Community Integrated Management Plan

Falealupo District – Savai'i

Implementation Guidelines 2018

Foreword

It is with great pleasure that I present the new Community Integrated Management (CIM) Plans, formerly known as Coastal Infrastructure Management (CIM) Plans. The revised CIM Plans recognizes the change in approach since the first set of fifteen CIM Plans were developed from 2002-2003 under the World Bank funded Infrastructure Asset Management Project (IAMP) , and from 2004-2007 for the remaining 26 districts, under the Samoa Infrastructure Asset Management (SIAM) Project.

With a broader geographic scope well beyond the coastal environment, the revised CIM Plans now cover all areas from the ridge-to-reef, and includes the thematic areas of not only infrastructure, but also the environment and biological resources, as well as livelihood sources and governance.

The CIM Strategy, from which the CIM Plans were derived from, was revised in August 2015 to reflect the new expanded approach and it emphasizes the whole of government approach for planning and implementation, taking into consideration an integrated ecosystem based adaptation approach and the ridge to reef concept. The timeframe for implementation and review has also expanded from five years to ten years as most of the solutions proposed in the CIM Plan may take several years to realize.

The CIM Plans is envisaged as the blueprint for climate change interventions across all development sectors – reflecting the programmatic approach to climate resilience adaptation taken by the Government of Samoa. The proposed interventions outlined in the CIM Plans are also linked to the Strategy for the Development of Samoa 2016/17 – 2019/20 and the relevant ministry sector plans.

We wish to acknowledge the significant contributions of our District and Village communities and our key government partner stakeholders and implementing agencies, in particular:

Ministry of Women Community and Social Development (MWCSD)
Ministry of Works Transportation and Infrastructure (MWTI)
Ministry of Natural Resources and Environment (MNRE)
Ministry of Agriculture and Fisheries (MAF)
Electric Power Corporation (EPC)
Land Transport Authority (LTA)
Samoa Water Authority (SWA)
Ministry of Health (MOH)
Ministry of Finance (MOF)

We acknowledge also our key international donor partners: the World Bank, the Pilot Program for Climate Resilience and Adaptation Fund, Adaptation Fund Project, through the UNDP, for the financial support that enabled the review and update of the CIM Plans.

Finally, I commend these CIM Plans to all relevant stakeholders from government ministries to districts and village communities and development partners to implement with the utmost urgency. It is assured that the implementation of the CIM Plans further enhance the resilience of Samoa to the impacts of climate change.

Thank you

Hon. Fiame Naomi Mata'afa
Minister of Natural Resources and Environment

Participants in the Plan

The CIM Plan is a Partnership between the Government of Samoa and the villages within the Plan area. The Plan area starts from the ridge extending to the reef broadly covering 4 sectors; Infrastructure; Natural Environment and Resources; Livelihood and Food security; and Village Governance. Both partners have responsibilities for issues and solutions and the Plan gives an integrated approach to the provision of services and improvement of resilience now and in the future.

This Plan incorporates the Faipule District of Falealupo (Falealupo-Tai and Falealupo-Uta)

The village representatives participated in the preparation of this CIM Plan in partnership with the Government of Samoa.

Date of Signing: 15 June 2018

Representative:	**Signature:**
Falealupo-uta & Falealupo-tai	
• Seula Lemoe Foaimea	
• Fuiono Patolo	
• Tai'i Tulei	
• Silialaei Tuaia Seumanutafa	
• Levi Titi Lamositele	

The Government of Samoa adopts the Community Integrated Management Plan for the Faipule District of Falealupo as a Management Plan for the Implementation of the Community Integrated Management Strategy (CIMS).

The Ministry of Natural Resources and Environment, as lead organization of Government, on behalf of the participating Government Departments and Corporations, confirms the participation of the Government of Samoa in the preparation of this Community Integrated Management Plan and its adoption as a Management Plan for the implementation of the Community Integrated Management Strategy.

Ulu Bismarck Crawley
CHIEF EXECUTIVE OFFICER, MNRE

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Acronyms:

ASCH	Areas Sensitive to Coastal Hazards
BCA	Benefit Cost Analysis
CBFMP	Community Based Fisheries Management Plan
CC	Climate Change
CCA	Climate Change Adaptation
CDCRM	Community Disaster & Climate Risk Management
CEP	Community Engagement Plan
CHZ	Coastal Hazard Zone
CEHZ	Coastal Erosion Hazard Zone
CFHZ	Coastal Flooding Hazard Zone
CIM	Community Integrated Management (Plan) or (Strategy)
CLHZ	Coastal Landslip Hazard Zone
COEP	Code of Environmental Practice
CSO	Civil Society Organization
CSSP	Civil Society Support Programme
DSP	District Sub Project
EbA	Ecosystem based Adaptation
ECCCR	Enhancing Coastal Community Climate Resilience
ECR	Enhancing Climate Resilience
EMP	Environmental Management Plan
EPC	Electric Power Corporation
ERN	Emergency Radio Network
HCSI	High Coastal Sensitive Index
IAS	Invasive Alien Species
IG	Implementation Guideline
KBA	Key Biodiversity Area
KPI	Key Performance Indicator
LTA	Land Transport Authority
LTO	Long Term Output
MAF	Ministry of Agriculture and Fisheries
MET Office	Meteorological Office
MoH	Ministry of Health
MNRE	Ministry of Natural Resources and Environment
MWCSD	Ministry of Women Community and Social Development
MWTI	Ministry of Work Transport and Infrastructure
NAP	National Action Programme
NBSAP	National Biodiversity Action Plan
NDMP	National Disaster Management Plan
NESP	National Environment Sector Plan
NISP	National Infrastructure Strategic Plan
NRW	Non Revenue Water
PA - KO	Priority Area - Key Outcome
PUMA	Planning Urban Management Agency
PPCR	Pilot Programme Climate Resilience
R2R	Ridge to Reef
SIAM	Samoa Infrastructure Asset Management
SOE	State of Environment
SWA	Samoa Water Authority
UNDP-GEF SGP	United Nations Development Programme Global Environment Facility Small Grants Programme
WB	World Bank
WCR	West Coast Road

WMP	Watershed Management Plan
WSSP	Water Sanitation Sector Plan

Glossary

Coastal Hazard Zones	Defined areas landward of the coast which are or are considered likely to be subject to the effects of hazards over a defined assessment period. In this study, reference is made to four coastal hazard zones: ASCHs (areas sensitive to coastal hazards); CEHZs (coastal erosion hazard zones); CFHZs (coastal flood hazard zones) and CLHZs (coastal landslip hazard zones).
"Do Minimum"option	A Management option that involves continuing with the present maintenance and upgrading programme on and when required basis.
Emergency Management	To provide communities with skills, facilities and materials so that they may adapt, respond and recover more quickly in the event of emergencies.
Hazard	A source of potential harm or a situation with a potential to cause loss.
Infrastructure	Built structures and networks which support the national, regional or local community.
Lifeline infrastructure	Infrastructure that contributes directly to the survival of the community and its ability to respond and recover at the time of extreme events.
Secondary infrastructure	Infrastructure that contributes to the every-day development of the community.
Implementation Guidelines	A document to guide land use and resource practices to achieve specified goals, objectives and policies and provide a framework for the implementation of defenses and works.
Issue	A specific concern regarding both cause and effect.
Land and Resource Use	The use of land and resources by the community for social, economic or other benefit (e.g. land use includes areas used for villages or crops, resource use includes activities such as sand mining, gravel extraction or fishing).
Monitoring	Process of measuring the effectiveness or impacts of projects and works against predicted standards, levels or outcomes.
Resilience	The ability to be adaptive, responsive and quick to recover.
Community Resilience	The ability for the community to be adaptive, responsive and quick to recover from the adverse effects of hazard.
Natural Resilience–	The ability of natural systems to be adaptive, responsive and quick to recover from natural processes or hazards.
Risk	The chance of something happening that will have an impact on objectives. It is measured in terms of consequence and likelihood. In the Community Integrated Management Plan context it is the likelihood that infrastructure, environment and biological resources and agricultural and marine resources (food security) will be subject to inland and coastal hazards and the potential for loss of property, life or land due to natural processes.
Stakeholders	Those people and organizations who may affect, be affected by, or perceive themselves to be affected by, a decision or activity. The term stakeholder may also include interested parties.
Strategy	Direction or course of action to achieve a define division.
Susceptibility	The degree to which infrastructure at risk is likely to be damaged by coastal hazards and how easy/difficult, expensive/cheap it is to replace. In the context of the CIM Plan the term susceptibility is equivalent to the term vulnerability as the Samoan phrase for both susceptibility and vulnerability is the same.

Vision	A desired destiny.
Livelihood	A livelihood is a means of making a living. It encompasses people's capabilities, assets, income and activities required to secure the necessities of life Food availability: The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).
Food access	Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live (including traditional rights such as access to common resources).
Utilization	Utilization of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs in food security.
Stability	To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security.

Introduction to the CIM Plan

The Strategic Vision

The District Community Integrated Management (CIM) Plan for Falealupo District has been prepared as part of the Government of Samoa's Adaptation Fund - *Enhancing Resilience of Coastal Communities of Samoa to Climate Change Project*. The CIM Plan is one of the primary means of implementing the CIM Strategy, which was formally approved by the Government of Samoa in February, 2001 and updated in 2015 as providing the Strategic direction for enhancing the resilience of community livelihoods, infrastructure, environment and natural resources using a holistic and integrated ridge-to-reef approach. The Strategy has as its central vision:

> Resilience – Community Livelihoods, Infrastructure, Environment and Natural Resources to Climate Change and Natural Disasters

The CIM Plan takes this vision and provides the practical tools with which the communities and the government, in partnership, can implement the Strategy. ***To be resilient is to be adaptive, responsive and quick to recover so that communities are environmentally, socially and economically sustainable (CIM Strategy, 2015).***

The Aim of the CIM Plan

The aim of the CIM Plan is to help communities and government improve resilience by identifying actions and solutions considered as best approach to issues identified. Not all the solutions may be actioned immediately but the plan will ensure that issues and options are identified for the long-term improvement in resilience of community livelihoods, infrastructure, and environment and resource systems.

The CIM Plan will:

1. Improve the community's awareness of all hazard risks from the ridge to the reef;
2. Enable the community as well as providers of services and physical, financial, and technical support in all climate prone sectors, to reduce inland and coastal hazard risks in villages;
3. Enable the community and government service providers of infrastructure services, livelihoods, environment and natural resources to better adapt, respond and recover from cyclones.

Structure of the Plan

The CIM Plan consists of two parts each serving a separate and distinct purpose.

- ***Plan Development,*** which describes the process undertaken in preparing the CIM Plan in conjunction with representatives of the Communities involved, the Government and other stakeholders with interests in the Plan area.
- ***Implementation Guidelines***, which describes the Plans and Actions recommended as outcomes of the process, together with the partner responsible for implementing these outcomes. The participants of the CIM Plan preparation process are acknowledged in the Implementation Guidelines.

Implementation Guidelines

Purpose of the Implementation Guidelines

The Implementation Guidelines describe the solutions proposed that will increase the resilience of the villages in the Plan area and the ways these solutions can be implemented. The solutions are presented for various livelihoods, infrastructure, environment and natural resources items that have moderate to low resilience. Where one solution will provide benefits to other items of livelihoods, infrastructure, environment and natural resources these "Other Benefits" are also noted. Implementation is considered to be the joint responsibility of both the villages and the government in partnership. The government is responsible for the provision of national and district "Public", infrastructure and public goods and benefits derive from environmental services and natural resources , while villages are responsible for local and community infrastructure and livelihoods related actions. The responsibility for implementing the proposed actions is also defined. Solutions for both District and Village level issues related to livelihoods, infrastructure, environment and natural resources respectively, and the responsibility of both partners, should be considered together as they combine to provide for the integrated management of all community development initiatives.

The solutions for village level interventions related to livelihoods, infrastructure, environment and natural resources will usually be the responsibility of the Village Council and Families in the village to implement. Advice and resources may be available from the Government to assist the village in implementing these solutions. In most situations these solutions will also provide benefits to both village and district infrastructure and resources and environmental goods that are shared between villages. These solutions should be considered an integral part of strengthening community resilience at both levels.

Duration of the Plan

The CIM Plan is ***reviewed*** every 10 years but during the Plan period, the solutions implemented will be ***monitored*** on a five (5) yearly basis to ensure the proposed solutions are effective and are actually improving resilience. The 5 yearly monitoring of the new CIM Plan is aligned with the 5 year review of **the key national planning and programming** strategy for Samoa: the *Strategy for the Development of Samoa* (SDS). The new CIM Plan recognizes some solutions are likely to take longer than 5 years, whilst others may take up to 10 years to implement due to the complexity of planning process, funding and budgeting programming required to implement these solutions.

Detailed implementation of the solution will determine the monitoring requirements and Key Performance Indicators.

Financing of the Plan

Implementation of best solutions is the collective effort of all identified responsible agencies, civil society organizations, donor partners **and** district and village communities themselves. Funding will be sourced through several mechanisms recognizing the Government of Samoa's programmatic approach to tackling climate change impacts on its development progress. While every effort has been made to identify priority actions needed to build the resilience of Samoa and its communities, the Government also recognizes that not all actions identified can be financed at once. Implementation of best solutions will be undertaken strategically and over time in line with available funding and, **if** determined a priority CCA activity that will actually build the resilience of communities and Samoa as a whole. Criteria of determining priority CCA best solutions for financing are:

- proposed development is in general accordance with the objectives of the CIM Strategy 2015;
- development is specifically recommended in the CIM Plan
- number of people that will benefit from the development, i.e. population benefit
- development will provide *life sustaining* support for communities
- minimum or neutral environmental effects
- development will improve resilience
- development will achieve speedy recovery
- development will reduce risk
- also identified as a priority in other Sector Plans or National Strategies

During the development of the new CIM Plans, the World Bank funded Pilot Programme for Climate Resilience Enhancing Climate Resilience for Coastal Resources and Communities (PPCR ECR) prepared two (2) key documents:

- ***Community Engagement Plan (CEP)***-the guidelines provided in the CEP is an excellent capacity building tool that can be used by CSO's and village communities themselves to aid development of small grant proposals to existing small grant funding mechanisms like CSSP and the UNDP-GEFSGP

- ***District Sub Project (DSP)*** – the guidelines provided in the DSP targets single districts or multi-district projects with a large number of beneficiaries

Noting Samoa's programmatic approach to CC and CCA, these key documents are fundamental in guiding development partners, implementing agencies and other stakeholders on the most effective way of resourcing and supporting climate change adaptation projects at the village and district levels. These village and district level CCA projects actually achieve the majority of key indicators in various Sector Plans, subsequently achieving key national indicators contained in the *Strategy for the Development of Samoa* (SDS).

1. Description of Falealupo District

Physical and Natural Resource Setting

The Falealupo District is located on the western-most tip of the island of Savaii. The coastal village of Falealupo was completely destroyed by cyclones Ofa and Valeria in 1990 and 1991. Cyclones Heta and Evans in 2004 and 2012 also caused severe damage to houses, roads and the coastline. Except for a few recently built beach fales, *t*here are no village dwellings on the sea side of the main access road in to the coastal village. The district is within a dry zone. The landform of the coastal plateau is gently sloping with gorges and streams that influence the surface water flows. There is a narrow strip of lava rock along the coastline. Inland is mainly wet climate including small areas of moderate dry season near the coast. The inland landscape is described as hills forming into steep land and intervening valleys.

There are no visible rivers in the district but there are SWA boreholes further inland of Falealupo-uta which services all of Falealupo District. This supply is supplemented by rainwater tanks as Falealupo is prone to droughts due to the low rainfall in this part of Samoa. The mean dry season rainfall for this district is less than 1,000mm while the mean annual rainfall is recorded at 2,000mm[1]. A Meteorology Office rainfall gauge is located in Falealupo. Residents report high salinity in the water supply most days of the week. There were several coastal springs located on the west end of Falealupo-tai on the way to Tufutafoe. These springs have all been inundated with seawater since the 2007 CIM Plan, and are now not safe for cooking or drinking. Water from the springs is used mainly for washing and bathing.

Almost all of the original village of Falealupo re-established itself inland along them a inroad after the devastations of Cyclones Ofa and Val. The movement whilst necessary also means that the inland area has been transformed to accommodate previously coastal dwelling populations. And where people have moved, planting of food crops and raising of domestic animals follow. Falealupo has a wetland located in the coastal area and the district map shows some homes sitting within or very near the riverbank encroachment control zones which means any contaminants from further inland are flowing into the wetland in the coastland.
The coastal ecosystem of the Falealupo district is characterized by rocky outcrops, a wetland at Avata extending to the center of the Falealupo-tai sub-village, and a virgin mango forest stand. The foreshores are protected by littoral forests comprising mainly of *fau* trees and *toitoi* with young coconuts sprouting from underneath matured palms at various places. On the road to Tufutafoe, *laulala* plants are abundant under young coconut palms mixed with other coastal species such as *fau*, *tavai* and *lusina*. This area was inundated by beach sand during the cyclones in the 1990s and Heta in 2004, and may have caused changes to its vegetation and species composition (Reti, 2016).

The reef at Falealupo district is about 20m from land at Avata and could easily be affected by sand mining that is happening, albeit small scale, at this location. There was no destructive fishing practices (dynamiting or fish poisoning) reported by the villagers who use outboard fishing boats to fish beyond the reef. The lagoon is considered too rough for traditional fishing and for this reason most if not all fishing by the village; occur outside its reef and lagoon area. Very little sedimentation from the access roads or other human based activities affects the reef and lagoon of the district, because of the porous nature of the land (Reti, 2016).

Much of the upland forest of Falealupo has been logged by sawmilling companies in the 1970s-1980s. Unlike its lowland forests that are being protected through the Canopy Walk, the upland areas are highly disturbed as a result of logging operations, land clearing for agriculture and wind damage. The recent construction and improvement of access roads into the upland areas has been accompanied by land clearing that much of the native forest has disappeared. This has also contributed to the declining numbers of native bird species including the pacific pigeon. (Reti, 2016)

Social and Economic Setting

The recent population and housing census report of 2016 shows total population for Falealupo of 545; female 275 and male 270. This figure excludes the population of Avata and Vaotupua. Total population of Avata is 360[2]and Vaotupua 186[3]. If added together, the actual total for Falealupo District would be 1,091[4]. After the cyclones, almost all of the original village of Falealupo (from Avata) re-established itself inland along the main road. Only a few households remain near the coast, so the village is now split into two distinct locations: one at Falealupo-tai and the other 6km

[1]MNRE, 2014. Climate services for agriculture
[2]Female 177; Male 183
[3]Female 90; Male 96
[4]SBS. Census 2016 Preliminary Count

inland at Falealupo-uta. Development in Falealupo-uta is mostly scattered along the main Falealupo Road. Settlements in Falealupo-tai tend to be more concentrated in one area along the foreshore, near Cape Vaitoloa. The popular tourist attraction; Canopy Walkway with a view to the Falealupo Rainforest Preserve is located along the Falealupo Road which links the two parts of the village. Falealupo-Uta has small shops and facilities for Western Union money transfer while there are beach fale accommodation and a shop at Falealupo-tai. The Falealupo Primary School is located in Falealupo-Uta near the main road.

Both the Falealupo Road and access roads between the villages are considered important parts of the district's infrastructure. The Falealupo Road for the most part is in good condition except along the coastal road between Avata and Falealupo-tai where it is not paved and is often submerged during high seas. As this part of the road is very close to the sea and as there is no reef to provide protection in this particular area, it will always be difficult and costly to maintain. Because both the main road and the access road between the Falealupo villages provide access to high schools, shops and health facilities, as well as adjacent districts, both are considered "life-line" infrastructure. Where the access road lies near the coast it is considered to be at **high** risk and susceptibility but is not considered lifeline access.

The cash economy of the District is dominated by traditional work. The majority of residents are largely sustained by plantation work and fishing. A small number of beach fales are located in Falealupo-tai and cater for overnight visitors to the historical and legendary sites of Falealupo (Canopy Walkway, Vae o Moso and Vai Sua Toto amongst others) and Tufutafoe, and provide alternative incomes for a small number of people. Away from the coast, plantations and agricultural activities dominate the area. The 'access' to the Falealupo Rainforest Preserve is through the Canopy Walkway entrance and is earning additional income for the village through paid eco-tours to the forest.

Urgent coordinated action is needed to protect pockets of undisturbed places such as the pristine mango forest and wetland at Falealupo before these are compromised by the increasing demand for accessible lands for agriculture development in the village. A concerted effort by families with customary rights to this part of Falealupo to declare this area a Key Protected Area (KPA); utilize it as an income earning activity through eco-tours would not only protect the area but also provide for a secondary form of income for the families and village.
Rainwater harvesting is already well entrenched in the district, continuation and maximizing assistance with this practice would appear to be a major and logical primary recommendation to support the current SWA borehole and rural water supply scheme in the Falealupo Peninsula (Tokalauvere, 2017).

Climate Risk and Resilience

The use of LiDAR mapping data, hydrologist and geomorphologist data and findings for this district has helped determine inland and coastal hazard zones and high risk areas for Falealupo. The immediate risks for Falealupo-tai are from coastal inundation, tsunami and storm surges and fluvial hazards. Some areas are located within the tsunami shore exclusive zone (or "red zone"). The Tsunami shore exclusive zone covers about 37 hectare of the district. No buildings are located within this zone. The Tsunami evacuation zone orange however covers 417 hectares of district area. 33 buildings of the district are located in this zone, one of which is the Falealupo Primary School. Most of these 33 buildings are also in the fluvial hazard zone.

Part of the Falealupo Road leading into the coastal area sits within both the immediate inundation and tsunami shore exclusive zone. It is also in some parts, susceptible to the immediate fluvial hazard zones and is therefore considered to be at high risk. The road to the coastal settlement is about 9 km from the main North Coast Road, most of it unsealed.

There is an urgent need to climate proof roads and infrastructure and to build community resilience by recommending inland relocation away from vulnerable coastlines. However, a proper cost benefit analysis needs to be done to weigh the benefits of creating and upgrading existing paths and tracks not accessible by vehicles vs. preserving the remaining pristine ecosystems left of Falealupo. The use of alternative environmentally friendly solutions such as beach replenishment needs to be explored further for Falealupo-tai.

The agricultural areas can be subject to long periods of days without rain that impact on household crops and the management of water surface runoff will increase resilience of local livelihoods. In order to be able to have a resilient agricultural system (which is the driver for rural livelihoods) communities require access to water, conservation of soil nutrients, access to suitable varieties, a wide range of crop and livestock activities as well as market outlets. Plantations are at more risk to damage from storm activities the closer they are situated to the coast. Some areas are low lying and subject to storm damage and salt intrusion. Impacts from climate change will not be uniform across the

district due to the uncertainty of the type and spatial extent of increased temperatures and changes in rainfall patterns associated with climatic change (Dews, 2016).

2. *Falealupo District Interventions*

CIM Plan Solutions

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant National, Sector Plans and Strategies
Reticulated water supply, quality and network to be improved	Extend the water supply to families inland with no access to water Procure rainwater harvesting systems for vulnerable families as a short term solution Procure rainwater harvesting systems for identified evacuation shelter(s) District and village to support SWA water rationing programmes during times of drought District to support SWA efforts at exploratory boreholes in district District and villages to support SWA efforts at protecting and conserving boreholes, intakes and catchment areas ***Responsibility:SWA/ MWCSP/ MNRE / District/ Village/ CSSP***	Increase adaptation during drought periods Improve infrastructure resilience and rate of recovery Improve health and sanitation Reduce contamination of water supply Reduce impact from inland flooding	Develop and register District/Village bylaws to include regulating developments around catchment areas and boreholes Implement SWA(2016)10year investment plan to improve water supply network to support all inland families without access to drinking water Include in budget programming design, and extension costs of water supply and procurement of rainwater harvesting systems Utilize hazard maps and Geomorphologist findings to inform designs Utilize Sui o Nu'u monthly meetings to monitor progress of village programmes and responsibilities	CIM Strategy 2015 Water and Sanitation Sector Plan SWA 10 Year Investment Plan(2016) Falealupo District Plan Community Engagement Plan Health Sector Plan Community Sector Plan
Electricity supply	Provide underground lines in the long term Install and connect power supply for inland residents Relocate overhead lines to a more resilient location when being replaced Install streetlights along the roads where needed for community safety Install and connect to solar power supply if	Maintain electricity supply at all times including natural disasters Avoid accidents from fallen electricity posts.	Monitor distribution networks to avoid overloading poles and contributing to line failures Utilize Falealupo Village Hazard Zone Resettlement Plan to guide long term planning of infrastructure relocation	Samoa Energy Sector Plan [Draft] Samoa Relocation Strategy 2016 and Falealupo Village Hazard Zone Resettlement Plan (VHZRP)

	made available Families to limit building and developments near electricity posts ***Responsibility:EPC/ MWTI/ Village/Families***			
Village infrastructure located in high risk hazard zones; such as houses, schools, Churches, Businesses, Committee houses etc	Relocate outside of high risk hazard zones when building/infrastructure requires replacement Conduct awareness raising campaign on flood resilient building practices and designs for at risk communities living in and near high risk hazard zones Design infrastructure to take into account the immediate hazard zones; for example, raise floor levels of houses in flood prone areas Develop land use planning and development controls to restrict developments within high risk hazard zones such as CEHZ and CFHZ Families and village to limit building and developing on natural overland flow paths exacerbating inland flooding and storm water surges Where reclamations are proposed, Government and district to manage processes by requiring villagers to get the appropriate permits and consent ***Responsibility: Village / Families /MWTI/ MNRE***	Minimize expenditure on damaged properties & personal assets Mitigate potential damage from coastal erosion and flooding accommodating the hazard Improve recovery to create more resilient villages Improve preparedness and readiness response to natural disasters Safer villages, houses and roads	Utilize hazard maps and Geomorphologist Drainage Infrastructure Database to inform designs Enforcement of National Building Code 2017 Encourage insurance of significant investments and assets within hazard zones Designation of the IFHZ, CEHZ and CFHZ as an “at risk” zone with appropriate land use planning controls and restrictions	National Building Code CIM Strategy 2015 [Draft] Samoa Relocation Strategy 2016 and Falealupo Village Hazard Zone Resettlement Plan (VHZRP)
Loop road from Falealupo-tai to Tufutafoe:	Upgrade loop road ***Responsibility:Village /MWTI/ MNRE***	Safer villages, houses and roads	Conduct feasibility, EIA for proposed inland road and implement recommendations	NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1

coastal road upgrade			Utilise Hazard Maps and Geomorphologist Infrastructure Database to inform location and design Utilise Falealupo Relocation Strategy to guide long term planning of infrastructure relocation	[Draft] Samoa Relocation Strategy 2016 and Falealupo Village Hazard Zone Resettlement Plan (VHZRP)
Upgrade Access Roads 1 & 2 as potential escape route for Falealupo-tai residents	Village to maintain track through mango forest as ecotourism project Village to utilize CDCRM recommendations on emergency management Families to consider relocating into lands at Falealupo-uta ***Responsibility: Village***	Mitigate potential damage from coastal erosion and flooding accommodating the hazard Safer villages, houses and roads	Conduct feasibility, EIA for proposed inland road and implement recommendations	Community Sector Plan Falealupo District Plan
Beach nourishment / offshore breakwaters	Implement beach replenishment at critical locations along the beach to protect coastal road and cultural and historical sites within Falealupo-tai against inundation, coastal erosion and natural disasters ***Responsibility: MNRE/ STA/ Village Council***	Improve infrastructure resilience and rate of recovery Reduce impact from coastal erosion Safer villages, houses and roads Minimise expenditure on damaged properties & personal assets	Undertake EIA Utilize recommendations of EIA and lessons learnt from Manase beach replenishment project to design beach replenishment to suit Falealupo-tai conditions Benefit cost analysis to include appropriate design loads and engineering design and supervision costs on top of capital work estimates	CIM Strategy 2015 NESP 2018 - 2022 Tourism Sector Plan
Evacuation Shelter and a connected escape route needed for emergency preparedness and response	Assess and/or select location for either an existing or new evacuation shelter, including safe access routes to the shelter Conduct evacuation shelter assessment and mark on CIM Plan hazard maps Develop a Village Climate Disaster Management Plan(VCDMP) Conduct trainings for	Improve resilience of public infrastructure Improve preparedness and readiness response to natural disasters	Enforcement of National Building Code 2017 Utilize hazard maps and Geomorphologist findings to inform location and designs	National Disaster Management Plan2017-2021 National Building Code National Policy for People with Disabilities

	People With Disabilities (PWDs) on emergency and disaster response strategies Implement CDCRM program Install relevant signs to guide the community on emergency response procedures and to locations of evacuation shelters Where no suitable houses exist, build emergency shelter(s) outside the hazard zones Retrofit identified and approved schools or churches outside hazard zones and designate as evacuation shelter ***Responsibility: MNRE /DMO/ MWTI/Village /CSSP/Council of Churches/MWCSD***			
Natural Resources and Environment	**Best Solutions**	**Benefits**	**Guideline to assist with the implementation**	**Relevant Sector Plans, National Strategies &Policies**
Wetland restoration and protection	Adopt agro-forestry and community tree farming practices instead of clear felling as is practiced at present Encourage planting of indigenous species in conjunction with engineered water land drainage action plans Fence domestic animals to reduce contamination in wetlands Enforce Watershed Management Riparian Zone and regulate developments around the wetlands Conduct regular inspections of the swamp/wetland vegetation to monitor	Protect coastline against normal wave action Maintains natural ecosystem connectivity Reduce inland & wetland flooding Improve health and sanitation Reduce overland flooding from river channels	Develop an integrated land management plan with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area MNRE Forestry to advice on appropriate species, depth and density of planting and provide seedlings for different vegetation types suitable to the habitats (coastal lowlands) and planting materials for village Update and register Falealupo 1998 Village bylaws that include banning of sand mining and illegal rubbish dumping Utilize Sui o Nu'u monthly meetings to monitor	Draft NESP2016-2020 Community Development Plan 2016-2021 Village Fono Act (Amendment Bill 2016) Falealupo District Plan Falealupo Village Bylaws

	health of vegetation ***Responsibility:MNRE/Village/MWCSD***		progress of village cleanup and awareness programmes	
Soft coastal protection measures needed for most vulnerable areas	Plant native species along coastal areas to strengthen existing seawall and to reduce coastal erosion and landslips; Talie, Fetau, Toa Togatogo are known to have greater resilience to natural disasters and changing climate conditions To act as an effective wave barrier, a minimum distance of 200m of vegetation is needed ***Responsibility: MNRE/ MAF/Villages***	Soft coastal protection measures will support and strengthen existing and new infrastructure along the coast Reduce impact from coastal erosion and natural disasters Implements an Ecosystem Based Approach	Develop an integrated land management plan for Falealupo district with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area MAF to assist in establishment of pilot sites to trial climate ready plant varieties MNRE Forestry, DEC and MAF to collaborate on supply of climate resilient crops	NESP 2018- 2022 Two Million Tree Planting Strategy 2015-2020 Restoration Operational Plan 2016-2020 Forestry Management Act 2011
Unsustainable sand mining (commercial and domestic)	Identify alternative sustainable sources of sand/rocks for domestic use Research the impacts of sand mining Village consultation on sand mining policy and regulation Village and government to collaborate closely on designated areas for sand/rock mining Raise awareness and support of sustainable land use practices ***Responsibility: MNRE/ Village/Families***	Mitigate potential damage from coastal erosion and flooding accommodating the hazard Safer villages, houses and roads Reduce impact from coastal erosion Economic benefit for village from sustainable sand mining activities	MNRE to continue to identify specific sites for inshore/inland sustainable sand/rock mining to meet demand without compromising riverbanks Undertake assessments of identified sites Undertake consultation with villages affected by proposed sand/rock mining Develop and register District bylaws to include managing and monitoring domestic sand/rock mining of rivers Utilize Sui o Nu'u monthly meetings to monitor progress of CIM Plan activities	Village Fono Act (Amendment Bill 2016) Draft Soil Resource Management Bill

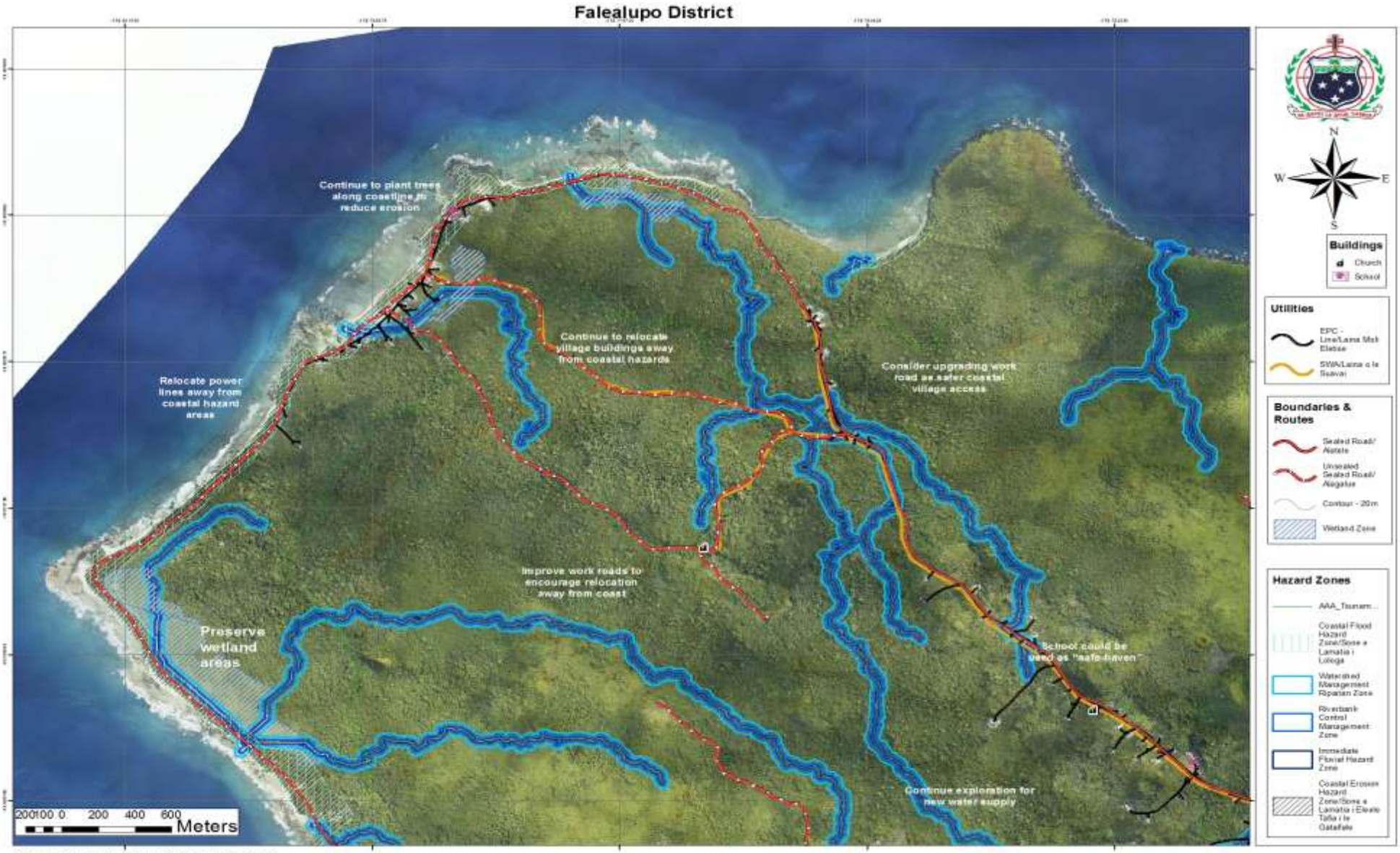
Livelihood and Food Security	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Food security: threatened by changes in climate and inadequate soil for planting	Promote and facilitate planting of root crops(i.eyams, sweet potato)which are more resilient to cyclones, droughts and floods Promote agro-forestry and mixed planting including fruit trees species to reduce crop vulnerability to pests and diseases Implement the Integrated Pest Management Programme Implement Sustainable Land Management (SLM) practices Replanting of native forestry species of the upland forests to restore resilience and ecological function Conduct pilot site trials for climate ready plant varieties ***Responsibility: MAF/ MNRE/villages/CSSP***	Maintains natural ecosystem Builds resilience of community livelihood and food security Improve preparedness and readiness response to natural disasters	MAF to provide trainings, awareness raising and support in supply of nursery trees, technology and infrastructure MAF to provide trainings and awareness on crop diversification to suit the prolonged impacts of climate change such as drought or rainy seasons MAF to assist in establishment of pilot sites to trial climate ready plant varieties Develop an integrated land management plan with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area MNRE Forestry to advice on appropriate species, depth and density of planting and provide seedlings for different vegetation types suitable to the habitats and planting materials for village	AgricultureSectorPlan2016-2021 Community Engagement Plan Falealupo District Plan Two Million Tree Strategy 2015-2020 Restoration Operational Plan 2016-2020
District/ Village Conservation Programme	Ban cultivation and clearing of forests on steep slopes to minimize the risk of erosion and land slips Enforce Watershed Management Riparian Zone and regulate developments around the upland forest area Conduct campaign for public awareness of conservation areas and establish a “neighbor hood watch” agreement with district to monitor and report on illegal deforestation	Protects and enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland flooding	Develop an integrated land management plan with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area Develop a Forestry Conservation Programme / Implementation Plan for Falealupo District Update and register Falealupo 1998village bylaws to include penalizing illegal deforestation in district lands Utilize Sui o Nu’u monthly meetings to monitor	Forestry for Sustainable Development Policy Logging Code Falealupo District Plan Falealupo Village Bylaws

	District/village councils to help promote the development of the agroforestry sector by encouraging relevant land use practice and where possible resolve any associated land disputes Government, district and villages to monitor, report and apply penalty on offenders ***Responsibility:MNRE/ District/Village councils***		progress of village programmes	
Governance	**Best Solutions**	**Benefits**	**Guideline to assist with the implementation**	**Relevant Sector Plans, National Strategies & Policies**
Strengthen the governance of natural resources and land use through Bylaws	Update and/or develop bylaws to manage the use of natural resources, and to control land use impacts; such as drainage maintenance, rubbish dumping, sand mining, stray animals and unregulated developments in water catchment areas and near boreholes. Collaborate with Sui o Nuu to monitor the use of and impact on natural resources Facilitate continuous awareness raising programs with the villages ***Responsibility: MWCSD /Village***	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation, Strategies, Plans and Policies Improve ability of communities to adapt, respond and recover quickly in the long term Improve accountability and enabling environment of communities	Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood and food security especially activities affecting water catchment areas and coastline Utilize Sui o Nu'u monthly meetings to monitor progress of district/village bylaws	Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan 2016-2021


Falealupo Mango forest


Coastal access road

Falealupo District Map



Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

Data Source: Ministry of Natural Resource and Environment, Samoa
Map Production: Spatial & DRM Specialist, Adaptation Fund - Enhancing Resilience of Coastal Communities of Samoa to Climate Change Project

Falealupo-tai Map

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

Data Source: Ministry of Natural Resource and Environment, Samoa
Map Production: Spatial & DRM Specialist, Adaptation Fund - Enhancing Resilience of Coastal Communities of Samoa to Climate Change Project

Falealupo-uta Map

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

Data Source: Ministry of Natural Resource and Environment, Samoa
Map Production: Spatial & DRM Specialist, Adaptation Fund - Enhancing Resilience of Coastal Communities of Samoa to Climate Change Project

Savaii AF Districts Overview Map of Coastal Inundation Zones