture and economic development areas in the prevention and control of invasive species.

			management work ⁶³	
<i>Individual Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> An existing pool individuals in government ministries and educational institutions with some knowledge and training in invasive species management and the state of invasives in the country⁶⁴ 	<ul style="list-style-type: none"> Lack of individual initiatives and commitment to address needed invasive work in the country 	<ul style="list-style-type: none"> Limited available education, public awareness and training programs on the knowledge and skills required for invasive species management Existing pool of able individuals are thinly spread over a large range and scope of invasive management work 	<ul style="list-style-type: none"> Untapped potential of grassroots individuals and communities for addressing invasive work Existing media and educational networks and resources for improving awareness and appreciation of and increasing commitment to invasive species control and management 	<ul style="list-style-type: none"> Change in individual priorities for more economic development and use of unsustainable invasive control approaches Individual non-compliance with measures for preventing introductions and spread of new and existing invasive plants and animals for economic reasons

4. Bio-safety

<i>Systemic Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Newly instituted national policy framework for addressing the importation, handling of biotechnology products⁶⁵ Policy and legislations in place for the protection of consumer rights and safety from 	<ul style="list-style-type: none"> Undeveloped institutional and individual capacities for implementing the approved national biosafety frameworks Limited to no technical resources and expertise to monitor and enforce the 	<ul style="list-style-type: none"> The national policy framework is very new and requires time, resources and efforts to develop its effective implementation High level of technologies and expertise required is expensive to acquire and maintain in the 	<ul style="list-style-type: none"> Currently formulated national programs of external assistance to build enabling capacities for implementing the established national biosafety framework⁶⁸ 	<ul style="list-style-type: none"> Non-compliance of industries with the requirements of policies governing the importation of GMOs and LMOs or biotechnology products

⁶⁴ This also as in the previous issues refers to a very small pool of individuals in the two government ministries of MAF and MNREM and as well as the USP Alafua, NUS and the general teaching profession which have mostly through practical work gained experience and skills in invasive species management.

⁶⁵ This refers to the approved National Biosafety Framework NBF in 2005 for the importation, handling and use of genetically modified organisms GMOs and living modified organisms LMOs that is centrally administer by MNREM through an established National Competent Authority NCA whose membership is composed of key national stakeholders including MNREM and MAF, representatives of NGOs, and the private sector. A currently proposed bill is yet to be considered 'Biodiversity Protection Bill' for enactment that will provide a more comprehensive and stronger legal framework for functioning of institutional implementing structures such as the NCA of this policy.

⁶⁶ This refers to policies and legislations on the consumers rights and safety for the acquisition and safe use of products that are being administered directly by the Ministry of Commerce, Industries and Labor. The NBF has provisions which extend these policies to include consumer concerns GMOs and LMOs

⁶⁷ This is one of the critical concern and a key aspect for capacity building required for the effective implementation of biosafety policy frameworks in Samoa, as the level of technologies and expertise required to evaluate and handle biotechnologies is highly academic and expensive. Infact for practical and economic reasons enforcement of this policy will largely depend on outside support all too often is only available from countries which develop and export the very biotechnological products which require screening.

⁶⁸ This refers to currently formulated UNEP-GEF Medium-sized project for implementing Samoa's National Biosafety Framwork among its key components is the establishment of a National Biosafety Clearinghouse Mechanism

imported and locally produced products ⁶⁶	provisions of the established national policy framework	country ⁶⁷		
<i>Institutional Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> • Collaboration has been developed among key national stakeholders during the formulation of the NBF • Key organisations have promoted national consumer rights and safety policies 	<ul style="list-style-type: none"> • Current collaborations were mainly focus on the formulation of the NBF and without formal internal measures for long term commitment to the policy⁶⁹ implementation • No institutions have developed real capacities for assessing the safeness of imported biotechnology products or addressing key biosafety issues 	<ul style="list-style-type: none"> • Biosafety issues are new and require more extensive education, public awareness and training actions before it can be effectively address by the country's organizations or authorities at the national and local levels 	<ul style="list-style-type: none"> • Developed NBF with clear roles for national and local stakeholders for addressing Biosafety issues 	<ul style="list-style-type: none"> • Non-compliance of private organisations and communities due to their preference of immediate benefits from the use of biotechnology products – GMOs and LMOs – over their known or unknown negative environmental and native biodiversity impacts
<i>Individual Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> • A pool of individuals from representative various national sectors with experience and knowledge gained from their involvement in the formulation of the country's NBF 	<ul style="list-style-type: none"> • Existing individuals with experience can not cope with the range and depth of capacities required to effectively address biosafety issues 	<ul style="list-style-type: none"> • Lack of available in-country education and training for the levels of knowledge and skills required to effectively address biosafety issues 	<ul style="list-style-type: none"> • Overseas education and training programs on biotechnology and biosafety issues • Bilateral and multi-lateral support for capacity building on biosafety issues 	<ul style="list-style-type: none"> • Cost of in-country and overseas training and education required for biosafety issues far outweighs its benefits due to the necessary technological resources to utilize knowledge and skills of trainees in the country⁷⁰

5. Access & Benefit Sharing & Protection of Traditional Knowledge

<i>Systemic</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> • Samoa's traditional communities highly value 	<ul style="list-style-type: none"> • Continuing loss of content and value of traditional biological 	<ul style="list-style-type: none"> • Lack of effective efforts to document and transmit 	<ul style="list-style-type: none"> • Rising interests and concern among stakeholders at 	<ul style="list-style-type: none"> • Future generations of Samoa prefers modern biological knowledge over

⁶⁹ NBF as a relatively new policy is yet to be effectively mainstreamed into existing cross-cutting national policies and legislative frameworks administered by key ministries and organisations which were involved in its formulation.

⁷⁰ This situation again is related to the high level of technical knowledge and skill required for addressing biosafety issues due the academic nature of their scientific basis.

<p>their traditional biological knowledge and their lands biological genetic resources⁷¹</p>	<p>knowledge, practices and innovations down the generations.</p> <ul style="list-style-type: none"> Continuing loss of indigenous biological genetic resources through the impacts of unsustainable developments 	<p>traditional biological knowledge through present day generations of Samoans</p> <ul style="list-style-type: none"> Lack of policies and legislative frameworks to protect traditional biological knowledge and the rights of the holders of such knowledge⁷² 	<p>the international, national, and local levels for the establishment of policies and legislations to protect the knowledge and rights of indigenous communities</p>	<p>TBK in the use and conservation of genetic resources</p> <ul style="list-style-type: none"> Development priorities continue at unsustainable ways eroding most of Samoa's native and endemic genetic resources Natural & human disasters
<ul style="list-style-type: none"> Outsiders access to the country's genetic resources and traditional biological knowledge⁷³ have resulted in some benefit-sharing arrangements⁷⁴ Provisions in relevant national policies⁷⁵ and legislations⁷⁶ in approved or draft formats and as well as key administrative policies of governmental agencies⁷⁷ have provided some measures for 	<ul style="list-style-type: none"> Opportunities still exist for bio-piracy on Samoa's genetic resources and use of traditional biological knowledge today⁷⁸ Recent agreements on bio-prospecting have not clearly address key controversial ABS&PTBK issues⁷⁹ 	<ul style="list-style-type: none"> Lack policy measures to prevent bio-piracy and even existing policies can not adequately guarantee and monitor the use of the country's already imported genetic resources. 	<ul style="list-style-type: none"> Continuing dialogue and negotiations on ABS&PTBK issues in which Samoa is an active participant will provide effective way forward for addressing the concerned issues. 	<ul style="list-style-type: none"> Outside countries (bio-prospectors) influences and non-compliance with CBD provisions and other inter-governmental agreements will maintain opportunities for bio-piracy Developed nations are not committed to definite international agreements on ABS issues for fear of their impacts on the interests of their respective industries

⁷¹ Urwin & KVA, Report of the National Capacity Needs Assessment on Access to Genetic Resources and Benefit-sharing and the Protection of Traditional Knowledge, Practices and Innovations in Samoa, 2003: Describe not only how communities highly value their traditional healers but have documented the various studies which demonstrate a strong and robust practice of traditional healing in Samoa where native plants extracts are the main ingredients.

⁷² Often traditional biological knowledge is not written but practice and transmitted through demonstration down the generation – this right of holders of such knowledge should be adequately and appropriately protected under the country's legislations.

⁷³ *ibid.*, Also there are recent publications by the renowned US botanist Art Whistler of University of Hawaii and Bishop Museum on plants of Samoa including documentations on traditional healings using native plants ingredients.

⁷⁴ *ibid.*, Examples are: The case of bio-prospecting agreements Paul Cox initiated between the United States Aids Research Alliance and National Cancer Institute and the village of Falealupo, their traditional healers and the Government of Samoa have specified benefit-sharing arrangements in the testing of the mamala plant prostratin as an anti-virus for HIV Aids. The case of researches and benefiting agreements between the Nihon University of Japan and the National University of Samoa in 1999-2000 on terrestrial flora of Samoa.

⁷⁵ The NBSAP fifth thematic area is on ABS&PTBK with specific strategies and actions to address these issues. ABS&PTBK is also addressed in the National Biodiversity Policy.

⁷⁶ The copyright legislations and the established Intellectual Properties Registry in the late '90s includes relevant provisions which can afford some protection of traditional biological knowledge

⁷⁷ Three Government Ministries have definite administrative policies for addressing issues of ABS&PTBK: MNREM has a bio-prospecting policy which requires researchers to submit formal applications and sign a bio-prospecting agreement for the exportation of plants and animal genetic materials for research purposes in or outside Samoa. MAF has a Mutual Transfer Agreement which requires researchers on agricultural plant and animal genetic materials to sign an agreement for the use in and benefit-sharing from researches on plant and animal genetic resources of Samoa. MCIL is mandated under copyright laws to register patents of intellectual property rights on inventions by Samoans or made in Samoa

⁷⁸ Refer to footnote 1: The report therein also discusses evidences of plant and animal genetic materials which were exported from Samoa to other countries especially Europe and US for research and their fate is still unresolved.

⁷⁹ For instance in the case of the agreement on the mamala discussed in footnote 3, it has not addressed claims by other countries in the region where the mamala plant is found and is also use by their traditional healers for their right to benefit from this arrangement, but the biggest loophole is in the agreements instituted by MNREM & MAF (refer to footnote 7) – as they are generally goodwill agreements without any authority or mechanism that will guarantee and ensure the compliance of both parties especially the accessing or bio-prospecting party.

addressing issues of ABS&PTBK in Samoa				
<ul style="list-style-type: none"> Samoa has by virtue of ratifying the CBD claimed her sovereignty over access to and use of her biological genetic resources⁸⁰ 	<ul style="list-style-type: none"> Samoa can not enforce the provisions of the CBD regarding due respect for the states' sovereignty over the use of her genetic resources from being exploited by outsiders without her consent or benefit as it depends on the commitment and cooperation of the other world states 	<ul style="list-style-type: none"> Strong international mechanisms were in place to monitor and enforce compliance with the CBD's provisions on 'states sovereignty over their respective biological genetic resources' 	<ul style="list-style-type: none"> Non-compliance of developed countries on any international mechanism set up to protect interests and sovereignty of states on their respective genetic resources 	<ul style="list-style-type: none">
<i>Institution</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Key Government organizations are actively involved on key issues of ABS&PTBK⁸¹ Village communities highly recognized and respect the authority of their chiefly councils over issues of ABS&PTBK Some old and recently created Non-governmental organizations⁸² and private companies⁸³ are 	<ul style="list-style-type: none"> Key national⁸⁴ and local⁸⁵ organizations can not address effectively the range and scope of all the key issues of ABS&PTBK 	<ul style="list-style-type: none"> Lack of human resources with the required capacities and limited financial available for institutions and organisations to effectively address relevant policies Lack of integrated actions among key institutions and organizations involved in ABS&PTBK issues 	<ul style="list-style-type: none"> Key government, non-governmental and private organisations are involved with ABS&PTBK issues have substantial experience and connections with international and regional organisations⁸⁶ which can assist the country's capacity building needs 	<ul style="list-style-type: none"> Non-compliance of parties outside Samoa with terms of ABS&PTBK agreements and arrangements

⁸⁰ As in the relevant articles of the CBD which proclaimed the sovereignty of states over their respective biological genetic resources.

⁸¹ Refer to footnote 6, regarding the relevant involvement of MNREM, MAF and MCIL in some of the ABS&PTBK issues in Samoa.

⁸² WIBDI and WDCO and the newly established TSA are involved in the promotion of traditional knowledge such as weaving of the original fine mat and crafts (as in the case of WIBDI); the promotion of traditional healing (as in the case of WDCO and TSA) as a compliment of modern medicine.

⁸³ Examples: The Kava Exporters Association of Samoa are seeking measures to lift the ban on the export of kava to European countries. The Nonu Samoa is promoting the traditional healing value of the nonu plant juice through an active export of raw nonu seeds and juice which has now become one of the top revenue export earnings of the country.

⁸⁴ Apart from the following governmental departments – MNREM, MAF, MCIL and to some extend MAF, MJ, AG, and MESC, most agencies of government are not aware of ABS&PTBK issues. Even the key ones mentioned who have direct involvement with these issues lack needed capacities to address them, and collectively there is no national framework for them to effectively address them

⁸⁵ All Village communities and authorities when consulted during the National Capacity Needs Assessment on ABS&PTBK (refer to footnote 1) have very scant knowledge of the issues and are not aware of international developments which are shaping their outcomes

⁸⁶ These organisations include the CBD Secretariat, the World Trade Organisation WTO and the World Intellectual Property Organisations which are working on various fronts and aspects of ABS&PTBK issues.

now actively involved in some key issues of ABS&PTBK				
<i>Individual</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> A networking of country and overseas experts on issues of ABS&TBK has been initiated recently through relevant Government Development Programs⁸⁷ 	<ul style="list-style-type: none"> Most of the population in Samoa can not address all key issues of ABS&PTBK⁸⁸ 	<ul style="list-style-type: none"> Lack of opportunities and programs for education, public awareness and training on ABS&PTBK issues⁸⁹ 	<ul style="list-style-type: none"> Untapped potentials of grassroot individuals holders of traditional biological knowledge and direct stewards of most the country's genetic resources for addressing ABS&PTBK issues Current regional efforts to develop capacities for addressing ABS&PTBK issues⁹⁰ 	<ul style="list-style-type: none"> Non-compliance of overseas and local individuals with often cumbersome and time consuming ABS&PTBK policies in preference of much more direct and fast earning benefits from bio-piracy practices

6. Agro-biodiversity

<i>Systemic Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Existing policy framework for addressing agro-biodiversity issues⁹¹ 	<ul style="list-style-type: none"> Current policies do not cover most of the key issues of agro-biodiversity Weak implementation of existing policies and legislations 	<ul style="list-style-type: none"> As a relatively new issue there is an extreme lack of knowledge and skills for addressing agro-biodiversity issues⁹² 	<ul style="list-style-type: none"> The country's experience with agriculture development is at a level where it can and must now establish strong policy and legislative frameworks to protect and 	<ul style="list-style-type: none"> Continuing development and importation of newer and better yielding agro-biodiversity resources and products places lower priority on the need to protect and conserve the

⁸⁷ Country experts such as Arona Palamo of the US Montenso (world renowned producer of Soya bean products and other genetically modified/engineered food and agricultural products), experts at NUS, USP have had some networking and collaborations in the National Capacity Assessment on ABS&PTBK and the formulation of the National Bio-safety Framework and some are members of the Competent Authority for assessing the importation, handling and use of GMO and LMO in Samoa.

⁸⁸ A key findings in the Capacity Needs Assessment on ABS&PTBK (refer to footnote 1) in 2003 is that most of the people interviewed are not aware and can not articulate issues of ABS&PTBK much less the CBD itself.

⁸⁹ As relatively very new issues these have not feature in any significant level in most educational and training programs now existing in the world.

⁹⁰ For instance the current ongoing regional GEF funded project co-coordinated by SPREP and other regional and international organisations such as the United Nations University and the Pacific Forum Secretariat for developing national policy and legislative frameworks to address ABS&PTBK issues.

⁹¹ Provisions in the NBSAP under its 'Agro-biodiversity' thematic area reflects the country's commitment to addressing issues of agro-biodiversity, however these do not adequately comprehend and address all the pertinent issues of the country's obligations and commitments under this area, and there are no specific policies and legislations yet to fully address the need to conserve the country's native agro-biodiversity resources.

⁹² This refers not only to capacities need to conserve native agro-biodiversity but also knowledge and expertise for developing the agricultural potentials of its endemic and unique range of flora (not only plants for food but refers also to native forest and indigenous ornamental species development) and fauna (essentially refers to its freshwater and marine fish and shell fish resources) species.

			conserve its agro-biodiversity	country's native and existing agro-biodiversity ⁹³
<i>Institutional Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Existing government, non-governmental and private organisations with facilities, expertise and knowledge of the country's agro-biodiversity resources⁹⁴ Samoa's participation in regional programs for the conservation of native agro-biodiversity⁹⁵ 	<ul style="list-style-type: none"> Limited efforts to protect, conserve and promote native agro-biodiversity 	<ul style="list-style-type: none"> Lack of education, awareness raising and training efforts for building capacities to address agro-biodiversity issues 	<ul style="list-style-type: none"> A high priority is placed on agriculture development in the country's existing national economic development strategies and policies⁹⁶ 	<ul style="list-style-type: none"> High national priority for resource use on food security and agricultural production can ignore the needs for effective agro-biodiversity management
<i>Individual Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Existing pool of individuals with knowledge and expertise on agro-biodiversity resources of the country 	<ul style="list-style-type: none"> Priority of existing workforce is mainly on increasing agricultural production with less on agro-biodiversity conservation and protection 	<ul style="list-style-type: none"> Lack of education, awareness raising and training to increase individual initiatives and commitment to agro-biodiversity issues 	<ul style="list-style-type: none"> Support from bilateral and multi-lateral organisations and programs for improving agro-biodiversity management 	<ul style="list-style-type: none"> As a new issue much of its training programs can only be offered in overseas countries which are expensive and may not be relevant to the country

7. Inland Freshwater Biodiversity

<i>Systemic Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Existing legislative and 	<ul style="list-style-type: none"> Existing policy and legislative 	<ul style="list-style-type: none"> Lack of education, training and 	<ul style="list-style-type: none"> Water sector is a priority 	<ul style="list-style-type: none"> Lack of priority of freshwater

⁹³ Examples of these are the introduction of new types of livestock such as the recently introduced Fiji sheep, fresh eggs and other products from overseas countries of cheaper costs can discourage the production from the country's existing and native agro-biodiversity, much less their conservation needs.

⁹⁴ Largely the Ministry of Agriculture and Fisheries and to some extent MNREM and such organisations as the Women in Business Development Inc. WIBDI, Development Bank of Samoa DBS, and Small Business Corporation SBEC which are promoting organic farming and other more environmentally sound agriculture development that are largely based on native agro-biodiversity resources. In terms of facilities MAF has the largest research and development facilities in the country at several locations such as Nafanua (Fruit tree development), Vailima (Livestocks), and Nu'u (Crops development and protection) which if provided with some appropriate human and financial strengthening, can incorporate measures for addressing agro-biodiversity needs in their respective programs.

⁹⁵ This refers to such regional initiatives as SPRIG for the regeneration of high quality indigenous timber species and the PGRC for the conservation of genetic materials of native agricultural crops throughout the region.

⁹⁶ Agriculture is one of the highest priority in the country's Development Strategy or SDS (Samoa's Development Strategy). This opportunity if properly approached can provide resources for initiating real actions to address agro-biodiversity issues.

policy frameworks for addressing the management of freshwater resources ⁹⁷	frameworks do not adequately provides for the key needs of freshwater endemic species and ecosystems especially species and ecosystems of high global value ⁹⁸ <ul style="list-style-type: none"> Lack of knowledge, awareness and appreciation of the full ecological and economic values of freshwater biodiversity resources⁹⁹ 	awareness raising opportunities and programs for integrating knowledge of freshwater biodiversity into national policy frameworks	development area which should provide the resources for improving the appreciation and management of freshwater biodiversity ¹⁰⁰	ecology in national planning
<i>Institutional Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Existing government ministries and organisations with experience and skills in the management of watershed areas and water utilisation and management¹⁰¹ Some research has been carried out on specific components of freshwater biodiversity¹⁰² 	<ul style="list-style-type: none"> Existing institutional capacities do not adequately cover key areas of freshwater biodiversity conservation and sustainable use Lack of knowledge, awareness and appreciation of the full ecological and economic values of freshwater biodiversity resources¹⁰³ 	<ul style="list-style-type: none"> Lack of education, training and awareness raising opportunities and programs for improving the knowledge of freshwater biodiversity of national and local organisations Lack of baseline information to provide the basis for developing effective policies 	<ul style="list-style-type: none"> Besides the ongoing government's EU funded WaSSP there are other international and bilateral opportunities sought to finance the management of freshwater biodiversity¹⁰⁴ 	<ul style="list-style-type: none"> National priorities for freshwater utilisation and its complimenting watershed management needs can ignore the needs for freshwater biodiversity research and management¹⁰⁵

⁹⁷ This refers to the existing watershed management policies and regulations and the Samoa Water Authority legislations and policies which were formulated and passed in the '90s.

⁹⁸ Classical example of these types of freshwater ecosystems are coastal and upland wetlands such as mangroves, crater lakes and mountain marshes two of which are of high global value – the Punataemo' o and the Vaipu upland forest marshes. Punataemo' o has been completely transformed into the Afulilo Hydro-power damp and Vaipu is threatened by the anticipated expansion of this same development. Mangrove swamps such as those in Apia area (Moata' a, Fugalei – Vaiusu) are threatened by expanding human settlements.

⁹⁹ Knowledge and appreciation of the value of freshwater biodiversity is one of the major gaps in biodiversity baseline data which require urgent attention.

¹⁰⁰ Current government programme such as the European Union EU funded Water Sector Support Program WaSSP have incorporated financial allocations for water resources management – a key aspects of it is freshwater biodiversity management.

¹⁰¹ This refers mainly to the capacities of staff and processes for water and water resources management in the Samoa Water Authority SWA and MNREM. Water use has a more larger stakeholder as it includes every individual and households of the country and as well as the key water service users and providers in the private sector and at the local community levels (some village communities own and manage their water supply systems and are not under the SWA management).

¹⁰² As stated above this a major area of biodiversity information gap in Samoa. Some of the specific research include recent studies by scientists from Japan and the US on freshwater snails. Plans were made to conduct a major national ecological survey of freshwater bodies under the GEF-UNDP funded NBSAP Add on Project did not eventuate due to the lack of funds.

¹⁰³ This is the common situation at all levels of capacity building in terms of freshwater biodiversity.

¹⁰⁴ This include the ongoing International Waters Project at the villages of Lepa and the island of Apolima, the Ramsar Convention on Wetlands Small Grant Program for Samoa to improve the management of Samoa's first Ramsar 'Lake Lanoto' o' and funding sought under the CBD's Global Taxonomic Initiative for funding a full ecological survey of the country's freshwater systems.

¹⁰⁵ Besides the improvement of freshwater supply systems the government's management of water catchments through direct legal and forest protection.

<i>Individual Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> A small pool of individuals with some general knowledge on freshwater biodiversity 	<ul style="list-style-type: none"> Lack of individuals with the training and experience and initiative to effectively manage freshwater biodiversity 	<ul style="list-style-type: none"> Lack of training and education opportunities and support programs in the area of freshwater biodiversity and the management of freshwater ecosystems¹⁰⁶ Lack of national development priorities on development of individual capacities for the management freshwater biodiversity 	<ul style="list-style-type: none"> Available training and education opportunities overseas for training on freshwater biodiversity management Existing international, regional and national programs for individual capacity building on freshwater biodiversity issues 	<ul style="list-style-type: none"> Priority for training and education on water resources are more on general resource management than the needed technical areas of freshwater biodiversity research, monitoring and management

8. Mountain Biodiversity

<i>Systemic Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Some conservation and environmental protection provisions in relevant legislations¹⁰⁷ are relevant to the protection of mountain biodiversity 	<ul style="list-style-type: none"> Lack of national policy and legislative frameworks to effectively address the unique conservation and management needs of mountain biodiversity 	<ul style="list-style-type: none"> Limited knowledge, data, and appreciation of mountain biodiversity 	<ul style="list-style-type: none"> Newly developed international opportunities to study, appreciate and provide effective management of mountain biodiversity¹⁰⁸ 	<ul style="list-style-type: none"> Mountain biodiversity as a relatively new area will take extensive time and effort to integrate into the country's major development and resource management priorities
<i>Institutional Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Certain key areas of mountain biodiversity are included in currently ongoing national programs such 	<ul style="list-style-type: none"> Work of existing institutions have not adequately address the needs of mountain biodiversity 	<ul style="list-style-type: none"> Lack of the required capacities to effectively address mountain biodiversity management 	<ul style="list-style-type: none"> Currently developed international and regional initiatives to support national efforts for the conservation and sustainable 	<ul style="list-style-type: none"> Unique native mountain biodiversity as a new issue may not receive in the near future the specific national attention it may require

¹⁰⁶ Freshwater biodiversity as a new subject area for education and training may not receive the attention it needs to effectively develop the human and financial resources required for its effective management

¹⁰⁷ The Lands and Survey Act 1989 and especially the PUMA Act 2004 currently developed Code of Environmental Ethics which promotes and enforces EIAs and other environmental protection and conservation measures can provide indirect measure for the protection of mountain biodiversity.

¹⁰⁸ As a new area Samoa is not far behind from international efforts to appreciate mountain biodiversity which is a very new development with the first major international conference and awareness campaign on mountain biodiversity in late nineties and like Inland freshwater biodiversity, mountain biodiversity is one of the lately developed program of work of the CBD.

as currently established PAs ¹⁰⁹			use of mountain biodiversity	
<i>Individual Capacities</i>				
Strengths	Weaknesses / Gaps	Root Causes	Opportunities	Constraints
<ul style="list-style-type: none"> Small pool of interested individuals both in Samoa and abroad on the conservation of the country's unique mountain biodiversity¹¹⁰ 	<ul style="list-style-type: none"> Limited pool of interested individuals can not cope with additional work on mountain biodiversity 	<ul style="list-style-type: none"> Lack of available incountry opportunities for training and education on mountain biodiversity issues 	<ul style="list-style-type: none"> Currently developed international and regional initiatives to support national efforts for the conservation and sustainable use of mountain biodiversity 	<ul style="list-style-type: none"> Lack of individual interest in this area as its real benefits are largely undefined and articulated in existing national policies and programs

¹⁰⁹ The three established national parks of 'Ole Pupu Pu'e(1978), Lake Lanoto'o(2003) and Mauga o Salafai(2004) have included areas of the country's mountain biodiversity for priority conservation. Currently proposed GEF funded and UNESCO funded projects target the central uplands of Savaii Samoa's mountain biodiversity area of significant global conservation value. Most of this work is currently under one organisation - MNREM

¹¹⁰ This small pool of individuals refers again to the same staff at MNREM and MAF and some very few organisations that have had some hands on experience and training in mountain biodiversity management, and are already heavily engaged in other major areas of biodiversity work

APPENDIX 2: GLOBAL STATUS OF SAMOA'S BIRD SPECIES¹¹¹

NO	SPECIES			GLOBAL STATUS
	Common Name	Scientific Name	Native Name	
1	Samoa Moorhen	<i>Gallinula pacifica</i>	Puna'e	CR
2	Shy Ground-dove	<i>Gallicolumba stairi</i>	Tuameo	VU
3	Many-coloured Fruit-dove	<i>Ptilinopus perousii</i>	Manuma	cd
4	Crimson-crowned Fruit-dove	<i>Ptilinopus porphyraceus</i>	Manutagi	cd
5	Tooth-billed Pigeon	<i>Didunculus strigirostris</i>	Manumea	EN
6	Blue-crowned Lorikeet	<i>Vini australis</i>	Segavao	cd
7	Flat-billed Kingfisher	<i>Todirhamphus recurvirostris</i>	Ti'otala	cd
8	Polynesian Triller	<i>Lalage maculosa</i>	Mititai	cd
9	Samoa Triller	<i>Lalage sharpei</i>	Mitivao	VU
10	Samoa Flycatcher	<i>Myiagra albiventris</i>	Tolaifatu	cd
11	Samoa Fantail	<i>Rhipidura nebulosa</i>	Se'u	cd
12	Samoa Whistler	<i>Pachycephala flavitrons</i>	Vasavasa	cd
13	Samoa White-eye	<i>Zosterops samoensis</i>	Matapapa'e	VU
14	Cardinal Honey-eater	<i>Myzomela cardinalis</i>	Segasegamau'u	cd
15	Wattled Honey-eater	<i>Foulehaio carunculata</i>	Iao	cd
16	Ma'o	<i>Gymnomyza samoensis</i>	Ma'oma'o	EN
17	Red-headed Parrotfinch	<i>Erythrura cyaneovirens</i>	Sega'ula	cd
18	Samoa starling	<i>Aplonis atrifusca</i>	Fuia	cd
19	Polynesian starling	<i>Aplonis tabuensis</i>	Fuiavao	cd
20	Scarlet robin	<i>Petroica multicolor pusilla</i>		cd
Legend:++				
CR	Critically endangered	'...it is facing an extremely high risk of extinction in the wild in the immediate future, judged to be a probability of 50% in 10 years'		
EN	Conservation Dependent	'...it is not Critical but is facing a very high risk of extinction in the wild in the near future, judged to be a probability of 20% in 20 years.'		
VU	Vulnerable	'...it is not Critical or Endangered but is facing a high risk of extinction in the wild in the medium-term future, judged to be a probability of 10% in 100 years.'		
cd	Conservation Dependent	'... the focus of a continuing taxon-specific or habitat-specific conservation programme which directly affects the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.'		

¹¹¹ Source, Birdlife International, Endemic Bird Areas 2004

APPENDIX 3: MAPS OF SAMOA'S ECOLOGY

(On separate file attached: Maps Ecology of Samoa 14.02.06)

APPENDIX 4: TABLES OF SAMOA'S ECOLOGY

(On separate file attached: Protected Unprotected Areas 07.02.06)

APPENDIX 5: CBD CAPACITY BUILDING STOCK-TAKING REPORT

(On separate file attached: NCSA CBD Stocktaking Report 14.02.06)

REFERENCES

(On separate file attached: TA CBD References 14.02.06)