E4271

INDEPENDENT STATE OF SAMOA

AGRICULTURE AND FISHERIES CYCLONE RESPONSE PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

DRAFT
AUGUST 20, 2013

EXECUTIVE SUMMARY

This Environment and Social Management Framework (ESMF) has been prepared by the Ministry of Agriculture and Fisheries (MAF) of the Government of Samoa for the proposed Agriculture and Fisheries Cyclone Recovery Project (AFCRP). The ESMF is the most appropriate instrument to identify and respond to the potential social and environmental impacts of the proposed project, instead of the normally used Environmental Impact Assessment (EIA) instrument, as the details and exact location of much of project activities would only be identified during project implementation. The ESMF provides a framework for screening these activities to minimize adverse social and environmental impacts and to ensure appropriate mitigating measures are incorporated in the design and during the conduct of these activities.

The Project

The AFCRP is part of the Government of Samoa's post-disaster response to Cyclone Evan that hit the Island of Upolu last December 13, 2012. The project will provide financial assistance to farmers in the severely and moderately affected areas for the repair/replace damaged/lost farm assets, thereby enabling them to restore their production capacities. It will also provide financial assistance to the Ministry of Agriculture and Fishery to repair/replace its damaged/lost facilities and to improve its capacity to respond to similar disaster. The project will be implemented in two years. It will have the following components:

Component 1: Cyclone Recovery for Subsistence Farmers and Fishers - Under this Component, the project would issue vouchers to households who have been identified and validated as subsistence farmers and/or fishers, for procuring a range of eligible farm and fishing items including, among others, planting materials and breeding livestock, fertilizer, farm tools, cast nets, goggles, spears, canoe repair materials and construction materials. Beneficiary households in areas severely affected by the cyclone would receive a higher value of vouchers than those in moderately affected areas.

Component 2: Cyclone Recovery for Commercial Farmers and Fishers. Under this Component, commercial farmers and aquaculture operators in severely and moderately affected areas whose farm equipment or infrastructure was lost or damaged due to the cyclone would be eligible for recovery grants. These grants could be used to procure infrastructure repair or reconstruction such as lost farm ditches, fish ponds and fences; and also to procure materials and equipment including, among others, plastic and shade houses, irrigation equipment, construction material and livestock housing.

Component 3: Restoration of MAF Facilities and Strengthening the Agricultural Sector's Capacity for Disaster Preparedness and Response. This component would support the repair of essential MAF facilities that were damaged during the cyclone, establish systems for the regular collection and updating of agricultural production information, develop a standard methodology for collection and analysis of damage and loss data for the agricultural sector and strengthen capacities of both farmers and sector institutions in disaster preparedness and response.

Component 4: Project Coordination and Management. This component will support effective implementation and management of the project through provision of staff and technical assistance, equipment and operating costs, and monitoring and evaluation system.

The Project would be implemented over a period of two years covering the whole country, although direct assistance to beneficiaries would be confined to those living on Upolu in the areas designated as severely or moderately affected in the Damage and Loss Assessment (DaLA) undertaken as part of GOS's Post-disaster Needs Assessment (March 2013)..

Environment and Social Impacts

Given the type and scale of the planned project activities (i.e., procurement of farm inputs, tools, equipment and materials by individual farming households; repair or restoration of small scale farm infrastructure and MAF facilities), the direct adverse environmental and social impacts of the project, is expected to be small which can be mitigated through the application of simple mitigation measures. There are however some issues that need to be addressed:

- The project could contribute to increased use of pesticides and environmentally destructive items such as illegal fishing nets;
- The project could be inadvertently supporting environmentally unsustainable farms due to their locations with respect to protected areas, forests or sensitive natural habitats, bad agricultural practices or excessive use of pesticides;
- The proposed relocation of a few damaged but improperly situated ponds could encroach into protected areas, mangroves or wetlands, or may require land acquisition or displace or reduce access of others to livelihood sources and other services; and,
- Any perceived unfairness in the selection of beneficiaries of the vouchers and grant programs could potentially result in social conflicts in the villages.

Management Measures

In order to address the above issues, project activities will be subjected to the following screening, review and approval and monitoring procedures:

	Component 1 **Vouchers for Subsistence Farmers/Fishers**	**Component 2** **Grant for Commercial Farmers/Fishers**	**Component 3** **Repair/Replacement of Damaged/Lost MAF Facilities**
Screening	Recipients are pre-identified by a team composed of the village mayor and representatives of women and youth sectors; and approved by their village councils; Eligible items for purchase are also pre-identified and excludes chemical	The Environmental and Social Management Officer (ESMO) or Project Officers will screen grant applications (proposals) using Screening Forms (Annexes 4 and 5). The screening will determine requirements;	Facilities to be rehabilitated have been identified (See List in Annex 3)

	pesticides;		
Preparation of Documentary Requirements	Upon receipt of voucher, the recipients are each provided with relevant MAF brochures on good farming/fishing practices.	Satisfy requirements as per screening guidelines. SACEP ESMO and AFCRP Project Officers to help proponent prepare ESMPs and PEAR if required;	Relevant MAF units prepare a Rehabilitation Plan or Program of Works and ESMPs if required
Review and Clearance	Not required	SACEP ESMO reviews and provides safeguards clearance for proposals to be considered for funding	With concerned MAF experts, SACEP ESMO reviews plan/program of work against relevant MAF guidelines, standards and regulations; and clears proposal for procurement.
Implementation	Voucher recipients are free to buy any items on the list of eligible inputs and equipment. Data on items bought are recorded.	Activities are undertaken with measures according to approved plan and measures in the ESMP	Works are procured by the concerned MAF units.
Compliance Monitoring	AFCRP Project Officers and SACEP ESMO will conduct random evaluation of the recipients.	AFCRP Project Officers monitors compliance of requirements	M&E Specialists monitors compliance of requirements

Institutional Arrangements

A small AFCRP Project Management Unit (PMU) located within MAF would provide project coordination and management and monitoring of the project's development impact. The PMU includes a full time Project Manager, up to two financial management staff and two Project Officers and additional short-term TA. The review and clearing of social and environmental safeguards of project activities would be handled by the existing Environmental and Social Management Officer based in the Project Coordination Group of the Samoa Agriculture Competitiveness Enhancement Project (SACEP). The ESMO would be responsible for ensuring the ESMF is implemented effectively, liaising with the relevant agencies such as MNREM and, providing support to the beneficiary farmers and fishers in preparing safeguards documents with the help of the AFCRP project officers and extension officers of MAF, through information dissemination, training, workshops. A Safeguards Adviser will also be engaged to assist the Project. The safeguards monitoring of compliance would be undertaken by the two AFCRP Project Officers in coordination with the ESMO.

Executive Summary in Samoan

Aotelega

O lenei Alāfua mo le Puleaina o le Siosiomaga ma Tagata Lautele (APSTL) ua tapena ina e le Matagaluega o Faatoaga ma Faigāfaiva o le Malo o Samoa mo le Poloketi mo le Toe Faaleleia o Faatoaga ma Faigāfaiva sa aafia i le Afa (PFFFA). O le Alāfua mo le Puleaina o le Siosiomaga ma Tagata Lautele o se vaega ua talafeagai lelei mo le iloiloina ma le tali atu i aafiaga e ono aafia ai le siosiomaga ma tagata lautele ona o le poloketi o loo fuafuaina, e ese mai ai i le faaaogaina o le Suesuega o Aafiaga i le Siosiomaga, ona o le tele o faamaumauga ma nofoaga patino o galuega o le poloketi e faatoā mafai ona māua peā faatino le poloketi. O loo tuuina atu i le APSTL le alafua mo le suesueina o galuega o le poloketi ina ia faaitiitia aafiaga ogaoga i le siosiomaga ma tagata lautele ma ia mautinoa le aofia o fofo talafeagai i fuafuaga ma le faatinoina o ia galuega.

O le Poloketi

O le PFFFA o se vaega o fesoasoani a le Malo o Samoa mo le faaleleia o aafiaga o le Afa o Eveni sa aafiaga ai le Motu o Upolu i le Aso 13, Tesema 2012. Ole a tuuina atu i lenei poloketi fesoasoani tau seleni i le aufai faatoaga o loo i nofoaga sa matuā ogaoga ma feololo aafiaga mo le toe faaleleia/suia o aseta tau faatoaga sa faaleagaina/leiloloa ma maua le avanoa e toe faaleleia ai fua o faaeleeleaga. Ole a tuuina atu foi fesoasoani tau seleni i le Matagaluega o Faatoaga ma Faigafaiva e toe faalelei/suia ai aseta ua faalegaina/leiloloa ma faaleleia ana auaunaga mo le tali atu i faalavelave faapea e ono toe tulai mai. O lenei poloketi ole a faatinoina i le lua tausaga ma ole a aofia ai Vaega taua ua ta'ua i lalo:

Vaega 1: Toe Faaleleia o Atina'e Tau Faatoaga ma Faigāfaiva mo Aiga - I lalo o lenei vaega, ole a tuuina atu e le poloketi pepa tala oloa i aiga ua maea filifilia ma faamaonia o faifaatoaga poo faifaiva mo le tausiga o aiga e faatau ai soo se ituaiga mea faigaluega e faatagaina e aofia ai mea faigaluega mo le totoina o laau ma galueina o lafumanu, faalelei eleele, mea faigaluega tau faatoaga, upega fagota, mata fagota, mata tao fagota, mea faigaluega mo le faaleleia o vaa alo/paopao ma mea faigaluega fau fale. O le a sili atu le telē o faamanuiaga tau seleni i aiga o loo nonofo i nofoaga sa matuā iloga ona mafatia nai lō o aiga o loo alala i nofoaga e feololo aafiaga na oo i ai.

Vaega 2: Toe Faaleleia o Atina'e Tau Faatoaga ma Faigāfaiva Faapisinisi - I lalo o lenei Vaega, o le au faifaatoaga ma le au fai pai'a faapisinisi i nofoaga sa matua aafia ma feololo aafiaga ma sa ma'umau pe faaleagaina a latou mea faigaluega tau faatoaga poo isi aseta tau faatoaga ole a faamanuiaina e ala i fesosoani tau seleni. O nei fesosoani tau seleni e mafai ona faaaogaina mo le toe faaleleia pe toe fausia o aseta tau faatoaga sa faaleagaina e aofia ai alavai mo faatoaga, vai mo pai'a ma pa; ma e mafai foi ona faatau ai mea faigaluega tau faatoaga e aofia ai ufiufi pepa ma fale to laau (shade houses), mea faigaluega mo le fuiina o togalaau (irrigation equipment), mea faufale ma fale mo lafumanu.

Vaega 3: Toe Faaleleia o Fale o le Matāgaluega ma faamalosia le tomai o le Matāgaluega mo Tapenaga ma le Tali atu i Taimi o Faalavelave Faafuasei - O lenei vaega o lea lagolagoina ai le

toe faaleleia o fale/nofoaga togia/taua o le Matāgaluega sa faaleagaina e le afa, faamalosia le auaunaga a le Matagaluega i le aoina ma le tuufatasia o faamaumauga tau faatoaga, faalelei le tulaga mo le aoina ma le iloiloina o faamatalaga i mea faaleagaina ma ma'umau mo faatoaga ma faamalosia tomai o le au faifaatoaga ma paaga o loo galulue ma le Matagaluega i tapenaga ma le tali atu i taimi o faalavelave faafuasei.
Vaega 4: Pulega ma le Faagaioiina o le Poloketi - O lenei vaega ole a lagolago i le faatinoina ma le pulega lelei o le polokoti e ala i le faafaigaluegaina o se aufai galuega ma faufautua faapitoa, faatauina o mea faigaluega ma faaavanoa tupe faaalu mo le faatinoina, ma faaogaina vaega e mata'itū ma iloilo ai tulaga o galuega a le poloketi.

Ole a faatino lenei poloketi i totonu o le lua tausaga, e ui o lenei fesoasoani ole a faamanuiaina ai na o latou o loo nonofo i Upolu i alalafaga ua patino o nofoaga e matuiā ma feololo aafiaga e pei ona taua ile ripoti o Suesuega mo Mea sa Faalegaina ma Ma'umau sa faia o se vaega o Suesuega mo Manaoga i le Maea ai ole Faalavelave Faanatura a le Malo o Samoa (Mati 2013).

Aafiaga i le Siosiomaga ma Tagata Lautele

E tusa ai o ituaiga ma le telē o galuega fuafua mo le poloketi (i.e. faatauina o mea tau faatoaga ma mea faigaluega e aiga faifaatoaga tai tasi; toe faafou pe toe fausia o fale mo faatoaga laiti ma fale/aseta a le Matāgaluega), e oga laiti aafiaga ogaoga i le siosiomaga ma tagata lautele e afua mai i lenei poloketi ma e mafai ona fo'ia e ala i fofo faigofie. Peitai e iai lava matāupu e ao ona silasila totoa i ai;

- E ono faateleina le faaaoga o vailaau mo manu faalafuā ma mea faigaluega e aafia ai le siosiomaga o I'a e pei o upega fagota e le faatagaina faale-tulafono;
- E ono fesoasoani ma le leiloa le poloketi i faatoaga e le gafataulimaina faalesiosiomaga le faatinoina ona o le latalata i fanua faasao, vaomatua poo nofoaga ma'ale'ale faanatura, ituaiga faatinoga o faatoaga e lē lelei poo le soona faaaogaina o vailaau mo manu faalafuā;
- O le fuafuaga mo le siitia o pa'ia ua faaleagaina ae le'o talafeagai le nofoaga e ono aafia ai fanua faasao, togā togo ma nofoaga faataufusi, pe moomia ai foi le ave eseina o fanua poo le tuli esea pe faaitiitia le oo atu o isi tagata i sosia mo le soifuaga o aso uma ma isi auaunaga; ma,
- Soo se tulaga faaitu'au i le filifilia o tagata e faamanuiaina i fesosoani tupe e ono tulai mai ai fe'ese'esea'iga i totonu o nuu.

Fofo mo le Puleaina Lelei

Ina ia foia atugaluga ua taua i luga, o galuega faatino mo lenei poloketi ole a mulimuli ta'i i iloiloga muamua, iloiloga auiliili ma le taliaina ma galuega mata'itu ua taua i lalo:

	Vaega 1 **Pepa Tala Oloa (voucher) mo le Au Faifaatoga/Au Faifaiva mo le tausiga**	**Vaega 2** **Fesoasoani Tau Tupe mo le Au Faifaatoga/Au Faifaiva Faapisinisi**	**Vaega 3** **Toe faafou/suia Aseta/ Fale o le Matāgaluega ua Faaleagaina/Ma'umau**

	o Aiga		
Iloiloga Muamua	O i latou ole a faamanuiaina e iloiloina muamua e le komiti e aofia ai le pule nuu ma sui o tamaitai ma tupulaga talavou; ma e faamaonia e le pulega a alii ma faipule O mea faigaluega e faatagaina ona faatau ole a iloiloina ma e le aofia ai vailaau;	O le Ofisa mo le Vaaia Lelei o le Siosiomaga ma Tagata Lautele poo Ofisa o le Poloketi latou te iloiloina talosaga mo fesosoani tupe e faaaoga i ai le Pepa Iloilo mo aafiaga (Pepa faapipi 4 ma le 5). O lea iloiloga ole a iloa ai nisi mea e moomia.	O aseta tau fale mo le toe faaleleia ua maea ona filifilia. (Tagai i le Lisi i le Pepa faapipi 3)
Saunia o Faamatalaga Moomia	Pe a tau lima ina pepa tala oloa, o i latou ole a faamanuiaina ole a tofu ma le pepa taiala talafeagai mai le Matagaluega o Faatoaga & Faigafaiva e faailoa atu ai le faatinoga i tulaga lelei/taualoa o faatoaga ma faiga faiva	Ia faamalieina manaoga e tusa ai ole taiala mo iloiloga. Ole a fesoasoani le Ofisa mo le Puleaina lelei o le Siosiomaga ma Tagata Lautele ole poloketi a le SACEP ma le Ofisa ole poloketi PFFFA i le tagata talosaga e saunia Fuafuaga mo le Puleaina Lelei o le Siosiomaga ma Tagata ma le Suesuega o Aafiaga i le Siosiomaga pea moomia;	E tapena e Vaega o le Matagaluega o Faatoaga & Faigafaiva fuafuaga mo le toe faaleleia poo Polokalame Faagasolo o Galuega ma Fuafuaga mo le Pulea Lelei o le Sioiomaga ma Tagata Lautele pe a moomia;
Iloiloga auiliili ma le pasiaina	E le moomia	O le Ofisa mo le Pulea lelei ole Sioiomaga ma Tagata Lautele o le poloketi ole SACEP e iloiloina auiliili ma pasia vaega mo le pulea lelei o talosaga mo le tuuina i ai o meaalofa tupe	E aofia ai tagata faigaluega tomai faapitoa o le Matāgaluega, ole a latou iloiloina ma le Ofisa mo le Pulea lelei ole Sioiomaga ma Tagata Lautele o le poloketi ole SACEP fuafuaga/polokalame o galuega e tusa ai o taiala, tulaga masani ma faiga faavae talafeagai

			a le Matāgaluega; ma pasia fuafuaga faataatitia mo le faatauina.
Faatinoina	E saoloto le tagata e maua pepa tala oloa e faatau soo se ituaiga mea faigaluega o loo i totonu o le lisi o mea e faatagaina. O faamatalaga o oloa faatau ole a faamaumauina.	E faatino galuega ma o latou fofo e tusa ai ma fuafuaga ma fofo ua pasiaina ile Alafua mo le Pulea Lelei o le Siosiomaga ma Tagata Lautele	O le sailia o oloa mo le faatauina ole a faatino lava e le vaega o le Matagaluega o Faatoaga & Faigafaiva e patino iai le galuega
Asiasiga Mata'itū	O Ofisa mo le poloketi PFFFA ma le Ofisa mo le Pulea lelei ole Sioiomaga ma Tagata Lautele o le poloketi ole SACEP ole a faia suesuega tuu faasolo o e faamanuiaina i le poloketi.	O Ofisa mo le poloketi PFFFA e mata'itūina le usita'ia o tu'utu'uga.	O le Ofisa faapitoa mo le Mata'itūina ma le Iloiloga ole a ia mata'itūina le ausia o tu'utu'uga.

Faatulagaina o le Ofisa o Pulega

O le Pulega mo le Poloketi PFFFA i le Matāgaluega o Faatoaga ma Faigāfaiva ole a faatinoina, pulea ma mata'itū le poloketi i aafiaga o lona atina'eina. E aofia i le Pulega o le Poloketi le Taitai Ulu o le Poloketi, Ofisa e toalua mo le puleaina o tupe ma Ofisa e toalua mo le poloketi ma Faufautua Faapitoa e galulue faa-vaitaimi. O le iloiloga ma le pasiaina o tulaga mo le vaaia lelei o le siosiomaga ma tagata lautele ole a gafa ma le Ofisa mo le Pulea lelei ole Sioiomaga ma Tagata Lautele o le Poloketi ole SACEP o loo iai i le taimi nei. O galuega patino mo le Ofisa mo le Pulea lelei ole Sioiomaga ma Tagata Lautele o le mautinoa lea o le faatinoina lelei o le Alafua mo le Pulea lelei o le Siosiomaga ma Tagata Lautele, galulue faatasi ma pulega talafeagai e pei ole Matagaluega o Punaoa Faanatura ma le Siosiomaga ma, fesoasoani i le aufai faatoaga ma le aufai faiva ua faamanuiaina e tapena faamatalaga mo le vaaia lelei ole siosiomaga ma tagata ma ole a fesoasoani foi i ai Ofisa o le Poloketi PFFFA ma le aufaigaluega a le Matagaluega e ala i le tufaina o faamatalaga, aoaoga ma fonotaga. Ole a iai foi le faufautua faapitoa e fesoasoani i le poloketi. O le mata'ituina o le usitaia o aiaiga mo le pulea lelei ole siosiomaga ma tagata ole a faatino e Ofisa e toalua mo le Poloketi PFFFA e galulue soosoo tau'au ai ma le Ofisa mo le Pulea lelei ole Sioiomaga ma Tagata Lautele.

ACRONYMNS

CEAR	Comprehensive Environmental Assessment Report
EA	Environmental Assessment
EMP	Environmental Management Plan
ESMOESMO	Environmental and Social Management Officer
ESMF	Environmental and Social Management Framework
GOS	Government of Samoa
IEC	Information, Education and Communication
IDA	International Development Association
IPM	Integrated Pest Management
IPP	Indigenous Peoples Plan
MAF	Ministry of Agriculture and Fisheries
MNREM	Ministry of Natural Resources, Environment, and Meteorology
OP	Operational Policy
PEAR	Preliminary Environmental Assessment Report
PMU	Project Management Unit
SACEP	Samoa Agricultural Competitiveness Enhancement Project
AFCRP	Agriculture and Fisheries Cyclone Recovery Project
SIA	Social Impact Assessment

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1. Introduction

The Government of Samoa (GoS) has requested World Bank financing for an Agriculture and Fisheries Cyclone Recovery Project (AFCRP) to accelerate the recovery of famers and fishers severely affected by the recent Cyclone Evans which struck Samoa in December 2012. The project complements another World Bank funded project, the Samoa Agriculture Competitiveness Enhancement Project (SACEP), which became effective in July 2013. SACEP aims to support fruit and vegetable growers and livestock producers to improve their productivity and take greater advantage of market opportunities.

This *Environmental and Social Management Framework (ESMF)* was prepared for the AFCRP to ensure that project activities will be undertaken in an environmentally and socially sustainable manner. The objectives of this ESMF are to:

- Assess the potential environmental and social issues associated with the various project activities;
- Establish clear procedures for screening, assessing and mitigating the environmental and social impacts of project activities; and,
- Specify appropriate roles and responsibilities within the implementing agency for managing and monitoring environmental and social concerns related to project activities.

1.2 Project Description

The project aims to restore the lost production capacities of cyclone affected farmers and fishers and to enhance preparedness of the agricultural sector to better respond to future disasters. The project will have the following components:

Component 1: Cyclone Recovery for Subsistence Farmers and Fishers. The objective of this component would be to restore the production capacity of cyclone affected subsistence farmers and fishers. The component would comprise of:

a) **Vouchers for subsistence farmers:** Vouchers would be issued to project beneficiaries for procuring a range of eligible farm and fishing items including, *inter alia*, planting material and breeding livestock, fertilizer, farm tools and construction materials from any registered supplier participating in the project. Beneficiary households in areas severely affected by the cyclone would receive a higher value of vouchers than those in moderately affected areas.

b) **Vouchers for subsistence fishers**: Vouchers would be issued to eligible fisher households in the same severely and moderately affected areas for procuring a range of agreed items, including, *inter alia*, cast nets, goggles, spears and canoe repair materials. Vouchers would be issued for fishing equipment only in villages with Community Based Fisheries Management Plans. Fishing households in villages without these management plans would be issued with vouchers for agricultural items only, precluding use of project funds for purchase of fishing gear.

Component 2: Cyclone Recovery for Commercial Farmers and Fishers. The objective of this component would be to restore the production capacity of cyclone affected commercial farmers and fishers. The component would comprise of:

a) **Recovery grants for commercial farmers**: Commercial farmers in severely and moderated affected areas whose farm equipment or infrastructure was lost or damaged due to the cyclone would be eligible for recovery grants. These grants could be used to procure materials and inputs including, *inter alia*, plastic and shade houses, irrigation equipment, construction material, livestock and livestock housing. This would be done through a 70 percent grant, up to a grant ceiling of US$ 4,200 (SAT 10,000) per farmer, following grant program guidelines developed for the project. Project support would be limited to regaining lost capacity only, and not to expand operations.

b) **Recovery grants for commercial aquaculturists**: Commercial farmers involved in aquaculture (Tilapia farming) in the cyclone affected areas who have damaged or lost equipment or infrastructure would be eligible for support under the project. Only enterprises fully operational prior to the cyclone would be eligible for financing through a 70 percent grant, up to a grant ceiling of US$ 4,200 (SAT 10,000) per farmer. Project support would be limited to regaining lost capacity only, and not to expand operations. To be eligible for a recovery grant, ponds/tanks poorly sited from an environmental point of view would have to be resituated on the farm.

Component 3: Restoration of MAF Facilities and Strengthening the Agricultural Sector's Capacity for Disaster Preparedness and Response. The objective of this component would be to support the repair of essential MAF facilities that were damaged during the cyclone, establish systems for the regular collection and updating of agricultural production information, develop a standard methodology for collection and analysis of damage and loss data for the agricultural sector and strengthen capacities of both farmers and sector institutions in disaster preparedness and response.

a) **Repair of damaged MAF facilities**: Facilities and equipment owned by MAF's Crop Division (CD), Animal Production and Health Division (APHD) and Fisheries Division (FD) that were destroyed or damaged in the cyclone would be repaired or replaced. This would include repair of the boundary fence at Atele and Nu'u, plastic tunnels and shade houses at the CD headquarters in Nu'u; chainsaws for fence clearance; replacing veterinary drug supplies used in the immediate post cyclone period; replacement of lost marker buoys that delineate fish and shellfish sanctuaries; repair of the Aquaculture workshops and FD's research vessel; replacement of giant clams in fish reserves and of lost fish aggregating devises.

b) **Strengthening the agricultural sector's capacity for disaster preparedness and response:** The project would support Technical Assistance to strengthen the capacity of the sector to respond more effectively to future natural disasters, through training programs to assist farmers and fishers protect their assets when extreme events are forecast; establish improved systems for the regular collection and updating of agricultural production information; enhancing MAF's ability to assess damages and

losses following a natural disaster and target support to those most affected; develop systems for assessing the biological and ecosystem impact of natural calamities on fisheries and designing effective rehabilitation programs; training programs to assist to improve disaster preparedness of farmers and fishers; and procurement of a boat trailer to facilitate removal of boats in Apia when extreme weather events are forecast.

Component 4: Project Coordination and Management. This component will support effective implementation and management of the project through:

a) **Staff and technical assistance:** engagement of incremental staff (consultants) needed to coordinate and implement the project effectively, including a full-time Project Manager; up to two financial management staff; two project officers; and short-term advisers in project management, information technology, procurement, financial management and environment and social safeguards.

b) **Equipment and operating costs:** This would include procurement of up to two vehicles for the project and provision of adequate work facilities and operating expenditure (including vehicle hire where necessary) for MAF to maximize operational effectiveness**.**

c) **Monitoring and evaluation:** designing an MIS system for project and enhancing MAF's M&E systems to track implementation progress and results.

1.3 Potential Social and Environmental Issues

As designed, the project would provide social benefits to the cyclone affected areas by restoring livelihoods, income and food supply; and environmental benefits by rehabilitating silted or scoured croplands, restoring damaged ponds dikes, irrigation ditches and farm drainage. However, if adequate safeguards are not in place, procurement activities under the first three components could result in or could indirectly contribute to the following:

- Increased use of pesticides and environmentally destructive items such as illegal fishing nets;
- The project could be inadvertently supporting environmentally unsustainable farms due to their locations with respect to protected areas, forests or sensitive natural habitats, bad agricultural practices or excessive use of pesticides;
- The proposed relocation of a few damaged but improperly situated ponds could encroach into protected areas, mangroves or wetlands, or may require land acquisition or displace or reduce access of others to livelihood sources and other services.
- Any perceived unfairness in the selection of beneficiaries of the vouchers and grant programs could potentially result in social conflicts in the villages.

Likewise, civil works and construction activities in the repair and restoration of damaged/lost commercial farm infrastructure and MAF facilities, if not properly managed, could also cause temporary environmental problems such as sedimentation of waterways, alteration of stream flow, restriction of access, displacement of structures and homes, dusts and noise nuisances,

among others.

2. Environmental and Social Safeguards Requirements

Triggered World Bank Policies **–** Of the ten (10) World Bank social and environmental policies, three were deemed triggered (Table 1). These are OP/BP4.01 (Environmental Assessment); OP/BP 4.10 (Indigenous Peoples) and OP/BP4.09 (Pest Management).

Table 1: World Bank Safeguards Policies and their Applicability to SAFCRP

World Bank Policy/Directive	Applicability
Environmental Assessment (OP 4.01, BP 4.01)	Yes
Natural Habitats (OP 4.04, BP 4.04)	No
Forestry (OP4.36)	No
Pest Management (OP 4.09)	Yes
Cultural Property (OP 11.3)	No
Indigenous Peoples (OP 4.10)	Yes
Involuntary Resettlement (OP4.12, BP 4.12)	No
Safety of Dams (OP 4.37, BP 4.37)	No
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	No
Projects in Disputed Areas (OP 7.60, BP 7.60, OP 7.60)	No

The OP 4.01 is triggered because of the potential negative environmental and social impacts of the procurement and rehabilitation activities which although small scale, could be significant. Under OP 4.01, the project is categorized as B. OP 4.09 is triggered because of the potential for increased use of pesticides among project beneficiaries and the potential of additional farm investment to indirectly result in increased pesticide use in the project areas. OP 4.10 is triggered as per recent policy ruling by the Bank Safeguards Secretariat which requires OP 4.10 to be triggered in all Pacific Island Countries.

Compliance with the requirements of the World Bank Policies –This Framework fulfils the requirement of OP 4.01. To comply with OP 4.09, the project will not fund purchase of any chemical pesticides and all farming and fishing households who are beneficiaries of the voucher programs as well as those who receive grants under Component 2 will be provided with MAF pamphlets on Integrated Pest Management and the Safe handling of Pesticides. The beneficiaries will also be encouraged to participate in the IPM trainings to be conducted by the MAF. In terms of OP 4.10, the social assessment conducted under SACEP (Annex 8) provided inputs that informed the design of the project particularly in the identification and selection process of beneficiaries for Component 1 and 2. In addition, a series of free and prior informed consultations, as required under WB OP/BP 4.10 have been conducted in villages by MAF and the MWCD. The minutes of these consultations (Annex 9) indicate broad community acceptance and support for the project.

Other policies such as OP 4.04 (Natural Habitat), OP 4.36 (Forestry), OP11.3 (Cultural

Property) and OP4.12 (Involuntary Resettlement) while not triggered have been considered in the screening of eligible project activities under Component 2. Activities that would convert forest or natural habitat or those that would result in involuntary displacement or restriction of access to livelihoods or those that involve lands with existing boundary disputes would not be funded.

Country Environmental Regulations Requirements **-** The relevant country environmental regulations are stipulated in three statutory documents. These are: (1) the *Planning and Urban Management (Environmental Impact Assessment) Regulations 2007* (2007 Regulation)*;* (2) the *Planning and Urban Management Act 2004* (2004 Act); and (3) the *Strategy for the Development of Samoa 2012 – 2016 (SDS).* The 2004 Act was established "to implement a framework for planning the use, development, management and protection of land in Samoa in the present and long-term interests of all Samoans and for related interests.*"* The Act requires all development to require a Consent (S.34) and for persons with intentions to undertake development to apply to PUMA for a Development Consent to carry out development (S.37). As part of the development consent application, PUMA may require the applicant to provide an EIA. The PUMA EIA Regulations (2007) elaborates on the types of EIAs required of which there are two (i) a Preliminary Environment Impact Assessment (PEAR) and (ii) a Comprehensive Environmental Impact Assessment (CEAR) (S.4). The criteria for determining which (PEAR or CEAR) is required are set out in Section 5. A PEAR may also recommend that an EIA is necessary if it finds significant environmental impacts that need more detailed investigations. The contents of both the PEAR and CEAR are described in Section 7. Included in the PUMA's planning framework is the Code of Environmental Practices (COEP, 2006) that defines methods and/or procedures to be followed by consultants, designers and contractors for the avoidance or mitigation of adverse environmental effects that may arise out of infrastructure development projects or maintenance work. Policies and standards for parking, noise and pollution have also been developed. The qualifying criteria for requirement of an EIA, specified in the guideline include adverse impacts:

a. On people, an existing activity, building or land;
b. On a place, species or habitat of environmental (including social and cultural)importance;
c. In conjunction with natural hazard risks;
d. On or in the coastal zone;
e. On or in any waterway or aquifer;
f. Arising from the discharge of any contaminant or environmental pollutant;
g. Associated with land instability, coastal inundation, or flooding;
h. On the landscape or amenity of an area;
i. Impacts on public infrastructure;
j. On traffic or transportation; and
k. On any other matter for consideration stated in Section 46 of the Act.

The indicative list of activities for AFCRP (Annexes 1-3) do not appear to have any major adverse impacts in areas as per above qualifying criteria. Activities under Component 2 may have some adverse impacts on the above but assuming they would pass the environmental screening, they would likely be negligible given the small scale of the undertakings (i.e. a

maximum of cost of US$6,000 (SAT 14,500)). This means that a PEAR should suffice the government EA requirements. This would complement the ESMP requirement of the World Bank. This however would depend on the proposed infrastructure or farm rehabilitation works. Hence, the above criteria will be included in the screening of the EA requirements of Component 2 activities.

3. Environmental and Social Profile of the Project Area

Environmental and Social Profile of the Project Area – The Project would be implemented over a period of two years covering the whole country, although direct assistance to beneficiaries would be confined to those living on Upolu (one of the two major islands that comprise Samoa) in the areas designated as severely or moderately affected in the Damage and Loss Assessment (DaLA) undertaken as part of GOS's Post-disaster Needs Assessment (March 2013). The Environmental Profile (Annex 7) excerpted from Environmental Assessment conducted for SACEP and a Social Assessment (Annex 8) also conducted for SACEP have provided inputs into the design of AFCRP.

Environmental Profile

The Samoan islands are of volcanic origin dominated by olivine basaltic rocks. The main islands including Upolu are generally mountainous and consist of relatively few areas of flat or undulating land suitable for agriculture or village settlements. In Upolu, the main mountain ridge runs along the length of the island with mountains rising as high as 1,500 msal. Upolu still has substantial forest areas with about 33,000 hectares of open forest, 17,300 hectares secondary forests, and 1,300 primary forest, 18,300 hectares grasslands and medium forests and bush and barren lands. There are an estimated 353 hectares of mangroves and 597 hectares of wetlands.

Settlements and agricultural lands are concentrated on the coastal plains and rolling slopes. The existing agricultural land use pattern is either based on subsistence farming or plantation cropping and is generally confined to the lowland and foothill areas up to about 230 masl. In areas of gentle slope and higher population pressure such as North-west Upolu, agricultural development extends to elevations of as high as 300 masl. Most of the high intensity agricultural production lands are within the 75 masl. The major crops consist of coconut, cocoa and bananas. Coconut plantations dominate the croplands with total area of 26,000 hectares.

Samoa has a high biodiversity with more than 2,500 species of insect, 770 species of native plants, 64 native land snails, 31 breeding birds, 14 reptiles and 3 native mammals. Marine biodiversity is also high with about 890 coral reef fish, over 200 corals and several turtles, whales and dolphins. About 30% of these species are endemic to Samoa. This biodiversity is threatened by habitat destruction due to agricultural development and housing, over-harvesting of resources and the impact of invasive species of pests and weeds. Some of these species such as are already in the endangered list, including the Samoa national bird, the Tooth-billed Pigeon (*Didinculus strigirostris*) and the Samoan flying fox. Major conservation sites have been established by the government. There are about 16 protected areas covering a total about 35,000 hectares and natural reserves in Samoa including three Marine

Protected Areas.

Social Assessment

The Island of Upolu has a total population of 187,820 (26,205 households) with males constituting 52% of the population. About 60 percent of the population are engaged in agriculture: 30 percent are subsistence households producing only for home consumption; 26 percent produce primarily for home consumption but with some limited opportunistic selling in the local market; and 3 percent produce primarily for sale. Farm size averages six acres, focused predominantly on the subsistence staples of taro, banana, ta'amu, breadfruit, and coconut and a variety of fruits and vegetables. There is only a handful of bigger commercial farmers selling directly to either supermarkets, restaurants and institutions, but even these operations are of limited scale. Livestock farming is also largely subsistent production based on cattle, poultry, pigs, and sheep, with a few larger semi-commercial units also producing these livestock. In the fishery sector, about one-quarter of rural households are engaged in fishing, with most of the catch used for home consumption. Only a small number of households engage in off-shore commercial fishing (tuna exported frozen to American Samoa). Coastal and lagoon fishery consists primarily of small dugout and fibreglass canoes and boats fishing in the lagoon area, and larger aluminium boats fishing on the outer edges of the reefs. The vast majority of the lagoon fishing is subsistence carried out by fishers gleaning the reefs and/or by using spear fishing gear. Aquaculture in Samoa is still very rudimentary with a small number of tilapia farmers.

Family and village structure: The family, *'iaga,* and the village, *nu'u,* are key social units in Samoan society. The Samoan family refers to an extended family which may include three or four generations living in close proximity. It is the primary unit through which the Samoan way of life, *fa'a Samoa,* operates. A village is made up of chiefs, who govern the village, and untitled men and women. Untitled members in a village are in one of four groups; the wives of matai (*faletua),* school aged children (*tamaiti),* untitled men (collectively *aumaga),* and women (*aualuma* - which also refers to the women's committee). The latter two groups are the workers in the village. There are 362 villages in Samoa and each village takes great pride in maintaining its identity and distinctive history. Loyalty to one's village and family are 'an almost sacred obligation'[1]. Groups of villages form districts, *itu malo,* connoting an alliance.

Each family has at least one leader, *matai,* as its head which is usually a male and may also be a female. A *matai* is appointed through inheritance and family. The *matai* works for the family to provide maximum benefits for all the members of the family. *Matai* command respect and are addressed by their titles of *Afioga, Susuga* and *Tofa* depending on their type and hierarchy. In 2006 only 9 percent of the total population reported to be Matai in their households (80 percent were male and 20 percent female)[2]. The *matai* is responsible for directing use of family land and other assets belonging to the family. *Matai* are responsible for enforcement of village law and punishment of family members who have violated social codes. Only Matai can run for

[1] Samoa Pacific Pride, by Graeme Lay, Tony Murrow & Malama Meleisea, 2000 Pasifika Press Ltd

[2] Report of the Population and Housing Census 2006

parliament. Each *matai* represents the family at village council, *fono*, meetings. The council of *matai* governs its village and makes decisions on all village matters beyond those made by each family. To make changes in a village, the most powerful *matai* needs to win the full support of the other matai of that village. In the village the chiefs make, interpret and implement the law. If anything needs to be done in the community it is done through the chiefs. It is through the chiefs a formal relationship can be established. The village mayor, *pulenu'u,* a *matai* and on the village council, is the point of contact to link the project with villages. *Matai*s are registered at the Land Titles Court. Bestowing so many matai titles is a current concern, in part because it makes decision making about development on customary land difficult. Some *matai* have stopped development and disagreement has sometimes resulted in a lengthy court case.

Each village has a women's committee which meets monthly and at other times as required. The women's committee is very active in each village. Each committee has a representative and representatives meet monthly with the Women's Division (WD) of the Ministry of Women Community and Social Development (MWCSD). Each representative is paid by government but selected by the village. The representative acts as a liaison between the village and government. There are 105 representatives in Upolu and 86 in Savaii. Meetings are an opportunity for participants to share information on a wide range of topics.

Land ownership and tenure: In Samoa, approximately 86 percent of the land is customary land and owned by the family over which the matai has authority. In 2006, 65 percent of households were living on customary land and 25 percent lived on freehold land. The rest lived on other types of land tenure[3]. The four regions of Samoa have markedly different percentages of people living on customary land. Savaii has 93 percent, Rest of Upolu (ROU) 90 percent, North West Upolu (NWU) 54 percent and Apia Urban Area (AUA) 24 percent. No households in Savaii and ROU lived on leased or Government land. Approximately 91 percent of crop cultivation takes place on customary land with a small percentage on freehold land and a smaller percentage on leased land[4].

Gender roles: While there are traditional male/female roles in the production cycle, the agricultural workload is usually shared. The exception is fishing, where women and older men glean the lagoons and inner reefs while younger men fish the outer lagoons, reefs, and sea. The men do the more physically challenging work including scaling trees for coconuts, cassava planting and harvesting, and slaughtering cattle. The women tend the smaller animals, do gardening, serve food and provide for guests, and support health and education initiatives as well as looking after the family. When there are village events such as planting of crops, it is the untitled men and women who do the work while the matai supervise and administer. Great importance is placed on the group and its dignity and achievement rather than the individual. This value is deeply rooted in the Samoan way of life.

Social and Environmental Impacts of Project Activities **–** The social and environmental

[3] Leased land 4 percent, government land 1 percent, church land 4 percent, employer's land 1 percent and not stated .1 percent (Report of the Population and Housing Census 2006)

[4] Refer to Dr Hanemann's report for details.

impacts of project activities are unlikely to be significant especially for Component 1. Minor and localized impacts may be felt in some of the Component 2 and Component 3 activities but these would be easily mitigated or avoided through proper engineering measures. Except for the rehabilitation of some fish ponds that would also need to be relocated, all activities will not result in new environmental footprints and hence would not have incremental land use impacts and land acquisition issues. None of the project activities would require a full EIA. A simple Environmental and Social Management Plan (ESMP) may be required for some Component 2 and Component 3 activities. Project activities would be concentrated on existing footprints, except if previous sites are assessed to be in a natural hazard zones or environmentally sensitive environment in which case relocation to a more environmentally and socially appropriate site would be necessary.

Component 1 - The purchase of inputs and materials under Component 1 (Voucher Program) which are estimated to be about WST1600 (US$800) each for severely affected household and WST1000 (US$500) for each of the moderately affected households are unlikely to have any direct adverse environmental or social impacts. There is however a small risk that project funding could inadvertently support environmentally unsustainable farming practices, which can mitigated by an Information, Education and Communication (IEC) on good farming practices.

Component 2 – Based on the indicative list of activities to be funded under Component 2 (Annex 2), only a few would have direct environmental or social impacts and any direct environmental impacts would likely be negligible given the maximum grant per farms of only SAT10,000 (US$ 4,200) and SAT 6,700 (US$2,814)(each for severely and moderately affected households, respectively. Adverse social impacts if there would be any would be limited to the immediate vicinity and involve one to a few households. The MAF Fisheries Division has identified about eight (8) fish ponds that have been destroyed by the cyclone. Some of these fish ponds however would not only need to be rehabilitated but also would need to be relocated. The original location of these ponds were poorly sited (i.e. some are too close to the river) as they were established by their owners without prior consultation of the MAF.

Component 3 – Component 3 activities are also small scale and would not have any new footprints. There are however some potential but minor issues which would need to be assessed and if significant, to be satisfactorily addressed prior to implementation (Table 2). For example, the fencing of lands may restrict/reduce access by local residents to roads or homes or farms. For activities involving civil works, usual construction impacts should be mitigated. A simple ESMP addressing these issues should be prepared, except for the repair of vessels.

Table 2: Component 3 activities and potential social or environmental issues

Activities	**Issues**
Repair of Nu'u fence, plastic tunnels and shade cloth houses;	Potential restriction of access of nearby community residents
Procurement of replacement chainsaws and veterinary drug supplies;	Use of chainsaws to cut forest trees
Replacement of lost marker buoys for fish sanctuaries	Restriction of access to fishing grounds

Building repairs for Fisheries aquaculture Work Shop	Construction impacts (noise and dusts nuisance, waste disposal)
Procurement and relocating three destroyed Fish Aggregating Devices (FADs);	Location issues; Restriction of access of traditional fishers to their fishing grounds
Giant clam replacement and regeneration	Introduction of foreign species
Repair of Fisheries Division research vessel;	None
Procurement of boat trailer.	None

4. Environmental and Social Management Measures: Procedures and Requirements

The measures below are applied in order to minimize environmental and social risks as well as identify and mitigate impacts of individual activities under each Component. These measures include procedures and requirements that are in compliance with the applicable World Bank policies and government environmental legislation and regulation in Samoa (PUMA Act 2004 and PUMA (EIA) Regulation 2007). The specific management measures for each component are discussed below and are summarized in Table 3:

Component 1: Distribution of Vouchers to Subsistence Farmers and Fishers

Screening **–** Only those listed in the list of beneficiaries are entitled to receive the vouchers and vouchers can only be used to purchase items found in the list of eligible items. Beneficiaries of the voucher program will be pre-identified at their respective villages by a team composed of representatives from the women, youth and the village mayor based on the criteria provided by MAF. The list would be approved by the village council before they are submitted to the AFCRP for consolidation and initial validation. After initial validation, the list will be sent again to the villages to be posted in the central or conspicuous places such as the village churches for final validation by the residents for a particular period. The lists will also be published in a national newspaper. During this period MAF-, will entertain any clarifications, complaints or requests for amendments to lists of beneficiaries. Telephone hotlines in MAF will be made available during this period.

The items eligible for purchase using the vouchers have also been pre-identified (Annex 1) and have been pre-screened to include only prescribed items such as fishing nets with mesh size of not less than 1.2 inches. Hazardous and environmentally risky items such as chemical pesticides are ineligible for purchase for voucher recipients.

There will be no need for environmental or social screening of individual recipient farms.

Assessment and Safeguards Documentary Requirements **-** Voucher recipients would not be required to undertake any assessment or prepare any ESMPs. Instead, voucher recipients will be provided a package containing the relevant MAF Pamphlets containing guidelines for sustainable and good farming practices. When beneficiaries sign up for the voucher program, they will be asked to provide some details on what they intend to purchase with the vouchers. Based on this information, the project will prepare some simple pamphlets (in Samoan) to provide guidance on good practices related to environmental and social aspects of crop

production/ safe handling of pesticides/ small scale livestock production/ inshore fisheries. These will be given to all voucher recipients. The following pamphlets are currently available at the MAF:

1. Proper and Safe Handling of Pesticides
2. Integrated Pest Management
3. Watershed Management and Soil Conservation
4. Fisheries Guidelines and Standards

Implementation – Voucher recipients will purchase the items they need from any of the Project-nominated suppliers. The transaction data are automatically captured by the electronic system which will be established with the suppliers and a data service provider; Otherwise beneficiaries should keep a simple record of what they purchased with their vouchers, which will be supplied to the MAF. In terms of technical support on the guidelines, there will be a telephone hotline in the MAF which the farmers can call if they have questions on how to do things or need guidance. MAF will offer some training on safe handling of pesticides and IPM. These would be widely announced and farmers could attend on a voluntary basis. As already agreed with MAF, vouchers cannot be used to purchase pesticides/herbicides.

Compliance Monitoring **–** The SACEP ESMO would randomly select and visit beneficiary households to monitor and validate safeguards compliance. Safeguards compliance however should be included in the M&E system. The AFRP Project Officers in collaboration with the SACEP ESMO will develop a safeguards compliance monitoring protocol for voucher recipients.

Component 2: Grant to Commercial Crop or Aquaculture Farms

Screening **–** To qualify for this program, a farm must be properly situated with respect to protected areas, forests and natural water bodies. Environmental and social screening forms shall be completed (Annexes 4 or 5) which combine government regulations and World Bank policy regulations. The screening will be done by the SACEP ESMO who will also be handling the social safeguards requirements for AFCRP. These screening forms will be further refined by ESMO prior to implementation.

Documentary Requirements **-** The screening will determine further documentary requirements under PUMA regulations i.e. whether an EIA or PEAR would be required. For the World Bank requirement, a simple ESMP in matrix format should be prepared based on the environmental conditions of the site and the type of rehabilitation works to be done. The SACEP ESMO will review and approve/decline all grant proposals packages including the ESMPs based on environmental and social concerns. If a Consent from PUMA is required the ESMO should assist the grantee obtain such Consent.

Review and Clearance - All proposals shall be reviewed and cleared by the SACEP ESMO. Among the items to be reviewed are: (1) the fulfilment of PUMA requirements, if any; (2) the proposals compliance with relevant MAF guidelines and standards; and, (3) compliance with World Bank safeguards policy requirements including a satisfactory ESMP.

***Compliance Monitoring* –** The AFCRP Project Officers in collaboration with the SACEP ESMO will monitor all grant recipients farms in terms of compliance with ESMPs and other issues. A safeguards compliance monitoring protocol will be developed by the Project Officers and SACEP ESMO.

Component 3: Rehabilitation/Repair of Damaged MAF Facilities

Screening – These eligible activities have already been pre-identified by MAF. Based on the above there will be no need for EMP for these activities.

Documentary Requirements – For activities involving civil works, relevant MAF units will prepare a Rehabilitation Plan or Program of Works according to its own guidelines and standards. The MAF unit will also be responsible for preparing an EMSP which addresses the relevant issues. For activities not involving civil works no safeguards documentation is required.

Table 3: Summary of procedures and requirements for each component

	Component 1 Vouchers for Subsistence Farmers/Fishers	**Component 2 Grant for Commercial Farmers/Fishers**	**Component 3 Repair/Replacement of Damaged/Lost MAF Facilities**
Screening	Recipients are pre-identified by a team composed of the village mayor and representatives of women and youth sectors; and approved by their village councils; Eligible items for purchase are also pre-identified and excludes chemical pesticides;	The Environmental and Social Management Officer (ESMO) or Project Officers will screen grant applications (proposals) using Screening Forms (Annexes 4 and 5). The screening will determine requirements;	Facilities to be rehabilitated have been identified (See List in Annex 3)
Preparation of Documentary Requirements	Upon receipt of voucher, the recipients are each provided with relevant MAF brochures on good farming/fishing practices.	Satisfy requirements as per screening guidelines. SACEP ESMO and AFCRP Project Officers to help proponent prepare ESMPs and PEAR if required;	Relevant MAF units prepare a Rehabilitation Plan or Program of Works and ESMPs if required
Review and Clearance	Not required	SACEP ESMO reviews and provides safeguards clearance for proposals to be considered for funding	With concerned MAF experts, SACEP ESMO reviews plan/program of work against relevant MAF guidelines, standards and

			regulations; and clears proposal for procurement.
Implementation	Voucher recipients are free to buy any items on the list of eligible inputs and equipment. Data on items bought are recorded.	Activities are undertaken with measures according to approved plan and measures in the ESMP	Works are procured by the concerned MAF units.
Compliance Monitoring	AFCRP Project Officers and SACEP ESMO will conduct random evaluation of the recipients.	AFCRP Project Officers monitors compliance of requirements	M&E Specialists monitors compliance of requirements

Grievance Redress Mechanism - A grievance redress mechanism will be established following the system being established for SACEP.

5. Implementation Arrangements and Staffing

A small AFCRP Project Management Unit (PMU) located within MAF would provide project coordination and management and monitoring of development impact. The PMU includes a full time Project Manager two financial management staff and two project officers and will be supported by short-term TA. The review and clearing of social and environmental safeguards of project activities would be handled by the existing Environmental and Social Management Officer of SACEP. The ESMO would be responsible for ensuring the ESMF is implemented effectively, liaising with the relevant agencies such as MNREM and, providing support to the grantee farmers in preparing safeguards documents with the help of the extension officers of MAF, through information dissemination, training, workshops. A Safeguards Adviser will also be engaged to assist the Project. The safeguards monitoring of compliance would be undertaken by the Project Officers in coordination with the ESMO.

The main agency responsible for environmental protection in Samoa is the Ministry of Natural Resources and Environment and Meteorology (MNREM) under which PUMA is a Division. This Ministry administers the PUM Act 2004 and 2007 Regulation which prescribe the Development Consent process as the means of regulating and screening development proposals for their potential environmental and social impacts. PUMA consults closely with other government agencies in this review process, including MAF for proposals related to agriculture and fisheries.

6. Estimated Costs

The estimated cost of ESMF implementation for AFCRP over the two years of project implementation is estimated at US$300,000, for salaries, training and monitoring. US$ 150,000 would be from AFCRP and US$200,000 is GoS through salaries of MAF personnel, PUMA costs and support from the SACEP ESMO.

ANNEX 1 - Eligible Input Purchases by Voucher Type

Subsistence Fishing Households	Subsistence Farming Households
Positive List (Allowed) 1. Three-prong Hand Spear 2. Diver Fins for adult 3. Diver mask professional type 4. Snorkel 5. Cast net (Throw net) Spanish type , 1 inch stretched mesh x 10 ft long x Polyamide monofilament 0,28mm diameter. Cast net is not a gillnet. 6. Eight (8) to ten (10) ft Rod and Reel complete with monofilament line 7. Twenty (20) fishing lures (Siripiri Galala) @ 20 ST$ each 8. Insulated cool box for marine use , made with UV inhibitors between 40 and 50 liters capacity with strong hands and drain plug. 9. Paint/Timber/nails/rope for canoe repair **Negative List (Not allowed)** 1. Fishing nets with mesh size of less than 1.2 inches Subsistence fishing households may also purchase any items on the positive list for subsistence farming households.	**Positive List (Allowed)** 1. Fertiliser (Organic or Inorganic) 2. Vegetable, pasture and fodder seed 3. Seedling and planting materials 4. Fencing wire and posts 5. Nails 6. Livestock feed 7. Construction timber 8. Materials for Animal shelter repair. 9. Bow saws and axes 10. Knapsack sprayers (for foliage fertilisers) 11. Irrigation equipment, water harvesting/storage 12. Crop shelter (e.g. poly-tunnels, shade cloth, etc) 13. Farm implements (e.g. hoes, shovels, rakes, wheelbarrows, hand sprayers, secateurs, etc) 14. Basic carpentary tools for repair work (eg hammers, saws, etc) 15. Rural water tanks 16. Breeding livestock *(to be specified)* 17. Organic or natural pesticides/herbicides **Negative List (Not allowed)** 1. Chemical Pesticides/Herbicides

ANNEX 2 - Indicative List of Activities to be funded Under Component 2

Grants to Commercial Famers and Aquaculture Operators

Commercial Farmers

1. Procurement of materials and inputs such as:

    - Plastic and shade/greenhouses;
    - Irrigation equipment;
    - Construction material; and
    - Livestock;

2. Repair/rehabilitation of farm buildings and other infrastructures.

Aquaculture Operators

1. Replacement of lost equipment and facilities

2. Pond rehabilitation /relocation – MAF has identified 8 Aquaculture Ponds that have been destroyed. Some of these ponds are poorly situated because they were installed without prior consultation with the MAF and would need to be also relocated.

ANNEX 3 - List of Activities for funding under Component 3

Repair/Replacement of Damaged/Lost MAF Facilities

1. Repair of Nu'u and Atele fence, plastic tunnels and shade cloth houses;
2. Rehabilitation of fruit farm
3. Procurement of replacement chainsaws and veterinary drug supplies;
4. Replacement of lost marker buoys;
5. Building repairs for Fisheries aquaculture workshop;
6. Procurement and relocating three destroyed Fish Aggregating Devices (FADs);
7. Repair of Fisheries Division research vessel;
8. Procurement of boat trailer.

ANNEX 4 - Screening Checklist for Rehabilitation of Farm Infrastructure

Name of Grant Applicant: _____

Type of Infrastructure: _____

Estimated Rehabilitation Cost:_____

EIA Needs	Sample checklist questions	Y	N	If yes, mitigation
Location				
	1. Would the proposed farm infrastructure rehabilitation: • Encroach on any protected area of natural habitat or a natural forest? • Caused involuntary land acquisition, or displacement of homes? • Adversely affect or alter structures or areas of great cultural or historical significance?			If the answer of either of the items is yes, the proposal is not eligible for a funding
	2. Is the farm properly situated in compliance with MNREM regulations (Use relevant MNREM regulations)			If yes, the proposal is not eligible for funding until all requirements are met
	3. Would the rehabilitation reduce people's access to pasture, water, public services or other resources that they depend on?			Design must provide access routes/corridors. If not possible, relocate the site
	4. Is there a high chance of encountering cultural or scientific artefacts in the construction site?			Applicant is required to adopt the "Chance Find" procedure under SACEP
Impacts	**Would the rehabilitation be likely to:**			
	5. Involve substantial demolition of existing facilities?			Applicant must submit a Demolition Plan
	6. Generate excessive dust, vibration, noise and wastes during construction and during operational phase?			Prepare EMP
	7. Release hazardous substances, contaminated waste water and gases during site preparation or demolition or during operation?			Consider EA
	8. Lead to creation of open pits?			Fill and grade the open pit area.
	9. Lead to construction wastes?			Minimize waste, reuse if possible, or send to dump sites
	10. Lead to loss of vegetation?			Minimize removal of

				vegetation.
General mitigation measures				
Are protective gear provided? If not enforce use of protective gears.				
Landfill arrangements in place? If not ensure procedures are in place to fill the open pits and grade them.				
Construction wastes management in place? If not prepare a construction waste management plan.				
Training on safety and precautionary measures planned? If not, ensure that H&S is in place.				

Al. If all answers to the checklist questions are "No", there is no need for further action.
A2. For all issues indicated by 'Yes" answers, adequate mitigation measures are included in the project design. No further planning action is required. Implementation of the mitigation measures would require supervision by the applicant and the appropriate local authority.
A.3. For the following issues Indicated by "Yes" answers (Q1specify questions numbers): the applicant has not provided adequate mitigation measures. The applicant must revise the proposed project plan to provide adequate mitigation. Specialist advice might be required in the following
A4. For the following issues indicated by "Yes" answers (specify questions numbers): 5, 6 and 7 for which the applicant has not provided adequate mitigation measures. The applicant must prepare an environmental assessment of the proposed project, and revise the project plan according to the results of that assessment. Specialist advice would be required in the following areas: 7 – consult with SWA, PUMA and MWTI.

Comments by extension/project officer:

_____
_____
_____

Recommendation on the proposal:

Proposed Environmental Category:

Signature of extension/project officer:_____ Date: _____

Name of Extension/Project Officer:_____

Signature of Applicant:_____ Date: _____

Name of Applicant: _____

Signature of ESMS: _____ Date: _____

ANNEX 5 - Screening Checklist for Fish Pond Rehabilitation

Name of Applicant: _____

Size of Pond (hectares): _____

Estimated Cost of Proposed Rehabilitation: _____

EIA Needs	Sample checklist questions	Y	N	If yes, mitigation
Location				
1	Is the current pond location not consistent with MAF's criteria? (Refer to relevant MAF Fishery regulation).			Proposal not eligible for funding
2	Would the proposed new Pond location: • Encroach on a protected area? • Alter cultural heritage sites or structures? • Caused involuntary land acquisition or displacement of dwellings? • Within a disputed lands?			Proposal not eligible for funding
3	Are there nearby stream or lake?			If yes, Go to 4: If no Go to 5
4	Are the fish species to be raised already in the stream or lake?			If yes, Proceed to 5. If No, Proposal not eligible for funding
5	Are there critically threatened species (based on IUCN RedList and MNRE data) that could be affected?			If yes, Proposal not eligible for funding
6	Is the proposed location in a flood hazard zone?			If yes, Not eligible for funding
7	Would the project reduce people's access to the farms, water, public services or other resources that they depend on?			Provide access routes/corridors. If not possible, relocate the site.
	Might the project alter any historical, archaeological or cultural heritage site (chance find)?			Relocate the subproject or use chance find procedures for SACEP.
Impacts	**Would the subproject be likely to:**			
	Increase production wastes or by-products?			Introduce proper disposal mechanism.
	Contribute to soil contamination?			Provide barriers (concrete patch, etc).
	Create unpleasant odors?			Ensure site is located away from, schools, hospitals and housings. Ensure that the site is downwind of the

				developed areas.
	Affect water quality?			Prevent leaching of material to surface and groundwater. Keep refuse and/or by-products behind berms or in sealed tanks.
Alternatives				
	Is it possible to achieve the objectives above in a different way, with fewer environmental and social impacts?			Consider using the alternative approach.
General mitigation measures				
The site should be located far away from sensitive environments such as wetlands, rivers and mangroves.				
Tank design should ensure that channels for overflow are discharged into a soak pit. Overflow pipes should have cloth or fine mesh screens to ensure fingerlings are not accidentally released into the environment.				
Provide training for tilapia farmers on environmental risks associated with tilapia and the need for proper monitoring and mitigation measures.				

Comments by extension/project officer:

_____

_____

_____

Recommendation on the proposal:

Proposed Environmental Category:

Signature of Extension/Project officer: _____ Date: _____

Name of Extension/Project Officer: _____

Signature of Applicant: _____ Date: _____

Name of Applicant: _____

Signature of ESMO: _____Date:_____

ANNEX 6 - PUMA (Environmental Impact Assessment) Regulation 2007

Planning and Urban Management (Environmental Impact Assessment) Regulations 2007

Arrangement of provisions

Schedule

Content of an EIA

Pursuant to section 105 of the Planning and Urban Management Act 2004, **I, TUI ATUA TUPUA TAMASESE EFI**, Head of State of the Independent State of Samoa, acting by and with the advice of Cabinet, **MAKE** the following Regulations.

DATED at Apia this ….. day of ……..…… 2007.

_____

(Tui Atua Tupua Tamasese Efi) HEAD OF STATE
REGULATIONS

1. Title and Commencement

1. These Regulations might be cited as the Planning and Urban Management (Environmental Impact Assessment) Regulations 2007.

2. These Regulations commence on the day they are made.

2. Interpretation

In these Regulations, unless the contrary intention appears:

"EIA" means an Environmental Impact Assessment, required for public and private development proposals as set out in these Regulations, and includes a PEAR;

"PEAR" means the form of EIA referred to in subregulation 4(2) as a Preliminary Environmental
Assessment Report, and applied in accordance with these Regulations;

"Proponent" means the person proposing and assuming responsibility for any development proposal;

"The Act" means the Planning and Urban Management Act 2004.

3. When an EIA is required

1. If, as part of any development consent application made pursuant to section 37 of the Act, an EIA is required by the Agency pursuant to section 42 of the Act, the EIA must be prepared and provided in the manner prescribed under these regulations, unless the Agency directs otherwise in writing.

2. In deciding whether to require an EIA, the Agency would take into consideration all the information and documentation provided with the application.

4. Forms of EIA

1. A Preliminary Environmental Assessment Report (PEAR) and a Comprehensive Environmental Assessment Report (CEAR) are the two forms of EIA.

2. A Preliminary Environmental Assessment Report might be required by the Agency for any development application to which any of the qualifying criteria specified in these Regulations apply, but which the Agency considers is not likely to have a significant adverse impact on the environment.

3. A Comprehensive EIA might be required by the Agency for any development application to which any of the qualifying criteria specified in these Regulations apply, and which the Agency considers is likely to have a significant adverse impact on the environment.

4. As a consequence of learning more about any particular development the Agency might, within 1 month of issuing any such requirement, alter its requirement, including changing its requirement from a PEAR to a CEAR or vice-versa.

5. A requirement or alteration under this Part shall be notified in writing to the proponent.

5. Qualifying Criteria for an EIA

An EIA might be required where the Agency considers that the development application and its associated activities could give rise to any of the following:

a. adverse impacts on people, an existing activity, building or land;

b. adverse impacts on a place, species or habitat of environmental (including social and cultural) importance;

c. adverse impacts in conjunction with natural hazard risks; (d) adverse impacts on or in the coastal zone;

d. adverse impacts on or in any waterway or aquifer;

e. adverse impacts arising from the discharge of any contaminant or environmental pollutant;

f. adverse impacts associated with land instability, coastal inundation, or flooding;

g. adverse impacts on the landscape or amenity of an area; (i) adverse impacts on public infrastructure;

h. adverse impacts on traffic or transportation; and

i. any other matter for consideration stated in section 46 of the Act.

6. Content of Preliminary Environmental Assessment Report

The PEAR shall be submitted in accordance with:

a. the Act; and

b. any EIA guidelines, development standards or planning provisions approved for this purpose by the Board; and

c. any form specified or provided by the Agency; and

d. any direction made in writing by the Agency; and

e. Part 1 of the Schedule, unless otherwise directed by the Agency in writing.

7. Content of Comprehensive EIA

The EIA shall be submitted in accordance with:

a. the Act; and

b. any EIA guidelines, development standards or planning provisions approved for this purpose by the Board; and

c. any form specified or provided by the Agency; and

d. any direction made in writing by the Agency; and

e. Part 2 of the Schedule, unless otherwise directed by the Agency in writing.

8. Baseline and Compliance Monitoring Schedule

1. In addition to the requirements stated in regulations 6 and 7 above, an EIA shall be accompanied by a Schedule outlining a programme of baseline and compliance monitoring, appropriate to the nature and scale of the application.

2. The Schedule referred to in subregulation (1) shall outline the baseline monitoring proposed to be undertaken and also any subsequent monitoring (together with its proposed frequency and methodology) intended to ensure compliance.

9. Review of PEAR and comprehensive EIA

1. The Agency shall review, or cause to be reviewed, any PEAR or comprehensive EIA required and submitted as part of a development consent process.

2. In undertaking the review referred to in subregulation (1), the Agency shall, as part of that review:

    a. circulate the EIA to all other agencies known to have, or to be likely to have, a statutory functional interest in the application, for their written comment; and,

    b. specify such period for the receipt of any comments as is reasonable in the circumstance, taking into account the nature and scale of the application and its associated documentation.

3. The Agency shall prepare a written review report to be considered, pursuant to section 46 of the Act with other relevant material before a decision on any development consent

application is made.

10. External Review might be undertaken

1. The Agency might determine that it does not possess, or has not currently available to it, the necessary specialist skills to appropriately review an EIA and in such a circumstance it might identify a suitable external reviewer and commission a report from that person.

2. Prior to commissioning any report under subregulation (1) and where the Agency intends to recover the associated costs from the proponent, agreement to that course of action must be obtained in writing from the proponent.

3. If the proponent does not agree to the course of action proposed by the Agency, and fails to provide an alternate option to the satisfaction of the Agency, the development application shall be deemed to be suspended until such time as this matter is resolved.

11. Public Consultation

1. The Agency might determine that further public consultation on an EIA is required either:

    a. by the applicant; or

    b. by the Agency.

2. The Agency must advise the proponent in writing of any such determination within 2 weeks of receiving the EIA, including full details of the public process it proposes the applicant or the Agency undertake and the reasons for that determination.

3. Any public consultation proposed under this Part must be consistent with any Board-approved guideline and shall be completed before a decision is taken on the development application pursuant to section 47 of the Act.

SCHEDULE - CONTENT OF AN EIA (regulations 6 and 7) Part 1:

1. A PEAR shall contain the following particulars: (a) a brief description of the development proposal;

    a. a brief description of the area to be affected and the nature of the proposed change to the area
    b. (including a location map and site plan);

    c. a brief justification for the development proposal;

    d. a summary of the stakeholder consultation undertaken, the general issues raised, and responses to those issues;

e. an assessment of all reasonably foreseeable adverse and positive environmental impacts, including long-term and short-term, primary and secondary consequences;

f. an indication of possible alternatives to mitigate any identified adverse environmental impacts; and

g. an indication of measures that the proponent intends to take to mitigate or avoid identified adverse environmental impacts.

Part 2:

1. A comprehensive EIA shall, where relevant, contain the following particulars:

   a. **Summary** - each EIA shall contain a summary of the development proposal and its consequences. The summary shall include:

      i. a statement of all major conclusions and recommendations; and
      ii. an outline of any issues that are controversial; and
      iii. an outline of issues that remain to be resolved; and
      iv. a summary of the stakeholder consultation undertaken, the general issues raised, and responses to those issues; and
      v. an outline of the preferred choice among any alternatives; and
      vi. details of any proposals to mitigate significant adverse impacts.

   b. **Description and purpose of activity** - each EIA shall include a description of the development proposal (including any phasing or sequencing of activities), a statement of its underlying purpose, and the long-term and short-term objectives sought by the proponent. The statement shall further:

      i. generally describe the proposal's technical, economic, and environmental characteristics, taking into consideration current engineering and supporting utility / infrastructural data;
      ii. show the precise location and boundaries of the proposal on a detailed map; and
      iii. provide a justification of the rationale for the proposal including such supporting information as is appropriate.

   c. Alternatives - each EIA shall review the environmental impacts of the development proposal and any practical alternatives to the proposal. In this section the proponent shall:

      i. review and evaluate all reasonable alternatives, including locations and methods and the alternative of no action; and
      ii. identify the proponent's preferred alternative or alternatives;

   d. **Affected environment -** each EIA shall:

i. describe the local environment in the vicinity of the proposal as it exists before commencement of the proposal;
ii. review and evaluate possible conflicts or inconsistencies between the development proposal and relevant applicable objectives of national, regional or local land use and marine / coastal plans (including Development Plans) and policies.

e. Environmental consequences - each EIA shall include an analysis of the environmental consequences of the development proposal and, to the extent relevant, might include the following:

i. a review of direct and indirect environmental effects, their significance, and risks;
ii. a consideration of any potential cumulative environmental impacts that might arise in conjunction with other activities in the location;
iii. a consideration of the environmental effects of alternatives;
iv. an assessment of the likely need for additional infrastructure, including energy and public utilities;
v. an assessment of impacts on the area's physical locality and amenity (including visual quality), its historic and cultural resources, and the design of the built environment;
vi. an assessment of social impacts on the local population and its uses of the land;
vii. an assessment of the implications of the use of potential environmental pollutants;
viii. a review of options proposed to mitigate adverse environmental impacts;
ix. a description of any unavoidable adverse environmental impacts, including any permanent change in the physical, biological, social or cultural characteristics of the affected environment or in the possible future use of that environment;
x. an analysis of the costs and benefits that might result from the development proposal;
xi. the identification of any irreversible or irretrievable commitments of resources required for the development proposal.

f. **Mitigation and conditions –** each EIA shall:

i. identify any significant environmental impacts that cannot be avoided;
ii. identify appropriate mitigation measures to minimise any significant environmental impacts arising from the preferred alternative; and
iii. recommend any proposed condition

ANNEX 7 – Environmental Project of Samoa

ENVIRONMENTAL PROFILE OF SAMOA (EXCERPTED FROM SACEP ESMF)

Introduction

1.1 Background Information

Samoa is an island country surrounded by the Pacific Ocean. It includes two major islands (Upolu and Savai'i), two smaller inhabited islands (Apolima and Manono), and five uninhabited islands. The project areas would be concentrated in Upolu only. The total land area is 2,935 km^2 with a population of some 187,820 (2011 census).

Salient features of Samoa's population include the following:

- Population density is 61 persons per km^2 of total area or 63.7 persons per km^2 of inhabited area;
- The annual demographic growth rate has been declining since 2001, mainly as a result of a high level of migration to overseas countries. This outflow has resulted in a loss of good people in the labor force, but creating a larger source of remittances from those overseas.
- There is only one ethnic group in Samoa (97% Polynesian) and more than 79% of the population are living in rural areas working either as farmers or are partially involved in farming activities.

Description of the Project Island – Upolu

The general characteristics of the two main islands are presented below.

Population

In 2011[2] the total population of Samoa was 187,820 of which 97 percent were Samoan (Polynesian) and 3 percent non-Samoan, 52% being male and 48% female. The Samoan population is one indigenous group. Total number of households was 28,182 with average household population of 7.2 persons. For Upolu, total population is 143,418, with males comprising 73,934 (52%) and females 69,484 (48%). Total number of households on Upolu is 21,747.

The basic demographic data on the two islands, based on the MAF/MOF agricultural survey data (2005) are presented in Table 1. Total population of agriculturally active household population by age and sex group is presented in Table 2.

Table 1: Key demographic data on population distribution in the two islands

Region	Age Group								
	All Age Groups			Under 15 Years			15 Years and Over		
	Total	Male	Female	Total	Male	Female	Total	Male	Femal
Total	198,598	102,078	96,520	80,021	41,627	38,394	118,577	60,452	58,126
Apia Urban Area	43,683	21,564	22,119	16,694	8,130	8,564	26,989	13,435	13,554
North West Upolu	60,563	31,408	29,154	24,151	12,612	11,540	36,412	18,796	17,615
Rest of Upolu	46,791	24,569	22,223	19,125	10,422	8,704	27,666	14,147	13,519
Savai'i	47,561	24,537	23,024	20,051	10,464	9,587	27,511	14,073	13,437

Source: MAF/MOF Agricultural Survey (2005)

Table 2: Total population of agriculturally active households by age group, sex and region

Region	**Age Group**								
	All Age Groups			**Under 15 Years**			**15 Years and Over**		
	Total	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
Samoa	157,909	82,036	75,873	64,347	33,860	30,487	93,561	48,175	45,386
Apia Urban Area	19,676	9,836	9,840	7,402	3,573	3,829	12,274	6,263	6,010
North West Upolu	47,014	24,578	22,436	18,849	9,882	8,967	28,166	14,697	13,469
Rest of Upolu	44,981	23,685	21,296	18,510	10,144	8,366	26,471	13,542	12,930
Savaii	46,237	23,936	22,301	19,586	10,262	9,324	26,652	13,674	12,977

Source: MAF/MOF Agricultural Survey (2005)

2.2 Education

Only 2 percent of the population had never been to school. The majority had achieved education at secondary level, 55 percent, and 11 percent tertiary level. A goal of the Millennium Development Project for Samoa is to achieve universal primary education in the country by 2015.

2.3 Poverty

Concerning the basic needs poverty line, the 2008 Household Income and Expenditure Survey (HIES) indicated 20.1% that shows an increase of 1% from 19.1% in 2002. However the percentage for 2008 is thought not to reflect the economic downturn and that it should have been much higher.

2.4 Economic Activities

The economy of Samoa is primarily based on agriculture, traditional bush-fallow and mixed cropping techniques are used for the subsistence and/or cash crop farming.

2.5 Division of labor by gender

The main economic activities for persons 15 years and older in 2011 indicate that only 27.4 percent of females were actively involved in economic activities compared to males with 72.6 percent being active. This pattern reflects the traditional Samoan household where men deal mostly with the heavier work outside the house such as farming, planting and fishing and income generating activities whereas women are more involved in lighter work and household work.

Table 3: Economically active population 2006 & 2001

Economically Active	Total	%	Male	%	Female	%	AUA	NWU	ROU	SAVAII
Total	47,881	100.0	34,763	72.6	13,778	27.4	100.0	100.0	100.0	100.0
Employer	582	1.2	386	66.3	196	33.7	2.4	1.3	0.5	0.6
Employee	23,410	48.9	14,276	61.0	9,134	39.0	73.4	60.2	32.9	23.7
Self Employed	3,984	8.3	2,595	65.1	1,389	34.9	12.3	9.5	5.8	5.0
Make/Manufacture goods for sale	1,040	2.2	491	47.2	549	52.8	1.6	2.0	2.9	2.3
Street Vendors	60	0.1	37	61.7	23	38.3	0.2	0.2	0.1	-
Produce for use/sale	16,085	33.6	15,154	94.2	931	5.8	4.4	20.2	52.0	64.2
Look for a job	2,720	5.7	1,824	67.1	896.0	32.9	5.7	6.7	5.9	4.1

Source: Samoa Bureau of Statistics, Population and Housing Census 2011

2.6 Agricultural Population

Agricultural households

The Agriculture Survey 2005[53] indicated that of the 23,964 households in Samoa, 17,962, or 75 percent, were agriculturally active households (that is, for home consumptions only, mainly for home consumption and for commercial use). Savaii was the most agriculturally active region with 96 percent agriculturally active and AUA the least with 69 percent agriculturally active.

Holdings

Households that were agriculturally active had a holding[6] with an average of 2 parcels

[5] 2005 Agriculture Survey, Ministry of Agriculture and Fisheries and Ministry of Finance, Government of Samoa. Note that the agricultural survey data is for 2005 whereas the population statistical data discussed above is for 2006.

[6] An agricultural holding is an economic unit of agricultural production under single management without regard to title, legal form or size. Single management may be by an individual or household, jointly by individuals or households by a clan, tribe or a juridical person such as a corporation, co-operative or government agency. The holding may consist of parcels not in the same locality provided they share the

per holding in each region except for Savaii with had an average of 3.

Major crops
The major crops consumed and sold by hhs are coconuts, cocoa, bananas, taro, taro palagi and taamu.

Livestock and poultry
Concerning cattle, 16 percent of households had cows, 10 percent heifers, 9 percent bulls, 5 percent steers and 10 percent calves. These hhs raised a total of 49.000 cattle of which 12,300 were slaughtered mostly for fa'alavelave, 1,700 were sold live and just over half the total were reared in an 'enclosed own' system.

Concerning pigs, 51 of hhs had sows, 36, breeding boars, 28 gilts, 24 barrows and 48 piglets. They raised 258,000 pigs of which 88,700 were slaughtered mostly for fa'alavelave, 8,200 live pigs were sold, and just over half the total were reared 'free range'.

Concerning chickens, 69 percent of households (16,400hhs) reared 497,000 chickens of which 233,800 chickens slaughtered and used mostly for consumption, and 98 percent were reared by 'free range'.

2.7 Livestock Production

In Samoa, the family farms normally raise small livestock (pigs and/or chicken) that are normally either grazing freely or are tended by women and children. The cattle is normally tended by men and young male and are free grazing in fenced pastures. The estimated livestock numbers in the two islands as of 2005 agricultural survey are presented in Table 4.

Current livestock production is scattered throughout Samoan islands with Upolu having the highest concentration of livestock and poultry. Table 4 presents the livestock distribution by region as per the agricultural survey data (2005).

same production means such as labour, farm, buildings or machinery (2005 Agriculture Survey Ministry of Agriculture and fisheries and Ministry of Finance, Government of Samoa)

Table 4: Estimated number of livestock and poultry in different regions of Samoa

Type of Livestock	REGION				
	Samoa	Apia Urban Area	N.W. Upolu	Rest of Upolu	Savai'i
CATTLE					
Cows	16	1	2	7	6
Heifers	10	1	2	4	3
Bulls	9	1	1	4	3
Steers	5	0.5	0.5	2	2
Calves	10	1	1	4	4
PIG					
Sows	51	5	12	15	19
Breeding Boars	36	3	9	11	13
Gilts	28	2	6	9	11
Barrows	24	2	5	8	9
Piglets	48	4	12	15	17
CHICKEN	69	10	20	18	21

Source: MAF/MOF, Agricultural Survey (2005)

2.8 Agricultural Production

Agricultural production is varied and diversified. Approximately 60,000 ha or 21% of the total land area is under crops or grazing regimes. Cropping areas are closely aligned with the undulating coastal and alluvial soils close to village settlements. Pastoral and grazing areas are restricted to the steeper slopes where water supply is adequate. The cultivated land per capita is estimated at 0.65 ha, and the average farm size at about nine ha.

The national food demand rises by about 2.3 percent annually, largely because of population growth and changes in population structure. The main food crops are taro, banana, coconut, cocoa, fruit trees, vegetables and other root crops. The composition, stability and reliability of local food supplies have been negatively influenced by natural disasters like cyclones and the recent tsunami and the devastation of taro by Taro Leaf Blight (TLB) that seriously reduced taro production.

Local consumption and export of Taro has increased significantly over the last four years, which reflects the improvement of the blight resistant varieties and the increase in the availability of planting material. Taro would therefore continue to be the most important crop in Samoa not only because it is the staple crop but due to its high return to labor input.

The main crops grown in the two islands as per the statistical data collected by MAF and published by MOF in 2005 are provided in Table 5.

Table 5: Estimated single crop equivalent area by major crops and region in acres

Type of Crops Grown	Region				
	Total	Apia Urban Area	N.W. Upolu	Rest of Upolu	Savai'i
Total	45,056	2,760	11,309	12,057	15,213
Cocoa Samoa	6,945	230	1,758	1,454	2,877
Cocoa Solomon	263	1	51	75	125
Taro	11,932	546	1,988	3,983	3,738
Ta'amu	6,142	187	1,648	1,331	2,631
Cassava	101	3	15	3	29
Kava	110	2	28	3	72
Banana	19,563	1,791	5,821	5,208	5,741

Source: MAF/MOF, Agricultural Survey (2005)

2.9 Fisheries Production

Samoa's fisheries sector Information from the show that the fisheries sector relies mainly on its offshore and inshore reef and lagoon fish resources (MAF, 2011. Agriculture Sector Plan 2011-2015). The total offshore fisheries output for 2001 was estimated at 6,180 mt valued at SAT 50.7 million with 80% exported valued at SAT 45 million (Faasili & Time, 2006). Official estimates from the Central Bank of Samoa (CBS) show that exports of fish grew from more than SAT 25 million in 1998 to SAT 36 million in 2001 however, export values post - 2002 declined to as low as SAT 11.5 million (2005) and despite a slight improvement in 2007 valued at SAT 20 million has continued to decline in the following years. The variability in the reported data as exhibited for 2001 is attributed to the periodic pricing of fish used by MAF to estimate values while CBS utilises an annual average to value production. Therefore, although both agencies utilise the same provisional forms to record data, estimates for the value of fisheries still differ thus emphasizing the need for quality control of the data (Gillet, 2009).

The inshore coastal fishery of Samoa plays a vital role in the livelihood of village economies with an estimated subsistence catch of 7,169 tons valued at SAT 45 million in 2000 (Passfield, 2001). However, there has been a noticeable decline in inshore resources which has been linked to the use of destructive albeit efficient fishing methods, loss of

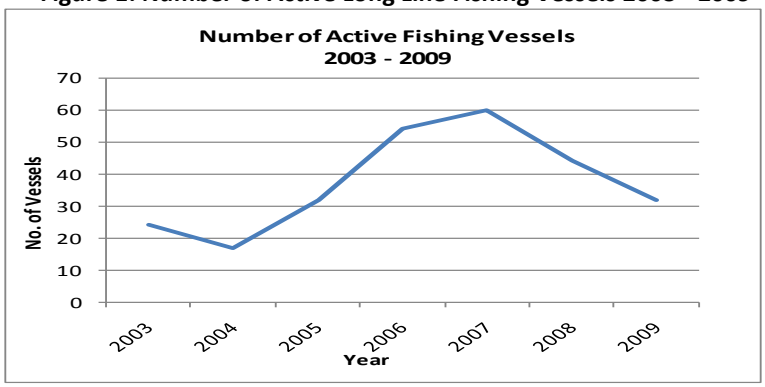
habitat and increased commercial harvesting traded fresh or processed and for 'faaoso'[7] for family and relatives overseas (MAF, 2011. Ibid). Land reclamation and road construction have also been known to destroy fish nursery areas and poor land management has led to erosion and consequent siltation of lagoons. The emphasis therefore for the subsector is conservation and sustainable management.

The 2009 agriculture census showed that 24.8% of households were engaged in fishing reflecting a 24% decline in the proportion of households engaged in fishing over the past decade (from 32.6% in 1999). The 2009 agriculture census also indicated that the vast majority fished mainly or entirely for home consumption, and only a small portion fished for commercial reasons.

Offshore long line fishing, predominantly tuna fishing, has been very consistent in leading the export earnings for the country since its humble beginnings in the early 1990's. At present, the industry is faced with the challenge of optimizing benefits and returns to the industry and the people of Samoa while at the same time ensuring that the fish stocks available within the EEZ are harvested in a sustainable manner.

The trend of the number of active fishing vessels licensed between 2003 and 2009 saw an average 14% decline in fishing vessels between 2007 and 2009 as shown in *Figure 11* below.

Figure 1: Number of Active Long Line Fishing Vessels 2003 - 2009



Source: Fisheries Division, Ministry of Agriculture and Fisheries

Figure 12 below shows that despite the fall in the number of active fishing vessels shown above, the total landed catch for the period illustrated an increasing trend. However, export values for the period were low due to the fall in unit value of fish attributed to global market prices as well as the global economic crisis in 2008 to 2009.

Inshore fisheries management depend heavily on the use of Fisheries Management Plans prepared with the assistance of the Fisheries Division. The FMPs identify main issues

[7] Consignments of seafood sent as gifts to relatives overseas.

affecting village controlled fisheries and prescribe measures for the mitigation and management. Villages also enact bylaws recognized by the Courts to help enforcement. MAF Fisheries 2011 Annual Report noted 91 villages have functioning fisheries management plans, and 60 villages have progressed plan implementation to the stage where they have established active fisheries reserves.

The 2009 tsunami caused severe damage to large portions of live coral reefs on the southern part of Upolu Islands and several community owned fisheries reserves were damaged. As part of recovery actions, 18 village reserves were replanted with live corals and cemented fish houses and 43 village fish reserves who lost ropes and buoys demarcating reserve boundaries had their boundaries replaced.

2.10 Potable water

According to available statistical data 80% of the population of the four regions has access to safe drinking water. There is still a large percentage of the population without metered water. For drinking water, 48 percent had drinking water from metered water, 36 percent used tap water, 8 percent used stored rainwater, 5 percent bought purified water and 2.5 percent used well or spring water. Many farm households, especially in Savai'I are harvesting rooftop rainwater for drinking, using concrete and/or plastic tanks.

2.11 Access to credit

Lack of access to credit is a problem for both rural men and women, due to high interest rates and collateral requirements. The Development Bank of Samoa is using high interest rate of around 14% for agricultural and rural development loans that makes use of credit for agricultural development quite difficult. Some NGOs such as WIBDI have been involved in providing access to fund to local farmers by purchasing their certified organic produce at the farm gate and providing the needed cash to the farmers. However, such funds are available only after farmers are certified and have spent their own or borrowed capital to finance their farming activities.

2.12 Distribution of electricity in rural areas

Around 97% of total households have access to electricity with only a small percentage using benzene and kerosene for lighting.

Around 81 percent of households used firewood for cooking (often in combination with another source such as gas, kerosene or electricity).

3 Bio-Physical Environment

The Samoan islands are of volcanic origin dominated by olivine basaltic rocks. Most soils of the two larger Samoan islands are classified as belonging to the Inceptisols soil order as per Soil Taxonomy and Cambisols according to the Word Soil Resource classification system. The area is generally mountainous and consists of relatively few areas of flat or undulating land suitable for agriculture or village settlements, mainly in the lowland areas. Settlements on both major inhabited islands of Upolu and Savai'i are concentrated on the coastal plains and rolling slopes. The non-arable land area is estimated to account

for approximately 43% of the total land area. A further 4% is unsuitable for cultivation due to lava flows, especially on Savai'i.

3.1 Land Tenure

The Fa'a Samoa or Samoan way is the complicated set of social rules that define every aspect of life, including land tenure, in Samoa. Key elements of thefa's Samoa are the aiga, the matai, fa'alavelave, and traditional land tenure. The Samoan land tenure system is derived from the system of family organization. A village is divided into a number of extended family groups (aiga), each with its own elected heads of family (matai). The matai takes the pule (authority, responsibility, privilege) and mamalu (dignity, respect, honor) associated with the title that includes control over the family-land (Lockwood, 1971).

The productivity of each aiga is dependent on the capability, initiative, and motivation of the matai who has complete control and jurisdiction over the entire village. The fono is responsible for the socio-economic welfare of the village and instructs the untitled men (labor force) to carry out various activities. An additional position in the village is that of the pulenuu, an elected official, whose responsibility is to interact with the Government. In lieu of his services, the pulenuu is paid an honorarium by the government.

Holmes (1970) summarized the customary land tenure system in Samoa into five different categories:

- **Village House Lots:** Each village is divided into family household lots, with boundaries marked often by some natural features such as trees, rocks, etc. Breadfruit (*Artocarpus altitus*), coconuts (*Cocos nucifera* L.), papaya (*Carica papaya* L.), banana (*Musa* spp.), taro (*Colocasia esculenta* L. Schott), taamu (*Alocasia* sp.), and cocoa (*Theobroma cacao* L.) might be found on these lands.
- **Plantation Lots:** The plantation lots lie around the village. Cutomary lands average approximately 500 acres per village. It is normally from the plantation lots that the family produces the most of its food requirement.
- **Family Reserves:** Beyond the plantation lots and higher on the mountain slopes is the land associated with different families of the village. Only part of this land is cultivated at any one time (shifting cultivation) to prevent soil fertility exhaustion of the whole area.
- **Village Land:** The village land lies within the village boundaries, mostly stretching from the sea to the mountain ridge, but does not belong to individual families. On bush lands, individuals might be allowed to clear new areas for plantation purposes with the permission of village council.
- **District Land:** The district lands are claimed by the traditional district councils and have mostly political significance. These lands, located high on the mountains, are little used except for hunting or collection of forest products.

Out of the total land of Samoa, according to the 2005 agricultural survey (MOF, 2005),

some 93.5% is owned by village under the traditional land tenure system. The rest are leased customary lands (0.4%), leased government land (2.4%), owned freehold land (3%), leased freehold land (04%), and other land tenure (0.3%). Renewable, 20 year long, leasing arrangement can be made on freehold and government land. Under the traditional social structure, customary lands cannot be sold. Previously there were no provisions for individual use and development of land, causing lack of security of tenure. In recent years, however, such customary land can be leased, if matai approves, and have been availed for leasing.

3.2 Geography and Geology

Samoa lies in the South Pacific Ocean within the 480 km long Samoan archipelago in a west north-west to east south-east orientation. Samoa is located between 13^{o} 15' and 14^{o} 5' South latitude and 171^{o} 23' and 172^{o} 48' West longitude. It is comprised of two large islands of Savai'i (approximately 1,700 km^2) and Upolu (approximately 1115 km^2), two small inhabited islands of Manono and Apolima, and five smaller uninhabited islands. The total area of the two major islands is about 2820 km^2. It is part of the Samoan archipelago. The other smaller islands, being Tutuila, Ofu, Olosega, Ta'u, and Rose, are all part of American Samoa.

In Upolu, the main mountain ridge runs along the length of the island with mountains rising as high as 1,500 msal. Savai'I ridge also lies along the length of island, but since the island is wider, there are several smaller mountain ranges that converge to the main ridge. The highest point in Savai'I (and Samoa) is Mt. Silisili near the middle of the island with an approximate height of some 2,000 masl.

The Samoan islands are of recent volcanic origin, the oldest lavas on the islands are about one million years old (Tarling, 1962). The two main islands are composed almost entirely of basic volcanic rocks (olivine basalt), picrite basalt, and somewhat more acidic olivine dolerite.

3.3 Land Use Pattern

The existing agricultural land use pattern is either based on subsistence farming or plantation cropping and is generally confined to the lowland and foothill areas up to about 230 masl (Pak-Poy and Kneebone, 1981). In areas of gentle slope and higher population pressure such as North-west Upolu, agricultural development extends to elevations of as high as 300 masl. Most of the high intensity agricultural production lands are within the 75 masl and within the coastal lowland physiographic unit of both islands. The "typical" distribution of crops relative to elevation and slope in Upolu is summarized in Table 6.

Table 6: Cropping pattern (land use) in Samoa by physiographic position

Elevation (masl)	Crop Classification	Main crop types

0-30	Food crops	**Coconuts[5], food crops, pineapples, breadfruit, taro**, pasture &cattle
30-150	Cash & plantation crops	**Cocoa, coconut**, taro (main coconut
150-225		**Banana and cocoa plantations** (mainly banana plantations)
225-300	Selected root crops	**Ta'amu**, coconut, pasture and cattle, taro
>300	Primary and close canopy secondary	Sporadic pasture and cattle

Source: Fox and Cumberland, 1972.

ADB (1985) produced a land use pattern and the area under trees crops based on aerial photo interpretation that is presented in Table 7 that estimated the total area under tree crops in the two islands to be 77,211 ha.

Table 7: Major area of tree crops in Islands of Upolu and Savai'I based on API

Island	Coconut	Coconut + Cocoa	Cocoa	Coconut + Cocoa + Banana	Coconut + Banana	Cocoa + Banana	Total
Upolu	21,190	11,324	3,496	3,598	3,617	2,152	45,377
Savai'i	15,616	8,332	2,546	4,556	156	628	31,838
Total	36,806	19,656	6,042	8,154	3,773	2,780	77,211

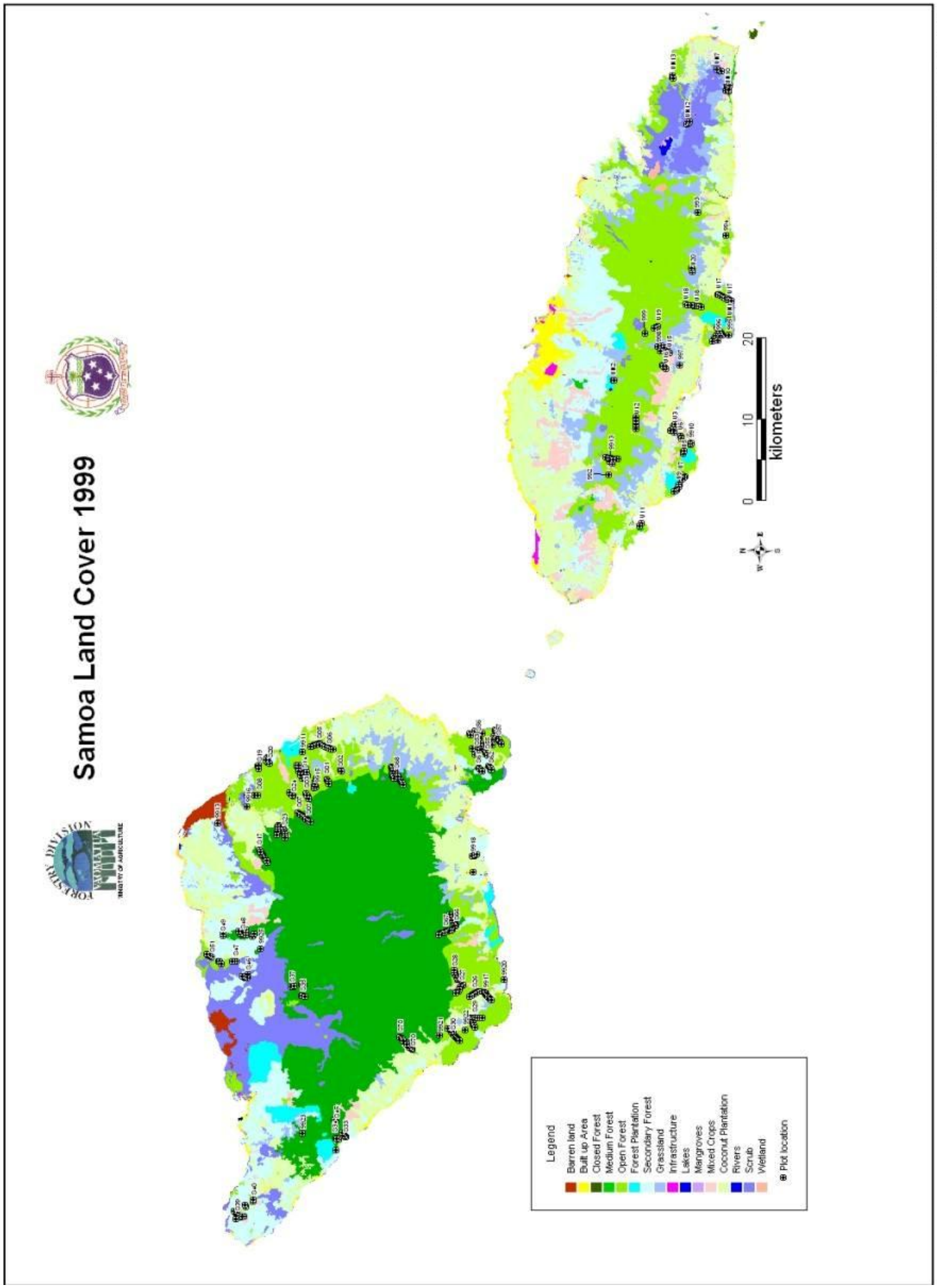
Most recently FAO in cooperation with then MAFFM (2004) prepared an inventory of Samoa land cover with emphasis on forest types using the 1999 aerial photography and spatial analysis, using GIS based SamFRIS program. The results, although does not provide full distribution of land use due to concentrating on forestry inventory, is very useful in identifying major tree crops and forest types in all Samoan islands. Figures 1 presents the FAO/MAFFRA produced land cover map of Upolu and Savai'i, respectively. Table 8 presents the major vegetation types in the two major islands.

Table 8: Major vegetation types in the two islands of Upolu and Savai'I based on API and ground-truthing by FAO/MAFFM (2004)

Main Vegetation type	Savai'i	Upolu	Grand Total	Percent of Samoa
Barren land (B)	1973.4	30.3	2004.7	0.71
Bush (BU)	1771.8	5291.4	7098.0	2.50
Medium Forest (FM)	72151.0	402.5	72563.0	25.53
Open Forest (FO)	22271.9	33049.4	55348.0	19.48
Primary Forest (FP)	3797.7	1304.9	5102.5	1.80
Secondary forest (FS)	19800.0	17296.0	37173.0	13.08
Grassland (G)	5193.0	12299.2	17494.0	6.16

Infrastructure (I)	31.8	431.7	463.5	0.16
Lakes (L)	16.1	202.7	218.8	0.08
Mangroves (M)	16.4	353.2	396.6	0.13
Mixed crops (MC)	2463.0	7706.3	10228.0	3.60
Coconut plantation (P)	26157.9	26770.2	53114.0	18.69
Rivers (R)	22.5	42.0	64.4	0.02
Scrubs (SC)	15065.6	7000.1	22115.0	7.78
Wetlands (WL)	147.8	597.4	745.1	0.26
Grand Total	170879.4	112776.9	284184	100

Figure 1: Land use map of Samoa



- **Physiographic Units**

- The main physiographic units identified in Samoa include (1) low land and foothills where elevation is generally below 650 masl and the upland physiographic unit above 650 masl.
- The sub units under the lowland and foothills physiographic unit include:
- Marine marsh physiographic unit with poorly drained soils and aquic moisture regime forming in estuaries and marine marshes;
- Beach areas and coastal margins physiographic unit with excessively well drained (beach sand units) to poorly drained (peaty or mottled loamy sand in low land physiographic areas);
- Valley floors and depressions with varying moisture characteristics from poorly drained units in peaty parent material in organic residues to well to excessively drained units formed in mafic alluvial material; and
- Hill country physiographic unit that can be divided to subunits with moderate dry season (less than 4 cumulative months of dry soil moisture regime) and units with no or weak dry season (less than 4 cumulative months with dry soil moisture characteristic). Each of the subunits can be further divided to (i) very slightly dissected landscape with somewhat to excessively drained soil units, (ii) slightly dissected landscape with well drained soils, (iii) moderately dissected with well drained soils, and strongly dissected landscapes with well drained soils. The subunits under the upland physiographic unit include:
- Upland swamps and depressions unit with poorly drained units formed in recent alluvium, colluviums, and organic residues with aquic moisture regime; and
- Soils of the upland hill country physiographic unit have a perudic soil moisture regime, indicating that the cumulative dry soil moisture is less than 4 months. They are further subdivided to (i) very slightly dissected landscape with moderately well drained to excessively well drained character, (ii) slightly dissected landscape with well to moderately well drained character, and (iii) moderately dissected landscape with moderately well drained to well drained character.

3.5 Soils

The Samoan islands are formed from basic volcanic rocks and their derived soils are rich in mafic minerals such as olivine basalt and andesite causing a variation in soil texture that ranges from sandy loam to clay loam. In the coastal areas sandy loam soils are dominant. Taxonimcally, soils of the two major islands are dominated by Inceptisols (Humitropepts and Dystrandepts), with smaller areas of Oxisols (Acroorthox and Umbriorthox), and Mollisols (Hapludolls).

The estimated water holding capacity is less than 120 mm per meter of soil depth. The main limiting factors of Samoan soils for crop production, based on limited data

available in maps at the scale of 1:31,680 for Upolu and 1:100,000 for Samoa developed by Wright (1963) can be summarized as follows:

- Depth of soil that appears to be generally shallow that makes tree crops prone to wind damage;
- Stoniness and rockiness of the soil (approximately 75% of the area under tree crops) which results in high labor requirements and makes mechanization in most areas impossible; and
- The unstable nature of land on steep slopes particularly on the central upland and upland regions of both islands that can limit the cultivation of crops and removal of rocks that can significantly induce accelerated soil erosion in such areas.

In general the soil temperature regime, an indication of soil suitability for production of different crops changes at approximate elevation of 650 m from isohyperthermic (average soil temperature at 50 cm depth of >22^{o}C with an annual variation in soil temperature of less than 5^{o}C) in lowlands and foothills physiographic units to isothermic (average soil temperature at 50 cm depth of 15-22^{o}C with an annual variation in soil temperature of less than 5^{o}C) in upland physiographic unit.

3.6 Topography

The overall topography of the two major islands are classified into four general categories by Wright (1963). The topographic categories are assigned based on elevation and overall landscape position. The main categories include: (i) lowlands; (ii) foothills; (iii) uplands; and (iv) highlands. However, the topography is quite variable and landscape position is probably the best method of determining the effect of topography on soil and vegetation development and land use planning.

The original lava flows, indicated by most recent lava flows in the island of Savai'i, have a rolling surface to a highly irregular surface with abrupt depressions and mounds. Steep hills and ridges are created by individual streams of lava, and steep slopes exist on the sides of cones. The overall slope of island varies from nearly level along the coastal areas (shoreline) to moderately sloping, following the slopes of the original lava flows. However, in some areas, geologic erosion has cut steep sloping valleys into the original slopes, creating some very steep backslopes or abrupt cliffs, and occasionally a nearly level valley floors. All these conditions have significant effect on soil formation, its depth and rockiness.

3.7 Climate

Samoa is characterized by a tropical rain-forest climate and is generally hot and wet. Mean lowland and upland temperatures range from 26 - 28°C and 20 - 22°C respectively. There is relatively little seasonal variation in both temperature and relative humidity. There is generally a decrease in average annual temperature from coastal areas toward the

center of the islands (inland), mainly due to rise in elevation. Analysis of diurnal fluctuations at the Apia observatory by Kammer (1978) indicates that the mean maximum temperature occurs between 11:00 and 15:00 hours and the minimum around 05:00 hours. The mean daily temperature is highest during the dry season when cloud cover is lowest, highest temperatures occurring between January and April. The lowest temperatures occur during the winter months of July and August. Annual rainfall is about 3000 mm which exceeds significantly the annual evapotranspiration (ETo), which is estimated to be in the range of 1480 mm. 60 % of the precipitation occurs between November and March while the driest months are June – August. Annual variations in other parts of the islands show a similar pattern to that of Apia with mean annual temperature falling lower due to increase in elevation inland. Mean annual air temperatures ranges from 27.4^{o}C in coastal areas to less than 15^{o}C in the highest elevation of Savai'i Island. The T_{max} and T_{min} officially recorded in Samoa are 35.3^{o}C recorded at Asau station on 24th December 1968, and 11.1^{o}C recorded at Afiamalu station in Savai'i on 29th September 1971 (Saifaleupolu, 1986). Table 9 presents the climatic norms for the period of 1971 – 2000 for Apia based on the available data.

Southeasterly surface winds, better known as trade winds, blow more than 50% of the time during the year (Kammer, 1978). During the dry seasons of Might to October, the south-east winds blow for more than 80% of the time. During the wet season, however, the wind direction is less consistent, but the south-easterlies still prevail for more than 30% of the time. The change in wind direction in Samoan islands is contributed to the migration of the South Pacific Convergence Zone (SPCZ).

Table 9: Climatic Norms 1971 – 2000, Station Apia (Meteorology Division data, Apia)

Norms	JAN	FEB	MAR	APR	MIG HT	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Rainfall (mm)	489	389	352	211	193	121	121	113	154	224	262	358	2965
Pressure (bar)	1009	1010	1010	1011	1012	1013	1013	1013	10 13	1012	1011	1008	
Sunshine (h)	149	160	173	186	193	197	213	219	207	199	181	154	2230
Tmax °C	30	31	31	31	30	30	30	30	30	30	30	31	
Tmin °C	23.9	24.2	24.0	23.8	23.4	23.2	22.6	22.8	23.1	23.4	23.6	23.8	
Tmean °C	27.1	27.4	27.3	27.2	26.9	26.6	26.1	26.2	26.5	26.8	26.9	27.2	
ETmax °C	33.4	34.0	33.7	33.2	33.6	32.5	31.7	32.1	32.8	32.4	33.1	34.9	
Etmin °C	19.4	21.1	21.2	19.5	17.9	17.6	18.9	18.1	18.1	19.4	19.2	20.7	

Due to the favorable rainfall and temperature, all year-round crop cultivation is possible. However, there are (even in the wet season) long dry periods between rainfall events that can last up to 22 days. These dry spells emphasize the need for introduction of supplementary irrigation if crop intensification (two crops per year) is going to be promoted, especially for shallow rooted crops.

The reference crop evapotranspirartion (ETo) was calculated by FAO for Samoa (2004) by means of the modified Penman-Monthien formula using FAO Irrigation and Drainage Paper No 52 procedures. The necessary data were obtained by the consultant from the Meteorological Station in Apia, being the only station that measures wind speed and relative humidity in Samoa. However, since the mean temperature, wind speed and humidity fluctuate very little in the coastal and low-lying areas of Samoa where most suitable land for farming are located, it is believed that the calculated data for Apia, presented in Table 11, can also be used with adequate accuracy for other locations within agricultural areas.

Table 11: Values of ET_O for Apia (mm/day)

	Jan	Feb	Mar	Apr	Migh t	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo mm / d	4.1	4.4	4.0	3.7	3.5	3.8	3.4	4.2	4.5	4.6	4.5	4.2	1483 (mm/ y

3.6 Vegetation Classification

Vegetation of the West Samoan islands is divided to five major units through the work of whistler (1980):

- Strand vegetation;
- Vegetation of the plains and lower montane region
- Forest of the upper montane region, rainforest and fern forest;
- Ridge forest vegetation; and
- Vegetation of recent lava flows.

The natural vegetation, specific to these islands, consists of cloud forest and smaller amount of lava flow scrub and herbaceous vegetation of cinder and ash deposits, and montane meadows, especially in Savai'i. Many species of animals and plants found are endemic to Savai'i and occur only in the highlands (Whistler, 1978).

Considering the scarcity of published work on flora and fauna of Samoa, it is difficult to provide a classification system that can satisfy plant cover of the main regions or major fauna in each agro-ecological zone. Whistler (1980) prepared a plant community classification system, based on his extensive work in American Samoa and determined 16 climax communities under five main vegetation categories. According to Whistler, this classification system is also applicable to Samoa with more plant communities being

present in Samoa due to its sheer size and variation in topography. The proposed vegetation classification is presented below:

- **Littoral Vegetation**
  - ✓ *Lepturus* rock strand
  - ✓ *Ipomoea* sand strand
  - ✓ *Littoral* shrubland
  - ✓ *Pandanus* littoral strand
    Barringtonia littoral forest

- **Wetland Vegetation**
  - ✓ Costal marsh
  - ✓ Mangrove forest
- **Rain Forest Vegetation**
  - ✓ "Au'auli" (*Diospyros* spp., *Syzygium* spp.) coastal forest
  - ✓ Asi (*Syzygium inophylloides*) ridge forest
  - ✓ Mamala (*Dysoxylum samoense*) lowland forest
  - ✓ Tava (*Poemtia pinnata*) lowland forest
  - ✓ Maota-mea (*Dysoxylum huntii*) montane forest
  - ✓ Fega-vao (*Syzygium samoense*) cloud forest

- **Scrubby Summit Vegetation**
  - ✓ Montane scrub
- **Disturbed Vegetation**
  - ✓ Managed land
  - ✓ Kula (*Dicranopeteris*) fernland
  - ✓ Disturbed forest
  - ✓ *Rhus* secondary forest

A relatively recent attempt by FAO and MAFFM (2004) to map the land cover, using API and groundtruthing has provided an inventory of major land uses related to forestry and forest cover. This mapping, produced based on 1999 aerial photography, although is not providing with a taxonomic classification or cataloguing of flora and fauna, provide a good visual representation of the forest cover and to a lesser extent agro forestry activities in the two main islands (Figure 1).

3.7 Biodiversity National Parks and nature Reserves

According to the newly prepared publication by CI, MNREM, and SCREP (2010),

terrestrial fauna of Samoa include more than 2,500 species of insect, 770 species of native plants, 64 native land snails, 31 breeding birds, 14 reptiles and 3 native mammals. Marine diversity is also high with 890 coral reef fish, over 200 corals and several turtles, whales and dolphins. It is interesting to note that approximately 30% of Samoa's native biodiversity is endemic to Samoa and are not found anywhere else.

Samoa is a very rich country in biodiversity of flora and fauna. She has more native species of ferns and butterflies than New Zealand, a country 85 times bigger than Samoa!

Manumea or Tooth-billed Pigeon, the national bird of Samoa (endangered, *Didinculus strigirostris*) is now very rare and restricted to mature native forests. In total, 76 species from Samoa are included on the 2009 IUCN Redlist as threatened species include 52 corals, 11 marine fish, 7 birds, 2 turtles, 2 plants, a land snail and a mammal. Many more species are believed threatened but have not yet made it onto the IUCN Redlist, or are on the Redlist but not classified as threatened.

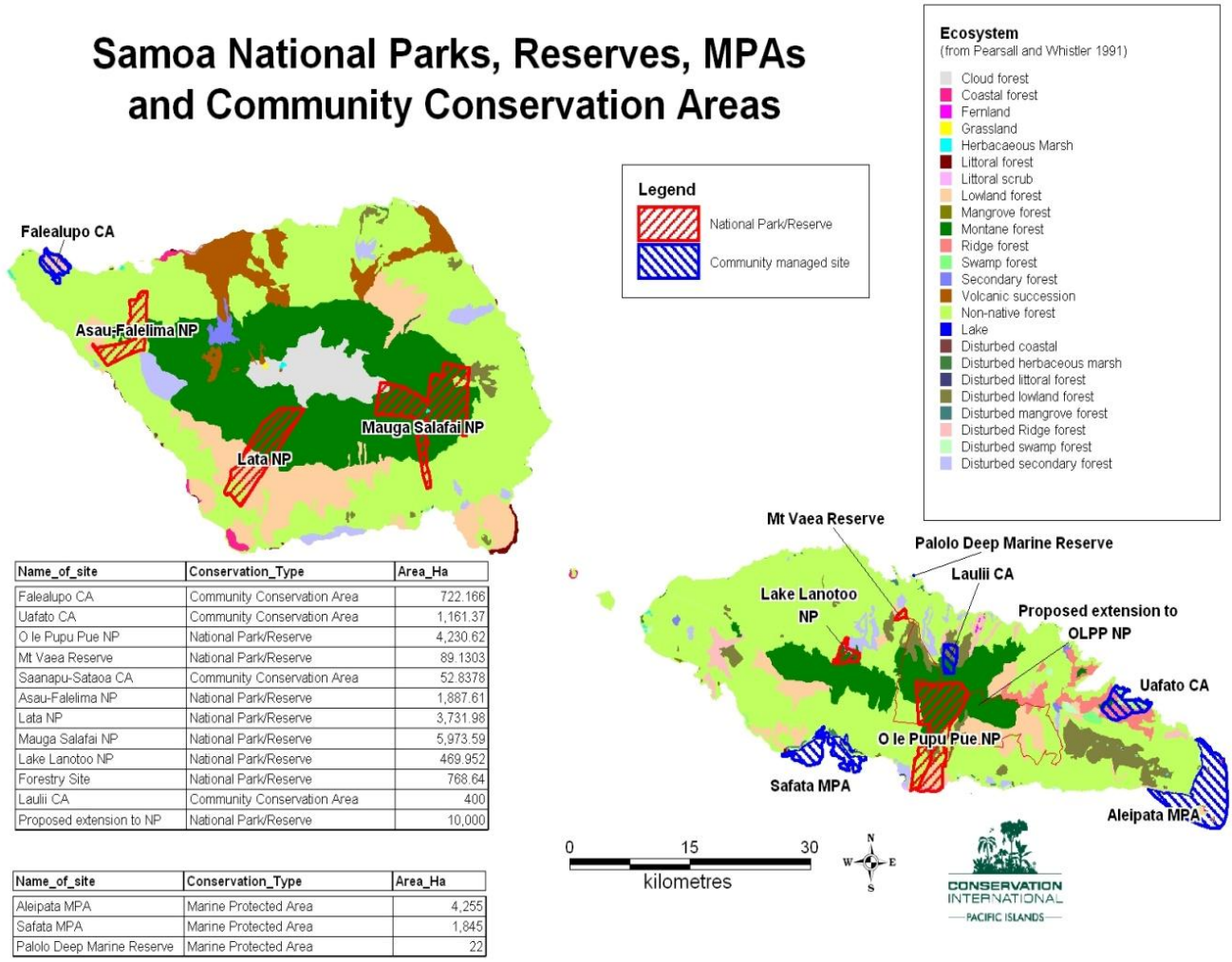
In 2003, the Conservation International–Pacific Islands Program initiated a process to identify data-driven conservation targets for the Polynesia-Micronesia region including Samoa. In total, six key biodiversity areas (KBAs) were identified in Samoa through this study. Later, in 2008, through a GEF funded project, CI in association with MNREM, SCREP identified another 8 terrestrial and 7 marine KBAs in Samoa.

Currently 11 terrestrial species present in Samoa are classified as threatened in the 2009 IUCN redlist. In addition to the mentioned 11 terrestrial species, an additional three species known to be threatened in Samoa were added as "trigger" species (species that trigger a KBA) including *ifilele* (Mollucan ironwood) and *taio* (Polynesian Storm Petrel) that are both classified as vulnerable, but are not recorded for Samoa on the IUCN Redlist, and *pea vao* (Samoan flying fox), recorded as near threatened on the Redlist that is actually highly threatened in Samoa.

The biggest threats to Samoa's biodiversity, as stated in the recent publication by CI/SCREP (2010) are habitat destruction due to agricultural development, housing and other development, the over-harvest of resources and the impact of invasive species of pests and weeds. It is important to ensure that project activities do not include areas identified as KBAs, national parks, nature reserves and their buffer zones.

The areas identified as nature reserve and national parks are demarcated by MNREM department of Forestry and the most recent map is presented in Figure 2.

Figure 2: Map of Upolu and Savai'i showing the nature reserve and national parks
(Source: Forestry Division, MNREM)



Name_of_site	Conservation_Type	Area_Ha
Falealupo CA	Community Conservation Area	722.166
Uafato CA	Community Conservation Area	1,161.37
O le Pupu Pue NP	National Park/Reserve	4,230.62
Mt Vaea Reserve	National Park/Reserve	89.1303
Saanapu-Sataoa CA	Community Conservation Area	52.8378
Asau-Falelima NP	National Park/Reserve	1,887.61
Lata NP	National Park/Reserve	3,731.98
Mauga Salafai NP	National Park/Reserve	5,973.59
Lake Lanotoo NP	National Park/Reserve	469.952
Forestry Site	National Park/Reserve	768.64
Laulii CA	Community Conservation Area	400
Proposed extension to NP	National Park/Reserve	10,000

Name_of_site	Conservation_Type	Area_Ha
Aleipata MPA	Marine Protected Area	4,255
Safata MPA	Marine Protected Area	1,845
Palolo Deep Marine Reserve	Marine Protected Area	22

Major conservation sites identified in Figure 4.2 are further explained in Table 12.

Table 12: List of Major Conservation/Nature reserve sites in Samoa

Name of Reserve	Conservation type	Area (ha)	Terrestrial
Aleipata MPA	Marine Protected Area	4,255.00	Marine
Assau-Falelima NP	National Park/Reserve	1,887.61	Terrestrial
Falealupo CA	Community Conservation area	722.17	Terrestrial
Forestry Site	National Park/Reserve	768.64	Terrestrial
Lake Lanotoo NP	National Park/Reserve	469.95	Terrestrial
Lata NP	National Park/Reserve	3,731.98	Terrestrial
Laulii CA	Community Conservation Area	400.00	Terrestrial
Mauga Salafai NP	National Park/Reserve	5,973.59	Terrestrial
Mt. Vaea Reserve	National Park/Reserve	89.13	Terrestrial
O le Pupu Pue NP	National Park/Reserve	4,230.62	Terrestrial
Proposed extension to NP	National Park/Reserve	10,000.00	Terrestrial
Saanapu-Sataoa CA	Community Conservation Area	52.84	Terrestrial
Safata MPA	Marine Protected Area	1,845.00	Marine
Uafato CA	Community Conservation Area	1,161.37	Terrestrial
Palolo Deep Marine Reserve	Marine Protected Area	22.00	Marine

3.8 Forests

More than 60% of the country is forested with primary forest covering 1.8% of the highland areas, especially in the island of Savai'i. According to the 2004 forest survey data produced by FAO and MAFFRA indicated that 46.8% of Upolu and 69.1% of Savai'i were covered by some type of forest cover.

The majority of rural population, at various levels, relies on forest products for food, medicine, firewood and construction materials. Samoa is blessed with a variety of tropical forests. Unfortunately, currently there are no government laws to prevent logging of primary native forests that can potentially impact the floral and indirectly faunal biodiversity in Samoa. Less than …% of Samoa's unprotected forest is protected by law as forest reserve. Currently most of the primary forests in the higher elevations in both islands are protected from logging due to lack of access roads. Project activities should ensure that no access roads would be improved or expand into the areas close to the primary forest buffer zone.

(Forest types such as natural, gazette, National park/reserves, customary forests, plantation forests, etc.)

5 Livelihood – Environmental-Social Linkages

5.1 Logging

Logging operations among the villagers and clear cutting by internationals logging companies

used to result in extensive deforestation exposing the soils to various agents of erosion. Since three years ago, commercial logging has been banned in Samoa and clear cutting has been stopped. However, cutting of trees, even old forest stands by individual villagers for use or to convert the land to other uses is not regulated and is ongoing.

5.2 Soil Erosion

Currently due to presence of a good ground cover, soil erosion is not considered as a major source of concern in Samoa. However, if intensive agricultural and livestock production is promoted and land cover is reduced or removed, there would be a danger of increasing accelerated soil erosion, considering the volcanic nature of the land and high erodibility of most soils on steep slopes in the islands. Continuous/intensive cropping, rock removal, and irrigation can all lead to increase in accelerated soil erosion if appropriate soil conservation measures are not also included in agricultural production packages.

ANNEX 8 – Social Assessment

SOCIAL ASSESSMENT

(Excerpts from Samoa Agriculture Competitiveness Enhancement Project – Social Review)

ACRONYMS

SIA officers	Social assessment advisory officers
A	Answer
CLGF	Commonwealth Local Government Fund
ESMF	Environmental and Social Monitoring Framework
EIA	Environmental Impact Assessment
EU	European Union
FAO	Food and Agricultural Organisation
GoS	Government of Samoa
Hh	Household
IPP	Indigenous Peoples Plan
IA	Internal Affairs, Ministry of Women, Community and Social Development
IAIA	International Association for Impact Assessment
MAF	Ministry of Agriculture and Fisheries
MOF	Ministry of Finance
MNRE	Ministry of Natural Resources and Environment
MWCSD	Ministry of Women, Community and Social Development
NZ	New Zealand
PAD	Project appraisal document
PEAR	Preliminary Environmental Assessment Report
PUMA	Planning Urban Management Agency
PSSF	Private Sector Support Facility
Q	Question
The project	Agriculture Competitiveness Enhancement Project
SACEP: SASA	Samoa agriculture competitiveness enhancement project: Social Assessment and Stakeholder Analysis
SASSA	South African Social Security Agency
SBEC	Small Business Enterprise Centre
SDS	Strategic Development for Samoa
TA	Technical Assistance
TOR	Terms of Reference
VDC	Village Development Committee
WIBDI	Women in Business Development Incorporated
WD	Women's Division, Ministry of Women, Community and Social Development
WB	World Bank
UN	United Nations
UNDP	United Nations Development Program

1. POPULATION

Information about the Samoan population and in particular the agricultural sector provides an overall context for the project. This information also provides a baseline against which any changes resulting from the project could be measured.

3.1 The Samoan Population

In 2006[8] the total population of Samoa was 180,741 (an increase of three percent on the 2001 Census). Of the total population, 97 percent were Samoan and 3 percent non-Samoan. Samoans are ethnically Polynesians as indicated in census data relating to the population of Samoa[9].

Of the total population, 52 percent are males and 48 percent females (the percentages were consistent with those from the three previous Censuses). Female headed households were 2,769 (20 percent) in 2006, a rise of 2 percent since 2001.

The age dependency ratio indicated the greatest dependency burden of the population (with the highest percentages in the dependent age groups of 0-14 and 65+) was in the rural regions and particularly Savaii followed by the Rest of Upolu (ROU). However in the last three censuses, the child dependency ratios have declined and the old age dependency ratios increased as the old age group has grown. The average life expectancy in Samoa is 73.2 (71.5 for males and 74.2 for females).

There has been a decline in the total growth rates since 2001 indicating continued outflow of Samoans overseas. This outflow has resulted in a loss of labour in all sectors and an increase in remittances. Regionally, North West Upolu has the greatest growth at 1.3 percent (the sale of government land in Vaitele, Vailele and other surrounding villages was a major reason for this growth) and Apia Urban Area (APA) had the only declining growth[10].

Most of the population is rural with only 21 percent being urban. Rural-urban migration, especially in NWU, has been due in part to the continuous centralisation of social and economic services (schools, health facilities, shopping, government and private employment opportunities). More efficient transport has also facilitated migration.

In 2006 only 2 percent of the population had never been to school. The majority had achieved education a secondary level education (55 percent) with 11 percent achieving tertiary level education. For the age group of 15 – 24, reading literacy in Samoan is 89 percent for males and 92 percent for females, and in English it is 71 percent for males and 81 percent for females. Differences between regions are not available.

[8] Report of the Population and Housing Census 2006

[9] Confirmed by Taimalietane Matatumua, Senior Policy Officer, MAF

[10] The four regions are Apia Urban Areas (AUA), North West Upolu (NWU), Rest of Upolu (ROU) and Savaii. There are 48 districts in Samoa.

The census indicates that for persons 15 years and older 32 percent of females are actively involved in economic activities and 65 percent mainly involved in non-economic activities. The reverse was the case for males: 68 percent are actively involved and 35 percent are mainly involved in non-economic activities. This pattern reflects the traditional Samoan household where men deal mostly with the heavier work outside the house such as farming, planting and fishing and income generating activities whereas women are more involved in less physical work and household work.

Table 1 shows trends in the economically active population in the 2006 and 2001 censuses.

Table 1: Economically active population Persons 15+ 2006 & 2001

	2006		2001	
Economically Active	**Total**	**%**	**Total**	**%**
Paid job	28179	51.6	24468	46.2
Subsistence for sale	1219	2.2	1831	3.5
Subsistence for family use	15652	28.6	23408	44.2
Subsistence for sale & family use	8878	16.2	612	1.2
Looking for work	707	1.3	2620	5.0
Total	**54,635**[11]	**100**	**52,954**	**100**

Between 2001 and 2006 the percentage of people in paid work increased by approximately 5 percent, and the percentage of those working in subsistence agriculture for family use decreased by 15 percent. However, a 15 percent increase was seen in people working in subsistence agriculture for family use and to earn money. Of those in paid work in 2006, 60 percent were female. It is of note that only 7 percent of females worked in subsistence agriculture for sale and family use compared to 21 percent of males. Most of the unemployed are young male adults aged 15 to 34.

[11] The total population of Persons 15+ by main activity for 2006 was 109,804 (54,635 Economically Active, 52,715 Not Economically Active and 2,454 Not Stated). From Report of the Population and Housing Census 2006

The rate of unemployment also dropped between 2001 and 2006. This may have been fuelled by preparation for the South Pacific Games which were held in 2007 which would have included construction of infrastructure and the growth in the service industry.

Concerning the basic needs poverty line, the 2008 Household Income and Expenditure Survey (HIES) indicated that 20.1 percent of Samoans live below the poverty line an increase from 19.1 percent in 2002. The Government of Samoa (GoS) and United Nations Development Program (UNDP) estimate that, had the food basket (on which the basic need poverty line is based as well as the non food basket) been costed in the fourth quarter of 2008 instead of the first quarter (the fourth quarter being a lower point in the worldwide economic downturn), its cost would have been 25 percent higher thus raising the percentage to some 34 percent[12].

Most deaths are due to non-communicable diseases such as diabetes, hypertension, heart problems, and smoking. There is a greater chance that non-communicable diseases can be prevented through public health campaigns targeted to the young.

3.2 Agriculture in Samoa

The Agriculture Survey (2005)[13] indicated that 75 percent of the households in Samoa were active in agriculture. Savaii was the most agriculturally active region with 96 percent agriculturally active households and AUA the least agriculturally active with 69 percent agriculturally active households. Households that were agriculturally active had a holding[14] of an average of 2 parcels per holding in each region except for Savaii which had an average of 3.

Use of major crops

Sale and consumption of major crops by 17,962 agriculturally active households is as follows:

[12] From Mr Zijp's report (and Samoa Bureau of Statistics and UNDP Pacific Centre (2009) *Samoa: A Report on the Estimation of Basic Needs Poverty Lines, and the Incidence and Characteristics of Hardship and Poverty: Analysis of the 2008 Household Income and Expenditure Survey)*

[13] 2005 Agriculture Survey, Ministry of Agriculture and Fisheries and Ministry of Finance, Government of Samoa. Note that the agricultural survey data is for 2005 whereas the population Census data discussed in chapter 2 is for 2006.

[14] An agricultural holding is an economic unit of agricultural production under single management without regard to title, legal form or size. Single management may be by an individual or household, jointly by individuals or households by a clan, tribe or a juridical person such as a corporation, co-operative or government agency. The holding may consist of parcels not in the same locality provided they share the same production means such as labour, farm, buildings or machinery (2005 Agriculture Survey, Ministry of Agriculture and Fisheries and Ministry of Finance, Government of Samoa)

Coconuts

Consumption:

The average weekly consumption per household of coconuts (matured and young) was 45 - similar to 2004 results

Sales:

- Approximately 2 percent sold 326,000 drinking nuts with an estimated value of SAT$917,000
- 6 percent sold 4,260,000 matured coconuts with an estimated value of SAT$917,000, and
- Only 0.3 percent sold copra with an estimated value of SAT$173,000.

Cocoa

Consumption:

Per household consumption decreased from 40 percent in 2004 to 33 percent in 2005. However average weekly consumption per household increased from 3 to 5 packets during the same period. AUA had the lowest weekly consumption per household with only 2 packets compared to NWU with 6 packets

Sales:

6 percent sold cocoa with an estimated value of SAT$1,330,000. NWU accounted for 52 percent of the cocoa sold and AUA only 1 percent.

Bananas

Consumption:

Bananas are a major food item in Samoa. 80 percent or all households consumed bananas with an average weekly consumption of 3 bunches. The 2004 survey results were similar with 78 percent of all households consuming bananas but with only an average weekly consumption of 2 bunches

Sales:

In contrast, only 16 percent of agriculturally active households sold bananas with an estimated value of sale of SAT$3,160,000. Of the volume sold, 46 percent was from NWU and only 10 percent from AUA.

Taro

Consumption:

Approximately 62 percent of all households consumed taro, the percent showing no significant change from the previous year's survey results

Sales:

Some 31 percent sold taro with an estimated value of SAT$18, 456,000.

Taro palagi

Consumption:

Only 8 percent consumed taro palagi with an average weekly consumption of 9 baskets. The majority of households consuming *taro palagi* were in NWU (810) and the least in AUA (148)

Sales:

About 2 percent sold *taro palagi* with an estimated value of sale of SAT$295,000. ROU accounted for 35 percent of sales and AUA 5 percent.

Taamu

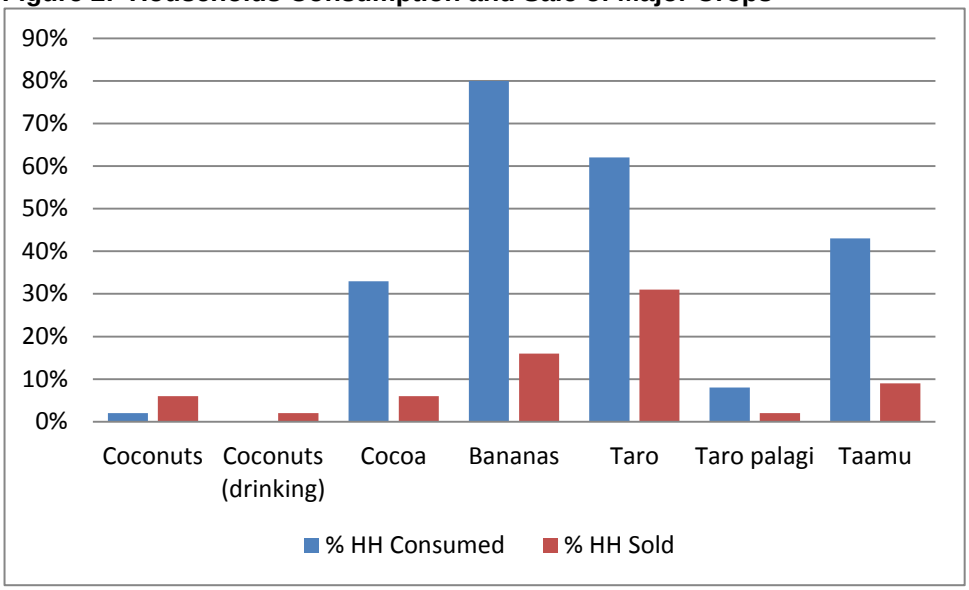
Consumption:

Some 43 percent consumed *taamu* which was a similar result with the 2004 survey

Sales:

Some 9 percent sold 288,000 tammu with an estimated value of SAT$416,000. Savaii sold 52.5 percent, NWU 27.5 percent and the rest in ROU.

Figure 2: Households Consumption and Sale of Major Crops



Annual data is available on major crops only.

Households with livestock and poultry

The raising, usage and rearing of livestock and poultry by households is as follows

Cattle

Household percentages:

(16 percent had cows, 10 percent heifers, 9 percent bulls, 5 percent steers and 10 percent calves).

Raising:

Of the 49,000 cattle in Samoa:

- 44 percent were from ROU
- 26 percent from Savaii
- 17 percent from NWU
- 13 percent AUA. The numbers raised was a significant increase of 75 percent since 1999.

Usage:

Of the 12,300 slaughtered

- 65 percent were for fa'alavelave
- 34 percent for sale
- 1 percent consumption. Also 1,700 live cattle were sold.

Rearing:

The main system is 'enclosed own' by 57 percent, tethering by 33 percent, free range by 4 percent and 'enclosed other' 6 percent.

Figure 3: Percentage cattle raised by region

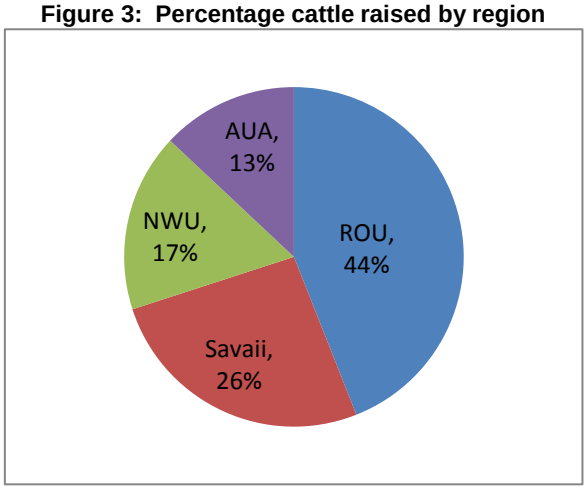
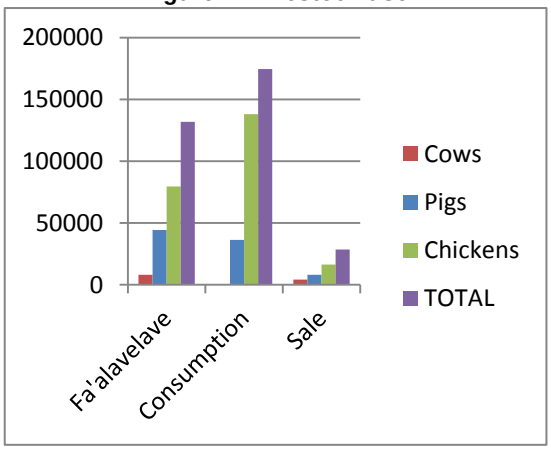


Figure 4: Livestock use



Pigs

Household percentages:

51 percent had sows, 36 percent had breeding boars, 28 percent had gilts, 24 percent had barrows, 48 percent had piglets)

Raising:

258,000 were raised (an increase of 25 percent over the last year):

- 54 percent were piglets
- 17 percent sows
- 12 percent breeding boars
- 9 percent barrows
- 8 percent gilts

Usage:

Of the 88,700 pigs slaughtered:

- 50 percent were for fa'alavelave
- 41 percent consumption
- 9 percent for sale. Also 8,200 live pigs were sold compared with 4,200 the previous year.

Rearing:

The main system was 'free range' by 53 percent and the remainder 'enclosed own'. The main local feed for pigs is 95 percent coconuts.

Chickens

Households:

16,400 households (69 percent)

Raising:

497,000 were raised (an increase of 8 percent over the last year).

Usage:

Of the 233,800 chickens slaughtered

- 59 percent were for consumption
- 34 percent for fa'alavelave
- 7 percent were sold. Also 17,000 live chickens were sold compared to 8,800 in 2004.

Rearing:

Of the 16,400 households that raised chickens

- 98 percent were 'free range'

- 2 percent 'enclosed own'. The main local feed was 85 percent coconut meal followed by 8 percent not fed.

Bees

The 40 bee keepers in Samoa supply the local market 100 percent through the bee keepers association. Little work is required, for raising bees and making honey and there are few costs, no transport is required and payment is immediate and given at the gate 3-4 times annually. These factors make it attractive to bee keepers / farmers as a part time or full time occupation.

Ten hives (which is a typical number for a bee keeper) require 4-5 days of work yearly and provide an annual income of US$900 for 450 kilos of honey. Buckets are provided to the bee keeper to collect the honey and a truck collects the honey 3-4 times (usually between June and December) annually. Costs include the hives and sometimes sugar. Honey can be produced alongside farming such as raising chickens.

The project would provide the opportunity for agricultural households to increase numbers in livestock and poultry already raised in Samoa and to improve animal husbandry practices.

1. SAMOAN SOCIETY

4.1 Family and village structure

The family, *'iaga,* and the village, *nu'u,* are key social units in Samoan society.

The Samoan family refers to an extended family which may include three or four generations living in close proximity. It is the primary unit through which the Samoan way of life, *fa'a Samoa*, operates. In this family structure each member knows their roles, expectations and duties. By carrying out their duties, they will be the beneficiaries in the long term. The family 'is a source of sustenance, certainty and comfort in times of social or economic difficulty'[15]. However, family expectations and obligations can be high and conflicts may emerge between the younger more western educated generation and their elders.

The village, *nu'u*, is the secondary unit which mantles several primary units. A village is made up of chiefs, who govern the village, and untitled men and women. Untitled members in a village are in one of four groups; the wives of matai (*faletua),* school aged children (*tamaiti),* untitled men (collectively *aumaga),* and women (*aualuma* - which also refers to the women's committee). The latter two groups are the workers in the village. There are 362 villages in Samoa and each village takes great pride in maintaining its identity and distinctive history.

[15] Samoa Pacific Pride, by Graeme Lay, Tony Murrow & Malama Meleisea, 2000 Pasifika Press Ltd

Loyalty to one's village and family are 'an almost sacred obligation'[16]. Groups of villages form districts, *itu malo,* connoting an alliance.

Each village has a sacred central open space, *malae,* which is the shared property of the *nu'u*. Traditional Samoan houses, *fale,* and palagi style houses are located around the central open space. The council meeting house, *fale talimalo,* predominates, by its presence usually in the middle and raised higher than other buildings. Most villages are located by the sea.

The men do the more physically challenging work including scaling trees for coconuts, cassava planting and harvesting, and slaughtering cattle. The women tend the smaller animals, do gardening, serve food and provide for guests, and support health and education initiatives as well as looking after the family. When there are village events such as planting of crops, it is the untitled men and women who do the work while the matai supervise and administer.

Great importance is placed on the group and its dignity and achievement rather than the individual. This value is deeply rooted in the Samoan way of life.

4.2 Matai and village council

Each family has at least one leader, *matai,* as its head which is usually a male and may also be a female. A *matai* is appointed through inheritance and family. The *matai* works for the family to provide maximum benefits for all the members of the family. *Matai* command respect and are addressed by their titles of *Afioga, Susuga* and *Tofa* depending on their type and hierarchy. In 2006 only 9 percent of the total population reported to be Matai in their households (80 percent were male and 20 percent female)[17].

There are two types of matai; *ali'i* or chief matai who inherit their titles and form a kind of aristocracy, and *tulafale* or orator matai who achieve similar status by performing important administrative roles and excellence as orators. The *tulafale* carries a *fue* made of sennit when speaking officially.

The *matai* is responsible for directing use of family land and other assets belonging to the family. He must honour the title he bears and the people he represents by his behaviour. Untitled people render services in return for his leadership.[18]

Matai are responsible for enforcement of village law and punishment of family members who have violated social codes. Transgressions include violence, disobedience of family orders, adultery, drunkenness and manslaughter and punishment include onerous tasks for minor

[16] Samoa Pacific Pride, by Graeme Lay, Tony Murrow & Malama Meleisea, 2000 Pasifika Press Ltd

[17] Report of the Population and Housing Census 2006

[18] 1999 Census of Agriculture Report

offences and extreme humiliation for serious offences. Generally most offences are dealt with at village level.

Only Matai can run for parliament. In 1990 voting was extended to all adult Samoans however the requirement remained that only *matai* could stand for parliament.

Each *matai* represents the family at village council, *fono*, meetings. The council of *matai* governs its village and makes decisions on all village matters beyond those made by each family. To make changes in a village, the most powerful *matai* needs to win the full support of the other matai of that village. In the village the chiefs make, interpret and implement the law.

Matai have monthly meetings and as required. If anything needs to be done in the community it is done through the chiefs. It is through the chiefs a formal relationship can be established. The village mayor, *pulenu'u,* a *matai* and on the village council, is the point of contact to link the project with villages.

Matai are registered at the Land Titles Court. Bestowing so many matai titles is a current concern, in part because it makes decision making about development on customary land difficult. Some *matai* have stopped development and disagreement has sometimes resulted in a lengthy court case.

4.3 Women's committees and other organisations

Each village has a women's committee which meets monthly and at other times as required. The women's committee is very active in each village.

Each committee has a representative and representatives meet monthly with the Women's Division (WD) of the Ministry of Women Community and Social Development (MWCSD). Each representative is paid by government but selected by the village. The representative acts as a liaison between the village and government. There are 105 representatives in Upolu and 86 in Savaii. Meetings are an opportunity for participants to share information on a wide range of topics.

MWCSD and Non-government organisations (NGO's) are very active in promoting healthy villages, healthy families and healthy eating. In addition, the health sector has undertaken several programmes to help improve the quality and longevity of life.

WD has several social and economic programs underway in villages. They include fine mats, vegetable programs and a Family, Health, Safety and Wellbeing program which started in 1998 (components include organic vegetable gardens, fencing pigs, improving sanitary conditions, fencing chickens and other livestock and access to water.

Other activities at the village level include small grants (from WD and UNDP), micro-finance, and nutrition. Some of the grants programs are group-based (applicants must apply as part of a group).

The Crops Division of MAF train WD members on growing fruit and vegetables. WD members then go and work directly with families in villages. The Livestock Division of MAF, however, does not work with WD but rather through Internal Affairs (IA) and the village mayors.

WIBDI is very active in villages and is driving organic farming. Through the revival of the partnership with WIBDI, WD hopes to play a much more facilitative role in the Fruit and Garden strategy.

4.4 Cultural practices

Food has cultural significance in Samoa. Food is distributed at ceremonies is accordance with social position, for example, a person of rank must be given taro and is often given a portion of cattle or pig.

At a function such as a funeral, wedding, house warming and the bestowal of a *matai* title, *fa'alavelave* (a traditional ceremony characterized by reciprocal gift-giving), fine mats and monetary gifts are given to the host family. Out of respect and custom, gifts are given in return. For *matai* and church ministers, gift giving often includes portions of cattle. The higher the status the more portions are given. The *matai* and church ministers take the gifts home and may divide them among family or church members. Alternatively, they may sell the meat. In the past pigs were the highly prized gifts, however cattle are now highly prized. People rely on remittances to help fund *fa'alavelave* occasions.

Farmers earn more from the *fa'alavelave* market than from selling to supermarkets. The *fa'alavelave* meat is sold at the farm gate where carcasses or live animals are sold. The price is negotiated between buyer and seller depending on the size or type of animal.

The commercial market has to be worthwhile for farming families to enter or extend in that market. Decisions relating to *fa'alavelave* are made by families in the village setting and not by government.

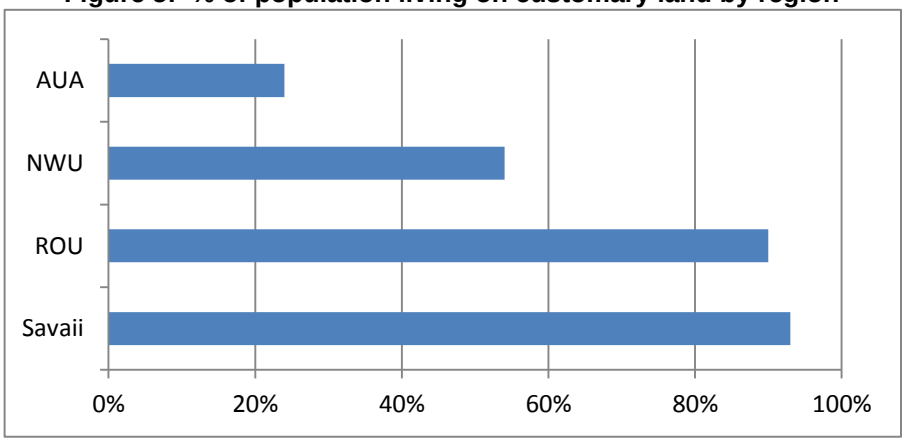
4.5 Land ownership and tenure

In Samoa, approximately 80 percent of the land is customary land and owned by the family over which the matai has authority.

In 2006, 65 percent of households were living on customary land and 25 percent lived on freehold land. The rest lived on other types of land tenure[19]. The four regions of Samoa have markedly different percentages of people living on customary land. Savaii has 93 percent, ROU 90 percent, NWU 54 percent and AUA 24 percent. No households in Savaii and ROU lived on leased or Government land.

Approximately 91 percent of crop cultivation takes place on customary land with a small percentage on freehold land and a smaller percentage on leased land%[20].

Figure 5: % of population living on customary land by region



4.6 Facilities and services available

Facilities and services available to households are as follows.

Concerning the main source of water supply for households, 80 percent of the four regions have access to tap water, however it is unclear if the source is reliable. There is still a large percentage of the population without metered water (which is purified and cleaner than tap water), for example, 7 districts had 95-100 percent of their households without metered water while only 9 districts had less than 12 percent of households without metered water or 88 percent with metered water.

For drinking water, 48 percent had drinking water from metered water, 36 percent used tap water (it needs to be boiled for drinking), 8 percent used stored rainwater, 5 percent bought purified water and 2.5 percent used well or spring water.

Around 97 percent of Samoa had access to an electrical supply of power with only a small percentage using benzene and kerosene for lighting.

[19] Leased land 4 percent, government land 1 percent, church land 4 percent, employer's land 1 percent and not stated .1 percent (Report of the Population and Housing Census 2006)

[20] Refer to Dr Hanemann's report for details.

Around 81 percent of households used firewood for cooking (often in combination with another source such as gas, kerosene or electricity).

Concerning toilet facilities, 77 percent of households had a flush toilet. The main reason for those who didn't have one was due to lack of a reliable water supply for flushing. However there has been an increase of 15 percent of households with flush toilets since 2001.

Table 2 indicates household items by status of ownership in all regions.

Table 2: Households by selected household items 2006

	TOTAL	AUA	NWU	ROU	SAVAII
	23813 hh*	**5183 hh**	**7581 hh**	**5443 hh**	**5606 hh**
Ownership and status of item	%	%	%	%	%
Land telephone line					
Yes operating	42.8	55.6	41.9	34.9	39.9
Cellular phone					
Yes operating	47.8	82.0	62.5	24.1	19.1
Computer					
Yes operating	9.7	22.8	9.8	3.7	3.0
Radio					
Yes operating	89.1	92.6	90.0	87.2	86.5
Television					
Yes operating	61.9	74.2	63.8	55.6	54.1

* Number of households for Samoa and each region

The table highlights the lower percentages of households in rural areas that had items that were operating. However, the selected household items indicate the appropriate way to let people know about the project in the information campaign. As well as direct communication, radio and TV will be very important.

4.7 Roles in agricultural practices

The following comments provide snapshots into men and women's roles in agricultural practices.

Within each village men's group have guidelines and rules for usage of customary land. For example, every untitled man may be required to plant 2 acres of a particular staple crop such as

taro. Afterwards the lands are inspected and if they don't comply the men are usually penalized. This encourages them to work.

Almost all villages in rural areas have programs for men including school leavers and those unemployed. The same applies for young women. Within villages there are examples of communal land used for communal projects. Vegetables grown in these programs are not for sale and are distributed among families.

Cattle are mainly men's work. Women generally don't slaughter cattle or pigs but they may kill chickens. Women rear calves near the home but as the cattle grow bigger they are moved away from the home. Women are included in decision-making about cattle including the distribution of meat.

Pigs are reared in low lands, closer to houses and roads. Young family members mainly look after the pigs in rural areas with men feeding and killing pigs.

Women provide /arrange the following for pigs and chickens

- Food, feed and rearing
- Marketing and selling of pigs and chickens for *fa'alavelave*, and to hotels, catering firms, restaurants and families.
- An advisory role to their husbands to fence pigs, and fence roaming pigs and piglets (pigs are to be fenced now under Planning Urban Management Agency (PUMA) requirements).

Crops advisory extension officers have training programs at the village level and get good feedback from the trainee groups. As a result some farm work has been extended.

While there are some good examples of successful village-based agricultural ventures (such as Savaia's taro village selling program run by a Village Development Committee) the following are challenges that may be faced in developing commercially-oriented village-based models:[21]

- Village groups are perceived of as suitable only for community projects that have no cash benefits
- Village groups may not be well-organized leading to disputes within leadership bodies. Unresolved disputes within the project may leak into the project, resulting in dissolution of the project

Numbers of cattle are said to make a cattle farmer in that they give prestige. A farmer with a large herd has around 500 cattle, and a farmer with a small herd would have 7 to 15 cattle. Some farmers have one cow per 5 acres as a way to manage resources.

[21] As identified by WD, IA and WIBDI

5.0 SALIENT SOCIO-ECONOMIC POINTS TO BE CONSIDERED IN PROJECT DESIGN

5.1 Vulnerable groups

While farmers ith Individual farmers make arrangements about selling cattle. Farmers with large herds sell to supermarkets (sometimes owned by family members). It is sometimes difficult for farmers with small herds to market their cattle.

Vulnerable groups include poor households that do not receive remittances (who often look for paid work or farm), poor families that rely on remittances, and young men (many of whom migrate to urban areas). There is a move to try to get young men to go back to their families and create their own block of land as they could be paid cash at the gate.

Vulnerability is characterized by lack of financial resources and lack of access to markets. Farmers living in areas away from roads lack distribution points for their crops or livestock.

5.2 Access to credit

Few villagers can get loans from banks especially as banks cannot take customary land as co-lateral for a loan. However, the United Nations (UN) and European Union (EU) have credit schemes focused on food crops (although the EU sometimes provides credit for livestock). In addition, the Small Business Enterprise Centre (SBEC) assists farmers with loans and there are other schemes available which are accessible to groups.

Some families may also be able to access credit from family members working in the urban area of Apia.

5.3 Remittances

The impact of remittances on households is great. Many in rural villages, such as the old and young, live by subsistence and remittances. School leavers come to Apia for a paid job and regard agriculture as the last resort.

Remittances are received by older members of the family. Young men and women don't get it directly. The money is budgeted by older members of the family. Remittances are often spent on *fa'alavelave,* church donations, food and basic needs.

Anecdotal evidence suggests remittances don't reduce young women's participation in the market economy and that they engage with the village women's group to earn income. WIBDI and WD play an important role in assisting the marketing and selling of goods developed by women's groups. Young men have groups of titled and untitled men also, and have programs for planting stable crops, fishing and rearing livestock. Young men don't seem to have the same kind of opportunity to make money from their produce. Remittances don't usually come in large amount except for *fa'alavelave.*

Remittances have dropped considerably for some families due to the economic downturn. This has encouraged people to grow more food crops.

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ANNEX 9 – Minutes of Consultations

MEETING WITH MAYORS OF "SEVERELY AFFECTED" VILLAGES

Members attended: Peseta Frank Fong(ACEO MAF), Lemalama Taaloga Faasalaina(ACEO MWCSD), Unasa Iulia Petelo(Project Coordinator –FAO), Peter McCrea (Project Consultant), **30 Village Mayors** and Kitiona Tugaga(MAF- Senior policy Officer/Secretary)

Welcome Remark

Lemalama Taaloga- welcomes all the participants and thanks them for making their time available to this important meeting.

Matters discussed in the meeting

Peseta – Addresses that the project focuses on families affected by the Cyclone especially with regards to their farms (crops and livestock) and fishing equipments. Also mentioned two levels.

1. Subsistence farmers – use of vouchers given out to every farmer to purchase tools (materials) needed to upgrade farm to the previous stage before the cyclone.
2. Commercial farmers – entitle to 70% from the project with farmer responsible for the 30% equity. A maximum of $7,000.00 for this category and terms and conditions apply.

Also stated the importance of a **list of households** (beneficiaries) affected to be presented by the Pulenu'u. This **list** will be posted on all the main churches of the villages involved and then later on to be published in the local newspaper.

Mayor 1- Mentioned the destruction of his coconuts and cocoa that is under the Stimulus Package.

Mayor 2- Asks for the name of the Project and where exactly were from?

Peseta – Firstly apologized and then answered. We're from the Ministry of Agriculture and Fisheries that is working in collaboration with MWCSD to execute the Cyclone Response Project. After translating the Project name, also explained the eligibility issues where if you don't have a farm then you are not entitled. Further, five signatures are needed for verification (i.e.) Village mayor, village youth rep, village woman's group rep etc. Then asked if the village mayors could fill in the list of households affected on the form given out.

Lemalama – commented that the list was already made from late last year (Dec) and also sometime this year.

Mayor 3- comment that the list should be renewed since there are new members in their community and also some have died, thus, should be removed from the list.

Mayor 4 – commented on the language the form is written (i.e.) English

Peseta – Translated the columns in the table.

Mayor 5 – Commented, if he is from a family that has seven farms, would they be entitle to seven vouchers?

Peseta – No. if a family has seven farms and only has one kitchen (umukuka), then they are still regarded as one household because whatever happens in the different farms will always end up to this one kitchen (umukuka).

Mayor 6 – Are we going to use the list we did last year?

Peseta – For subsistence farming, we can't go back to that list. Only for Commercial farms because there are evidences and information on what was destroyed and what's left. Also stresses the need for the mayors to have all the households that were affected in their final list to avoid complains and also the effectiveness of the project.

Mayor 7 – What about cows that were drifted away from flooding? Should that be included?

Peseta – Depending on the evidence and report given to support it.

Mayor 8 – So if every household gets $2000. Is it really up to us on how we spend it on agricultural tools..etc??

Peseta – Yes

Mayor 8 – Oh that's really good.

Peseta – Explained that commercial farms are entitled to more money but that depends on the report given. Again stresses the need for the mayors to have all the households that were affected in their final list to avoid complains and also the effectiveness of the project.

Mayor 9 – Questions the list and which households should be on the list?

Lemalama – Explains that if the name is on the old list, just copy it to the new list and add the new ones.

Mayor 10 – Said the damage on his farm at Aleisa was assessed last year and it's still waiting for the fund. Also suggested that since the project is about assisting farmers whose crops are affected by the cyclone, then what about households who only has 3 to 4 bananas growing on their ¼ acre of land. If that's the case then pretty much everyone should be entitled to the funding.

Peseta – No. That is not the case. The project is only responsible mainly for households who truly rely on their farms for a living. It does not include households that have people working and do not rely much on the farm.

Mayor 11 – What number of cows should you have to be entitled to the project fund?

Peseta – It's not so much about the number of cows you have but the cost of the damage done is what the project is responsible for. Also suggested when will the list be finalized?

Lemalama – Asked all the village mayors present that the sooner we get the list, the sooner it is for them to get assistance from the project. Then suggested what about Wednesday on the following week? And everyone agreed.

Mayor 12 – Say the list is finalized, when are we going to receive assistance from the project?

Peseta – Discussed with Peter McCrea the commonly raised issue of **WHEN** the assistance will actually be disbursed. He responded that if we do get the list and everything goes as planned, the vouchers should be given out by November 2013 the latest.

Other matters

Dates finalized for the visit.

Wednesday	**Time**	**Mayor's Phone number**
Satalo	11 am	751 8107
Falealili Matautu	2 pm	772 7995

Thursday	**Time**	**Mayor's Phone number**
Siumu	11am	722 6524
Vaie'e	2 pm	---

Friday	**Time**	**Mayor's Phone number**
Aleisa	11 am	----

AGRICULTURE & FISHERIES CYCLONE RESPONSE PROJECT (AFCRP)

Meeting with Mayors of Severely Affected Areas, 2nd August 2013 @ 9:00am at the MWCSD Conference Room

Present: **Peseta Frank Fong (ACEO-PPCD, MAF) – Chairman**
Peter McCrea – World Bank Consultant
Joyce Samuelu Ah Leong (ACEO-Fisheries, MAF)
Village Mayors
Silupe & Agnes (PPCD staff) – PPCD Staff

Opening Prayer – Mayor

- The Chair welcomes and thanked all members present.

Feedback from Mayors

- One of the mayors inquires the chairman and the ministry about the amount that each household should receive from the World Bank contribution?

  The chairman responded and clearly clarifies the voucher system for subsistence farmers and assistance for commercial farmers, plus the definition of households.

- Another mayor questioned why commercial farmers receive a higher amount of assistance whereas most of subsistence farmers are paying hired labour to work their farms?

  Chairman further elaborated the differences between a subsistence farm and a commercial farm. Subsistence farmers grow or farm mainly for family consumption whereas commercial farmers aims for the local and export market.

- One mayor asked whether the assistance is for farmers or fishers only.

  The chair stated that the assistance covers all farmers and fishers in the severely and moderately damaged areas.

- Another question raised is the timing of the implementation of the project.

  Chairman explained that the project timeframe is two years, and the ministry has started the consultations with the affected villages, the handing out of vouchers depends on the finalization of lists of beneficiaries.

The meeting closed at 11:30am and the Chair again thanked all the participants for making their time available to this important meeting and urged the support of the mayors for the ease of implementation of this recovery project.

Consultation with the Severely Affected Villages and Households

for the Cyclone Evan Response Project

Villages Involved: Matautu-Falealili, Satalo-Falealili, Siumu, Vaiee-Safata and Aleisa Sasae.

Welcome Remark

Peseta welcomes everyone attending followed by a brief summary of the main purpose of the project and how every severely and moderately affected household benefit from this assistance.

Summary of Issues:

1. Most participants were unclear regarding the process of selecting the beneficiaries and how MAF would select and identify the affected households.

    - Peseta elaborated every terms and criteria of above matter, given that the Ministry of Agriculture and Fisheries has to follow the old definition of Household which is "1 Kitchen = 1 Households", with given examples.
    - He also reminded that this project would only benefit those households that were engaged and relied on farming and fishing for food as well as those who operated livestock farm before the cyclone.
    - These selected beneficiaries would receive a voucher in any approved amount later on from the WB to purchase tools/equipment that would assist them in the rehabilitation process of their affected farms.

2. Another common issue that was always raised was how would the project response for those Households that owned both a Crop farm and livestock farm? Would the project provide an extra voucher for those cases?

    - Peseta responded that each affected household will be eligible for one (1) voucher to cover both the crop farming tools and building materials for livestock farms.
    - Pese also added on that there is another way of getting an extra fund apart from the voucher, however only the Commercial farmers would be entitled to apply for those funds given that they can provide the 30% of the proposed amount and the project would fund the other 70%.
    - One of the team members gave advice to all the attendees that it is better to accept the voucher instead of applying for the above extra fund, knowing that it would be a very difficult process and paper works in order to get it.

3. From the women's perspective, they were so concern on how they (households) will repay these vouchers later on.

    - Peseta and the team simply stated that all benefits in this mission are for free, and there is no need to pay back anything.

4. Some participants were concerned on what sort of tools and farming equipment that they can purchase using the voucher.

    - Peseta responded that the project would provide a list of all tools and equipment that are allowed to purchase under the voucher.
    - He also reminded that beneficiaries are not be acceptable to obtain any sort of materials that are not use for agriculture and fishing purposes under these vouchers.

5. One of the main issues being raised was how the project would be so sure that the list from village mayors is accurate and completely correct.

    - Peseta explained that all lists would get back again to the village mayors to stick on churches notice board and also posted on the Savali Newspaper in order for everyone's eyes.

The consultations started on the 31st of July and finished on the 2nd of August, and our team leader again thanked all the participants for making their time available to this important session for the start of this recovery project.

List of People Consulted for the Environmental Assessment

List of people interviewed

NOTE: The ESMF for the AFCRP is based on the SACEP ESMF. It builds on and extends the scope of the SACEP ESMF to include fisheries subprojects which is outside the scope of SACEP. The SACEP ESMF was developed in consultations with the following individuals and organizations.

Government Organizations

Name	Institution	Position
Taito Dr. Tumaalii	SROS	Chief Executive Officer
Czavina Iese	MNREM	Senior Officer, Environment& Conservation Division
Fonoiava Sealiitu Sesega	MAF	Chief Executive Officer
Lafaele Lameko	MAF	SACEP Project Coordinator
Philip Tuivavalagi	MAF	Principal Officer, Crop Protection, Nu'u
Fuifatu Billy Enosa	MAF	Senior Research Officer, Crop Protection, Nu'u
Faalelei Laiti	MAF	Research Officer, Fruit fly Research, Nu'u
Aleni Uelese	MAF	Senior Officer, Crop Protection, Nu'u
Juvita Tone	MAF	Research Officer, Crop Protection, Nu'u
Parate Matalavea	MAF	Principal Research Officer, Crop Research, Nu'u
Mike Furlong	MAF	Australian Volunteer, Crop Protection, Nuu
Ofeira Vitoria Faasau	MNREM	Acting ACEO, PUMA & Principal Sustainable Development Officer
Tuulima Laiti	MAF	Project Coordinator, ICCRAHSS
Josephine Stowers-Fiu	MNREM	ACEO, Legal Consultant
Lagomauitumua Sunny Seuseu	MNREM	Principal Climate Officer
Ann Rasmussen	MNREM	Project Coordinator, GEF Climate Change
Pau Ioane	MNREM	Principal Officer, Land management Division
Tony Tipamaa	MNREM	ACEO, Environment & Conservation Division

Katenia Rasch	MNREM	Senior Chemist & Hazardous Waste Management Officer, Environment and Conservation Division
Maiava Pimalolo	MAF	Registrar of Pesticides (Agrochemicals)
Frank Fong	MAF	ACEO, Policy Planning & Communication Division
Taimalietane Matatumua	MAF	Senior Policy Officer, PPCD
Pueata Tanielu	MAF	Senior Officer, Crop Development, Nuu
Sina Moala	MAF	Principal Officer, Livestock Division
Emele Ainuu	MAF	Principal Officer, Agricultural Extension
Louise Apelu	Ministry of Women,	ACEO, Women Division
Fata Alo Fania	MAF	Senior Officer, Nuu
Maulolo Tavita Assistant	Ministry of Women,	CEO

Non-Government Organizations

Name	Institution	Position
Bruce Russel	Women in Business	Misiluki Project Advisor
Fiu Mataese Elisara	Ole Siosiomaga Society	Executive Director
Walter Vermeulen	Matualleoa Environmental	Director
Bruce Kussel	WIBDI	
Canandra Wiles	WIBDI	Organic Rop Development Officer
Sooalo A. Peters	WIBDI	Technical Officer
Manita Ah San	WIBDI	Project Officer
Adimaimalaga Tafunai	WIBDI	Director
Alatina Ioelu	SBEC	Financial Officer
Tusitina Nuuvali	WIBDI	Project Officer

International Organizations/Universities

Name	Institution	Position
Mareko P. Tofinga	USP	Associate Professor, Agriculture
Adama A. Ebenebe	USP	Lecturer, Crop Protection
Mohammed Umar	USP	Director, IRETA
David Hunter	USP	Professor, Soil Science
Daya Perera	USP	Soil Laboratory Technician

Aru Mathias	FAO	Forestry Officer, Sub-Regional Office for the Pacific Islands
Peter Murgatroyd	SPREP	IRC Manager, Pacific Environmental Information Network Coordinator
Ugar Lualupu	USP	University Livestock Supervisor
Michael Furlong	University of	Senior Lecturer, School of Biological Sciences (IPM)

Affected, beneficiary, and interested People

List are not attached due to large file size but will be filed in the Project Files