# Community Integrated Management Plan Fa'asalele'aga 1 District - Savaii



## **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

Hop. 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 Fa'asalele'aga 1 (Salelologa, Salelavalu, 'Iva, Vai'afai, Vaisaulu, Lalomalava and Safua villages).

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

#### Date of Signing: 15th June 2018

Representatives

Signatures

#### Salelologa Village

- Matamua Maa
- Touli Fagaese
- Seumanu Sione
- Fiu Lomata II
- Elisapeta Taotua

#### Salelavalu Village

- Pese Ulali
- Telefoni Mariner
- Tuita Talalelei
- Lotolelei Amani
- Miriama Pese

#### 'Iva Village

- Seve Luki
- Taua loaia Ionatana
- Au Asi
- Sarona Leauanae
- Losivale Leauanae

can ana

#### Vai'afai Village

- Moemai Kome
- Leaaliiee Vaeagi
- I'amua Simati
- Fata Tamotu
- Emele Lealiiee

#### Vaisa'ulu Village

- Leuo Taugauli Tuioti
- Logo Fasitau Piula
- Tia Kalena L. Toleafoa
- Lauloa Tui Agavale
- Tupuivao J. lakopo

#### Lalomalava Village

- Vaaelua Taunuu
- Lina Veve Faaolataga
- Talimao Viliamu
- Tofilau Mapusaga
- Lotumalii Sakaria

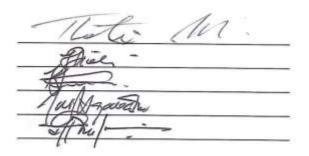
#### Safua Village

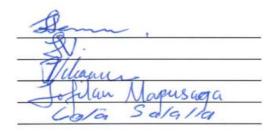
- Moeiatoto Filipo
- Sufia Lua
- Tuleto'a Alofa
- Luafata Puuaoalo
- Leleo Fiu

The Government of Samoa adopts the Community Integrated Management Plan for the Faipule District of Fa'asalele'aga 1as 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
СЕР	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
LTA	Long Term Output
MAF	ů l
MAP MET Office	Ministry of Agriculture and Fisheries
	Meteorological Office
МоН	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
SOER	State of Environment Report
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
Risk	natural processes or hazards. 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 Fa'asalele'aga 1District 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 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 communityresilience 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 theproposed 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 neutralenvironmental 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-GEF SGP.
- 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 Fa'asalele'aga 1 District

#### **Physical and Natural Resource Setting**

The District of Fa'asalele'aga 1 is located on the eastern coast of Savai'i between the districts of Palauli Sasa'e and Fa'asalele'aga 2. It consists of 7 villages; Salelologa Village, Safua, Vai'afai, Lalomalava, Vaisaulu, Iva and Salelavalu. Salelologa Township is included in the CIM Plan as although not a specific village it is the main commercial and government centre of Savaii and is located within Salelologa village.

The district is characterized by a broad plain sloping down to the coast from steep inland mounts. The main mountains within the area are volcanic cones including Mt Valusia, Mt Ologae and Mt Uliva'a. Along the coast a series of rocky headlands have formed as the base rock meets the edge of the lagoon. The most prominent of these is at Salelavalu. There is little sand along the shoreline with most shore areas composed of fragmented rock remnants presenting a hard coast eroding at an average rate of 0-0.2 m per year. The lagoon is generally wide (2-3 km) and shallow but there is a wide break in the reef opposite Salelavalu and a channel serving the ferry wharf at Salelologa. The coastal plateau is described as mainly wet climate including small areas with moderate dry season near the coast. Inland from the coastal plateau is a landscape dominated by gently rolling hills but without deep gorges.

The underlying geology of the district is composed of volcanic basaltic rock with a porous nature. Due to its absorbent factor it allows free draining of water to the extent that river and stream valleys run dry much of the year. Although estuaries are waterless for the majority of the time, flash floods still occur, flooding areas adjacent to the Safua Stream approximately twice a year.

There are small areas of mangrove established in the rocky bays along the coast. Plantation and agricultural areas dominate the inland regions. Most of these are located inland from the main North East Road but suitable area between the road and the sea are also planted particularly the Salelavalu headland. To the south-west is the Tafua peninsula and conservation area of lowland forest.Lowland forests at Salelologa can be observed from the main road. The area supports vegetetation types where tavai (Rhustaitensis), maota (Dysoxylummaota), asitoa (Syzygiuminophylloides), launinii (Cryptocaryaelegans), magaui (Garuga floribunda) and toi (Alphitoniasyzyphoides) appear to be the dominant species. Other opportunistic species such as the pulumamoe, puluvao, tamaligi and lusina are present and appear to be spreading.

The Salelologa wharf by its nature is located within both the CEHZ and CFHZ, it is also considered to be a lifeline infrastructure. However, it is a substantial structure designed and built to withstand cyclones; susceptibility and risk are therefore considered to be low. The entire district is comprised of customary land and has a total of 20 roads<sup>1</sup> which includes the main South East Coast Road running through the district. The roads are in various levels of condition; some good whilst others require a complete face lift showing signs of structural damage or failure.Sand mining is not a major problem as there is a lack of sandy beaches in this particular district.

A number of villages have established marine protected areas with help from the Fisheries Division of the MAF with dual objectives of allowing corals and reefs to recuperate and to help reduce the impact of wave action on the foreshores. Villages have also been provided by the Fisheries Division with young giant clams for planting in their safeguarded areas as an additional incentive for participation in the activity.

The Main Road is generally outside both the CEHZ and CFHZ however there are some sections that run through very high risk areas where four hazards combine. For example, parts of the road in Foua, Papaloa, Saletagaloa, 'Iva, Vaiafai and Safua sit in the Immediate Fluvial Hazard Zone, Coastal Flooding Hazard Zone, Coastal Erosion Hazard Zone and the Tsunami Shore Exclusion Zone (or red zone).

Local overhead electricity and telecommunication lines are located along coastal access roads and between houses. Where these lines fall within the CEHZ and CFHZ they are at high risk and susceptibility. These overhead lines are at threat as they are exposed to strong wind effects and providing underground lines is likely to increase the resilience of communities in these areas. The main high voltage electricity and telephone lines follow the Main South Coast Road and are safely situated outside of the hazard zones. Some parts of the main telephone distribution networks are underground and phone

<sup>&</sup>lt;sup>1</sup>Salelologa Rd, Foua Rd, Iva Access Rd, Iva Park Rd, Iva Rd, Lalomalava Rd, Salelavalu Access Rd 1, Salelavalu Access Rd 2, Salelavalu Coastal Rd, Salelavalu Rd, Satalafai Rd, Salelologa Access Rd, Vaiafai Access Rd, Vaisaulu Access Rd, Safua Access Rd, South East Coast Rd, LTA Rd, Saletagaloa Rd, Township Rd and Township Rd 2. LTA Samoa Infrastructure Asset Management Database

coverage within the district is provided by Bluesky and Digicel. The EU funded rural water supply project is working on replacing the galvanized pipe water network by a PVC network. The galvanized network runs along the inland side of the Main South Coast Road and is in many areas exposed. The line from the Salelavalu borehole is also exposed.

Invasive species that are most common in this district include the common fa'apasi (Spathodiacampanulata) and fuelautetele (merremiapeltata). These species have eventually suppressed and killed off the native trees and plants within the Salelologa forests.

#### Social and Economic Setting

The Fa'asalele'aga 1 District currently has a population of 3,059<sup>2</sup>; Salelavalu 1,102, Iva 749, Vaiafai 438, Vaisaulu 147, Lalomalava 307 and Safua 316. Of the total 3,059, total male is 1,502, female 1,557. Total number of households is 649.

There are 9 schools<sup>3</sup>located within the district and are either owned privately or run by the government or churches. Only three have been considered as potential evacuation shelters (Salelavalu Primary School, Lalomalava Primary School and Salelologa Primary School) because they are not within any critical hazard zones. The district has 4 tourist accommodations<sup>4</sup> and 15 churches divided between Salelavalu<sup>5</sup>, Iva<sup>6</sup>, Vaiafai<sup>7</sup>, Vaisaulu<sup>8</sup>, Lalomalava<sup>9</sup>and Salelologa<sup>10</sup>. The closest hospital<sup>11</sup> is located at Tuasivi.

Salelologa is the main commercial and government center for Savai'i. Almost all government ministries now have offices in Salelologa. There are also several wholesale, retail shops, supermarkets and hardware shops. All 4 trading banks (ANZ, National Bank of Samoa, Samoa Commercial and BSP) have branches located in Salelologa. The main Market is also located at Salelologa Township area.

The wharf is a terminus for the island's bus services and also has a taxi stand servicing passengers travelling between Salelologa Wharf and Mulifanua Wharf on Upolu. Outside of the Township area the Salelologa sub-villages and those closer to the commercial center provide residential areas for workers.

The districts livelihood is mostly cattle, plantation, fishing and household gardens. The amount of product for sale is influenced by the proximity to established local markets. There is a range of livelihoods with small mixed farming on small household plots. Crops include fruit, vegetable and small livestock for family consumption and to supply local hotels and supermarkets. Although the Fa'asalele'aga 1District is cultivated with various crops, the soil type at the locale is not suitable to all harvest, with banana having the highest suitability, coconuts, cocoa and breadfruit being moderate and taro-moderately low.

Fa'asalele'aga 1 is the 4<sup>th</sup>ranked district with the highest percentage (31.3%) of their income sourced from salaries. It is ranked as the highest to receive the most income per person weekly at \$60.27 and also the highest ranked with most of the income received through business activities. The surplus income received by a Fa'asalele'aga 1 individual equals \$27.36. The figures do not translate to everyday life situations when Fa'asaleleaga 1 is second highest in ranking with poor water supply and 3<sup>rd</sup> highest in ranking with the number of families (14) living without electricity. This survey<sup>12</sup> assessed 12 districts in Savaii which included all districts within Fa'asaleleaga.

#### **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 Fa'asalele'aga 1. The immediate risks for some areas of

<sup>2</sup>SBS Village Directory Census 2016 preliminary count

<sup>&</sup>lt;sup>3</sup>Salelologa Primary School, Manumalo Primary School, Manumalo Baptist Pre- School, Salelavalu Primary School, Salelavalu Pre-School, Iva Primary School, Mataaevave College, Lalomalava Primary School and Lalomalva Pre-School

<sup>&</sup>lt;sup>4</sup>Jet Over Hotel, Lusia's Lagoon Chalets, Salafai Backpackers Inn and Safua Hotel

<sup>&</sup>lt;sup>5</sup> Methodist, SDA,CCCS, Roman Catholic

<sup>&</sup>lt;sup>6</sup> CCCS,

<sup>7</sup> AOG

<sup>&</sup>lt;sup>8</sup> LDS

<sup>&</sup>lt;sup>9</sup> CCCS

<sup>&</sup>lt;sup>10</sup> Methodist, Roman Catholic, LDS, AOG, SDA, Church of Nazarene

<sup>&</sup>lt;sup>11</sup>MalietoaTanumafili II Hospital

<sup>&</sup>lt;sup>12</sup>Community Disaster and Climate Risk Management household survey: final report

Fa'asalele'aga 1 are from coastal inundation and fluvial hazards. Some areas are located within the tsunami red and orange zones.

For the entire district there is about 7,967 hectares of land. About 85.79 hectare is in the Tsunami shore exclusion zone (Red zone) and 312 buildings are in this zone. There are approximately 1,773 buildings in the district; about 312 are located in both the Tsunami shore exclusive zone and the Coastal Flood Hazard Zone. The watershed management riparian buffer covers 1,432 hectares of 7,967 hectares, therefore leaving about **6449** hectares in the "safe" zone. The Watershed Management Riparian Zone is a 20m buffer on either side of the river banks. Healthy riparian areas are vital to the health of stream ecosystems and the entire watershed as well. Many of the threats to the rivers and streams are directly related to loss of vegetation as well as human and physical changes such as land clearing for agricultural developments. It is therefore recommended that a topographic and geomorphological assessment be carried out first if construction of any infrastructure is proposed within this buffer zone.

The CEHZ and CFHZ extend along the eastern side of the road to the wharf. Rocky outcrops form the coast in that area and the land zones are about 5 m above the mean sea level. The CEHZ ranges from about 10m in width near the ferry wharf to about 80m in width further to the north. The CFHZ follows the indented coastline and extends to the western side of the road in low-lying areas to the north of the market, just south of the SWA depot and north of the MIA offices.

Facilities need to be provided at the Salelologa Township for the disposal of waste from commercial and industrial activities. It was verified by site assessments that companies and people still dump rubbish behind the Salelologa Township. The issues within the Salelologa Township should not be held as a MNRE only responsibility. It needs to be incorporated into government wide development programs and projects and also needs the aid of village by-laws so policies and plans by the government are actually implemented, monitored and regulated through village bylaws. Villages have attempted replanting but failed as the geology of the district comprises mostly of lava rock.

Existing culverts and drainage should be improved on village roads as a way to minimize flooding around the area. However, when designing the size of culverts a number of elements should be taken into account (i.e. size of the drainage area, surrounding terrain type, rainfall intensity, etc). Electricity and water supply along the inland work road must be upgraded so as to facilitate relocation. The intensity of recent cyclones and the tsunami of 2009 had convinced some residents to move further inland which has actually contributed to the number of land clearance and tree felling in the upland forests and watershed areas of this district.

Reticulated water has been improved in addition with SWA conducting water tests at a regular basis though it still does not reach families inland as the water pressure is not adequate to travel uphill. Rainwater harvesting systems should be constructed for vulnerable families only. Extension of sea wall to protect all village assets was not recommended by site assessments, instead villages were advised to replant around coastal areas utilizing Climate Resilient trees such as the fetau and other native trees.

## 2. Fa'asalele'aga 1 District Interventions

**CIM Plan Solutions** 

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Drainage systems require maintenance and upgrade in high risk areasof main South East Coast Road	Assess and upgrade culverts on main South- East Coast Road especially at junctions with access roads (Salelologa Inland Road,Salelologa Road, Township Road, Sapulu Road, Sakalafai Road, Foua Road, Saletagaloa Access Road Vaiafai Access Road, Vaisaulu Access Road and Lalomalava Road) exacerbating inland flooding and storm water surges affecting infrastructure, village homes and other asset – in accordance with Vulnerability Assessment of the Samoa Road Network recommendations Implement national standards for culverts and drains to facilitate the overland flow of storm water and reduce flooding Implement regular drainage inspection and maintenance <b>Responsibility: LTA</b> /MWTI/MWCSD /Village/Families	Improves climate resilience of infrastructure resilience and rate of response and recovery to natural hazards and disasters Encourages coastal families to relocate inland Maintains lifeline access for all of Upolu Minimises national disaster recovery expenditure on damaged properties, public and private assets	Use existing information for guidance but not limited to: "Vulnerability Assessment of the Samoa Road Network (2017)"; "Review of National Road Standards in Samoa (2016)"; "Samoa Code of Environmental Practice (2007)" Undertake a Cost Benefit Analysis to weigh options for funding Incorporate environmental and social safeguards concerns in the design and undertake consultations with affected communities Apply for necessary permits as required by law Utilise hazard maps and Geomorphologist Infrastructure Drainage Database to inform designs Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District	CIM Strategy 2015 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1 Community Sector Plan
Upgrade access/ work roads to facilitate relocation of houses away from hazard zones	Assess and upgrade access/work roads to reduce inland flooding Upgrades to include adequate sized culverts to facilitate the overland flow of storm water exacerbating river overruns, and to reduce flooding onto main roads and village lands Implement regular drainage inspection and maintenance	Improveinfrastruc tureresilience and rate of recovery Improve preparedness and readiness response to natural disasters Reduce impact from coastal erosion and natural disasters Safer villages,	dumping into waterways Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to inform designs 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 Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate	CIM Strategy 2015 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1 Community Sector Plan

behind homes damaged EIAs in screet properties and designing but	ons onmental and ards including ning and ilt environment re projects for ct visions to be CIM Strategy 2015
Village houses, businesses, tourist facilities,       Responsibility:LTA/ MWTI / MNRE/ Village houses, tourist facilities,       Minimise expenditure properties and	e PUMA Act

	overland flow paths exacerbating inland flooding and storm water surges Government and Village to liaise and collaborate on processes needed to protect riverbanks and coastline from land clearing and developments Responsibility:Village /			
	Families/MWTI/MNRE/			
Evacuation Shelter and a connected escape route needed for emergency preparedness and response	MWCSDAssess and/or selectlocation for either anexisting or new evacuationshelter, including safeaccess routes to theshelterConductevacuationshelterassessment and mark on CIM Planhazard mapsDevelopaVillageClimateDisasterManagementPlan(VCDMP)Conduct trainings forPeople With Disabilities(PWDs) on emergency anddisaster responsestrategiesImplementCDCRMprogramInstall relevant signs toguide the community onemergency responseprocedures and tolocations of evacuationsheltersWhere no suitable housesexist, build emergencyshelter(s) outside thehazard zonesRetrofit identified andapproved schools orchurches outside hazardzones and designate as	Improve resilience of public infrastructure Improve preparedness and readiness response to natural disasters	Enforcement of National Building Code 2017 Utilise hazard maps and Geomorphologist findings to inform location and designs	National DisasterManagement Plan2017-2021 NationalBuildingCode National Policy for People with Disabilities

	Responsibility: MNRE /DMO/ MWTI/Village /CSSP/Council of Churches /MWCSD			
Electricity supply	Churches/MWCSD Provide underground lines in the long term Install and connect power supply for inland residents Relocateoverheadlinestoa moreresilientlocations when being replaced Install streetlights along the roads where needed for community safety Install and connect to solar power supply if made available Families to limit building	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	EPC Strategic Plan
Paticulated	and developments near electricity posts <b>Responsibility:EPC/</b> <b>MWTI/ Village/</b> <b>Families</b>	Increase	Develop (Undate and	CIM Stratogy 2015
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 District and villages to support SWA water rationing programs during times of drought District to support SWA efforts at exploratory boreholes in district <b>Responsibility:SWA/M</b> <b>NRE/</b> <b>District/Villages/CSSP</b>	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/Update and register District/Village bylaws to include regulating developments around catchment areas and boreholes ImplementSWA(2016)10ye ar investmentplantoimprove watersupplynetworkto support allinlandfamilieswithout access todrinkingwater 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 location and design Utilize Sui o Nu'u monthly meetings to monitor progress of village programs	CIM Strategy 2015 WaterandSanitationSe ctorPlan SWA 10 Year Investment Plan(2016) Community Engagement Plan Health SectorPlan Village Fono Act(Amendment Bill 2016)
Effluent and wastewater	Provide a network sewage collection and	Increase adaptation during	and responsibilities Develop an integrated land management plan with the	National Waste

management	treatment system for district	extreme weather events	aim of reducing any unnecessary actions that	Management Strategy
systems	uisti ict	events	may adversely affect the	
	Introduce ban on latrines	Improve	natural habitats and	
	established in and around	infrastructure	ecosystems of the area	Village Fono
	fluvial hazard zones	resilience and		Act(Amendment Bill
		rate of recovery	Review wastewater	2016)
	Families in fluvial hazard		strategy/ legislation to	
	zones to install proper	Improve health	include role of	
	septic waste disposal	and sanitation	Village/District bylaws	
	systems	Reduce	Develop/Update and	
	Families to fence domestic	contamination of	register District/Village	
	animals	water supply	bylaws to include	
			regulating developments	
	Implement village		and latrines around	
	awareness and cleanup		catchment areas and areas	
	programme to reduce		susceptible to flooding	
	illegal rubbish dumping		TT. 11. TT 1 1	
	Implement district (ville as		Utilise Hazard maps and Geomorphologist findings to	
	Implement district/village drainage cleanup and		inform location	
	awareness programme		mormiocation	
			Utilise Sui o Nu'u monthly	
	Produce posters and		meetings to monitor	
	village signs for public		progress of village	
	awareness		programmes on waste	
			management	
	Responsibility: MNRE/			
	MWCSD/ District/ Village			
Natural	Best Solutions	Benefits	Guideline to assist with	Relevant Sector Plans,
Resources and				
			the Implementation	National Strategies &
Environment			the Implementation	Policies
	Enforce Watershed	Protects and		Policies Two Million Tree
Environment District Upland Forest and	Management Riparian		Develop Integrated	Policies Two Million Tree Planting Strategy 2015-
District Upland Forest and	Management Riparian Zone and Riverbank	enhance local	Develop Integrated Catchment Strategy and	Policies Two Million Tree
District Upland	Management Riparian Zone and Riverbank Encroachment Control		Develop Integrated Catchment Strategy and Flood Management Plan for	Policies Two Million Tree Planting Strategy 2015- 2020
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate	enhance local	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District.	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control	enhance local species diversity	Develop Integrated Catchment Strategy and Flood Management Plan for	Policies Two Million Tree Planting Strategy 2015- 2020
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area	enhance local species diversity Sustains	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016-
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area Adopt agro-forestry and	enhance local species diversity Sustains ecosystem	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area Adopt agro-forestry and community tree farming	enhance local species diversity Sustains ecosystem services and	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas Develop an integrated land	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area Adopt agro-forestry and community tree farming practices instead of clear	enhance local species diversity Sustains ecosystem	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas Develop an integrated land management plan with the	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area Adopt agro-forestry and community tree farming practices instead of clear felling as is practiced at	enhance local species diversity Sustains ecosystem services and	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas Develop an integrated land management plan with the aim of reducing any	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area Adopt agro-forestry and community tree farming practices instead of clear	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas Develop an integrated land management plan with the aim of reducing any unnecessary actions that	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area Adopt agro-forestry and community tree farming practices instead of clear felling as is practiced at present	enhance local species diversity Sustains ecosystem services and functions Reduce	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas Develop an integrated land management plan with the aim of reducing any	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016)
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area Adopt agro-forestry and community tree farming practices instead of clear felling as is practiced at	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas Develop an integrated land management plan with the aim of reducing any unnecessary actions that may adversely affect the	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area 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	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas Develop an integrated land management plan with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015 Water and Sanitation
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area 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	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas 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	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area 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	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas 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	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015 Water and Sanitation Sector Plan Community
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area 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	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland flooding	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas 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,	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015 Water and Sanitation Sector Plan
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area 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 Regulate developments	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland flooding Improve	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas 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	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015 Water and Sanitation Sector Plan Community
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area 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 Regulate developments around catchment area,	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland flooding Improve preparedness	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas 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	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015 Water and Sanitation Sector Plan Community
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area 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 Regulate developments around catchment area, SWA intake and	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland flooding Improve preparedness and readiness	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas 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	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015 Water and Sanitation Sector Plan Community
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area 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 Regulate developments around catchment area,	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland flooding Improve preparedness and readiness response to	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas 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	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015 Water and Sanitation Sector Plan Community
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area 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 Regulate developments around catchment area, SWA intake and	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland flooding Improve preparedness and readiness	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas 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	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015 Water and Sanitation Sector Plan Community
District Upland Forest and	Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland area 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 Regulate developments around catchment area, SWA intake and boreholes in district	enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland flooding Improve preparedness and readiness response to	Develop Integrated Catchment Strategy and Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas 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	Policies Two Million Tree Planting Strategy 2015- 2020 Restoration Operational Plan 2016- 2020 Village Fono Act (Amendment Bill 2016) CIM Strategy 2015 Water and Sanitation Sector Plan Community

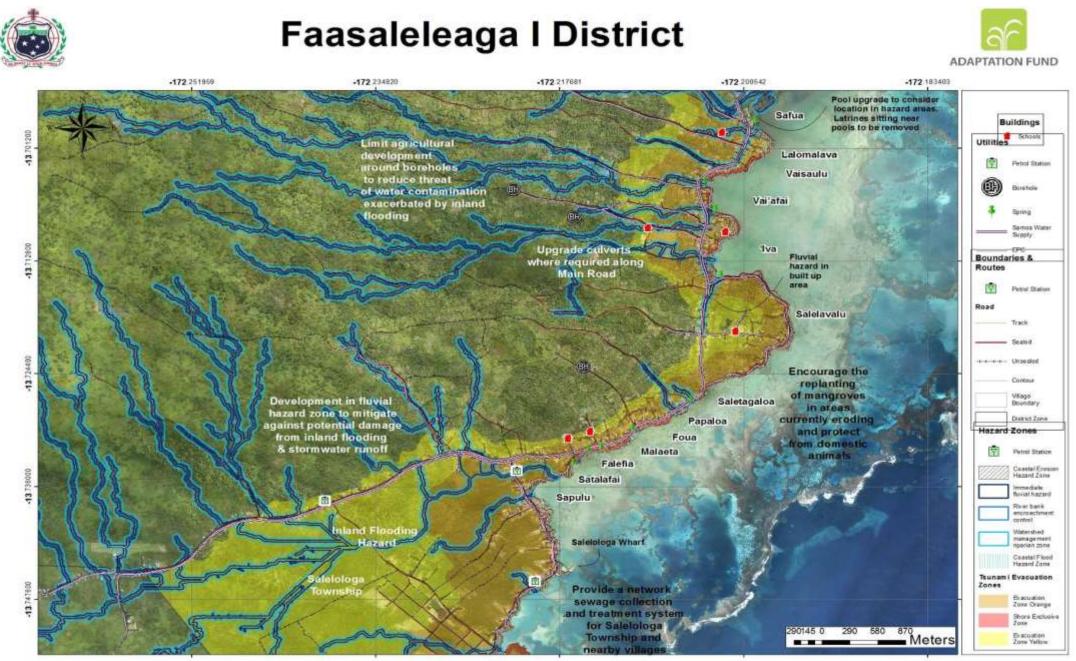
	boreholes	houses and roads	Develop and register	
			District/Village bylaws to	
	Conduct campaign for		include penalizing illegal	
	public awareness and		deforestation in district	
	establish a		lands	
	"neighbourhood watch"			
	agreement with district			
	to monitor and report on			
	illegal deforestation		Utilise Sui o Nu'u monthly	
	inegal deloi estation		meetings to monitor	
	District/village to help		progress of district/village	
	,		forestry programmes	
	promote the			
	development of the			
	agroforestry sector by			
	encouraging relevant			
	land use practice and			
	where possible resolve			
	any associated land			
	disputes			
	District to support SWA			
	efforts at exploratory			
	intakes and boreholes in			
	district			
	Continue ban of			
	destructive fishing			
	practices including sand			
	mining and introduce			
	village ban on rubbish			
	dumping in waterways			
	and watercourses			
	(immediate fluvial hazard			
	zones)			
	zonesj			
	Fence domestic and			
	invasive animals to			
	protect young trees			
	Responsibility: MNRE/			
	SWA/MWCSD/ District			
	/Village /CSSP			
Sand/rock	Identify alternative	Mitigate potential	MNRE to continue to	Village Fono Act
extraction	sustainable sources of	damage from	identify specific sites for	-
(domestic):	sand/rocks for domestic	coastal erosion	inshore/inland sustainable	(Amendment Bill
coastline, rivers	use	and flooding	sand/rock mining to meet	2016)
and riverbanks		accommodating	demand without	
	Research the impacts of	the hazard	compromising riverbanks	Draft Soil Resource
	sand mining			Management Bill
	Ŭ	Safer villages,	Undertake assessments of	
	Village consultation on	houses and roads	identified sites	
	sand mining policy and			
	regulation	Reduce impact	Undertake consultation	
		from coastal	with villages affected by	
	Village and government	erosion	proposed sand/rock mining	
		031011	proposed sand/rock mining	
	to collaborate closely on	Faanamia	Develop and register	
	designated areas for	Economic	Develop and register	
		benefit for	District bylaws to include	
	sand/rock mining			
	sand/rock mining	village from	managing and monitoring	
	sand/rock mining Raise awareness and	village from sustainable	managing and monitoring domestic sand/rock mining	
		village from	managing and monitoring	

	land use practices		Utilise Sui o Nu'u monthly	
	Responsibility: MNRE/		meetings to monitor progress of CIM Plan	
	Village/Families		activities	
Mangrove area conservation	Protect ridge-top habitats and forests from	Protects and enhance local	MNRE DEC to continue to provide technical	NESP 2018 -2022
	indiscriminate cultivate	species diversity	assistance and	Community
	and other developments	Sustains	backstopping for wetland and mangrove conservation	Engagement Plan
	Plant native species	ecosystem services and	programmes	
	along coastal areas to strengthen existing	functions		
	seawall and to reduce	Reduce	MAE to continue to support	
	coastal erosion and landslips; Talie, Fetau,	contamination of	MAF to continue to support community-based fisheries	
	Toa, Togatogo are known	water supply	reserve	
	to have greater resilience to natural disasters and	Reduce impact from inland		
	changing climate	flooding		
	conditions			
	Discourage large scale			
	agricultural ventures and other developments that			
	threaten catchment			
	areas, upland native forests and sensitive			
	habitats			
	Village to collect and			
	dispose of crown-of- thorns (alamea) on a			
	regular basis to prevent			
	major outbreaks			
	Responsibility: MNRE /MAF/ Village /CSSP/ UNDP-GEF SGP			
Livelihood and	Best Solutions	Benefits	Guideline to assist with	Relevant Sector Plans,
Food Security			the implementation	National Strategies & Policies
Pest	Implement an eradication programme	Maintains natural	Develop an integrated land management plan for	Agriculture Sector Plan 2016-2021
management;	to eradicate, contain or	ecosystem	Faasaleleaga 1 district with	
invasive species (african snails,	exclude invasive species		the aim of reducing any unnecessary actions that	NESP 2018 -2022
crown-of-thorns,	Replant with climate	Builds resilience	may adversely affect the natural habitats and	Samoa's National
and worms affecting	resilient native species Implement an inventory	of community livelihood and	ecosystems of the area	Invasive Species Action
plantations and	of invasive species and	food security	MAF to raise awareness of	Plan (NISAP)
vegetable gardens)	include information on		farmers on impacts to water flows from poor	
	their past, present and potential future		livestock management	
	distribution, as well as			

Food security: threatened by changes in climate and inadequate soil for planting	impacts and possible actions that can be taken Conduct education and awareness programmes on the impacts of invasive species Implement the Integrated Pest Management Programme Implement Sustainable Land Management (SLM) practices Build the capacity of farmers to manage stray animals (pigs, cattle) that are contaminating water sources Conduct pilot site trials for climate ready plant varieties District to fence domestic animals <i>Responsibility: Villages</i> / <i>District/MNRE/MAF/</i> <i>SROS</i> Promote and facilitate planting of root crops (i.eyams,sweet potato) which are more resilient to cyclones, droughts and floods	Maintains natural ecosystem Builds resilience of community livelihood and food security livelihood and food security livelihood and food security	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 MNRE, MAF and SROS to implement aggressive, nationwide invasive species eradication programme based on inventory of invasive species and conduct campaign on public awareness accordingly Village to manage pig/cattle population (compounds, in particular around water supplies) Training for farmers on pests management particularly affecting fruit trees and crops 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	
	Replanting of native forestry species of the upland forests to restore resilience and ecological function Conduct pilot site trials for climate ready plant varieties		Develop an integrated land	

	Responsibility: MAF/		depth and density of	
	MNRE/villages/CSSP		planting and provide	
	,		seedlings for different	
			Ũ	
			vegetation types suitable to	
			the habitats and planting	
			materials for village	
<b>6</b>	Best Solutions	Benefits	Guideline to assist with	Relevant Sector Plans,
Governance			the implementation	National Strategies &
			•	Policies
	Update and/or develop	Strengthen	Develop and register	Village Fono Act
Strengthen the	by laws to manage the	implementation	district/village bylaw to	(Amendment Bill
governance of	use of natural resources.	of all national	protect all district/ village	2016)
natural	and to control land use		, ,	2010)
resources and		sector plans	and government assets,	
	impacts; such as drainage		environment, livelihood	Community Sector
land use	maintenance, rubbish	Strengthen	and food security especially	Plan
through Bylaws	dumping, sand mining,	monitoring of all	activities affecting water	
	stray animals and	National Acts,	catchment areas and	Community
	unregulated	Regulation,	coastline	Development Plan
	developments in water	Strategies, Plans		2016-2021
	catchment areas and	and Policies	Utilise Sui o Nu'u monthly	
	near boreholes.		meetings to monitor	
		Improve ability of	8	
	Collaborate with Sui o	communities to	bylaws	
	Nuu to monitor the use of		5y14775	
		and recover		
	and impact on natural			
	resources	quickly in the		
		long term		
	Facilitate continuous			
	awareness raising	Improve		
	programs with the villages			
		and enabling		
	Responsibility: MWCSD	environment of		
	/Village	communities		

#### Fa'asaleleaga 1 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

## 3. Salelologa Township and Salelologa Village Interventions

#### **CIM Plan Solutions**

#### Salelologa Township

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Government infrastructur e and other assets located in high risk hazard zones (immediate fluvial, inundation and tsunami shore exclusive zones)	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	Minimise expenditure on damaged properties & personal assets Mitigate potential damage from coastal erosion and flooding accommodating the hazard Improve recovery to	Develop an Integrated Catchment and Flood Management Strategy for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to inform designs Enforcement of National Building Code 2017	Strategies & PoliciesNational BuildingCodeCIM Strategy 2015
	zones; for example, raise floor levels of houses in flood prone areas Develop landuse planning and development controls to restrict developments within high risk hazard zones such as CEHZ and CFHZ Families, government, businesses and village to limit building and developing on natural overland flow paths exacerbating inland flooding and storm water surges <b>Responsibility: Village</b> / Families /MWTI/ MNRE	create more resilient villages Improve preparedness and readiness response to natural disasters Safer villages, houses and roads	Encourage insurance of significant investments and assets within hazard zones Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions	

Drainage	Assess and upgrade	Improves	Use existing information	CIM Strategy 2015
systems to be	culverts on main	climate	for guidance but not	
improved in	Salelologa Road, LTA	resilience of	limited to:	NISP2011 KESO 5
high risk	Road, Township Road,	infrastructure	"Vulnerability	
hazard zones	main Palauli South	resilience and	Assessment of the Samoa	TSP2014-2019 Goal
areas	Coast Road and	rate of response		2 KO 1
	junction of Salelologa	and recovery to	"Review of National	
	Inland Road and South-	natural hazards		Community Sector
	East Coast Road	and disasters	Samoa (2016)"; "Samoa	Plan
	exacerbating inland		Code of Environmental	
	flooding and storm	Encourages	Practice (2007)"	
	water surges affecting	coastal families	Undertake a Cost Benefit	
	government	to relocate	Analysis to weigh	
	infrastructure, CBD and	inland	options for funding	
	other assets- in	Matadata	Incorporate	
	accordance with	Maintains	environmental and social	
	Vulnerability Assessment	lifeline access	safeguards concerns in	
	of the Samoa Road Network	Minimise	the design and	
	recommendations	national disaster	undertake consultations with affected	
	recommendations		communities	
	Implement national	recovery expenditure on	Apply for necessary	
	standards for culverts	damaged	permits as required by	
	and drains to facilitate	properties,	law	
	the overland flow of	public and	law	
	storm water and reduce	-	Utilise hazard maps and	
	flooding	private assets	Geomorphologist	
	nooung		Infrastructure Drainage	
	Implement regular		Database to inform	
	drainage inspection and		designs	
	maintenance		accigite	
			Develop Integrated	
	Responsibility: LTA/		Catchment Strategy and	
	MWTI/MWCSD		Flood Management Plan	
	/Village / Families		for Faasaleleaga 1	
	, , ,		District	
			Develop and register	
			District/Village bylaws to	
			include maintenance of	
			drainages and illegal	
			rubbish dumping into	
			waterways	
Upgrade	Assess and upgrade all	Improve	Utilise hazard maps and	CIM Strategy 2015
access/ work	relevant access roads	infrastructure	Geomorphologist	
roads to	as potential escape	resilience and	Drainage Infrastructure	NISP2011 KESO 5
reduce storm	routes and to reduce	rate of	Database to inform	
water overflow	8 8	recovery	location and designs	TSP2014-2019 Goal
and run off	Salelologa township			2 KO 1
into Salelologa		Improve	Develop an Integrated	
Township area	Upgrade to include	preparedness	Flood Management Plan	Community Sector
	adequate sized culverts	and readiness	for Faasaleleaga 1	Plan
	to facilitate the	response to	District. MNRE to	

	overland flow of storm	natural	develop zonation	Village Fono Act
	water exacerbating	disasters	strategy for safe areas	(Amendment Bill
	river overruns, and to			2016)
	reduce flooding onto	Reduce impact	Develop an integrated	
	main roads and village	from coastal	land management plan	
	lands	erosion and	with the aim of	
		natural	reducing any	
	Implement regular	disasters	unnecessary actions	
	drainage inspection		that may adversely	
	and maintenance	Safer villages,	affect the natural	
		houses and	habitats and	
	Village to restrict	roads	ecosystems of the area	
	rubbish dumping into			
	waterways and conduct	Minimise	Include in budget	
	regular clearance of	national	programming CBA,	
	rubbish behind homes	disaster	design and construction.	
		recovery	Road design standard to	
	Village to regulate	expenditure	take account of forecast	
	developments near and	on damaged	increased rainfall	
	around road shoulders	properties and	intensity	
	of all access roads	public assets	Designation of the IFHZ,	
	or all access routes	public assets	CEHZ and CFHZ as an "at	
	Enforce environmental		risk" zone with	
	safeguards		appropriate landuse	
	Saleguarus		planning controls and	
			restrictions	
	Responsibility: LTA/		Develop and register	
	MWTI/ MNRE/		Village bylaws to	
	District/ Village		include maintenance of	
	/Families/CSSP		drainages and illegal	
	/ 1 diffines/ 6551		rubbish dumping into	
			waterways	
			waterways	
			Utilise Sui o Nu'u	
			monthly meetings to	
			monitor progress of	
			village cleanup and	
			awareness programmes	
Evacuation	Assess and/or select	Improve	Enforcement of National	National
Shelter and a	location for either an	resilience of	Building Code 2017	DisasterManageme
connected	existing or new	public	Dunung Couc 2017	nt Plan2017-2021
escape route	evacuation shelter,	infrastructure	Utilise hazard maps and	NationalBuildingCo
needed for	including safe access	Improve	Geomorphologist findings	de
emergency	routes to the shelter	preparedness	to inform location and	National Policy for
preparedness		and readiness	designs	People with
and response	Conduct	response to	ucoigno	Disabilities
and response	evacuationshelterassess	natural		
	ment and mark on CIM	disasters		
	Plan hazard maps	415031513		
	i ian nazai u maps			
	Develop			
	aVillageClimateDisaster			
	avmagecinnateDisastel			

ManagementPlan(VCD		
MP)		
,		
Conduct trainings for		
People With Disabilities		
(PWDs) on emergency		
and disaster response		
-		
strategies		
I so allo so a st		
Implement		
CDCRMprogram		
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		
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Electricity	Drovido un dorground	Maintain	Monitor distribution	EDC Stratagic Dlan
Electricity	Provide underground lines in the long term	Maintain electricity	networks to avoid	EPC Strategic Plan
supply	lines in the long term	•		
	Install and connect	supply at all times including	overloading poles and contributing to line	
	power supply for inland	natural	failures	
	residents	disasters	lanures	
	Relocateoverheadlinesto	uisasters		
	amoreresilientlocationw	Avoid accidents		
	hen being replaced	from fallen		
	nen being replaced	electricity		
	Install streetlights along	posts.		
	the roads where needed	1		
	for community safety			
	Install and connect to			
	solar power supply if			
	made available			
	Families to limit			
	building and			
	developments near			
	electricity posts			
	Responsibility:EPC/			
	MWTI/ Village/			
	Families			
Effluent and	Provide a network	Increase	Develop an integrated	National Waste
wastewater	sewage collection and	adaptation	land management plan	Management
management	treatment system for	during extreme	with the aim of reducing	Strategy
systems	Salelologa	weather events	any unnecessary actions	
			that may adversely affect	Village Fono
	Introduce ban on latrines	-	the natural habitats and	Act(Amendment
	established in and	infrastructure	ecosystems of the area	Bill 2016)
	around fluvial hazard	resilience and		
	zones	rate of	Review wastewater	
		recovery	strategy/legislation to	
	Families in fluvial hazard	Immerce	include role of	
	zones to install proper septic waste disposal	Improve health and	Village/District bylaws	
	systems	sanitation	Develop/Update and	
	systems	Samtation	register District/Village	
	Families to fence	Reduce	bylaws to include	
	domestic animals	contamination	regulating developments	
		of water supply	and latrines around	
	Implement village		catchment areas and	
	awareness and cleanup		areas susceptible to	
	programme to reduce		flooding	
	illegal rubbish dumping			
	, ,		Utilise Hazard maps and	
	Implement		Geomorphologist findings	
	district/villagedrainage		to inform location	
	cleanup and awareness programme		Utilise Sui o Nu'u monthly	
L	programme		ounse sui o nu u monully	

				I
	Produce posters and village signs for public awareness		meetings to monitor progress of village programmes on waste management	
	Responsibility: MNRE/ MWCSD/ District/ Village			
Natural Resources and Environment	Best Solutions	Other Benefits	ImplementationGuideli ne	Relevant Sector Plans National Strategies & Policies
Sand/rock extraction (domestic): coastline, rivers and riverbanks	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	coastal erosion and flooding accommodating the hazard Safer villages, houses and roads Reduce impact	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 Utilise Sui o Nu'u monthly meetings to monitor progress of CIM Plan activities	Village Fono Act (Amendment Bill 2016) Draft Soil Resource Management Bill

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

## SalelologaVillage

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Upgrade access/ work roads of Salelologa village to reduce storm water overflow	Assess and upgrade all relevant access roads as potential escape routes and to reduce flooding affecting main	Improve infrastructure resilience and rate of recovery	Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to inform location and designs	CIM Strategy 2015 NISP2011 KESO 5
and run off into Salelologa Township area	Salelologa township Assess feasibility of connecting access roads Sapulu, Vaimauga and Salelologa Inland Road as potential	Improve preparedness and readiness response to natural disasters	Develop an Integrated Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas	TSP2014-2019 Goal 2 KO 1 Community Sector Plan

	connectivity road if township roads are impassable during extreme events Upgrade to include adequate sized culverts to facilitate the overland flow of storm water exacerbating river overruns, and to reduce flooding onto main roads and village lands Implement regular drainage inspection and maintenance Village to restrict rubbish dumping into waterways and conduct regular clearance of rubbish behind homes Village to regulate developments near and around road shoulders of all access roads Enforce environmental safeguards Responsibility: LTA/ MWTI/ MNRE/ Diatriat / Village	Reduce impact from coastal erosion and natural disasters Safer villages, houses and roads Minimise national disaster recovery expenditure on damaged properties and public assets	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 Include in budget programming CBA, design and construction. Road design standard to take account of forecast increased rainfall intensity Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions Develop and register Village bylaws to include maintenance of drainages and illegal rubbish dumping into waterways Utilise Sui o Nu'u monthly meetings to monitor progress of village cleanup and awareness programmes	Village Fono Act (Amendment Bill 2016)
	District/ Village /Families/CSSP		awareness programmes	
Village houses, school, churches and other village assets located in high risk hazard zones	Relocate outside of high risk hazard zones when building/infrastructure requires replacement Conduct awareness raising campaign on flood resilient building	Minimise expenditure on damaged properties & personal assets Mitigate potential damage from coastal erosion and flooding	Develop an Integrated Catchment and Flood Management Strategy for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas Utilise hazard maps and Geomorphologist Drainage Infrastructure	National Building Code CIM Strategy 2015

	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 landuse 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	accommodating the hazard Improve recovery to create more resilient villages Improve preparedness and readiness response to natural disasters Safer villages, houses and roads	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 landuse planning controls and restrictions	
	Responsibility: Village / Families /MWTI/ MNRE			
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 evacuationshelterasses sment and mark on CIM Plan hazard maps Develop aVillageClimateDisaster ManagementPlan(VCD	Improve resilience of public infrastructure Improve preparedness and readiness response to natural disasters	Enforcement of National Building Code 2017 Utilise hazard maps and Geomorphologist findings to inform location and designs	National DisasterManagement Plan2017-2021 NationalBuildingCode National Policy for People with Disabilities

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	MP)			
	Conduct trainings for People With Disabilities (PWDs) on emergency and disaster response strategies			
	Implement CDCRMprogram			
	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			
Electricity supply	Provide underground lines in the long term	Maintain electricity supply at all times including natural disasters	Monitor distribution networks to avoid overloading poles and contributing to line failures	EPC Strategic Plan
	Install and connect power supply for inland residents			
	Relocateoverheadlinest oamoreresilientlocation when being replaced			
	Install streetlights along the roads where needed for community safety	Avoid accidents from fallen electricity posts.		
	Install and connect to solar power supply if			

	made available			
	Families to limit			
	building and			
	developments near			
	electricity posts			
	Responsibility:EPC/ MWTI/ Village/			
	Families			
Reticulated	Extend the water	Increase	Develop and register	CIM Strategy 2015
water supply,	supply to families	adaptation	District/Village bylaws	
quality and	inland with no access	during drought	to include regulating	WaterandSanitationS
network to be	to water	periods	developments around	ectorPlan
improved			catchment areas and	
	Procure rainwater	Improve	boreholes	SWA 10 Year
	harvesting systems for	infrastructure		Investment
	vulnerable families as	resilience and	ImplementSWA(2016)10	Plan(2016)
	a short term solution	rate of	year	Community
	<b>D</b>	recovery	investmentplantoimprov	Engagement Plan
	Procure rainwater	<b>.</b>	ewatersupplynetworkto	
	harvesting systems for	Improve	support	Community Sector
	identified evacuation	health and	allinlandfamilieswithout	Plan
	shelter(s)	sanitation	access todrinkingwater	r Iall
	District and village to	Reduce	Include in budget	
	support SWA water	contamination	programming design,	
	rationing	of water	andextension costs of	
	programmes during	supply	water supply and	
	times of drought	11 7	procurement of	
	0	Reduce impact	rainwater harvesting	
	District to support	from inland	systems	
	SWA efforts at	flooding		
	exploratory boreholes		Utilise hazard maps and	
	in district		Geomorphologist findings	
	<b>D</b>		to inform designs	
	District and villages to			
	support SWA efforts at		Utilise Sui o Nu'u	
	protecting and		monthly meetings to	
	conserving boreholes,		monitor progress of	
	intakes and catchment		village programmes and	
	areas		responsibilities	
	Responsibility:SWA/		-	
	MWCSP/ MNRE /			
	District/ Village/			
	CSSP			

Effluent and wastewater management systems	Provide a network sewage collection and treatment system for district Introduce ban on latrines established in and around fluvial hazard zones Conduct campaign for public awareness of district ban and establish a "neighborhood watch" agreement with district to monitor and manage introduced policies Government, district and villages to monitor, report and apply penalty on offenders Government to monitor waste collection contractors and apply penalties according to relevant legislation <b>Responsibility:MNRE</b> /MWCSD/District/Vil lages	Increase adaptation during extreme weather events Improve infrastructure resilience and rate of recovery Improve health and sanitation Reduce contamination of water supply	Develop an integrated land management plan for Faasaleleaga 1 District Utilize Waste Management Act/Legislation to guide process of effecting the 'polluter pays' principle Review wastewater strategy/legislation to include role of Village/District bylaws Develop/Update and register District/Village bylaws to include regulating developments and latrines around catchment areas and areas susceptible to flooding Include in budget programming design, and installment of sewage and treatment systems Utilize Hazard Maps and Geomorphologist findings for planning purposes Utilize Sui o Nu'u monthly meetings to monitor progress of village programs on waste management	
Natural Resources and	Best Solutions	Benefits		National Strategies &
Environment				Policies
Sand/rock extraction (domestic): coastline, rivers	Identify alternative sustainable sources of sand/rocks for domestic use	Mitigate potential damage from coastal erosion	MNRE to continue to identify specific sites for inshore/inland sustainable sand/rock	Village Fono Act (Amendment Bill 2016)
and riverbanks	Research the impacts of sand mining	and flooding accommodating the hazard	mining to meet demand without compromising riverbanks	Draft Soil Resource Management Bill

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	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/	from coastal	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	
	Village/Families		Utilise Sui o Nu'u monthly meetings to monitor progress of CIM Plan activities	
Illegal rubbish dumping	Implement village awareness and cleanup programme to reduce illegal rubbish dumping		Develop an integrated land management plan with the aim of reducing any unnecessary actions	National Waste Management Strategy
	Implement district/village drainage cleanup and awareness programme	into environment and water supply	that may adversely affect the natural habitats and ecosystems of the area Utilise Waste	National Waste Management Policy
	Produce posters and village signs for public awareness	Reduce contaminant from overland flooding	Management Act/Legislation to guide process of effecting the 'polluter pays' principle	NESP 2018 -2022
	Introduce ban on illegal rubbish dumping in district especially around fluvial hazard zones	entering sea	Develop and register District/Village bylaws to include penalizing illegal rubbish dumping in district lands	Village Fono Act(Amendment Bill 2016)
	Conduct campaign for public awareness of district ban and establish a "neighbourhood watch" agreement with district to monitor and report on illegal dumping activities		Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes on waste management	
	Government, district and villages to monitor, report and apply penalty	,		

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	on offenders			
	Responsibility: MNRE/ District/ Village			
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 Faasaleleaga 1 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	Two Million Tree Planting Strategy 2015-2020 Restoration Operational Plan 2016-2020 Forestry Management Act 2011
Village pool located in high risk hazard zones (coastal erosion and flooding from fluvial inundation, wave impacts and storm surges)	Village pool is currently in a poor state with an assessment needed for options to either rejuvenate or find a new site depending on the location of springs. Test the quality of the water source before any further investment on the pool is undertaken (eg: fence/repair works) <b>Responsibility: CSSP/</b> <b>NGOs/MNRE/Villages</b>	Increase adaptation during drought periods Improve health and sanitation Reduce contamination of water supply	Utilise Hazard Maps and Geomorphologist findings for planning purposes MNRE Water & Sanitation to conduct water testing and analysis of village pool prior to any intervention UpdateVillage bylaws to include managing and maintaining village natural resources Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes and responsibilities	CIM Strategy 2015 Water and Sanitation Sector Plan Community Engagement Plan Village Fono Act (Amendment Bill 2016)

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 <i>Responsibility:</i> <i>MWCSD /Village</i>	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 Utilise 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







### Salelologa Township Map



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

Data Source: Ministry of Natural Resource and Environment, Samoa

#### Salelologa Village Map





Data Source: Ministry of Natural Resource and Environment, Samoa

### 4. Salelavalu Village Interventions

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant National, Sector Plans and Strategies
Village houses, Churches, School and private residences located in high risk hazard zones	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 landuse 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 <b>Responsibility:Villag</b> <b>e / Families /MWTI/</b> <b>MNRE/ MWCSD</b>	houses and roads	Planning provisions to be guided by the Planning and Urban Management Act 2004 Enforcement of National Building Code 2017 Encourage insurance of significant investments and assets within hazard zones Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to determine safe areas for relocation purposes Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions	CIM Strategy 2015 NESP 2018 -2022 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1 [Draft] Samoa Relocation Strategy 2016

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Upgrade access/ work roads to reduce storm water overflow and run off into South East Coast Road	Upgrade Salelavalu Access Road 1, Access Road 2 and Salelavalu Road to facilitate the overland flow of storm water and reduce flooding onto main South East Coast road and further downhill into school grounds and neighboring houses Upgrade to include adequate sized culverts to facilitate the overland flow of storm water exacerbating river overruns, and to reduce flooding onto main roads and village lands Implement regular drainage inspection and maintenance Village to restrict rubbish dumping into waterways and conduct regular clearance of rubbish behind homes Village to regulate developments near and around road shoulders o all access roads	Improve infrastructure resilience and rate of recovery Improve preparedness and readiness response to natural disasters Reduce impact from coastal erosion and natural disasters Safer villages, houses and roads Minimise national disaster recovery expenditure on damaged properties and public assets	Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to inform location and designs Develop an Integrated Flood Management Plan for Faasaleleaga 1District. MNRE to develop zonation strategy for safe areas 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 Include in budget programming CBA, design and construction. Road design standard to take account of forecast increased rainfall intensity Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions Develop and register Village bylaws to include maintenance of drainages and illegal rubbish dumping into waterways	CIM Strategy 2015 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1 Community Sector Plan
	Enforce environmental safeguards Responsibility: LTA/ MWTI/ MNRE/ District/ Village /Families/CSSP		Utilise Sui o Nu'u monthly meetings to monitor progress of village cleanup and awareness programmes	

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Reticulated water	Extend the water	Increase	Develop and register	CIM Strategy 2015
supply, quality and network to be	supply to families inland with no access to	adaptation during	District/Village bylaws to include regulating	
improved	water	drought periods	developments around	WaterandSanitationS
IIIpioveu	water	Improve	catchment areas and	ectorPlan
	Procure rainwater	infrastructure	boreholes	
	harvesting systems for	resilience and		SWA 10 Year
	vulnerable families as a	rate of recovery	ImplementSWA(2016)	Investment
	short term solution		10year	Plan(2016)
		Improve health	investmentplantoimprovew	Community
	Procure rainwater	and sanitation	atersupplynetworkto	Engagement Plan
	harvesting systems for		support	2
	identified evacuation	Reduce	allinlandfamilies without	
	shelter(s)	contamination of water supply	access todrinkingwater	Community Sector
	District and village to	of water supply	Include in budget	Plan
	support SWA water	Reduce impact	programming design,	
	rationing programmes	from inland	andextension costs of water	
	during times of	flooding	supply and procurement of	
	drought	Ŭ	rainwater harvesting systems	
	-			
	District to support SWA		Utilise hazard maps and	
	efforts at exploratory		Geomorphologist findings to	
	boreholes in district		inform designs	
	District and wills gos to			
	District and villages to support SWA efforts at		Utilise Sui o Nu'u monthly	
	protecting and		meetings to monitor	
	conserving boreholes,		progress of village	
	intakes and catchment		programmes and	
	areas		responsibilities	
	Responsibility:SWA/			
	MWCSP/MNRE/			
	District/ Village/ CSSP			
Electricity supply	Provide underground	Maintein	Monitor distribution	EPC Strategic Plan
	lines in the long term	Maintain	networks to avoid	Č
	_	electricity supply	overloading poles and	
	Install and connect	at all times	contributing to line failures	
	power supply for inland	including natural		
	residents	disasters		
	Relocateoverheadlinesto			
	amoreresilientlocationw			
	hen being replaced	Avoid accidents		
	o o o o o o o o o o o o o o o o o o o	from fallen		
	Install streetlights along	electricity posts		
	the roads where needed			
	for community safety			
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	Install and connect to			
	solar power supply if			
	made available			
	Families to limit			
	building and			
	developments near			
	electricity posts			

	Responsibility:EPC/ MWTI/ Village/ Families			
Natural Resources and Environment	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Coral reefs, lagoons and inshore fishery reserve	Collect and dispose of crown-of-thorns (alamea) on a regular basis to prevent major outbreaks Responsibility: MAF/ Villages	Protect coral reefs and inshore fisheries Protect marine biodiversity	MAF Fisheries to support implementation and provide technical backstopping and monitoring	Agriculture Sector Plan 2016-2021
Village pool located in high risk hazard zones (coastal erosion and flooding from fluvial inundation, wave impacts and storm surges)	Village pool is currently in a poor location with an assessment needed for options to either rejuvenate or find a new site depending on the location of springs Test the quality of the water source before any further investment on the pool is undertaken (eg: fence/repair works) Village to remove latrines upstream from village pools <i>Responsibility: CSSP/</i> <i>NGOS/MNRE/Villages</i>	Increase adaptation during drought periods Improve health and sanitation Reduce contamination of water supply	Utilise Hazard Maps and Geomorphologist findings for planning purposes MNRE Water & Sanitation to conduct water testing and analysis of village pool prior to any intervention UpdateVillage bylaws to include managing and maintaining village natural resources Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes and responsibilities	CIM Strategy 2015 Water and Sanitation Sector Plan Community Engagement Plan Village Fono Act (Amendment Bill 2016)
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	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 Faasaleleaga 1 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	Two Million Tree Planting Strategy 2015-2020 Restoration Operational Plan 2016-2020 Forestry Management Act 2011

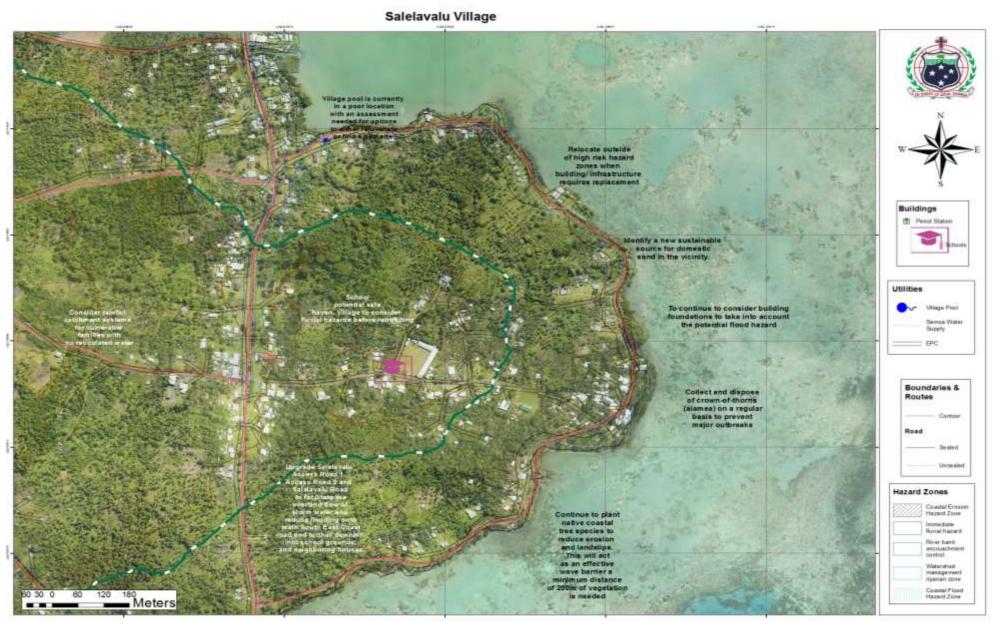
	Responsibility: MNRE/ MAF/Villages			
Livelihood and Food Security	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Pest management; invasive species	Implement an eradication programme to eradicate, contain or exclude invasive species Replant with climate resilient native species Implement an inventory of invasive species and include information on their past, present and potential future distribution, as well as impacts and possible actions that can be taken Conduct education and awareness programmes on the impacts of invasive species Implement the Integrated Pest Management Programme Implement Sustainable Land Management (SLM) practices Build the capacity of farmers to manage stray animals (pigs, cattle) that are contaminating water sources Conduct pilot site trials for climate ready plant varieties District to fence domestic animals <i>Responsibility: Villages</i> / <i>District/MNRE/MAF/</i> <i>SROS</i>	Maintains natural ecosystem Builds resilience of community livelihood and food security Reduce forest loss and land clearance	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 MAF to raise awareness of farmers on impacts to water flows from poor livestock management 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 MNRE, MAF and SROS to implement aggressive, nationwide invasive species eradication programme based on inventory of invasive species and conduct campaign on public awareness accordingly Village to manage pig/cattle population (compounds, in particular around water supplies) Training for farmers on pests management particularly affecting fruit trees and crops	Agriculture Sector Plan 2016-2021 NESP 2018 -2022 Samoa's National Invasive Species Action Plan (NISAP)

Strengthen governance of hatural resource andunauseInduce anduce by any contract resource by any contract resource by any contract resource by any contract resource by any contract resourceStrengthen inplementation andunauseStrengthen anducounce by any contract resource by any contract resource by any contract resourceStrengthen any contract resource by any contract resource by any contract resource by any contract resource by any contract resourceStrengthen any contract resource by any contract resource by any contract resource by any contract resource by any contract resourceStrengthen any contract resource by any contract resource by any contract resourceStrengthen any contract resource by any contract resourceStrengthen any contract resource by any contract resource by any contract resource by any contract resourceStrengthen any contre	Governance	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
/Village	governance of natural resources and land use	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 <i>Responsibility: MWCSD</i>	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	district/village bylaw to protect all district/ village and government assets, environment, livelihood and food security especially activities affecting water catchment areas and coastline Utilise Sui o Nu'u monthly meetings to monitor progress	(Amendment Bill 2016) Community Sector Plan Community Development Plan





### Salelavalu Village Map



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

Data Source: Ministry of Natural Resource and Environment, Samoa

# 5. Iva Village Interventions

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village houses, Churches, School and private residences located in high risk hazard zones	Relocate outside of high risk hazard zones when building/infrastructur e 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 landuse 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 <b>Responsibility:Vill age / Families</b> /MWTI/ MNRE/ MWCSD	Minimise expenditure on damaged properties and personal assets Safer villages, houses and roads Increases awareness for insurance	Planning provisions to be guided by the Planning and Urban Management Act 2004 Enforcement of National Building Code 2017 Encourage insurance of significant investments and assets within hazard zones Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to determine safe areas for relocation purposes Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions	CIM Strategy 2015 NESP 2018 -2022 National Building Code

Upgrade access/ work roads to reduce storm water overflow and run off into South East Coast Road and school grounds	Upgrade Iva Access Road, Iva Road and Iva Park Road to include adequate to facilitate the overland flow of storm water and reduce flooding onto main South East Coast road, school grounds and neighboring houses Upgrade to include adequate sized culverts to facilitate the overland flow of storm water exacerbating river overruns, and to reduce flooding onto main roads and village lands Implement regular drainage inspection and maintenance Village to restrict rubbish dumping into waterways and conduct regular clearance of rubbish behind homes Village to regulate developments near and around road shoulders of all access roads Enforce environmental safeguards Responsibility: LTA/ MWTI/ MNRE/ District/	Improve infrastructure resilience and rate of recovery preparedness and readiness response to natural disasters Reduce impact from coastal erosion and natural disasters Safer villages, houses and roads Minimise national disaster recovery expenditure on damaged properties and public assets	Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to inform location and designs Develop an Integrated Flood Management Plan for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas 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 Include in budget programming CBA, design and construction. Road design standard to take account of forecast increased rainfall intensity Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions Develop and register Village bylaws to include maintenance of drainages and illegal rubbish dumping into waterways Utilise Sui o Nu'u monthly meetings to monitor progress of village cleanup and awareness programmes	CIM Strategy 2015 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1 Community Sector Plan
	LTA/ MWTI/			
	MNRE/ District/ Village			
	/Families/CSSP			
Extend Iva Access	Assess feasibility of	Improve	Utilize Hazard	CIM Strategy 2015
Road to facilitate relocation inland	extending Iva Access Road	Improve preparedness and	Maps/models and Geomorphologist Drainage	TSP2014-2019 Goal 2
	Nuau	readiness	Infrastructure Database to	KO 1
	Enforce	response to natural disasters	inform location	Community Costor D
	environmental	natural uisasters	Utilize the environmental	Community Sector Plan

		Γ		
	safeguards Village to resolve land issues	Safer villages, houses and roads	and social safeguards including EIAs in screening and designing infrastructure facilities	
	Responsibility: Village / MWTI		Undertake a Cost Benefit Analysis to weigh options for funding	
			Designation of the CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions	
Reticulated water supply, quality and network to be improved	Assess old pump in village whether fit for reuse (borehole) 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 <b>Responsibility:SWA</b> / 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	and restrictionsDevelop and registerDistrict/Village bylaws toinclude regulatingdevelopments aroundcatchment areas andboreholesImplementSWA(2016)10yearinvestmentplantoimprovewatersupplynetworktosupportallinlandfamilieswithoutaccess todrinkingwaterInclude in budgetprogramming design,andextension costs of watersupply and procurement ofrainwater harvestingsystemsUtilise hazard maps andGeomorphologist findings toinform designsUtilise Sui o Nu'u monthlymeetings to monitorprogrammes andresponsibilities	CIM Strategy 2015 WaterandSanitationS ectorPlan SWA 10 Year Investment Plan(2016) Community Engagement Plan Community Sector Plan

Natural Resources and Environment	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village pool (Vaifou) located in high risk hazard zones (coastal erosion and flooding from fluvial inundation, wave impacts and storm surges)	Village pool is currently in a poor location with an assessment needed for options to either rejuvenate or find a new site depending on the location of springs. Test the quality of the water source before any further investment on the pool is undertaken (eg: fence/repair works) Village/women's committee to remove latrines near village pool(s) <i>Responsibility: CSSP/</i> <i>NGOs/MNRE/Villages</i>	Increase adaptation during drought periods Improve health and sanitation Reduce contamination of water supply	Utilise Hazard Maps and Geomorphologist findings for planning purposes MNRE Water & Sanitation to conduct water testing and analysis of village pool prior to any intervention UpdateVillage bylaws to include managing and maintaining village natural resources Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes and responsibilities	CIM Strategy 2015 Water and Sanitation Sector Plan Community Engagement Plan Village Fono Act (Amendment Bill 2016)
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 Faasaleleaga 1 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	Two Million Tree Planting Strategy 2015-2020 Restoration Operational Plan 2016-2020 Forestry Management Act 2011
Rubbish behind rivers and homes	Implement village awareness and cleanup programme to reduce illegal rubbish dumping Implement district/village	Improve health and sanitation Reduce leachate into environment and water supply Reduce	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	National Waste Management Strategy National Waste

	awareness programme	entering sea	Utilise Waste Management Act/Legislation to guide process of effecting the 'polluter pays' principle Develop and register District/Village bylaws to include penalizing illegal rubbish dumping in district lands Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes on waste management	Management Policy NESP 2018 -2022 Village Fono Act(Amendment Bill 2016)
Livelihood and Food Security	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Pest management; invasive species	Implement an eradication programme to eradicate, contain or exclude invasive species Replant with climate resilient native species Implement an inventory of invasive species and include information on their past, present and potential future distribution, as well as impacts and possible actions that can be taken Conduct education	Maintains natural ecosystem Builds resilience of community livelihood and food security Reduce forest loss and land clearance	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 MAF to raise awareness of farmers on impacts to water flows from poor livestock management 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	Agriculture Sector Plan 2016-2021 NESP 2018 -2022 Samoa's National Invasive Species Action Plan (NISAP)

	and awareness			
	programmes on the		MNRE, MAF and SROS to	
	impacts of invasive		implement aggressive,	
	species		nationwide invasive species	
			eradication programme	
	Implement the		based on inventory of	
	Integrated Pest		invasive species and	
	Management		conduct campaign on public	
	Programme		awareness accordingly	
	Fiogramme			
	Implement		Village to manage pig/cattle	
	Sustainable Land		population (compounds, in	
			particular around water	
	Management (SLM)		supplies)	
	practices			
	Duild the conseity of		Training for farmers on	
	Build the capacity of		pests management	
	farmers to manage stray animals (pigs,		particularly affecting fruit	
	cattle) that are		trees and crops	
	-			
	contaminating water sources			
	5001005			
	Conduct pilot site			
	trials for climate			
	ready plant varieties			
	District to fence			
	domestic animals			
	Responsibility:			
	Villages /District/			
	Villages /District/ MNRE/MAF/ SROS			
Governance	Villages /District/	Benefits		Relevant Sector Plans,
Governance	Villages /District/ MNRE/MAF/ SROS	Benefits	the implementation	National Strategies &
Governance	Villages /District/ MNRE/MAF/ SROS Best Solutions		the implementation	National Strategies & Policies
<b>Governance</b> Strengthen the	Villages /District/ MNRE/MAF/ SROS Best Solutions Update and/or	Strengthen	the implementation Develop and register	National Strategies & Policies Village Fono Act
Strengthen the	Villages /District/ MNRE/MAF/ SROS Best Solutions Update and/or develop bylaws to	Strengthen implementation of	the implementation Develop and register district/village bylaw to	National Strategies & Policies Village Fono Act (Amendment Bill
Strengthen the governance of	Villages /District/ MNRE/MAF/ SROS Best Solutions Update and/or develop bylaws to manage the use of	Strengthen implementation of all national sector	the implementation Develop and register district/village bylaw to protect all district/ village	National Strategies & Policies Village Fono Act
Strengthen the governance of natural resources	Villages /District/ MNRE/MAF/ SROS Best Solutions Update and/or develop bylaws to manage the use of natural resources,	Strengthen implementation of	the implementation Develop and register district/village bylaw to protect all district/ village and government assets,	National Strategies & Policies Village Fono Act (Amendment Bill 2016)
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions Update and/or develop bylaws to manage the use of natural resources, and to control land	Strengthen implementation of all national sector plans	the implementation Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector
Strengthen the governance of natural resources	Villages /District/ MNRE/MAF/ SROS Best Solutions Update and/or develop bylaws to manage the use of natural resources, and to control land use impacts; such as	Strengthen implementation of all national sector plans Strengthen	the implementation Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood and food security especially	National Strategies & Policies Village Fono Act (Amendment Bill 2016)
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions Update and/or develop bylaws to manage the use of natural resources, and to control land use impacts; such as drainage	Strengthen implementation of all national sector plans Strengthen monitoring of all	the implementation Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood and food security especially activities affecting water	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions Update and/or develop bylaws to manage the use of natural resources, and to control land use impacts; such as drainage maintenance, rubbish	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts,	the implementation 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	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation,	the implementation Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood and food security especially activities affecting water	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation, Strategies, Plans	the implementation 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	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation,	the implementation 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 Utilise Sui o Nu'u monthly	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation, Strategies, Plans and Policies	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation, Strategies, Plans and Policies Improve ability of	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation, Strategies, Plans and Policies Improve ability of communities to	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	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	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	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	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	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	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	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	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	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	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	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	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	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	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	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	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	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	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan
Strengthen the governance of natural resources and land use	Villages /District/ MNRE/MAF/ SROS Best Solutions 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	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	the implementation 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 Utilise Sui o Nu'u monthly meetings to monitor progress of district/village	National Strategies & Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan

Responsibility: MWCSD /Village		

Non-CR issues raised during consultations	Proposed Solution	Comments
School grounds <i>Responsibility:</i> Village/MESC	Raise level of school grounds to avoid ponding from inland flooding	Indirectly related to CR however school is located in hazard zone (CEHZ, CFHZ) and is also affected from inland flooding due to inadequate drainage and culverts on roads. Recommendation of school relocation away from hazard zones still applies





### Iva Village Map



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

Data Source: Ministry of Natural Resource and Environment, Samoa

# 6. Vaiafai Village Interventions

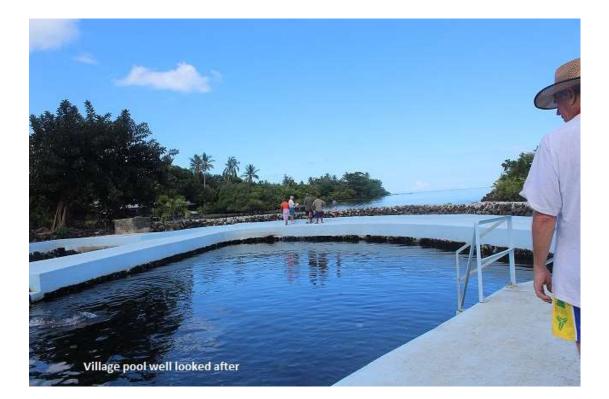
Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village houses, school and other village assets located in high risk hazard zones	Relocate outside of high risk hazard zones when building/infrastructure requires replacement 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 landuse 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 <i>Responsibility: Village / Families /MWTI/ MNRE</i>	Minimise 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	Develop an Integrated Catchment and Flood Management Strategy for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas Utilise 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 landuse planning controls and restrictions	National Building Code CIM Strategy 2015
Drainage systems to be improved in high risk areas on main South- East Coast Road especially at junctions with Vaiafai Access	culverts on main South East Coast road especially at junctions with access roads (Vaiafai Access Rd)– in accordance with Vulnerability Assessment of	infrastructure resilience and rate of response and recovery to	Use existing information for guidance but not limited to: "Vulnerability Assessment of the Samoa Road Network (2017)"; "Review of National Road Standards in Samoa (2016)"; "Samoa	CIM Strategy 2015 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1 Community Sector Plan

		<b>F</b>		
road		Encourages coastal families to relocate	Code of Environmental	
	standards for culverts and		Practice (2007)"	
	drains to facilitate the	initia	Undertake a Cost Benefit	
		Maintains lifeline	Analysis to weigh options for	
	water and reduce flooding	access	funding	
		Minimise national		
		disaster recovery	Incorporate environmental	
		expenditure on	and social safeguards	
		damaged properties, public	concerns in the design and	
		and private assets	undertake consultations	
	MWTI/MWCSD /Village /		with affected communities	
	Families		A	
			Apply for necessary permits as required by law	
			Utilise hazard maps and	
			Geomorphologist	
			Infrastructure Drainage	
			Database to inform designs	
			Develop Integrated	
			Catchment Strategy and	
			Flood Management Plan for	
			Faasaleleaga 1 District	
			Develop and register	
			District/Village bylaws to	
			include maintenance of	
			drainages and illegal rubbish	
			dumping into waterways	
Upgrade access/	Assess and upgrade	Improve	Utilise hazard maps and	CIM Strategy 2015
work roads to	Vaiafai Access roads to	infrastructure	Geomorphologist Drainage	
reduce storm water overflow	reduce inland flooding	resilience and	Infrastructure Database to	
and run off into	5	rate of recovery	inform location and designs	
South East Coast	Upgrade to include	5	5	NISP2011 KESO 5
Road and	adequate sized culverts	Improve	Develop an Integrated Flood	
family/ village	to facilitate the overland	preparedness	Management Plan for	
homes	flow of storm water	and readiness	Faasaleleaga 1 District.	TSP2014-2019 Goal
	exacerbating river	response to	MNRE to develop zonation	2 KO 1
	overruns, and to reduce flooding onto main roads	natural disasters	strategy for safe areas	
	and village lands	Reduce impact	Develop an integrated land	
	ana vinage ianus	from coastal	management plan with the	Community Sector
	Implement regular	erosion and	aim of reducing any	Plan
	drainage inspection and	natural disasters	unnecessary actions that	
	maintenance		may adversely affect the	
		Safer villages,	natural habitats and	
	Village to restrict rubbish	houses and	ecosystems of the area	
	dumping into waterways	roads		
	and conduct regular	Minimico	Include in budget	
	clearance of rubbish	Minimise national	programming CBA, design	
	behind homes	disaster	and construction. Road	
	Villago to regulate		design standard to take	
	Village to regulate developments near and	recovery expenditure on	account of forecast increased	
	around road shoulders of	damaged	rainfall intensity	
	arounu roau shouluers of	properties and	Designation of the IFHZ,	
		properties allu	Designation of the IFIL,	

	all access roads Enforce environmental safeguards Responsibility: LTA/ MWTI/ MNRE/ District/ Village /Families/CSSP	public assets	CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions Develop and register Village bylaws to include maintenance of drainages and illegal rubbish dumping into waterways Utilise Sui o Nu'u monthly meetings to monitor progress of village cleanup and awareness programmes	
Natural Resources and Environment	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village pool located in high risk hazard zones (coastal erosion and flooding from fluvial inundation, wave impacts and storm surges)	Village pool is currently in a poor location with an assessment needed for options to either rejuvenate or find a new site depending on the location of springs. Test the quality of the water source before any further investment on the pool is undertaken (eg: fence/repair works) <b>Responsibility: CSSP/</b> <b>NGOs/MNRE/Villages</b>	Increase adaptation during drought periods Improve health and sanitation Reduce contamination of water supply	Utilise Hazard Maps and Geomorphologist findings for planning purposes MNRE Water & Sanitation to conduct water testing and analysis of village pool prior to any intervention UpdateVillage bylaws to include managing and maintaining village natural resources Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes and responsibilities	CIM Strategy 2015 Water and Sanitation Sector Plan Community Engagement Plan Village Fono Act (Amendment Bill 2016)
Mangrove area replanting	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	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 Faasaleleaga 1 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	Two Million Tree Planting Strategy 2015-2020 Restoration Operational Plan 2016-2020 Forestry Management Act 2011

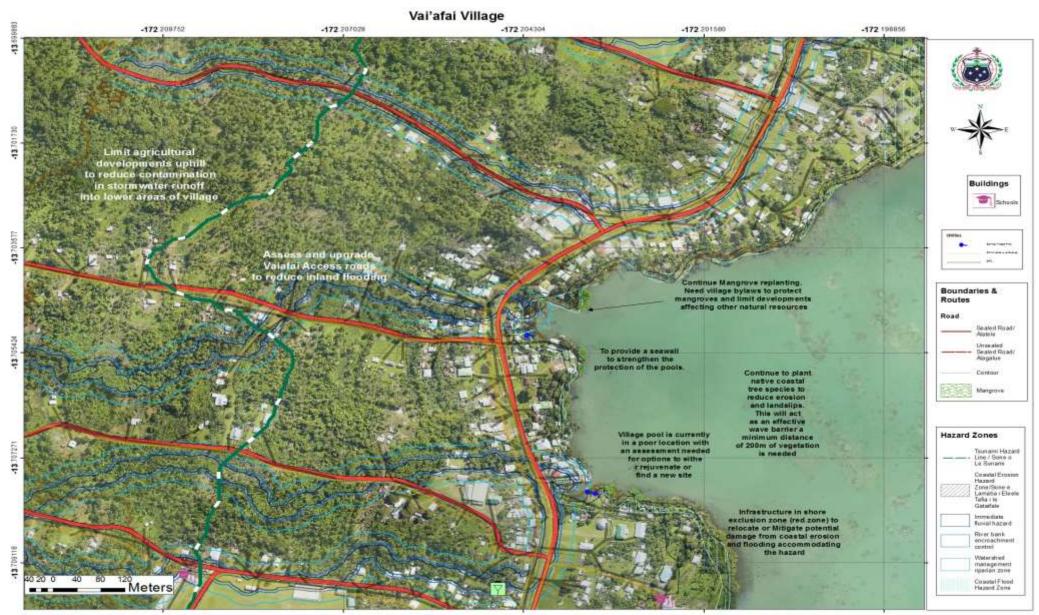
	Responsibility: MNRE/ MAF/Villages			
Livelihood and Food Security	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Pest management; invasive species	Implement an eradication programme to eradicate, contain or exclude invasive speciesReplant with climate resilient native speciesImplement an inventory of invasive species and include information on their past, present and potential future distribution, as well as impacts and possible actions that can be takenConduct education and awareness programmes on the impacts of invasive speciesImplement the Integrated Pest Management ProgrammeImplement Sustainable Land Management (SLM) practicesBuild the capacity of 	Maintains natural ecosystem Builds resilience of community livelihood and food security Reduce forest loss and land clearance	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 MAF to raise awareness of farmers on impacts to water flows from poor livestock management 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 MNRE, MAF and SROS to implement aggressive, nationwide invasive species eradication programme based on inventory of invasive species and conduct campaign on public awareness accordingly Village to manage pig/cattle population (compounds, in particular around water supplies) Training for farmers on pests management particularly affecting fruit trees and crops	Agriculture Sector Plan 2016-2021 NESP 2018 -2022 Samoa's National Invasive Species Action Plan (NISAP)
Governance	Best Solutions	Benefits	the implementation	Relevant Sector Plans, National Strategies & Policies
Strengthen the governance of natural resources and	Update and/or develop bylaws to manage the use of natural resources, and to control land use impacts; such as drainage	Strengthen implementation of all national sector plans	Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood and	Village Fono Act (Amendment Bill 2016) Community Sector

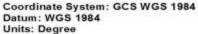
, ,				D
land use	maintenance, rubbish	Strengthen	food security especially	Plan
through	dumping, sand mining,	monitoring of all	activities affecting water	
Bylaws	stray animals and	National Acts,	catchment areas and	Community
J	unregulated	Regulation,	coastline	Development Plan
	developments in water	Strategies, Plans		2016-2021
	catchment areas and near	and Policies	Utilise Sui o Nu'u monthly	
	boreholes		meetings to monitor progress	
		Improve ability of	of district/village bylaws	
	Collaborate with Sui o Nuu	communities to		
	to monitor the use of and	adapt, respond		
	impact on natural	and recover		
	resources	quickly in the		
		long term		
	Facilitate continuous	-		
	awareness raising	Improve		
	programs with the villages	accountability		
		and enabling		
	Responsibility: MWCSD	environment of		
	/Village	communities		





#### Vaiafai Village Map





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

### 7. Vaisa'ulu Village Interventions

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village houses, Churches, School and private residences located in high risk hazard zones	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 landuse 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 <i>Responsibility:Villag</i> <i>e / Families /MWTI/</i>	houses and roads	<ul> <li>Planning provisions to be guided by the Planning and Urban Management Act 2004</li> <li>Enforcement of National Building Code 2017</li> <li>Encourage insurance of significant investments and assets within hazard zones</li> <li>Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to determine safe areas for relocation purposes</li> <li>Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions</li> </ul>	CIM Strategy 2015 NESP 2018 -2022 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1 [Draft] Samoa Relocation Strategy 2016
Upgrade Vaisaulu access/ work road to reduce storm water overflow and run off into South East Coast Road and family/ village homes	MNRE/ MWCSD Upgrade to include adequate sized culverts to facilitate the overland flow of storm water exacerbating river overruns, and to reduce flooding onto	Improve infrastructure resilience and rate of recovery Improve preparedness	Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to inform location and designs Develop an Integrated Flood Management Plan for	CIM Strategy 2015 Community Sector Plan Village Fono Act (Amendment Bill

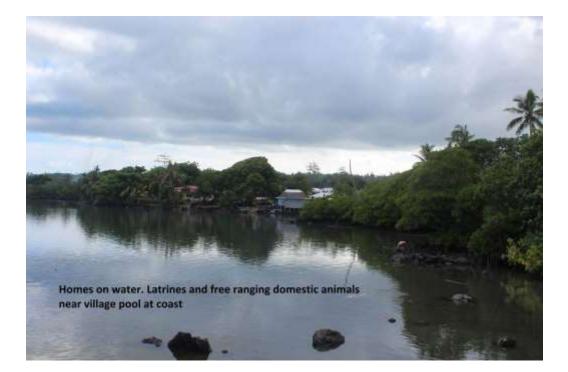
	main roads and village	and readiness	Faasaleleaga 1 District.	2016)
	lands	response to	MNRE to develop zonation	
	<b>.</b>	natural disasters	strategy for safe areas	
	Implement regular	Deduc		
	drainage inspection	Reduce impact	Develop an integrated	
	and maintenance	from coastal	land management plan	
	Village to restrict	erosion and	with the aim of reducing	
	rubbish dumping into	natural disasters	any unnecessary actions	
		Safan willagaa	that may adversely affect	
	waterways and conduct	Safer villages,	the natural habitats and	
	regular clearance of rubbish behind homes	houses and roads	ecosystems of the area	
			Include in budget	
	Village to regulate	Minimise	programming CBA, design	
	developments near and	national	and construction. Road	
	around road shoulders	disaster	design standard to take	
	of all access roads	recovery	account of forecast	
		expenditure on	increased rainfall intensity	
	Enforce environmental safeguards	damaged	-	
	saicguaius	properties and	Designation of the IFHZ,	
	Responsibility: LTA/	public assets	CEHZ and CFHZ as an "at	
	MWTI/ MNRE/		risk" zone with appropriate	
	District/ Village		landuse planning controls	
	/Families/CSSP		and restrictions	
	, ,		Develop and register	
			Village bylaws to include	
			maintenance of drainages	
			and illegal rubbish	
			dumping into waterways	
			dumping into water ways	
			Utilise Sui o Nu'u monthly	
			meetings to monitor	
			progress of village cleanup	
			and awareness	
			programmes	
Reticulated water	Extend the water	Increase	Develop and register	CIM Strategy 2015
supply, quality and	supply to families	adaptation during		
network to be	inland with no access to	drought periods	include regulating	WaterandSanitationSe
improved	water	Improve	developments around catchment areas and	ctorPlan
	Procure rainwater	infrastructure	boreholes	
	harvesting systems for	resilience and	501010105	SWA 10 Year
	vulnerable families as a	rate of recovery	ImplementSWA(2016)	Investment Plan(2016)
	short term solution		10year	Community
		Improve health	investment plantoim prove	Community Engagement Plan
	Procure rainwater	and sanitation	watersupplynetworkto	Lingagement i iall
	harvesting systems for		support	
	identified evacuation	Reduce	allinlandfamilieswithout	Community Sector
	shelter(s)	contamination of water supply	access todrinkingwater	Plan
	District and village to	or mater suppry	Include in budget	
	support SWA water	Reduce impact	programming design,	
	rationing programmes	from inland	andextension costs of water	
	during times of	flooding	supply and procurement of	
	drought		rainwater harvesting	
	D		systems	
	District to support SWA			

	-	Γ		
	efforts at exploratory boreholes in district		Utilise hazard maps and Geomorphologist findings to inform designs	
	District and villages to support SWA efforts at protecting and conserving boreholes, intakes and catchment areas		Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes and responsibilities	
	Responsibility:SWA/ IWS/MWCSD/ MNRE / District/ Village/ CSSP			
Natural Resources and Environment	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village pool located in high	Village pool is currently in a poor state with an assessment needed for	adaptation during drought	Utilise Hazard Maps and Geomorphologist findings for planning purposes	CIM Strategy 2015 Water and Sanitation
risk hazard zones (coastal erosion and flooding from fluvial inundation, wave impacts and storm surges)	options to either rejuvenate or find a new site depending on the location of springs.	periods Improve health and sanitation Reduce	MNRE Water & Sanitation to conduct water testing and analysis of village pool prior to any intervention	Sector Plan Community Engagement Plan
	Test the quality of the water source before any further investment on the pool is undertaken (eg: fence/repair works)	contamination of water supply	Update Village bylaws to include managing and maintaining village natural resources	Village Fono Act (Amendment Bill 2016)
	Responsibility: CSSP/ NGOs/MNRE/Villages		Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes and responsibilities	
Coral reefs, lagoons and inshore fishery	Collect and dispose of crown-of-thorns (alamea) on a regular basis to prevent major	Protect coral reefs and inshore fisheries	MNRE DEC to provide technical assistance and backstopping to support re- growth of coral reefs	NESP 2017-2021 Community
	outbreaks Responsibility: MAF/	Protect marine biodiversity	MAF Fisheries to support implementation and provide technical backstopping to re-stock marine resources	Engagement Plan Agriculture Sector Plan 2016-2021
	Village	Protects and enhance local species diversity Sustains	Identify funding/budget requirementsand implementation programme for establishment of protected areas in village	
		sustains ecosystem services and functions		

Livelihood and Food Security	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Pest management; invasive species	Implement an eradication programme to eradicate, contain or exclude invasive speciesReplant with climate resilient native speciesImplement an inventory of invasive species and include information on their past, present and potential future distribution, as well as impacts and possible actions that can be takenConduct education and 	Maintains natural ecosystem Builds resilience of community livelihood and food security Reduce forest loss and land clearance	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 MAF to raise awareness of farmers on impacts to water flows from poor livestock management 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 MNRE, MAF and SROS to implement aggressive, nationwide invasive species eradication programme based on inventory of invasive species and conduct campaign on public awareness accordingly Village to manage pig/cattle population (compounds, in particular around water supplies) Training for farmers on pests management particularly affecting fruit trees and crops	
Governance	Best Solutions	Benefits	the implementation	Relevant Sector Plans, National Strategies & Policies
Strengthen the governance of natural resources and land use	Update and/or develop bylaws to manage the use of natural resources, and to control land use impacts; such as	Strengthen implementation of all national sector plans	Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood	Village Fono Act (Amendment Bill 2016) Community Sector

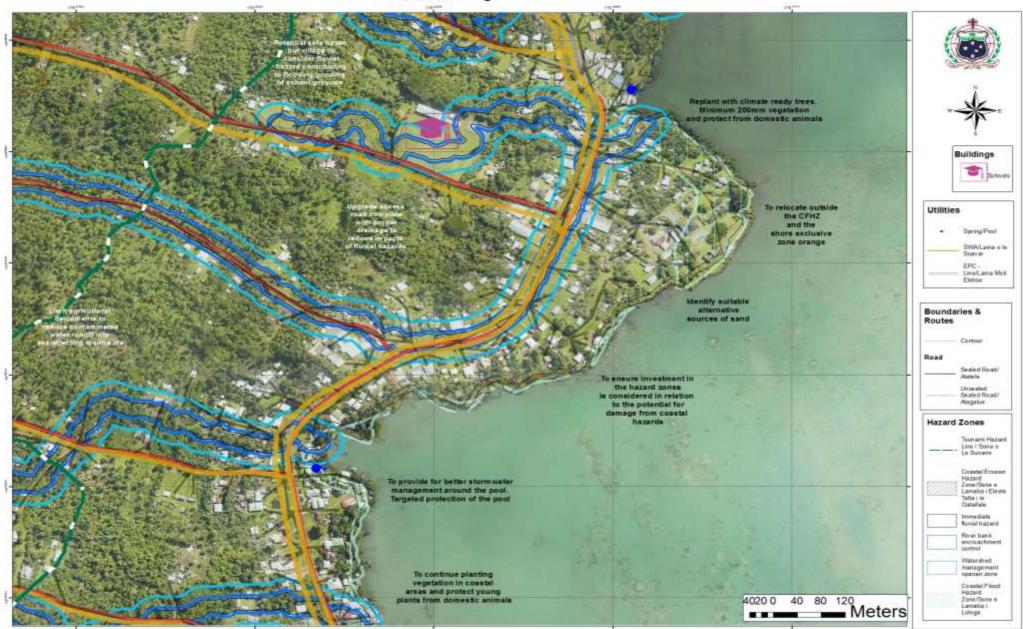
drainage maintenance,	Strengthen	and food security especially	Plan
<u> </u>	8		Tian
	0	8	Community
	,		Community
		coastline	Development Plan
-	0		2016-2021
catchment areas and	and Policies	Utilise Sui o Nu'u monthly	
near boreholes		meetings to monitor	
	Improve ability of	progress of district/village	
Collaborate with Sui o	communities to	bylaws	
Nuu to monitor the use	adapt, respond		
of and impact on natural	and recover		
resources	quickly in the		
	long term		
Facilitate continuous	-		
awareness raising	Improve		
8	•		
	5		
	0		
Responsibility: MWCSD			
	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	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 monitoring of all National Acts, Regulation, Strategies, Plans and Policies umprove ability of communities to adapt, respond and recover quickly in the long term Improve accountability and enabling environment of communities	rubbish dumping, sand mining, stray animals and unregulated developments in water catchment areas and near boreholesmonitoring of all National Acts, Regulation, Strategies, Plans and Policiesactivities affecting water catchment areas and neetings to Nu'u monthly meetings to monitorCollaborate with Sui o Nuu to monitor the use of and impact on natural resourcesImprove ability of adapt, respond of and impact on natural awareness raisingUtilise Sui o Nu'u monthly meetings to monitorFacilitate continuous awareness raising programs with the villagesImprove accountability and enabling environment of communitiesImprove accountability





#### Vaisa'ulu Village Map

#### Vaisaulu Village



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

# 8. Lalomalava Village Interventions

### **CIM Plan Solutions**

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village houses, Churches, School and private residences located in high risk hazard zones	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 landuse 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 <b>Responsibility:Villag e / Families /MWTI/</b> <b>MNRE/ MWCSD</b>	houses and roads	Planning provisions to be guided by the Planning and Urban Management Act 2004 Enforcement of National Building Code 2017 Encourage insurance of significant investments and assets within hazard zones Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to determine safe areas for relocation purposes Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions	CIM Strategy 2015 National Building Code
Upgrade Lalomalava Access road to reduce storm water overflow and run off into South East Coast Road and family/ village homes	Upgrade to include adequate sized culverts to facilitate the overland flow of storm water exacerbating river overruns, and to reduce flooding onto main roads and village	Improve infrastructure resilience and rate of recovery Improve preparedness and readiness	Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to inform location and designs Develop an Integrated Flood Management Plan for Faasaleleaga 1 District.	CIM Strategy 2015 NISP2011 KESO 5 TSP2014-2019 Goal 2

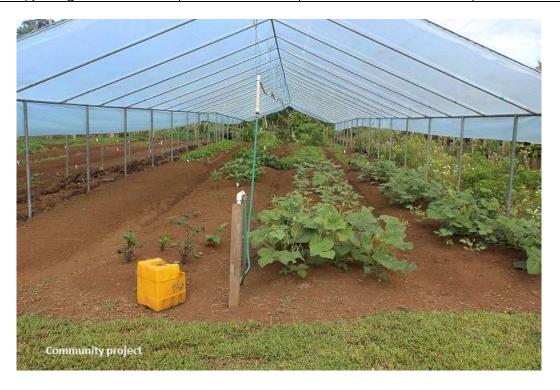
	1	1		
	lands	response to	MNRE to develop zonation	KO 1
	Implant ant l	natural disasters	strategy for safe areas	
	Implement regular	De du ce increat		
	drainage inspection	Reduce impact	Develop an integrated	Community Sector
	and maintenance	from coastal erosion and	land management plan	Plan
	Village to restrict	natural disasters	with the aim of reducing	
	rubbish dumping into	natural disasters	any unnecessary actions	
	waterways and conduct	Safer villages,	that may adversely affect the natural habitats and	
	regular clearance of	houses and roads	ecosystems of the area	
	rubbish behind homes		ecosystems of the area	
		Minimise	Include in budget	
	Village to regulate	national disaster	programming CBA, design	
	developments near and	recovery	and construction. Road	
	around road shoulders	expenditure on	design standard to take	
	of all access roads	damaged	account of forecast	
		properties and	increased rainfall intensity	
	Enforce environmental	public assets	-	
	safeguards		Designation of the IFHZ,	
	Posponsibility, LTA /		CEHZ and CFHZ as an "at	
	Responsibility: LTA/ MWTI/ MNRE/		risk" zone with appropriate	
	District/ Village		landuse planning controls	
	/Families/CSSP		and restrictions	
	/ Failines/ C551			
			Develop and register	
			Village bylaws to include	
			maintenance of drainages	
			and illegal rubbish	
			dumping into waterways	
			Utilise Sui o Nu'u monthly	
			meetings to monitor	
			progress of village cleanup	
			and awareness	
			programmes	
			programmes	
Upgrade	Assess feasibility of	Minimise	Utilise environmental and	CIM Strategy 2015
causeway:	upgrading causeway	expenditure on	social safeguards including	
potential escape		damaged	EIAs in screening and	Two Million Tree
route	Upgrade or repair	properties &	designing infrastructure	Strategy 2015-2020
	riverine embankment	personal assets	facilities	Postoration
	protection work upstream of	Mitigatepotentiald	MNRE to zone hazard areas	Restoration Operational Plan 2016-
	Lalomalava	amage from inland		2020
		flooding	based on flood risk to	
	Ensure river channel	0	provide suitable areas for	
	upstream is cleared and	Reduce flooding of	riparian revegetation	
	maintained regularly	built up areas		
			Designation of the CEHZ and CFHZ as an "at risk" zone	
	Conduct riparian	Safer villages,	with appropriate landuse	
	replanting along river channels and	houses and roads	planning controls and	
	watercourses		restrictions	
	water tour 303			
	Encourage planting of			
	indigenous species in			
	conjunction with			
	engineered water land			
	drainage action plans			

	Government and			
	Villages to liaise and collaborate on			
	processes needed to protect riverbanks from			
	land clearing and developments			
	developments			
	Responsibility: MNRE/ District/ Village			
Reticulated water supply, quality	Extend the water supply to families	Increase adaptation during	Develop and register District/Village bylaws to	CIM Strategy 2015
and network to be improved	inland with no access to water	drought periods	include regulating developments around	WaterandSanitationS ectorPlan
	Procure rainwater	Improve infrastructure	catchment areas and boreholes	SWA 10 Year
	harvesting systems for vulnerable families as a	resilience and rate of recovery	ImplementSWA(2016)	Investment Plan(2016)
	short term solution	Improve health	10year investmentplantoimprove	Community
	Procure rainwater harvesting systems for	and sanitation	watersupplynetworkto support	Engagement Plan
	identified evacuation shelter(s)	Reduce contamination of	allinlandfamilieswithout access todrinkingwater	Health Sector Plan
	District and village to support SWA water	water supply Reduce impact	Include in budget programming design,	Community Sector
	rationing programmes during times of drought	from inland flooding	andextension costs of water supply and procurement of rainwater harvesting	
	District to support SWA		systems	
	efforts at exploratory boreholes in district		Utilise hazard maps and Geomorphologist findings to inform designs	
	District and villages to support SWA efforts at		Utilica Sui a Nu'u monthly	
	protecting and conserving boreholes,		Utilise Sui o Nu'u monthly meetings to monitor	
	intakes and catchment areas		progress of village programmes and	
	Responsibility:SWA/ IWS/MWCSD/ MNRE / District/ Village/ CSSP		responsibilities	
Natural Resources and Environment	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village pool	Village pools are currently in a poor location/state	Increase adaptation during	Utilise Hazard Maps and Geomorphologist findings for	CIM Strategy 2015
(Tufu, Agape, Pumoomoo and	with an assessment needed for options to	drought periods	planning purposes	Water and Sanitation Sector Plan
Puna) located in high risk hazard	either rejuvenate or find a new site depending on the	Improve health and sanitation	MNRE Water & Sanitation to conduct water testing	Sector Plan

Livelihood and Food Security	Best SolutionsImplement an eradication programme to eradicate, contain or exclude invasive speciesReplant with climate 	Benefits Maintains natural ecosystem Builds resilience of community livelihood and food security Reduce forest loss and land clearance	Guideline to assist with the implementation 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 MAF to raise awareness of farmers on impacts to water flows from poor	Relevant Sector Plans, National Strategies & Policies Agriculture Sector Plan 2016-2021 NESP 2018 -2022 Samoa's National Invasive Species Action Plan (NISAP)
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 Faasaleleaga 1 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	Two Million Tree Planting Strategy 2015-2020 Restoration Operational Plan 2016-2020 Forestry Management Act 2011
zones (coastal erosion and flooding from fluvial inundation, wave impacts and storm surges)	location of springs. Test the quality of the water source before any further investment on the pool is undertaken (eg: fence/repair works) <i>Responsibility: CSSP/</i> <i>NGOs/MNRE/Villages</i>	Reduce contamination of water supply	and analysis of village pool prior to any intervention UpdateVillage bylaws to include managing and maintaining village natural resources Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes and responsibilities	Community Engagement Plan Village Fono Act (Amendment Bill 2016)

	taken		to trial climate ready plant	
			varieties	
	Conduct advection and			
	Conduct education and		MNRE Forestry, DEC and	
	awareness programmes		MAF to collaborate on	
	on the impacts of		supply of climate resilient	
	invasive species		crops	
	Implement the Integrated Pest Management Programme		MNRE, MAF and SROS to implement aggressive, nationwide invasive species eradication programme based on inventory of invasive species and conduct campaign on public awareness accordingly	
	Implement Sustainable		Village to manage pig/cattle	
	•		population (compounds, in	
	Land Management		particular around water	
	(SLM) practices		supplies)	
	Build the capacity of farmers to manage stray		Training for farmers on pests management particularly affecting fruit	
	animals (pigs, cattle) that are contaminating water sources		trees and crops	
	Conduct pilot site trials			
	for climate ready plant			
	varieties			
	District to fence domestic animals			
	Responsibility: Villages /District/ MNRE/MAF/ SROS			
Governance	Best Solutions	Other Benefits		Relevant Sector Plans,
Governance			-	National Strategies &
		0,		Policies
Strengthen the	Update and/or develop	Strengthen	Develop and register	Village Fono Act
governance of	bylaws to manage the	implementation of	district/village bylaw to	(Amendment Bill
natural	use of natural resources, and to control land use	all national sector plans	protect all district/ village and government assets,	2016)
resources and	impacts; such as	pians	environment, livelihood	Community Sector
land use	drainage maintenance,	Strengthen	and food security especially	
through bylaws	rubbish dumping, sand	monitoring of all	activities affecting water	
	mining, stray animals	National Acts,	catchment areas and	Community
	and unregulated	Regulation,	coastline	Development Plan
	developments in water	Strategies, Plans		2016-2021
	catchment areas and	and Policies	Utilise Sui o Nu'u monthly	
	near boreholes.	T 1.11. 6	meetings to monitor	
		Improve ability of	progress of district/village	
	Collaborate with Sui o	communities to	bylaws	
	Nuu to monitor the use of and impact on natural	adapt, respond and recover		
	resources	quickly in the long		
	1 03001 003	quickly in the folig		

	term
Facilitate contin	S
awareness raisi	Improve
programs with t	accountability and
villages	enabling
	environment of
Responsibility:	<b><i>CSD</i></b> communities
/Village	





#### Lalomalava Village 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

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# 9. Safua Village Interventions

**CIM Plan Solutions** 

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village houses, school and government assets located in IFHZ	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 landuse 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	Minimise 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	<ul> <li>Develop an Integrated Catchment and Flood Management Strategy for Faasaleleaga 1 District. MNRE to develop zonation strategy for safe areas</li> <li>Utilise hazard maps and Geomorphologist Drainage Infrastructure Database to inform designs</li> <li>Enforcement of National Building Code 2017</li> <li>Encourage insurance of significant investments and assets within hazard zones</li> <li>Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions</li> </ul>	National Building Code CIM Strategy 2015
Drainage systems require maintenance and upgrade in high risk areasof main South East Coast Road	/MWTI/ MNRE Assess and upgrade culverts on main South West Coast road especially at junction with Safua Access Road -in accordance with Vulnerability	Improves climate resilience of infrastructure resilience and rate of response and recovery to natural hazards and	Use existing information for guidance but not limited to: "Vulnerability Assessment of the Samoa Road	CIM Strategy 2015 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1

	Assessment of the	disasters	Network (2017)"; "Review	Community Sector Plan
	Samoa Road Network		of National Road Standards	
	recommendations	Encourages coastal	in Samoa (2016)"; "Samoa	
	Implement national	families to relocate inland	Code of Environmental	
	standards for culverts		Practice (2007)"	
	and drains to	Maintains lifeline	Undertake a Cost Benefit	
	facilitate the overland	access for all of	Analysis to weigh options	
	flow of storm water	Upolu	for funding	
	and reduce flooding		for funding	
	T 1 , 1	Minimises national	Incorporate environmental	
	Implement regular drainage inspection	disaster recovery expenditure on	and social safeguards	
	and maintenance	damaged	concerns in the design and	
	una mantenance	properties, public	undertake consultations	
	Responsibility: LTA	and private assets	with affected communities	
	/MWTI/MWCSD	_		
	/Village/ Families		Apply for necessary	
			permits as required by law	
			IIIiliaa har J	
			Utilise hazard maps and	
			Geomorphologist	
			Infrastructure Drainage Database to inform designs	
			Database to inform designs	
			Develop Integrated	
			Catchment Strategy and Flood Management Plan	
			for Faasaleleaga 1 District	
			ioi raasaleleaga i District	
			Develop and register	
			District/Village bylaws to	
			include maintenance of drainages and illegal	
			rubbish dumping into	
			waterways	
Reticulated water	Extend the water	Increase adaptation	Develop and register	CIM Strategy 2015
supply, quality and	supply to families	during drought	District/Village bylaws to	
network to be	inland with no access	periods	include regulating	WaterandSanitationSe
improved	to water	Improve	developments around catchment areas and	ctorPlan
	Procure rainwater	infrastructure	boreholes	
	harvesting systems	resilience and rate	201010105	SWA 10 Year
	for vulnerable	of recovery	ImplementSWA(2016)10y	Investment
	families as a short	-	ear	Plan(2016)
	term solution	Improve health	investmentplantoimprove	Community
	Due en ur	and sanitation	watersupplynetworkto	Engagement Plan
	Procure rainwater	Reduce	support allinlandfamilieswithout	
	harvesting systems for identified	contamination of	anniandiannieswithout access todrinkingwater	Community Sector
	evacuation shelter(s)	water supply	access tour mixing water	Plan
	(0)	- FF J	Include in budget	
	District and village	Reduce impact	programming design,	
	to support SWA	from inland	andextension costs of	
	water rationing	flooding	water supply and	
	programmes during		procurement of rainwater	
	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 <b>Responsibility:SWA</b> / MWCSP/ MNRE / District/ Village/ CSSP		harvesting systems Utilise hazard maps and Geomorphologist findings to inform designs Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes and responsibilities	
Natural Resources and Environment	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Coral reefs, lagoons and inshore fishery	Collect and dispose of crown-of-thorns (alamea) on a regular basis to prevent major outbreaks Responsibility: MAF /Villages	Protect coral reefs and inshore fisheries Protect marine biodiversity Protects and enhance local species diversity Sustains ecosystem services and functions	MNRE DEC to provide technical assistance and backstopping to support re-growth of coral reefs MAF Fisheries to support implementation and provide technical backstopping to re-stock marine resources Identify funding/budget requirementsand implementation programme for establishment of protected areas in village	Community Engagement Plan Agriculture Sector Plan 2016-2021
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	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 Palauli le Falefa 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	Two Million Tree Planting Strategy 2015-2020 Restoration Operational Plan 2016- 2020 Forestry Management Act 2011

Governance	needed Responsibility: MNRE/ MAF/Villages 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 <i>Responsibility:</i> <i>MWCSD /Village</i>	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 Utilise 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





#### Safua Village Map



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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

