# **Community Integrated Management Plan**

# Salega 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

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

### Participants in the Plan

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

This Plan incorporates the Faipule District of Salega (Samata, Fagafau, Fogatuli, Sagone, Fai'a'ai, Vaipua and Fogasavaii villages)

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

#### Date of Signing: <u>15<sup>th</sup> June 2018</u>

Representatives

Signatures:

#### Samata Village

- Soipoese Faamausili
- Fau Tua
- Legoga Togaga'e
- Loto F'asavalu
- Su'e Solofa

#### Fagafau Village

- Lua'i Malu
- Mafutaga Tapuvae
- Lua'i Isaako
- 'Ualotu Ale
- Falesii 'Aisa

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### Fogatuli Village

- Afualo Apelu
- Elisapeta La'ulu
- Poutoa Tautele
- Fuatia Feleti
- Afualo Toese

### Sagone Village

- Ma'ilata Tuese
- Talele Faalogo
- Tupa'i Anesone

### Fai'a'ai Village

- Leulua'i Fetalaiga Pepese
- Maria Paula
- Levu Iosua
- Lotu Talatau
- Fualau Failauga

### Vaipua Village

- Mafuatu Esau
- Salafai Lolimisieli
- Loli Mafiti
- Loli Enele
- Loli Siō

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#### Fogasavaii Village

- Mo'oui Viliamu
- Maria M Sefo
- Faialofa Mooui Viliamu
- Ufie Muagutu
- Mauao Ionatana

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

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

Ulu Bismarck Crawley CHIEF EXECUTIVE OFFICER, MNRE

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### Acronyms

BCA       Benefit Cost Analysis         CBFMP       Community Based Fisheries Management Plan         CCC       Climate Change Adaptation         CCA       Climate Change Adaptation         CDCRM       Community Disaster & Climate Risk Management         CIP       Community Engagement Plan         CHZ       Coastal Hazard Zone         CHZ       Coastal Fosion Hazard Zone         CHZ       Coastal Fosion Hazard Zone         CHZ       Coastal Looding Hazard Zone         CM       Community Integrated Management (Plan) or (Strategy)         CHZ       Coastal Landslip Hazard Zone         CMC       Conventity Support Programme         DSP       District Sub Project         EAA       Ecosystem based Adaptation         ECCCR       Enhancing Climate Resilience         EK       Enhancing Climate R	ASCH	Areas Sensitive to Coastal Hazards
CBFRMP         Community Based Fisheries Management Plan           CCCS         Congregation Christian Church Samoa           CC         Climate Change Adaptation           CDCRM         Community Disaster & Climate Risk Management           CEP         Community Disaster & Climate Risk Management           CHZ         Coastal Hooding Hazard Zone           CHZ         Coastal Flooding Hazard Zone           CHZ         Coastal Flooding Hazard Zone           CHZ         Coastal Indoing Hazard Zone           CHZ         Coastal Andsily Hazard Zone           CHZ         Coastal Andsily Hazard Zone           CDEP         Code of Environmental Prattice           CSO         Civil Society Organization           CSSP         Civil Society Support Programme           DSP         District Sub Project           EbA         Ecosystem based Adaptation           ECCR         Enhancing Climate Resilience           ERM         Enhancing Climate Resilience           ER         Enhancing Climate Resilience           ER </td <td></td> <td></td>		
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R2R     Ridge to Reef       SIAM     Samoa Infrastructure Asset Management		
SIAM Samoa Infrastructure Asset Management		
SOE State of Environment		
SWA Samoa Water Authority		
UNDP-GEF SGP United Nations Development Programme Global Environment Facility Small Grants	UNDP-GEF SGP	United Nations Development Programme Global Environment Facility Small Grants

	Programme
VCDMP	Village Climate Disaster Management Plan
WB	World Bank
WCR	West Coast Road
WMP	Watershed Management Plan
WSSP	Water Sanitation Sector Plan

### Glossary

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

Plan the term susceptibility is equivalent to the term vulnerability as the Samoan phrase for both susceptibility and vulnerability is the same.

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

### 1. Introduction to the CIM Plan

#### **1.1 The Strategic Vision**

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

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

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

#### 1.2 The Aim of the CIM Plan

The aim of the CIM Plan is to help communities and government improves 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.

#### 1.3 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.

### 2. Implementation Guidelines

### 2.1 Purpose of the Implementation Guidelines

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

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

### 2.2 Duration of the Plan

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

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

### 2.3 Financing of the Plan

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

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

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

Community Engagement Plan(CEP)- the guidelines provided in the CEP is an excellent capacity building too that can be used by CSO's and village communities themselves to aid development of small grant proposals to existing small grant funding mechanisms like CSSP and the UNDP-GEFSGP. District Sub Project (DSP) – the guidelines provided in the DSP targets single districts or multi-district projects with a large number of beneficiaries.

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

### 3. Description of Salega District

#### 3.1 Physical and Natural Resource Setting

The District of Salega is located on the south-western side of Savaii between the Alataua West and Palauli West Districts. Local climatic conditions are influenced by winds and moisture content as the trade wind rise over the high mountain range inland. The coast has sandy beaches and a narrow coral reef system that creates a small lagoon system for part of the district. The coastal system supports fishing; a small demand for tourism and local consumption. Salega District is made up of 7 villages; Fagafau, Sagone, Fai'aai, Fogatuli, Vaipua,Samata and Fogasavaii and is the third largest populated district of Savaii<sup>1</sup>.

The villages of the Salega district are well protected by coral reefs and human access to the reefs is made difficult by the high cliffs and rocky outcrops in most places. These same cliffs and rocky outcrops also provide protection for coastal vegetation from wave action but limits access to the beach areas. The rocky terrain not only impedes fishing activities but also restrict access by villagers to coastal springs on which they depended in past years before reticulated water became available. In many cases, coastal vegetation of the villages in this district is very much intact and the tree species have remained unchanged over time. The dominant coastal species include pu'a, futu, tauanave, fetau, and pulu (indian banyan) although at some places encroachment by other species especially lusina and fau (*Hibiscus tiliaceas*) are becoming obvious (Reti, 2016).

The coastal areas of the district of Salega are largely undisturbed due to the high cliffs and rocky terrain which support some species not commonly seen in coastal areas of other districts of Savaii.At Fagafau, native forest species on the coastal side of the main road are being cleared for taro plantations. The villages of the Salega district probably have more lowland forest on the coastal side of the main road than inland. Village plantations occupy land immediately behind village houses and cattle grazing under coconut trees are a common practice along both sides of the access roads. The cattle farms are small in size (between 1 and 2 acres) but do provide an environment suitable for the vao tuaniu or sword fern (*Nephrolepsishirsutula*) and vaopinati or peanut weed (*Senna tora*) to spread and dominate. Mint weed and vaofefepalagi (*Mimosa invisa*) are present in the district although they are not yet regarded as serious threats to the vegetation (Reti, 2016).

No destructive fishing practices were reported from the district but there is evidence of domestic sand extraction in some places.Commercial operators are reported to be dumping their rubbish over the cliffs into the sea below where they are hidden from sight. In some areas of the district, the cliffs look like a mini-landfill with domestic rubbish dumped quite close to the main South West Coast Road. Commercial rubbish removal companies resorted to dumping into the cliffs and outcrops of Salega due to the temporary closure of the Vai'aata Landfill mid-2016. Fai'aai reported an increase in different species of corals and seaweed and the lagoons are rougher than they used to be. Some villages have asked for help in replanting corals in their lagoon areas.

Village plantations and cattle grazing dominate the upland areas of the district. The forests that once provided shelter for the districts fauna and flora have been severely damaged by land clearing and strong winds that only small "pockets" of native forest species are evident but even these are under threat from encroaching invasive species such as the merremia vine (*Merremiapeltata*), pulumamoe (*Castillaelastica*), and puluvao (*Funtumiaelastica*).

The main South West Coast Road running through the district is considered a lifeline access as it is part of the national road network connecting the whole of Savaii; from the East (from Salelologa Wharf) to the West (Falealupo) and back around to the North. The main road is an important part of the district's infrastructure as it provides easy access to other work roads, schools, churches and village buildings. This district due to its large area has 9<sup>2</sup> other roads within LTA's normal road maintenance programme; Samata-i-Tai Access Road, Samata-i-Uta School Road, Samata-i-Uta Access Road, Vaipua Road, Vaipua Access Road, Fogasavaii Access Road, Fogasavaii Link Road, Savaii Sisifo Secondary School Road and Sagone Road<sup>3</sup>. The DRM District map shows several fluvial hazard zones within the Salega District.

<sup>1</sup>SBS Census 2016 Preliminary Count- population count = 3,355

<sup>2</sup>No updated list of roads available from LTA but number could be more as there are several other 'roads' that are not counted under the national road network

<sup>&</sup>lt;sup>3</sup>MWTI, 2016 Inspection report

### 3.2 Social and Economic Setting

Salega District currently has a population of 3,355; Samata 1,062<sup>4</sup>, Fagafau 240, Fogatuli 251, Sagone 625, Fai'aai 397, Vaipua 426 and Fogasavaii 354. Of the total 3,355, total male is 1,744, female 1,611<sup>5</sup>. Development runs ribbon like and is mostly scattered along or near the main South West Coast Road.

Primary services such as water, power and telephone generally follow the main road and are vulnerable to extreme events. Electricity reaches all of the inland areas where some families have moved. Telephone coverage is provided by both Digicel and BlueSky. 4 boreholes service this district; 1 each at Samata, Fogasavaii, Sagone and Fogatuli. There are 6 schools within the district; 1 secondary and 5 primaries- Savaii I Sisifo Secondary School, Faiaai/Fogatuli Primary, Sagone Primary, Samata-i-Tai and Samata-i-Uta Primaries and the Vaipua/Fogasavaii Primary School.

Because of its steep slopes, crop suitability in this district is very high for the major food crops such as banana, coconut, cocoa, breadfruit, taro and fruits such as lemon<sup>6</sup>. All are limited to areas of fertile soil on the lower slopes of Salega District (Dews, 2016).

The cash economy of the District is dominated by traditional work. The majority of residents are largely sustained by cattle farms and plantations. A few receive income through the Samata-i-Tai beaches, Fai'aai beaches and the Lover's Leap at Fagafau; a cliff-top lookout steeped in legend. There are also employment opportunities at a nearby tourist facility; the Satuiatua Beach Fales as well as schools within the district. There are also a number of shops throughout the district and a petrol station between Fogasavaii and Sagone.

### 3.3 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 Salega. The immediate risks for some areas of Salega District are coastal landslips and fluvial hazards.

The district has a total area of 9,248 hectares. There are about 1,119 buildings in the district; about **139 of those buildings are located both in the immediate inundation zones and the fluvial hazard zones**. At present, the majority of buildings are located away from the tsunami evacuation zones, CFHZ, CLHZ and ASCH. There are 5 churches<sup>7</sup> and 2 schools<sup>8</sup> sitting outside hazard zones that could be designated as safe havens. Reinforcing criticial lands, buildings and/or infrastructure within the hazard zones if they must remain where they are is crucial. Otherwise, relocation is recommended. New residential construction in the regulated floodplain must be elevated, anchored, and otherwise protected against flood damage from a flood event.

The main South West Coast Road crosses through all of these fluvial hazards making it susceptible to damages caused by inland flooding and storm water surges. Inadequate culvert sizes on the main road and non-existent drainages in access roads exacerbate the impacts of inland flooding on the main South West Coast Road. Any upgrades to roads in this district will need to consider the Drainage Infrastructure Database<sup>9</sup> which systematically identifies the location, design and the condition of drainage infrastructure in the district.

During heavy rains, the ford at Sagone runs up the riverbanks flooding family homes sitting very near the riverbank encroachment control zone. The Sagone Access Road in some parts is less than 5mtrs away from this fluvial hazard and during heavy rains; the stream overtops the road and flows into homes on the opposite site of the access road. There is no footpath or footbridge so pedestrians have to cross the ford when the river overflows during heavy rains. There are no advisory edge markers and depth markers to warn vehicle and pedestrian traffic at this crossing<sup>10</sup>. Flooding and storm surges are further exacerbated by the Sagone Primary School blocking the natural channel where the river runs into the sea.

Rainwater harvesting is evidently a well accepted, effectively universal practice for the scattered population of Salega District. Since the idea is already well accepted in the district, continuation with this practice would appear to be the most logical recommendation for any rural water supply scheme. Stored rainwater should therefore be regarded as one of the primary sources for drinkable water in the Salega district. Clearly, the more rainwater

<sup>4</sup>Samata-i-Tai 416, Samata-i-Uta 646

<sup>&</sup>lt;sup>5</sup> SBS Village Directory Census 2016 preliminary count

<sup>6</sup>Samoa Agricultural Census 2015

<sup>&</sup>lt;sup>7</sup>1 church in Fagafau, 1 in Fogatuli, 1 in Sagone and 2 in Fogasavaii

<sup>&</sup>lt;sup>8</sup>Vaipua/Fogasavaii Primary School and the Samata-i-Uta Primary School

<sup>&</sup>lt;sup>9</sup>GWP Consultants LLP/MNRE, 2016

<sup>&</sup>lt;sup>10</sup>There are no advisory edge markers and depth markers for any crossing in all of Savaii

harvesting that can be developed in the area, the less demand needs to be placed on more conventional piped SWA water supplies sourced from the locally, extremely sensitive, aquifer (Tokalauvere, 2017).

Agriculture livelihoods are limited to areas of fertile soil on the lower slopes. This agriculture area is above the influence of any sea level rise impacts. The water surface flows will be altered by climate change and local adaption through the maintenance of the upper level forests will be important. There are only small areas that have suitable soil fertility which will have to managed in line with best practices that does limit top soil erosion, and reduces the extend of invasive species.

### 4.Salega District Interventions

### **CIM Plan Solutions**

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies &
Main South Coast Rd: areas prone to landslips	Investigate replacement road inland (approx length 400mtrs) 2km from the coast as <b>long term</b> <b>solution</b> for high risk landslip area of road between Fagafau and Samata. Area also identified in Assessment of the Samoa Road Network and Road Network Adaptation Strategy as medium severity from land slips Where reclamations are proposed, Government and district to manage processes by requiring villagers to get the appropriate permits and consent <b>Responsibility: LTA/</b> MWTI/ MNRE/	Improve infrastructure resilience and rate of recoveryImprove preparedness and readiness response to natural disastersReduce impact from coastal erosion and natural disastersSafer villages, houses and roadsMinimise national disaster recovery expenditure on damaged properties and public assets	Consult affected landowners and community 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	PoliciesCIM Strategy 2015TSP2014-2019 Goal 2 KO 1Community Sector PlanVulnerability Assessment of the Samoa Road Network (2016) and Road Network Adaptation Strategy, LTA
Drainage systems require maintenance and upgrade in high risk areasof main South Coast Road especially at junctions of Access Rd	Villages/Families Upgrade drainage and culverts on main south- west coast road and junctions of access roads 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	Improves climate resilience of infrastructure resilience and rate of response and recovery to natural hazards and disasters 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	CIM Strategy 2015 TSP2014-2019 Goal 2 KO 1 Community Sector Plan

Reticulated water supply, quality and network to be improved	Responsibility: LTA /MWTI/MWCSD /Village/Families /Village/Families /Village/Families /Village/Families ////////////////////////////////////	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	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 and register District/Village bylaws to include maintenance of drainages and illegal rubbish dumping into waterways Develop/Update and register District/Village bylaws to include regulating developments around catchment areas and boreholes Implement SWA (2016) 10year investment plan to improve water supply network to support all inland families without access to drinking water Include in budget programming design, and extension costs of water supply and procurement of rainwater harvesting systems Utilize Hazard Maps and Geomorphologist findings to inform location and design	CIM Strategy 2015 Water and Sanitation Sector Plan SWA 10 Year Investment Plan(2016) Community Engagement Plan
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Village houses,	Relocate outside of	Minimise	MNRE to develop	National
school, churches,	high risk hazard zones	expenditure on	zonation strategy for	Building Code
government and	when	damaged	safe areas	
other village	building/infrastructure	properties &		CIM Strategy
assets in high risk	requires replacement	personal assets	Utilise hazard maps	2015
hazard zones		I	and Geomorphologist	
	Investments within the	Mitigate potential	Drainage	
	hazard zones to adopt	damage from	Infrastructure	
	appropriate mitigation	coastal erosion and	Database to inform	
	measures	flooding	designs	
	medsures	accommodating the	acoigno	
	Conduct awareness	hazard	Enforcement of	
	raising campaign on	nazaru	National Building	
	flood resilient building	Improve recovery	Code 2017	
	practices and designs	to create more	Coue 2017	
	for at risk communities	resilient villages	Encourage incurance	
		resilient villages	Encourage insurance	
	living in and near high risk hazard zones	Improve	of significant investments and	
	risk nazaru zones	Improve		
	Design infus stars stars	preparedness and	assets within hazard	
	Design infrastructure	readiness response	zones	
	to take into account the	to natural disasters	Designations (1)	
	immediate hazard		Designation of the	
	zones; for example,	Safer villages,	IFHZ, CEHZ and CFHZ	
	raise floor levels of	houses and roads	as an "at risk" zone	
	houses in flood prone		with appropriate	
	areas		landuse planning	
			controls and	
	Develop landuse		restrictions	
	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			
	mater surges			
	Where reclamations are			
	proposed, Government			
	and district to manage			
	processes by requiring			
	villagers to get the			
	appropriate permits and			
	consent			
	Responsibility: Village			
	/ Families /MWTI/			
	MNRE			
Electricity supply	Provide underground	Maintain	Monitor	EPC Strategic
	lines in the long term	electricity supply	distribution	Plan
	Install and connect	at all times	networks to avoid	
	power supply for inland	including natural	overloading poles	
	power suppry for infant	including natul al	over loading poles	

	residents	disasters	and contributing to	
	Relocate over headlines to a more resilient location when being replaced Install streetlights along the roads where needed for community safety Install and connect to solar power supply if made available	Avoid accidents from fallen electricity posts	line failures	
	Families to limit building and developments near electricity posts <b>Responsibility:EPC/</b> <b>MWTI/ Village/</b> <b>Families</b>			
Natural Resources and Environment	Best Solutions	Benefits	with the implementation	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 <b>Responsibility: MNRE/</b> Village/Families	Safer villages, houses and roads Reduce impact from coastal erosion Economic benefit	MNRE to continue to identify specific sites for inshore/inland sustainable sand/rock mining to meet demand without compromising	Village Fono Act (Amendment Bill 2016) Draft Soil Resource Management Bill
			Utilise Sui o Nu'u monthly meetings to monitor progress of CIM Plan activities	

District upland	Formally declare Salega	Protects and	Develop an	Forestry for
forest	Upland Forest a Key	enhance local	integrated land	Sustainable
	Protected Area (KBA)	species diversity	management plan	Development
		1 5	with the aim of	Policy
	Enforce Watershed	Sustains ecosystem	reducing any	
	Management Riparian	services and	unnecessary actions	NESP 2018 -
	Zone and Riverbank	functions	that may adversely	2022
	Encroachment Control	Tunctions	affect the natural	2022
		Deduce		
	and regulate	Reduce	habitats and	
	developments around	contamination of	ecosystems of the	
	the upland forest area	water supply	area	
	Conduct commister for	Deduces investigation	Develop a Develop	
	Conduct campaign for	Reduce impact from	Develop a Forestry	
	public awareness and	inland flooding	Conservation	
	establish a		Programme/	
	"neighbourhood		Implementation Plan	
	watch" agreement with		for Fa'asaleleaga 4	
	district to monitor and		District	
	report on illegal			
	deforestation		Develop and register	
			District/Village	
	District/village councils		bylaws to include	
	to help promote the		penalizing illegal	
	development of the		deforestation in	
	agroforestry sector by		district lands	
	encouraging relevant			
	land use practice and		Utilise Sui o Nu'u	
	where possible resolve		monthly meetings to	
	any associated land		monitor progress of	
	disputes		district/village	
	uisputes		forestry programmes	
	Government, district		forestry programmes	
	-			
	and villages to monitor,			
	report and apply			
	penalty on offenders			
	Responsibility: MNRE			
	/ District /Village /CCCD			
Governance	District/Village/CSSP Best Solutions	Benefits	Guideline to assist	Relevant Sector
Governance	Best Solutions	Denents		Plans, National
				Strategies &
				Policies
Strengthen the	Update and/or develop	Strengthen	Develop and register	Village Fono
governance of	bylaws to manage the	implementation of	district/village bylaw	Act
natural resources	use of natural	all national sector	to protect all district/	(Amendment
and land use	resources, and to	plans	village and	Bill 2016)
through Bylaws	control land use	pialis	0	JII 2010J
		Strongthon	government assets,	Community
	impacts; such as	Strengthen	environment,	Community Sector Plan
	drainage maintenance,	monitoring of all	livelihood and food	Sector Fiall
	rubbish dumping, sand	National Acts,	security especially	Comment of the
	mining, stray animals	Regulation,	activities affecting	Community
	and unregulated	Strategies, Plans	water catchment	Development
	developments in water	and Policies	areas and coastline	Plan 2016-
	catchment areas and			2021
			L L L L L L L C. L L M. P.	
	near boreholes.	Improve ability of communities to	Utilise Sui o Nu'u monthly meetings to	

Collaborate with Sui o	adapt, respond and	monitor progress of	
Nuu to monitor the use	recover quickly in	district/village bylaws	
of and impact on natural resources	the long term		
haturarresources	Improve		
Facilitate continuous	accountability and		
awareness raising programs with the	enabling environment of		
villages	communities		
Responsibility: MWCSD /Village			



### SalegaDistrict Map



COORDINATE SYSTEM: GCS WGS 1984 DATUM: WGS 1984 UNITS: DEGREE

Data Source: Ministry of Natural Resource and Environment, Sam oa

Map Production: Spatial & DRM Specialist, Adaptation Fund - Enhancing Realistics of Coastal Communities of Sam on to Climate Change Project

## 5. Samata Village Interventions

### **CIM Plan Solutions**

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village houses, school, churches, government and other village assets in high risk hazard zones	Relocate outside of high risk hazard zones when building/infrastructure requires replacement Investments within the hazard zones to adopt appropriate mitigation measures 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 landslip hazard zones; Develop landuse planning and development controls to restrict developments within high risk hazard zones Families and village to limit building and developing on natural overland flow paths exacerbating inland flooding and storm water surges Where reclamations are proposed, Government and district to manage processes by requiring villagers to get the appropriate permits and consent	<ul> <li>Minimise</li> <li>expenditure on</li> <li>damaged</li> <li>properties &amp;</li> <li>personal assets</li> </ul> Mitigate potential <ul> <li>damage from</li> <li>coastal erosion</li> <li>and flooding</li> <li>accommodating</li> <li>the hazard</li> </ul> Improve recovery <ul> <li>to create more</li> <li>resilient villages</li> </ul> Improve <ul> <li>preparedness and</li> <li>readiness</li> <li>response to</li> <li>natural disasters</li> </ul> Safer villages, <ul> <li>houses and roads</li> </ul>	<ul> <li>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
	Families /MWTI/ MNRE			

Drainage	Upgrade drainage and	Improves climate	Use existing	CIM Strategy 2015
systems require	culverts on main south-	resilience of	information for	
maintenance	west coast road and	infrastructure	guidance but not	TSP2014-2019
and upgrade in	junctions of access roads in		limited to:	Goal 2 KO 1
high risk areas	accordance with	rate of response	"Vulnerability	
of main South	Vulnerability Assessment	and recovery to	Assessment of the	<b>Community Sector</b>
Coast Road	of the Samoa Road	natural hazards	Samoa Road Network	Plan
especially at	Network recommendations	and disasters	(2017)"; "Review of	
junctions of			National Road	
Access Rd	Implement national	Minimises	Standards in Samoa	
	standards for culverts and	national disaster	(2016)"; "Samoa	
	drains to facilitate the	recovery	Code of	
	overland flow of storm	expenditure on		
	water and reduce flooding	damaged	Environmental	
		properties, public	Practice (2007)"	
	Implement regular	and private assets		
	drainage inspection and		Incorporate	
	maintenance		environmental and	
			social safeguards concerns in the	
	Responsibility: LTA			
	/MWTI/MWCSD		design and undertake consultations with	
	/Village/ Families		affected communities	
			anecteu communities	
			Apply for necessary	
			permits as required	
			by law	
			,	
			Utilise hazard maps	
			and Geomorphologist	
			Infrastructure	
			Drainage Database to	
			inform designs	
			Develop and register	
			District/Village	
			bylaws to include	
			maintenance of	
			drainages and illegal	
			rubbish dumping into	
			waterways	
			water ways	

Upgrade	Reconstruct Samata-i-Tai	Improves climate	Use existing	TSP2014-2019
Samata-i-Tai	access road containing	resilience of	information for	Goal 2 KO 1
&Samata-i-Uta	potential evacuation shelter	infrastructure	guidance but not	
access roads and	(Church) to acceptable road	resilience and	limited to:	<b>Community Sector</b>
Samata-i-Uta	standards	rate of response	"Vulnerability	Plan
School Road to		and recovery to	Assessment of the	
facilitate	Reconstruct Samata-i-Uta	natural hazards	Samoa Road Network	Vulnerability
relocation of	School Road containing	and disasters	(2017)"; "Review of	Assessment of the
houses away	potential evacuation shelter		National Road	Samoa Road
from hazard	(Samata-i-Uta Primary	Minimises	Standards in Samoa	Network (2016)
zones- and as	School)	national disaster		and Road Network
potential escape	Enforce environmental	recovery	(2016)"; "Samoa	Adaptation
route		expenditure on	Code of	Strategy, LTA
	Where reclamations are	damaged	Environmental	
	proposed, Government and	properties, public	Practice (2007)"	
	district to manage processes	and private assets		
	by requiring villagers to get		Undertake a Cost	
	the appropriate permits and		Benefit Analysis to	
	consent		weigh options for	
			funding	
	Responsibility: LTA/		Incorporate	
	MWTI/ MNRE/MWCSD/		environmental and	
	Villages /Families		social safeguards	
			concerns in the	
			design and undertake	
			consultations with	
			affected communities	
			Apply for necessary	
			permits as required	
			by law	
			Ittikas hansed ware	
			Utilise hazard maps	
			and Geomorphologist Infrastructure	
			Drainage Database to inform designs	
			morm designs	
			Develop and register	
			District/Village	
			bylaws to include	
			maintenance of	
			drainages and illegal	
			rubbish dumping into	
			waterways	

		-		
Path to access	Village to identify suitable	Increase	Village to consult	NESP 2018 - 2022
fishing grounds	lands to construct a proper	adaptation during		
	boat slipway	drought periods	dedicating areas for	Community
			access road to fishing	Engagement Plan
		Improve	grounds and seek	
	Responsibility:Villages	community	financing if land issues	
	/Families/MNRE/CSSP	resilience and	are resolved	
		health		
			MNRE DEC to provide	
			technical advice to	
			guide village planning	
			and avoid potential	
			environmental	
			impacts	
Detter late 1	Parton data a data data data data data data d	In man a sta	Develor /II - 1	CIM Charles 2045
Reticulated	Extend the water supply to	Increase	Develop/Update and	CIM Strategy 2015
water supply,	families inland with no	adaptation during		Water and
quality and	access to water	drought periods	District/Village	
network to be	Procure rainwater	Improvo	bylaws to include	Sanitation Sector Plan
improved		Improve infrastructure	regulating	Plall
	harvesting systems for vulnerable families as a	resilience and	developments around catchment	SWA 10 Year
	short term solution	rate of recovery	areas and boreholes	Investment
	Short term solution	rate of recovery	al eas allu bol elloles	Plan(2016)
	District and villages to	Improve health	Implement SWA	
	support SWA water	and sanitation	(2016) 10year	Community
	rationing programs	and Santation	investment plan to	Engagement
	during times of drought	Reduce	improve water	Plan
	auting times of thought	contamination of	supply network to	
	District to support SWA	water supply	support all inland	
	efforts at exploratory	mater suppry	families without	
	boreholes in district	Reduce impact	access to drinking	
		from inland	water	
	<b>Responsibility: SWA</b>	flooding		
	/MNRE/ District	0	Include in budget	
	/Villages/ CSSP		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	

Electricity supply	Provide underground lines in the long term Install and connect power supply for inland residentsRelocate overhead lines to a 	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
Evacuation Shelter and a connected escape route needed for emergency preparedness and response	Assess and/or select location for either an existing or new evacuation shelter, including safe access routes to the shelter Conduct evacuation shelter assessment and mark on CIM Plan hazard maps Develop a Village Climate Disaster Management Plan(VCDMP) Conduct trainings for People With Disabilities (PWDs) on emergency and disaster response strategies Implement CDCRM program Install relevant signs to guide the community on emergency response procedures and to locations of evacuation shelters	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 Disaster Management Plan2017-2021 National Building Code National Policy for People with Disabilities

	Where no suitable houses exist, build emergency shelter(s) outside the hazard zones Retrofit identified and approved schools or churches outside hazard zones and designate as evacuation shelter Responsibility: MNRE /DMO/ MWTI/Village /CSSP/Council of Churches/MWCSD			
Natural Resources and Environment	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
(coastal erosion	Village pool 1 (Vaipuese) 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 Village pool 2: 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 Update Village bylaws to include managing and maintaining village natural resources	CIM Strategy 2015 Water and Sanitation Sector Plan Community Engagement Plan
Livelihood and Food Security	Best Solutions	Benefits	with the	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	Builds resilience of community livelihood and food security	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	Agriculture Sector Plan 2016-2021 Draft NESP 2018 - 2022 Samoa's National Invasive Species Action Plan (NISAP)

Access to fishing grounds	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 <b>Responsibility: Villages</b> /District/MNRE/MAF/ SROS	clearance Improve preparedness and readiness response to natural disasters	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 MNRE DEC to research reef openings and provide technical advice on alternative route for fishing grounds	NESP 2018 - 2022
	Responsibility: MNRE/	natural	alternative route for	

Governance	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Strengthen the governance of natural resources and land use through Bylaws	Update and/or develop bylaws to manage the use of natural resources, and to control land use impacts; such as drainage maintenance, rubbish dumping, sand mining, stray animals and unregulated developments in water catchment areas and near boreholes. Collaborate with Sui o Nuu to monitor the use of and impact on natural resources Facilitate continuous awareness raising programs with the villages Responsibility: MWCSD /Village	communities to adapt, respond and recover quickly in the long term	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

Non-CR	Proposed Solution	Comments
issues raised	-	
during		
consultations		
Safety	Construct safety barrier around cliff top/	Not a CR issue. Village to seek assistance from
barriers/fence	ravine to protect children and elderly	other funding sources geared towards community
barriers/ relice		<u> </u>
D	from falling off cliff	safety projects
Responsibility:		
Village/Families		
Streetlights to	Village mayor to report directly to	Not a CR issue. Relevant for consideration under
reach houses for	EPC number of families who have	EPC Community Service funding
people who	moved inland and develop proposal	
have moved	for EPC to consider	
further inland		
Responsibility:		
Village		
Mayor/EPC		
Samata-tai	Improve school grounds for students	Not a CR issue. Village School Committee to seek
School grounds	1 0	assistance from other funding sources targeted at
0		improving educational resources
Responsibility:/		r · 0
Village School		
Committee		





### Samata Village Map



COORDINATE SYSTEM GCS WGS 1984 DATUM WGS 1984 UNITS DEGREE

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

## 6.Fagafau Village Interventions

### **CIM Plan Solutions**

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant National, Sector Plans
Village houses, school, churches, government and other village assets in high risk hazard zones	Relocate outside of high risk hazard zones when building/infrastructur e requires replacement Investments within the hazard zones to adopt appropriate mitigation measures 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 landslip hazard zones; Develop landuse planning and development controls to restrict developments within high risk hazard zones Families and village to limit building and developing on natural overland flow paths exacerbating inland flooding and storm water surges Where reclamations are proposed, Government and district to manage processes by requiring villagers to get the appropriate permits and consent	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	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	and Strategies National Building Code CIM Strategy 2015

	D 'L 'l''			1
	Responsibility: Village / Families /MWTI/ MNRE			
Drainage systems require maintenance and upgrade in high risk areas Upgrade access/ work roads to facilitate relocation of houses away from hazard zones- and as potential escape	Upgrade drainage and culverts on main south- coast road and	Improves climate resilience of infrastructure resilience and rate of response and recovery to natural hazards and disasters 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 and register District/Village bylaws to include maintenance of drainages and illegal rubbish dumping into waterways	CIM Strategy 2015 TSP2014-2019 Goal 2 KO 1 Community Sector Plan
route	Where reclamations are proposed, Government and district to manage processes by requiring villagers to get the appropriate permits and consent	preparedness and readiness response to natural disasters Safer villages, houses and roads	Include in budget programming CBA, design and construction. Road design standard to take account of forecast changes in sea level rise and increased rainfall intensity	Community Sector Plan

	Responsibility:LTA/M WTI/ MNRE/ Villages /Families/District			
Electricity supply	Provide underground lines in the long term Install and connect power supply for inland residents Relocate over headlines to a more resilient location when being replaced Install streetlights along the roads where needed for community safety Install and connect to solar power supply if made available Families to limit building and developments near electricity posts <b>Responsibility:EPC/</b> <b>MWTI/Village/</b> <b>Families</b>	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
Natural Resources and Environment	Best Solutions	Benefits	with the implementation	Relevant Sector Plans, National Strategies & Policies
District/ Village Upland Forest deforestation	Formally declare Salega Upland Forest a Key Protected Area (KBA) Enforce Watershed Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland forest area Conduct campaign for public awareness and establish a "neighbourhood watch" agreement with district to monitor and report on illegal deforestation	Protects and enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland flooding	Develop an integrated land management plan with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area Develop a Forestry Conservation Programme / Implementation Plan for Fagafau and Salega District Develop and register District/Village bylaws to include penalizing illegal deforestation in district lands Utilise Sui o Nu'u	Forestry for Sustainable Development Policy Salega District Plan

Sand/rock extraction (domestic): coastline, rivers and riverbanks	District/village councils to help promote the development of the agroforestry sector by encouraging relevant land use practice and where possible resolve any associated land disputes Government, district and villages to monitor, report and apply penalty on offenders <b>Responsibility:MNRE/</b> District/Village/CSSP 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 <b>Responsibility: MNRE/</b> Village/Families	Mitigate potential damage from coastal erosion and flooding accommodating the hazard Safer villages, houses and roads Reduce impact from coastal erosion Economic benefit for village from sustainable sandmining activities	monthly meetings to monitor progress of village programmes on waste management 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 Guideline to assist	
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	Maintains natural ecosystem Builds resilience of community livelihood and food security Reduce forest loss	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	Agriculture Sector Plan 2016-2021 Draft NESP 2018 - 2022 Samoa's National Invasive 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	and land clearance	<ul> <li>water flows from poor livestock management</li> <li>MAF to assist in establishment of pilot sites to trial climate ready plant varieties</li> <li>MNRE Forestry, DEC and MAF to collaborate on supply of climate resilient crops</li> <li>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</li> <li>Village to manage pig/cattle population (compounds, in particular around water supplies)</li> <li>Training for farmers on pests management particularly affecting fruit trees and crops</li> </ul>	Action Plan (NISAP)
--	---	--	--	---
	Responsibility: Villages /District/ MNRE/MAF/ SROS			
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	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation, Strategies, Plans and Policies Improve ability of	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	Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan 2016- 2021

	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>	communities to adapt, respond a recover quickly i the long term Improve accountability an enabling environment of communities	n	ss of /village bylaws	
Non-CR issues raise	Proposed Solution		Comments		
during					
Safety barrie /fence	rs Construct safety barr top/ ravine to protect			1e. Village to seek as ces geared towards o	
,	elderly from falling o		projects	ces geared towards (	community safety
Responsibil Village/Fam					

#### Fagafau 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

# 7. Fogatuli Village Interventions

Infrastructure	Best Solutions	Benefits	with the implementation	Relevant Sector Plans, National Strategies & Policies
Village houses, school, churches, government and other village assets in high risk hazard zones	Relocate outside of high risk hazard zones when building/infrastructure requires replacement Investments within the hazard zones to adopt appropriate mitigation measures 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 Develop landuse planning and development controls to restrict developments within high risk hazard zones Families and village to limit building and developing on natural overland flow paths exacerbating inland flooding and storm water surges Where reclamations/rock or sandmining are proposed, Government and district to manage processes by requiring villagers to get the appropriate permits and consent <b>Responsibility: Village</b> / Families /MWTI/ MNRE	<ul> <li>Minimise expenditure on damaged properties &amp; personal assets</li> <li>Mitigate potential damage from coastal erosion and flooding accommodating the hazard</li> <li>Improve recovery to create more resilient villages</li> <li>Improve preparedness and readiness response to natural disasters</li> <li>Safer villages, houses and roads</li> </ul>	<ul> <li>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

F				
Drainage systems	Upgrade drainage and	Improves climate	Use existing information	CIM Strategy
require maintenance and	culverts in accordance with <i>Vulnerability</i>	resilience of infrastructure	for guidance but not limited to:	2015
upgrade in high risk	5		<i>"Vulnerability</i>	TSP2014-2019
areas of main South	Road Network	response and recovery	Assessment of the Samoa	Goal 2 KO 1
Coast Road	recommendations	to natural hazards and	Road Network (2017)";	
especially at		disasters	"Review of National Road	Community
junctions of Access	Implement national		Standards in Samoa	Sector Plan
Rd	standards for culverts	Minimises national	(2016)"; "Samoa Code of	
	and drains to facilitate	disaster recovery	Environmental Practice	
	the overland flow of	expenditure on	(2007)"	
	storm water and reduce flooding	damaged properties, public and private	(2007)	
	noounig	assets	Undertake a Cost Benefit	
	Implement regular	435013	Analysis to weigh	
	drainage inspection and		options for funding	
	maintenance		Incorporate	
			environmental and	
	Responsibility: LTA		social safeguards	
	/MWTI/MWCSD /Village/ Families		concerns in the design	
	/ vinuge/ runnines		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	
			ucorgrio	
			Develop and register	
			District/Village bylaws	
			to include maintenance	
			of drainages and illegal	
			rubbish dumping into	
Reticulated water	Extend the water	Increase adaptation	waterways Develop/Update and	CIM Strategy 2015
supply, quality and	supply to families	during drought periods		Sin Strategy 2013
network to be	inland with no access	5 . 6 . F . 60.	bylaws to include	Water and
improved	to water	Improve	regulating developments	
	<b>.</b> .	infrastructure	around catchment areas	Plan
	Procure rainwater	resilience and rate of	and boreholes	SWA 10 Year
	harvesting rainwater harvesting systems for	recovery	Implement SWA (2016)	Investment
	vulnerable families as a	Improve health and	10year investment plan	Plan(2016)
	short term solution	sanitation	to improve water supply	ζ <i>γ</i>
			network to support all	Community
	District and villages to	Reduce	inland families without	Engagement
	support SWA water	contamination of	access to drinking water	Plan
	rationing programs	water supply		
	during times of	Doduco immost form	Include in budget	
	drought	Reduce impact from inland flooding	programming design, and extension costs of water	
	District to support	manu noounig	supply and procurement	
	SWA efforts at		of rainwater harvesting	

	exploratory boreholes		systems	
	in district		Utilize Hazard Maps and	
	Responsibility: SWA		Geomorphologist findings	
	/MNRE/ District		to inform location and	
	/Villages/ CSSP		design	
			Heiling Cost of New york and he	
			Utilize Sui o Nu'u monthly meetings to monitor	
			progress of village	
			programs and	
			responsibilities	
Electricity supply	Provide underground	Maintain electricity	Monitor distribution	EPC Strategic
	lines in the long term Install and connect	supply at all times including natural	networks to avoid overloading poles and	Plan
	power supply for inland	disasters	contributing to line	
	residents		failures	
		Avoid accidents from		
	Relocate over headlines to a more resilient	fallen electricity posts		
	location 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 and			
	developments near			
	electricity posts			
	Responsibility:EPC/ MWTI/ Village/			
	Families			
Natural Resources	Best Solutions	Benefits		Relevant Sector
and Environment				Plans, National
				Strategies & Policies
District/ Village	Formally declare Salega	Protects and enhance	Develop an integrated	Forestry for
Upland Forest	Upland Forest a Key	local species diversity	land management plan	Sustainable
deforestation	Biodiversity Area (KBA)	Sustains ecosystem	with the aim of reducing any unnecessary actions	Development Policy
	Enforce Watershed	sustains ecosystem services and functions	that may adversely affect	5
	Management Riparian	services and functions	the natural habitats and	NESP 2018 - 2022
	Zone and Riverbank	Reduce contamination	ecosystems of the area	
	Encroachment Control	of water supply	_	
	and regulate	Deduce immerst former	Develop a Forestry	
	developments around the upland forest area	Reduce impact from inland flooding	Conservation Programme/	
	the uplant forest allea		Implementation Plan for	
	Conduct campaign for		Fa'asaleleaga 4 District	
	public awareness and			
	establish a		Develop and register	
	"neighbourhood watch"		District/Village bylaws	

	agreement with district to monitor and report on illegal deforestation village councils to help		to include penalizing illegal deforestation in district lands Utilise Sui o Nu'u	
	promote the development of the agroforestry sector by encouraging relevant land use practice and		monthly meetings to monitor progress of district/village forestry programmes	
	where possible resolve any associated land disputes			
	Government, district and villages to monitor, report and apply penalty on offenders			
	Responsibility: MNRE / District/Village/CSSP			
Village pool located in high risk hazard zones (coastal erosion and flooding	Village pool is currently in a poor location with an assessment needed for options to either	Increase adaptation during drought periods	Utilise Hazard Maps and Geomorphologist findings for planning purposes	CIM Strategy 2015 Water and Sanitation Sector
from fluvial inundation, wave	rejuvenate or find a new site depending on the	Improve health and sanitation	MNRE Water & Sanitation to conduct	Plan
impacts and storm surges)	location of springs Test the quality of the	Reduce contamination of water supply	water testing and analysis of village pool prior to any	Community Engagement Plan
	water source before any further investment on the	of water supply	intervention	
	pool is undertaken (eg: fence/repair works)		Update Village bylaws to include managing and maintaining village	
	Responsibility: CSSP/ NGOs/MNRE/Villages		natural resources	
Livelihood and	Best Solutions	Benefits		Relevant Sector
Food Security			implementation	Plans, National Strategies & Policies
Food security: threatened by changes in climate	Promote and facilitate planting of root crops(i.e yams, sweet	Maintains natural ecosystem	MAF to provide trainings, awareness raising and support in	AgricultureSector Plan2016-2021
and inadequate soil for planting	potato)which are more resilient to cyclones, droughts and floods	Builds resilience of community livelihood and food security	supply of nursery trees, technology and infrastructure	Community Engagement Plan
	Promote agro-forestry and mixed planting including fruit trees	Improve preparedness and readiness response to natural	MAF to provide trainings and awareness on crop diversification to	
	species to reduce crop vulnerability to pests and diseases	disasters	suit the prolonged impacts of climate change such as drought or rainy seasons	Restoration Operational Plan 2016-2020
	Implement the Integrated Pest Management		MAF to assist in establishment of pilot	

	Programme		sites to trial climate	
			ready plant varieties	
	Implement Sustainable			
	Land Management		Develop an integrated	
	(SLM) practices		land management plan	
	(ohit) praedees		with the aim of reducing	
	Conduct pilot site trials		any unnecessary actions	
	for climate ready plant		that may adversely affect	
	varieties		the natural habitats and	
	varieties		ecosystems of the area	
			ecosystems of the area	
	Responsibility: MAF/			
	MNRE/villages/CSSP			
Pest management;	Implement an	Maintains natural	Develop an integrated	Agriculture Sector
invasive species	eradication programme	ecosystem	land management plan	Plan 2016-2021
	to eradicate, contain or		with the aim of reducing	
	exclude invasive	Builds resilience of	any unnecessary actions	Draft NESP 2018
	species	community livelihood	that may adversely affect	2022
		and food security	the natural habitats and	
	Replant with climate	and food security	ecosystems of the area	Samoa's National
		Reduce forest loss and	ceosystems of the area	
	resilient native species		MAE to main and	Invasive Species
		land clearance	MAF to raise awareness	Action Plan
	Implement an inventory		of farmers on impacts to	(NISAP)
	of invasive species and		water flows from poor	
	include information on		livestock management	
	their past, present and			
	potential future		MAF to assist in	
	distribution, as well as		establishment of pilot	
	impacts and possible		sites to trial climate ready	
	actions that can be taken		plant varieties	
			r · · · · · · · · · · · ·	
	Conduct education and		MNRE Forestry, DEC and	
	awareness programmes		MAF to collaborate on	
	on the impacts of		supply of climate	
	invasive species		resilient crops	
	Implement the		MNRE, MAF and SROS to	
	Integrated Pest		implement aggressive,	
	Management		nationwide invasive	
	Programme		species eradication	
			programme based on	
	Implement Sustainable		inventory of invasive	
	Land Management		species and conduct	
	(SLM) practices		campaign on public	
	() F_ access		awareness accordingly	
	Build the capacity of		and chebb accordingly	
	farmers to manage stray		Village to manage	
	0			
	animals (pigs, cattle)		pig/cattle population	
	that are contaminating		(compounds, in	
	water sources		particular around water	
			supplies)	
	Conduct pilot site trials			
	for climate ready plant		Training for farmers on	
	varieties		pests management	
			particularly affecting	
	District to fence		fruit trees and crops	
	domestic animals		<b>r</b> -	
			l	

ViAccess to fishinggroundslagacgr	Responsibility: Yillages /District/ MNRE/MAF/SROS mprove conditions for shers to use the agoon and increase ccess to fishing rounds	Increase adaptation during drought periods Improve health	MNRE DEC to provide technical advice on management of reef opening to enable village	NESP 2018 - 2022
grounds fis lag ac gr	shers to use the agoon and increase ccess to fishing rounds	during drought periods	technical advice on management of reef opening to enable village	
dy po otl fis <b><i>Re</i></b>	illage ban on use of ynamites, herbal oisons (avaniukini) and ther unsustainable shing methods Cesponsibility: MNRE/ Yillage		access to fishing grounds	
	est Solutions	Benefits	with the implementation	Relevant Sector Plans, National Strategies & Policies
governance of by natural resources and land use re through Bylaws cc im dr ru m ar de ca ne Fa av pr vi	Jpdate and/or develop oylaws to manage the use of natural resources, and to control land use mpacts; such as drainage maintenance, rubbish dumping, sand nining, stray animals and unregulated levelopments in water ratchment areas and near boreholes. Collaborate with Sui o Nuu to monitor the use of and impact on natural resources Facilitate continuous wareness raising programs with the rillages	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

Non-CR issues raised during consultations	Proposed Solution	Comments
Cattle farms Responsibility: Village	Acquire cattle for village	Not a CR issue. Village to seek assistance from other funding sources geared towards community agricultural projects



COORDINATE SYSTEM GCS WGS 1984 DATUN WGS 1984 UNITS DEOREE

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

# 8. Sagone Village Interventions

Infrastructure	Best Solutions	Benefits		Relevant Sector Plans, National
			implementation	Strategies & Policies
Village houses, school, churches, government and other village assets in high risk hazard zones	Relocate outside of high risk hazard zones when building/infrastructure requires replacement Investments within the hazard zones to adopt appropriate mitigation measures 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 Families and village to limit building and developing on natural overland flow paths exacerbating inland flooding and storm water surges Where reclamations/rock and sandmining are proposed, Government and district to manage processes by requiring villagers to get the appropriate permits and consent	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	MNRE to develop zonation strategy for safe areas Utilise hazard maps and Geomorphologist	Policies National Building Code CIM Strategy 2015
	Responsibility: Village / Families /MWTI/ MNRE			

	I			
Drainage systems require maintenance and upgrade in high risk areas especially where the main South Coast Road meets new Sagone Access Road	Upgrade drainage and culverts 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 Responsibility: LTA /MWTI/MWCSD /Village/Families Upgrade cross culvert road crossing Upgrade causeway to facilitate free flow of river into sea Conduct feasibility study to assess potential impact on area around Sagone Primary School and neighbouring houses	Improves climate resilience of infrastructure response and recovery to natural hazards and disasters Minimises national disaster recovery expenditure on damaged properties, public and private assets Jubic and private assets Improve infrastructure resilience and rate of recovery Reduce impact from inland flooding Safer villages, houses and roads	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 and register District/Village bylaws to include maintenance of drainages and illegal rubbish dumping into waterways Utilise DRM maps and Geomorphologist Infrastructure Database to inform location and design	CIM Strategy 2019 Goal 2 KO 1 Community Sector Plan

	Responsibility: Village/ MNRE/LTA			
Natural Resources and Environment	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant Sector Plans, National Strategies & Policies
Village Upland Forest deforestation	Formally declare Sagone Upland Forest a Key Protected Area (KBA) Enforce Watershed Management Riparian Zone and Riverbank Encroachment Control and regulate developments around the upland forest area Conduct campaign for public awareness and establish a "neighbourhood watch" agreement with district to monitor and report on illegal deforestation village councils to help promote the development of the agroforestry sector by encouraging relevant land use practice and where possible resolve any associated land disputes Government, district and villages to monitor, report and apply penalty on offenders <b>Responsibility: MNRE /</b> <b>District/Village/CSSP</b>	Protects and enhance local species diversity Sustains ecosystem services and functions Reduce contamination of water supply Reduce impact from inland flooding	Develop an integrated land management plan with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area Develop and register District/Village bylaws to include penalizing illegal deforestation in district lands Utilise Sui o Nu'u monthly meetings to monitor progress of district/village forestry programmes	Forestry for Sustainable Development Policy NESP 2018 - 2022
Livelihood and Food Security	Best Solutions	Benefits	Guideline to assist with the	Relevant Sector Plans, National
			implementation	Strategies & Policies
Coconut farm	Replant area near coast with coconuts as alternative source of food and as income generating activity Responsibility: Village/ MAF/MNRE	Improve preparedness and readiness response to natural disasters Alternative source of income for village	Village to consult landowners about dedicating areas for coconut farm MNRE Forestry, DEC and MAF to collaborate on supply of climate resilient crops	AgricultureSectorP lan2016-2021 NESP 2018 - 2022 Salega District
			MAF to provide	

				]
			trainings, awareness	
			raising and support	
			in supply of nursery trees, technology and	
			infrastructure to	
			have a sustainable	
			mechanism for	
			replanting	
			, obranning	
			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	
			varieties	
			MAF to provide	
			technical advice,	
			seedlings and planting	
			material for village	
Pest management;	Implement an	Maintains natural	and families as a trial Develop an	Agriculture Sector
invasive species	eradication programme	ecosystem	integrated land	Plan 2016-2021
invasive species	to eradicate, contain or	ceosystem	management plan	1 1011 2010 2021
	exclude invasive species	Builds resilience of	with the aim of	Draft NESP 2018 -
	-	community	reducing any	2022
	Replant with climate	livelihood and food	unnecessary actions	
	resilient native species	security	that may adversely	Samoa's National
			affect the natural	Invasive Species
	Implement an inventory of	Reduce forest loss	habitats and	Action Plan
	invasive species and include information on	and land clearance	ecosystems of the	(NISAP)
	their past, present and		area	
	potential future		MAF to raise	
	distribution, as well as		awareness of farmers	
	impacts and possible		on impacts to water	
	actions that can be taken		flows from poor	
			livestock management	
	Conduct education and		MARY	
	awareness programmes on		MAF to assist in	
	the impacts of invasive species		establishment of pilot sites to trial climate	
	species		ready plant varieties	
	Implement the Integrated		i suaj plane varieties	
	Pest Management		MNRE Forestry, DEC	
	Programme		and MAF to	
1			collaborate on supply	
	Implement Sustainable		of climate resilient	
	Implement Sustainable Land Management (SLM) practices		of climate resilient crops	

Governance	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 Responsibility: Villages /District/MNRE/MAF/SROS Best Solutions	Benefits	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: MWCSD</i> /Village	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation, Strategies, Plans and Policies Improve ability of communities to adapt, respond and recover quickly in the long term Improve accountability and enabling environment of communities	Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood and food security especially activities affecting water catchment areas and coastline 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

Sagone Village Map





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

# 9. Fai'a'ai Village Interventions

Infrastructure	Best Solutions	Benefits	with the implementation	Relevant Sector Plans, National Strategies & Policies
Village houses,	Relocate outside of	Minimise	MNRE to develop	National Building
school, churches,	high risk hazard	expenditure on	zonation strategy for	Code
government and	zones when	damaged	safe areas	
other village assets	building/infrastruct		TT. 11 1 1	CIM Strategy
in high risk hazard zones	ure requires replacement	personal assets	Utilise hazard maps and Geomorphologist	2015
		Mitigate potential	Drainage	
	Investments within	damage from	Infrastructure	
	the hazard zones to	coastal erosion	Database to inform	
	adopt appropriate	and flooding	designs	
	mitigation measures	accommodating the hazard	Enforcement of	
	lifeasures	the hazara	National Building	
	Conduct awareness	Improve recovery	Code 2017	
	raising campaign	to create more		
	on flood resilient	resilient villages	Encourage insurance	
	building practices	0	of significant	
	and designs for at	Improve	investments and assets	
	risk communities	preparedness and	within hazard zones	
	living in and near	readiness		
	high risk hazard	response to	Designation of the	
	zones	natural disasters	IFHZ, CEHZ and	
	Design	Safer villages,	CFHZ as an "at risk" zone with appropriate	
	infrastructure to	houses and roads	landuse planning	
	take into account	nouses and rouds	controls and	
	the immediate		restrictions	
	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			
	Families and village			
	to limit building			
	and developing on			
	natural overland flow paths			
	exacerbating inland			
	flooding and storm			

Where reclam and sa activiti propos Gover distric proces requiri get the permitDrainage systems require maintenance and upgrade in high risk areas of main North Coast RoadWhere reclam Willag Vulner Assess	mations/rock sandmining ities are			
reclam and sa activiti propos Gover distric proces requir get the permit <i>Respo</i> <i>Villag</i> <i>/MWT</i> Drainage systems require maintenance and upgrade in high risk areas of main North Coast Road	mations/rock sandmining ities are osed, ernment and ict to manage esses by iring villagers to ne appropriate hits and consent <b>consibility:</b> age / Families /TI/ MNRE			
Drainage systemsUpgrarequireand cumaintenance andaccordupgrade in highVulnerrisk areas of mainAssessNorth Coast RoadSamoa				
junctions of Access Rd Imple standa culver to faci overla storm reduce Imple draina and m <i>Respo</i> //MWT	culverts in rdance with erability ssment of the ba Road Network mmendations ement national dards for erts and drains cilitate the land flow of n water and ce flooding ement regular hage inspection maintenance tonsibility: LTA /TI/MWCSD age/ Families	Improves climate resilience of infrastructure resilience and rate of response and recovery to natural hazards and disasters 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	CIM Strategy 2015 TSP2014-2019 Goal 2 KO 1 Community Sector Plan

			bylaws to include	
			maintenance of	
			drainages and illegal	
			rubbish dumping into	
	1/	T .11	waterways	
Evacuation Shelter	Assess and/or	Improve resilience	Enforcement of	National
and a connected	select location for	of public	National Building	Disaster
escape route needed	•	infrastructure	Code 2017	Management
for emergency preparedness and	new evacuation shelter, including	T	Utilize bazard mana	Plan2017-2021
response	safe access routes to	Improve	Utilise hazard maps and Geomorphologist	National
response	the shelter	preparedness and readiness	findings to inform	Building Code
	the sheller	response to	location and designs	
	Conduct evacuation shelter assessment and mark on CIM Plan hazard maps	natural disasters	ioculion and designs	National Policy for People with Disabilities
	i lan nazaru maps			
	Develop a Village Climate Disaster Management Plan(VCDMP)			
	Conduct trainings			
	for People With			
	Disabilities (PWDs)			
	on emergency and			
	disaster response			
	strategies			
	Implement CDCRM program			
	Install relevant signs			
	to guide the			
	community on			
	emergency response			
	procedures and to			
	locations of evacuation shelters			
	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			
	l			

	Responsibility: MNRE /DMO/ MWTI/Village /CSSP/Council of Churches/MWCSD	_		
Access path to village pool and beach (cliff side)	Conduct EIA to assess feasibility of upgrading coastal access and implement recommendations Where reclamations, sand mining, extraction or other major coastal works are proposed, Government and village to manage processes by requiring villagers to get the appropriate permits and consent <i>Responsibility:</i> <i>Village MNRE</i>	Improve preparedness and readiness response to natural disasters	Utilise DRM maps and Geomorphologist Infrastructure Database to inform location and design	Community Sector Plan
Reticulated water supply, quality and network to be improved	Extend the water supply to families inland with no access to water Procure rainwater harvesting 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 <i>Responsibility:</i> <i>SWA /MNRE/</i> <i>District /Villages/</i>	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 Implement SWA (2016) 10year investment plan to improve water supply network to support all inland families without access to drinking water Include in budget programming design, and extension costs of water supply and procurement of rainwater harvesting systems Utilize Hazard Maps and Geomorphologist	2015 Water and Sanitation

			location and design	
Natural Resources and Environment	Best Solutions	Benefits	with the implementation	Relevant Sector Plans, National Strategies & Policies
	Identify alternative sustainable sources of sand/rocks for domestic use Research the impacts of sand mining Village consultation on sand mining policy and regulation Village and government to collaborate closely on designated areas for sand/rock mining Raise awareness and support of sustainable land use practices Responsibility: MNRE/ Village/Families	Mitigate potential damage from coastal erosion and flooding accommodating the hazard Safer villages, houses and roads Reduce impact from coastal erosion Economic benefit for village from sustainable sandmining activities	MNRE to continue to identify specific sites for inshore/inland sustainable sand/rock mining to meet demand without compromising riverbanks Undertake assessments of identified sites Undertake consultation with villages affected by proposed sand/rock mining Develop and register District bylaws to include managing and monitoring domestic sand/rock mining of rivers	Draft Soil Resource Management Bill
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)	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 Update Village bylaws to include managing and maintaining village natural resources	CIM Strategy 2015 Water and Sanitation Sector Plan Community Engagement Plan

	Responsibility: CSSP/NGOs/MNRE/ Villages			
Livelihood and Food Security	Best Solutions	Benefits	with the implementation	Relevant Sector Plans, National Strategies & Policies
Food security: threatened by changes in climate and inadequate soil for planting	Promote and facilitate planting of root crops(i.e yams, sweet potato)which are more resilient to cyclones, droughts and floods Promote agro- forestry and mixed planting including fruit trees species to reduce crop vulnerability to pests and diseases Implement the Integrated Pest Management Programme Implement Sustainable Land Management (SLM) practices Conduct pilot site trials for climate ready plant varieties <b>Responsibility:</b> MAF/ MNRE/villages/CSS P	Maintains natural ecosystem Builds resilience of community livelihood and food security Improve preparedness and readiness response to natural disasters	MAF to provide trainings, awareness raising and support in supply of nursery trees, technology and infrastructure MAF to provide trainings and awareness on crop diversification to suit the prolonged impacts of climate change such as drought or rainy seasons MAF to assist in establishment of pilot sites to trial climate ready plant varieties Develop an integrated land management plan with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area	
Governance	Best Solutions	Benefits	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,	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts,	Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood and food security especially	Village Fono Act (Amendment Bill 2016) Community Sector Plan
	rubbish dumping,	Regulation,	activities affecting	Community

sand mining, stray	Strategies, Plans	water catchment	Development
animals and	and Policies	areas and coastline	Plan 2016-2021
unregulated			
developments in	Improve ability of	Utilise Sui o Nu'u	
water catchment	communities to	monthly meetings to	
areas and near	adapt, respond	monitor progress of	
boreholes.	and recover	district/village bylaws	
	quickly in the		
Collaborate with	long term		
Sui o Nuu to			
monitor the use of	Improve		
and impact on	accountability		
natural resources	and enabling		
	environment of		
Facilitate continuous	communities		
awareness raising			
programs with the			
villages			
Responsibility:			
MWCSD /Village			



#### Fai'a'ai Village Map



COORDINATE SYSTEM GCS WGS 1984 DATUM WGS 1984 UNITE 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

# 10. Vaipu'a Village Interventions

Infrastructure	Best Solutions	Benefits		Relevant Sector Plans, National
			implementation	Strategies & Policies
Village houses, school,	Relocate outside of	Minimise	MNRE to develop	National Building
churches, government	high risk hazard	expenditure on	zonation strategy for	Code
and other village	zones when	damaged	safe areas	
assets in high risk	building/infrastructu	properties &		CIM Strategy 2015
hazard zones	re requires	personal assets	Utilise hazard maps	
	replacement		and Geomorphologist	
		Mitigate potential	Drainage	
	Investmentswithinth	damage from	Infrastructure	
	ehazardzones to	coastal erosion	Database to inform	
	adoptappropriatemiti	and flooding	designs	
	gationmeasures	accommodating the hazard	Enforcement of	
	Conduct awareness	ule llazal u	National Building	
	raising campaign on	Improve recovery	-	
	flood resilient	to create more	600C 2017	
	building practices	resilient villages	Encourage insurance	
	and designs for at	i comone ( mageo	of significant	
	risk communities	Improve	investments and assets	3
	living in and near	preparedness and		
	high risk hazard	readiness		
	zones	response to	Designation of the	
		natural disasters	IFHZ, CEHZ and CFHZ	
	Design infrastructure		as an "at risk" zone	
	to take into account	Safer villages,	with appropriate	
	the immediate	houses and roads	landuse planning	
	hazard zones		controls and	
	Develop londuce		restrictions	
	Develop landuse planning and			
	development controls			
	to restrict			
	developments within			
	high risk hazard zones			
	-			
	Families and village			
	to limit building and developing on natural			
	overland flow paths			
	exacerbating inland			
	flooding and storm			
	water surges			
	Where reclamations			
	are proposed,			
	Government and			
	district to manage			
	processes by requiring			
	villagers to get the			
	appropriate permits			

	and consent <i>Responsibility:</i> <i>Village / Families</i> <i>(MWTL ( MNPE</i> )			
Reticulated water supply, quality and network to be improved	/MWTI/ MNRE Extend the water supply to families inland with no access to water Procure rainwater harvesting 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 Responsibility: SWA /MNRE/ District /Villages/ CSSP	Increase adaptation during drought periods Improve infrastructure resilience and rate of recovery Improve health and sanitation Reduce contamination of water supply Reduce impact from inland flooding	Develop/Update and register District/Village bylaws to include regulating developments around catchment areas and boreholes Implement SWA (2016) 10year investment plan to improve water supply network to support all inland families without access to drinking water Include in budget programming design, and extension costs of water supply and procurement of rainwater harvesting systems Utilize Hazard Maps and Geomorphologist findings to inform location and design Utilize Sui o Nu'u monthly meetings to monitor progress of village programs and responsibilities	CIM Strategy 2015 Water and Sanitation Sector Plan SWA 10 Year Investment Plan(2016) Community Engagement Plan
Evacuation Shelter and a connected escape route needed for emergency preparedness and response	Assess and/or select location for either an existing or new evacuation shelter, including safe access routes to the shelter Develop a Village Climate Disaster Management Plan(VCDMP) Conduct trainings for People With Disabilities (PWDs) on emergency and disaster response strategies	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 Disaster Management Plan2017-2021 National Building Code National Policy for People with Disabilities

Natural Resources and Environment Sand/rock extraction (domestic): coastline, rivers and riverbanks	Implement CDCRM programInstall relevant signs to guide the community on emergency response procedures and to locations of evacuation sheltersWhere no suitable houses exist, build emergency shelter(s) outside the hazard zonesRetrofit identified and approved 	from coastal erosion and flooding accommodating the hazard Safer villages, houses and roads Reduce impact from coastal erosion Economic	with the implementation 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	Relevant Sector Plans, National Strategies & Policies Village Fono Act (Amendment Bill 2016) Draft Soil Resource Management Bill
	government to collaborate closely on designated areas for sand/rock mining	erosion Economic benefit for village from	consultation with	
	Raise awareness and support of sustainable land use practices Responsibility: MNRE/ Village/Families	sustainable sandmining activities	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	
Livelihood and Food	Best Solutions	Benefits		Relevant Sector
Security	Dest solutions	Denents		Plans, National
Security				-
Food conveiter	Promote and		<b>implementation</b> MAF to provide	Strategies & Policies AgricultureSectorPl
Food security:		Maintains		an2016-2021
threatened by changes	facilitate planting of	natural	trainings, awareness	an2016-2021
in climate and	root crops(i.e yams,	ecosystem	raising and support in	2
inadequate soil for	sweet potato)which	5	supply of nursery	Community
planting	are more resilient to	Builds resilience	trees, technology and	Engagement Plan
	cyclones, droughts	of community	infrastructure	
	and floods	livelihood and		Two Million Tree
		food security	MAF to provide	Strategy 2015-2020
	Promote agro-	ioou becurity	trainings and	
	forestry and mixed	Improve	awareness on crop	Restoration
	planting including	preparedness	diversification to suit	Operational Plan
	fruit trees species to	and readiness	the prolonged impacts	2016-2020
	reduce crop	response to	of climate change such	
	vulnerability to pests	natural disasters	as drought or rainy	
	and diseases	liaturai uisasters	seasons	
	Implement the		MAF to assist in	
	Integrated Pest		establishment of pilot	
	Management		sites to trial climate	
	Programme		ready plant varieties	
	Tiogramme		ready plant varieties	
	Implement		Develop an integrated	
	Sustainable Land		land management plan	
			with the aim of	
	Management (SLM)		reducing any	
	practices		unnecessary actions	
	Conduct pilot site		that may adversely affect the natural	
	trials for climate			
	ready plant varieties		habitats and	
			ecosystems of the area	
	Responsibility: MAF/			
	MNRE/villages/CSSP			
Pest management;	Implement an	Maintains	Develop an integrated	Agriculture Sector
invasive species	eradication	natural	land management plan	Plan 2016-2021
	programme to	ecosystem	with the aim of	
	eradicate, contain or		reducing any	Draft NESP 2018 -
	exclude invasive	Builds	unnecessary actions	2022
	species	resilience of	that may adversely	
	_	community	affect the natural	Samoa's National
	Replant with climate	livelihood and	habitats and	Invasive Species
	resilient native	food security	ecosystems of the area	Action Plan (NISAP)
	species	5	5	
	1	Reduce forest	MAF to raise awareness	
	Implement an	loss and land	of farmers on impacts	
	inventory of invasive	clearance	to water flows from	
	species and include		poor livestock	
	information on their		•	
			management	
	past, present and		MAE to conict in	
	potential future		MAF to assist in	
	distribution, as well as		establishment of pilot	
	impacts and possible		sites to trial climate	
	actions that can be		ready plant varieties	

			,	
	taken			
			MNRE Forestry, DEC	
	Conduct education and		and MAF to	
	awareness		collaborate on supply	
	programmes on the		of climate resilient	
	impacts of invasive		crops	
	species			
	- <b>F</b>		MNRE, MAF and SROS	
	Implement the		to implement	
	Integrated Pest		aggressive, nationwide	
	Management		invasive species	
	Programme		eradication	
	3		programme based on	
	Implement		inventory of invasive	
	Sustainable Land		species and conduct	
	Management (SLM)		campaign on public	
	practices		awareness accordingly	
	1			
	Build the capacity of		Village to manage	
	farmers to manage		pig/cattle population	
	stray animals (pigs,		(compounds, in	
	cattle) that are		particular around	
	contaminating water		water supplies)	
	sources			
			Training for farmers	
	Conduct pilot site		on pests management	
	trials for climate		particularly affecting	
	ready plant varieties		fruit trees and crops	
	District to fence			
	domestic animals			
	Deenersthiliter			
	Responsibility:			
	Villages /District/ MNRE/MAF/ SROS			
Governance	Best Solutions	Benefits	Guideline to assist	Relevant Sector
Governance	Dest bolutions	Denents		Plans, National
				Strategies & Policies
Strengthen the	Update and/or	Strengthen	Develop and register	Village Fono Act
governance of	develop bylaws to	implementation	district/village bylaw	(Amendment Bill
natural resources and		of all national	to protect all district/	2016)
land use through	natural resources,	sector plans	village and	
Bylaws	and to control land	•	government assets,	Community
-	use impacts; such as	Strengthen	environment,	Sector Plan
	drainage	monitoring of all	livelihood and food	
	maintenance, rubbish	National Acts,	security especially	Community
	dumping, sand	Regulation,	activities affecting	Development Plan
	mining, stray animals	Strategies, Plans	water catchment areas	2016-2021
	and unregulated	and Policies	and coastline	
	developments in			
	water catchment	Improve ability	Utilise Sui o Nu'u	
	areas and near	of communities	monthly meetings to	
	boreholes.	to adapt,	monitor progress of	
		respond and	district/village bylaws	
	Collaborate with Sui	recover quickly		
	o Nuu to monitor the	in the long term		
	use of and impact on			
1	natural resources	Improve	1	
		accountability	4	

	and enabling environment of
8	communities
Responsibility: MWCSD /Village	

#### Vaipua 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

## 11. Fogasavaii Village Interventions

Infrastructure	Best Solutions	Benefits		Relevant Sector Plans,
			with the implementation	National Strategies & Policies
Village houses, school, churches, government and other village assets in high risk hazard zones	Relocate outside of high risk hazard zones when building/infrastructur re requires replacement Investments within the hazard zones to adopt appropriate mitigation measures Conduct awarenesss 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 Develop landuse planning and development controls to restrict developments within high risk hazard zones Families and village to limit building and developing on natural overland flow paths exacerbating inland flooding and storm water surges Where reclamations are proposed, Government and district to manage processes by requiring villagers to get the appropriate permits and consent	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 preparednesss and readiness response to natural disasters Safer villages, houses and roads	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

•	-			
	Responsibility: Village / Families /MWTI/ MNRE			
Drainage systems require maintenance and upgrade in high risk areas of main South Coast Road especially at junctions of Access Rd	Upgrade drainage and culverts in accordance with Vulnerability Assessment of the Samoa Road Network recommendations	resilience of infrastructure resilience and rate of response and recovery to natural hazards and disasters Minimises national	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 and register District/Village bylaws to include maintenance of drainages and illegal rubbish dumping into waterways	CIM Strategy 2015 TSP2014-2019 Goal 2 KO 1 Community Sector Plan
Evacuation Shelter and a connected escape route needed for emergency preparedness and response	Assess and/or select location for either an existing or new evacuation shelter, including safe access routes to the shelter Develop a Village Climate Disaster	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 Disaster Management Plan2017-2021 National Building Code National Policy for People with Disabilities

	Plan(VCDMP)			
	Conduct trainings for People With Disabilities (PWDs) on emergency and disaster response strategies			
	Implement CDCRM program			
	Install relevant signs to guide the community on emergency response procedures and to locations of evacuation shelters			
	Where no suitable houses exist, build emergency shelter(s) outside the hazard zones			
	Retrofit identified and approved schools or churches outside hazard zones and designate as evacuation shelter			
	Responsibility: MNRE /DMO/ MWTI/Village /CSSP/Council of Churches/MWCSD			
Reticulated water supply, quality	Extend the water supply to families	Increase adaptation during drought periods	Develop/Update and register District/Village	CIM Strategy 2015
and network to be	inland with no	- and an ought periods	bylaws to include	Water and
improved	access to water	Improve infrastructure	regulating	Sanitation Sector Plan
	Procure rainwater	resilience and rate of	developments around catchment areas and	r idli
	harvesting rainwater	recovery	boreholes	SWA 10 Year
	harvesting systems for vulnerable	Improve boolth and	Implement SWA (2010)	Investment Plan(2016)
	families as a short	Improve health and sanitation	Implement SWA (2016) 10year investment plan	
	term solution		to improve water	Community
	District and villages	Reduce contamination of	supply network to support all inland	Engagement Plan
	to support SWA	water supply	families without access	
	water rationing		to drinking water	
	programs during times of drought	Reduce impact from inland flooding	Include in budget	
	times of allought	manu noounig	programming design,	
	District to support		and extension costs of	
	SWA efforts at exploratory		water supply and procurement of	
	boreholes in district		rainwater harvesting	

Coastal access path to village pool and beach (cliff side)	Responsibility: SWA /MNRE/ District /Villages/ CSSP Conduct EIA to assess feasibility of upgrading coastal access and implement recommendations Where sandmining/ rock extraction and/or reclamations are proposed, Government	Improve preparedness and readiness response to natural disasters	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 and responsibilities Utilise DRM maps and Geomorphologist Infrastructure Database to identify specific location and condition of current drainage/ infrastructure requiring maintenance and upgrade works	Community Sector Plan NESP 2018 - 2022
Natural Resources and Environment	and district to manage processes by requiring villagers to get the appropriate permits and consent <i>Responsibility:</i> <i>Village MNRE</i>	Benefits		Relevant Sector Plans, National Strategies &
				Policies
	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 <b>Responsibility: MNRE/</b> Village/Families	Mitigate potential damage from coastal erosion and flooding accommodating the hazard Safer villages, houses and roads Reduce impact from coastal erosion Economic benefit for village from sustainable sandmining activities	MNRE to continue to identify specific sites for inshore/inland sustainable sand/rock mining to meet demand without compromising riverbanks Undertake assessments of identified sites Undertake consultation with villages affected by proposed sand/rock mining Develop and register District bylaws to include managing and monitoring domestic sand/rock mining of rivers Utilise Sui o Nu'u monthly meetings to	Village Fono Act (Amendment Bill 2016) Draft Soil Resource Management Bill

			monitor progress of CIM Plan activities	
Livelihood and Food Security	Best Solutions	Benefits	with the	Relevant Sector Plans, National Strategies & Policies
Food security: threatened by changes in climate and inadequate soil for planting	are more resilient to cyclones, droughts and floods Promote agro- forestry and mixed planting including fruit trees species to reduce crop vulnerability to pests and diseases Implement the Integrated Pest Management Programme Implement Sustainable Land Management (SLM) practices Conduct pilot site trials for climate ready plant varieties <b>Responsibility: MAF/</b>	Maintains natural ecosystem Builds resilience of community livelihood and food security Improve preparedness and readiness response to natural disasters	MAF to provide trainings, awareness raising and support in supply of nursery trees, technology and infrastructure MAF to provide trainings and awareness on crop diversification to suit the prolonged impacts of climate change such as drought or rainy seasons MAF to assist in establishment of pilot sites to trial climate ready plant varieties Develop an integrated land management plan with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area	AgricultureSectorPlan 2016-2021
Pest management; invasive species	MNRE/villages/CSSP 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	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	Agriculture Sector Plan 2016-2021 Draft NESP 2018 - 2022 Samoa's National Invasive Species Action Plan (NISAP)

	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 <b>Responsibility:</b> Villages /District/ MNRE/MAF/ SROS		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		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	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	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 bylaws	Policies Village Fono Act (Amendment Bill 2016) Community Sector Plan Community Development Plan 2016-2021

Facilitate continuous awareness raising programs with the villages		
Responsibility: MWCSD /Village		





#### Fogasavaii 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

### Savaii AF Districts Overview Map of Coastal Inundation Zones

