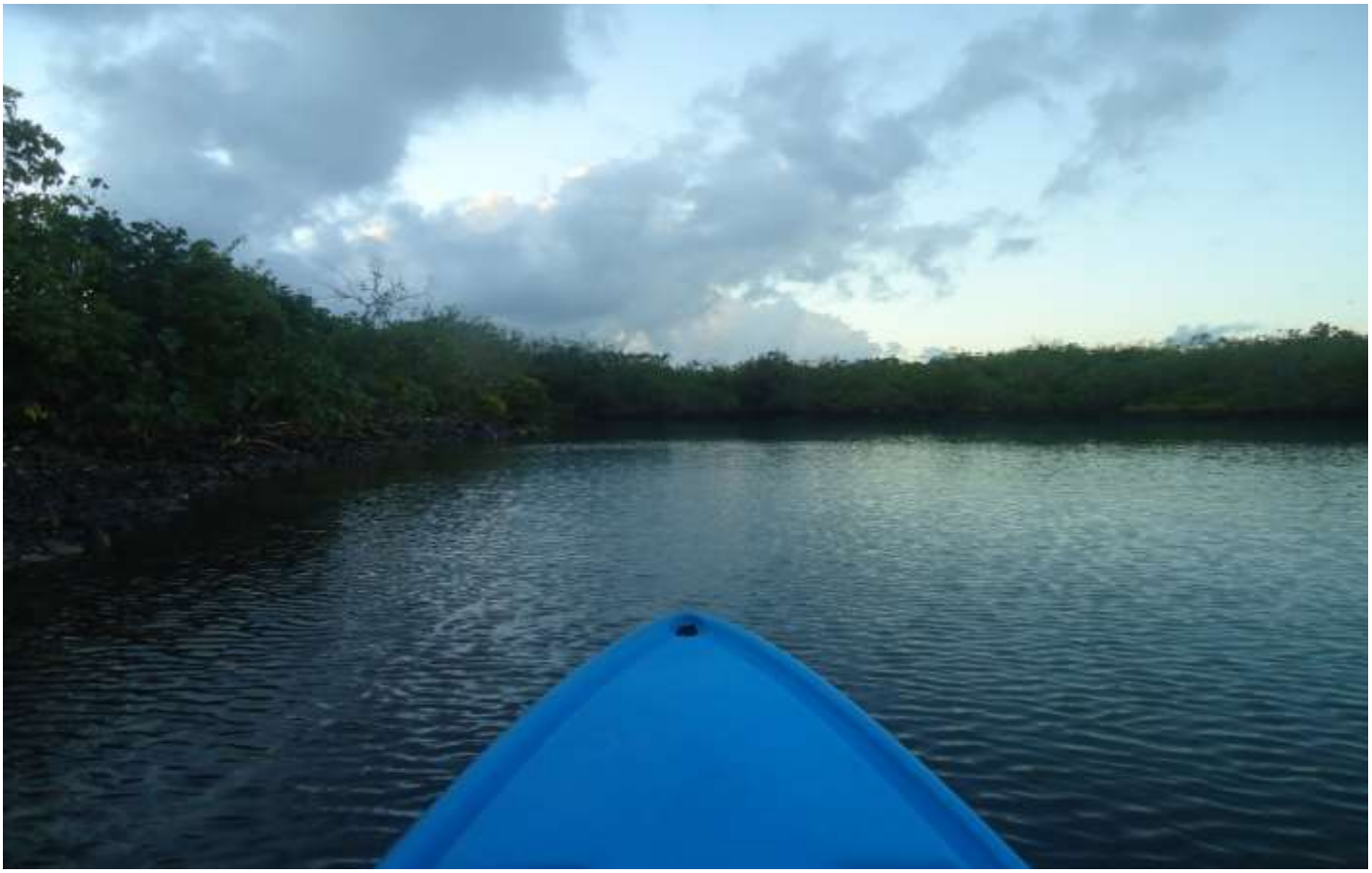
Community Integrated Management Plan

Gagaemauga 2 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 Gagaemauga 2 (Saleaula and Salamumu villages).

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

Date of Signing: 15 June 2018

Representative:	**Signature:**
Saleaula Village	
• Alofipo Viliamu	
• Tauefu Paratiso	
• Vevesi Semau Fepuleai	
Salamumu Village	
• Faasootauloa Tito	
• Levaopolo Opetaia	
• Maatuavao Isaia	
• Mao Matuavao	
• Feagaimalii Pulepule	

The Government of Samoa adopts the Community Integrated Management Plan for the Faipule District of Gagaemauga2as a Management Plan for the Implementation of the Community Integrated Management Strategy (CIMS).

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

Ulu Bismarck Crawley
CHIEF EXECUTIVE OFFICER, MNRE

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Acronyms:

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

Glossary

"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.
Food Security	Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life
Food access:	Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as these to fall 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)
Food availability:	The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid)
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 in security). The concept of stability can therefore refer to both the availability and access dimensions of food security
Utilization:	Utilization of food through adequate diet, clean water, sanitation and healthcare 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
Hazard	A source of potential harm or a situation with a potential to cause loss.
Hazard Zones	Defined areas 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 six hazard zones: *ASCHs*(areas sensitive to coastal hazards); *CEHZs*(coastal erosion hazard zones); *CFHZs*(coastal flood hazard zones)and *CLHZs* (coastal landslip hazard zones) *CIHZ* (coastal inundation hazard zones) - Coastal Inundation 0 to 15mASL – immediate coastal inundation hazard zone - Coastal Inundation 15 to 20mASL – 5-metre uncertainty buffer on the immediate coastal inundation hazard zone (due to potential LiDAR inaccuracies) - Coastal Inundation 20 to 50mASL – additional hazard zone for the purpose of assessing/planning the location of tsunami protection infrastructure beyond the 0-20mAmSL contour. Please note tsunami risk includes 0-20mASL, so tsunami hazard zones need to include the 0-15mASL and 15-20mASL polygons as well as the 20-50mASL polygon - Coastal Inundation 50 to 55mASL – 5-metre uncertainty buffer on the tsunami infrastructure hazard zone (due to potential LiDAR inaccuracies) *IFHZ* (immediate fluvial hazard zone) within the steep banks of the river gorges - River bank encroachment control – 5m buffer on either side of river banks - Watershed management riparian zone – 20m buffer on either side of the river banks
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 Guideline	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. landuse includes areas used for villages or crops, resource use includes activities such as sand mining, gravel extraction or fishing).
Livelihood	Livelihood refers to a person or group's "means of securing the necessities -food, water, shelter and clothing- of life".
Monitoring	Processof measuringtheeffectivenessorimpactsofprojectsandworksagainst 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 for the natural system to be adaptive, responsive and quick to recover from the adverse effects of hazard.
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.

1. Introduction to the CIM Plan

1.1 The Strategic Vision

The District Community Integrated Management (CIM) Plan for Gagaemauga2District 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 improve resilience by identifying actions and solutions considered as best approach to issues identified. Not all the solutions may be actioned immediately but the plan will ensure that issues and options are identified for the long-term improvement in resilience of community livelihoods, infrastructure, and environment and resource systems.

The CIM Plan will:

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

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

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

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

proposals to existing small grant funding mechanisms like CSSP and the UNDP-GEFSGP

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

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

3. Description of Gagaemauga 2 District

3.1 Physical and Natural Resource Setting

The Faipule District of Gagaemauga2 is divided into two parts. It includes the village of Sale'aula (Gagaemauga2: Part A) on the north coast of the island of Savaii (see Map 1) and the village of Salamumu (Gagaemauga2:Part B) on the south coast of the island of Upolu (see Map 2). The historical explanation for this is because of the "volcanic eruptions of Mt. Matavanu (1905-1911) in central Savaii which swept northwards towards the coast and destroyed villages in its path. Saleaula land was covered by lava that reached other villages to the east including Mauga and Samalae'ulu. The colonial German administration of that era acquired land on Upolu and resettled affected villagers at Salamumu and Leauvaa. Today, those villagers are still part of the Gagaemauga electoral district on Savaii despite their relocation"[1]Because of this, the Gagaemauga 2 CIM Plan is divided into two parts (Part A: Saleaula; Part B: Salamumu) and does not include a District Interventions section but presented instead in two Village Interventions; recognizing their individual situations in relation to geographical and environment issues. Descriptions of the environment, resilience assessment, village issues and suggested solutions for each distinct geographical area are included. Although their locations are different, Saleaula and Salamumu share common cultural and social concerns. The Plan as a whole may be applied to the whole of the District emphasising the importance of village development in each of the areas to the District.

The Village of Sale'aula is characterised by a broad plain sloping gently down to the coast from steep volcanic mountains inland. From the tip of Matavanu to the foreshore, the vegetation is basically dominated by tavai (*Rhustaitensis)*, mango, aoa (banyan tree), mati (dryer's fig), laufatu (*MacarangaStipulosa)*except for some small "pockets" of higher plant life. The lava flow at Saleaula and Matavanu are slowly but steadily being transformed into a unique shrub forest containing many "native species" of Samoa. Village development is ribbon-like stretching for about 800 meters along the Main Road. It is situated about an hour's drive from the wharf at Salelologa.

A sand spit peninsula in the Gagaemauga 2 district serve both as protection from cyclone induced wave surges for the Salealula Bay and a barrier to the free flow of (polluted) water in and out of the bay causing increased sedimentation of the bay area (Reti, 2016). It is heavily vegetated with coconut palms and other littoral vegetation. The village of Saleaula wants this area opened up again to enable free flow of water within the bay area. The lagoon varies in width and depth as part of it was dredged to provide fill for the Main Road.

Off the lava coasts, there is an additional 10-15 km2 of rocky shelf, which supports some coral growth (SOE, 2012). The Main Road has been built up along the shore and acts as a barrier to direct water drainage to the lagoon. On both sides of the main road on the eastern side of Saleaula village, new settlements have been established. These are accompanied by land clearing for food crops. This trend appears to be going on unregulated and could see more and more forest lands being lost. Although not directly situated in Gagaemauga 2, the Priority Sites for Conservation in Samoa: KBAs (2010) identifies "all inland parts of all districts on Savaii" as the location of the highest priority for terrestrial conservation investment is the Central Savaii Rainforest KBA, the largest contiguous area of rainforest in tropical Polynesia. Only portions of the lower parts of this KBA benefit from official safeguard status.

The vegetation of the lava fields is unique although some tree species found here are either ancient introductions (e.g. mangoes) or recent introductions (e.g. leucaena). This and the fact that Matavanu is a well known historic site would make the Saleaula lava fields (including Matavanu) an important area worth protecting. Overall, the ecosystem of Gagaemauga 2 has undergone some transformation mainly spurred by the impacts of climate change on coastal populations. The lack of any major rivers limit the impact of upland development on low lying areas, but compounds the drinking water woes of the residents (Reti, 2016).

Salamumu on the island of Upolu has a total population of 410 with 33 living near the coast at Salamumu-tai and 377 at Salamumu-uta along the main south coast road. Salamumu is characterised by a wide coastal plain sloping gently back to the Main South Coast Road and then further inland to the central mountains. The Main South Coast Road is about 4 km inland running parallel to the coast.

The beach is generally sand overlaying volcanic rock outcrops and the road along the beach is about 5 m above Mean Sea Level. The road behind the land falls away into lower areas some of which are wet or pond during heavy rain. This area is generally not more than 200 meters wide and most of the existing houses have been built on plots built up above the surrounding wetter areas. These areas either drain through the underlying sand and rock or by way of

[1]Meleisea, Malama; Meleisea, Penelope Schoeffel (1987).Lagaga: A Short History of Western Samoa.p.121

a drain under the road at the western end of the village development.

The shoreline is well vegetated with coconut palms and other trees planted along the length of the foreshore. The lagoon itself is very narrow in this area with the reef 100 – 150 meters from the shore. The coastal vegetation of Salamumu is similar to other low lying villages where littoral forest species dominate. Hibiscus *tiliaceas*, lala, coconut palms, laufatu, and leucaena are common. A wetland situated immediately behind the village limit plantation development. Salamumu village is confined to the area from the South Coast Road to the beach and therefore does not have the benefit of upland areas and forest land that are typical of villages in Samoa. Villagers have for some time asked government for land elsewhere where they can plant and develop.

3.2 Social and Economic Setting

The recent population and housing census report of 2016 shows total population for the Gagaemauga 2 District of 1,010; female 500 and male 510. 600 reside on Savaii whilst the other 410 live on Upolu.[2] Total population in the 2011 census showed 864.

The rocky lava surface that covers almost the entire village of Saleaula offers very little vegetation and many families rely on fishing. However, the small areas of land with fertile soil are utilized for small subsistence plantations and some families have also managed to raise cattle in the higher areas. The development of the nonu industry in Samoa has offered another economic resource as nonu plants have sprung up in between the cracks on the surface of lava rocks. Some families also raise poultry, cattle and pig farms as another source of nourishment.

Saleaula remains one of the popular sites for tourists with its lava field attraction. Local families provide *fale* accommodation for visitors and tourists by the lava and the coast. Bayview Resort is located at the edge of the lava fields on the waterfront of Saleaula Bay. This new accommodation is set at the edge of the lava fields overlooking the ocean. The hotel as well as a gas station offers employment for a few of the locals whilst most of its economy relies on remittances and salary/wage earners in the public and private sector. Both the resort and gas station are located within the flooding hazard zone.

The main road is considered an important part of the district's infrastructure and lifeline. The main road that runs through the district provides primary access to and from Salelologa Wharf and Central Business District (CBD) as well as to the Tuasivi Hospital. It is in good condition, but islocated within the flooding and erosion hazard zones as well as the tsunami orange evacuation zone.

The main water network for Saleaula runs from a Samoa Water Authority borehole about 1.5 km inland along the school access road. The supply is regular but reported to be saline at times. The distribution network is generally underground along the access road and the inland side of the Main Road within both the CEHZ and the CFHZ. It is made up of both PVC and galvanized pipe. Only a small numberof families can afford water tanks and are reliant on stored rain water.

For Salamumu, the water supply is also provided from a Samoa Water Authority borehole situated near the main South Coast Road. The main lines run along the coastal access track and are exposed in some areas due to coastal erosion. Supply is reported to be irregular due to the electricity to the pump being irregular. Salamumu-tai is particularly vulnerable in times of droughts.

Similar to their cousins on Savaii, the Upolu residents benefit from monetary income from tourist operations set up along their white sandy beach. The Samoana Resort is located on the Salamumu Beach and also offers employment for locals. Salamumu is also a favourite destination for many who want to catch the edible delicacy of *palolo* which rises twice a year. All the families have plantations. Some also raise cattle, some piggery as well as poultry farms are found in the village.

3.3 Climate Risk and Resilience

The majority of Gagaemauga 2 Part A (Saleaula) reside in the coastal area where many of the government infrastructures, churches, school and the two major commercial buildings (Bayview Hotel and Gas station) are located. Gagaemauga 2 Part B (Salamumu) on the other hand has less than 10% of its total population residing in the coastal hazard zone. While the situations for Parts A and B in terms of geographical and environmental issues are different, they share common cultural and social concerns.

[2] Samoa Bureau of Statistics: Census 2016 Preliminary Count.

The coastal area of Saleaula is comprised largely of high cliffs and rocky outcrops that provide natural protection against wave action and rough seas. This area is by and large, still in good condition due to its rough conditions and difficult accessibility (Reti, 2016). The2016 DRM HazardMapping using LiDar products[3]in 2016 showedthat 95% of buildings in Saleaula are located in the immediate inundation zone (Tokalauvere, 2017) with **10 residential buildings** located in the immediate inundation and fluvial hazard zone; therefore are in a high risk area. For Salamumu, the Samoana Resort and a few households living on the track leading to Samoan Resort are in a high risk area from immediate inundation, storm surges and the tsunami red zone.

Developments in the Saleaula coastal area include the Bayview Hotel and a gas station, both located in the immediate inundation zone. The reclamation of the coastal area where the gas station is located can change the current circulation along the shore and near-shoreareas. This in turn places great ererosion or flooding pressure else where along the coastline and can lead to near-shore waters not being adequately flushed by tidal variations and wave actions. The Samoana Resort is located in Salamumu-tai accessible only by the coastal access track. The track shows signs of scouring due to a combination of heavy rain, lack of formed drains and erosion caused by wave overtopping. The track is repaired once or twice a year by the village with sand taken from the beach at the point where the track meets the coast.

The Lagoon and sand spit/reef systems at Saleaula are considered to be at low risk and susceptibility. The Saleaula Primary School and EFKS Church is located in the inland access road and non-existent drainage and inadequate culverts and table drains on the main North Coast Road is exacerbating inland flooding and inundation.

The Vulnerability Assessment of the Samoa Road Network (SMEC, 2016) did not rank the north coast road running through Saleaula as in a coastal hazard zone but identified the road west for 1.8 kms west of Saleaula as exposed to coastal hazards. The main road is however located in the immediate inundation zone and the tsunami orange zone so any road upgrade should take into consideration the fluvial elements such as the Watershed Management Riparian Zone in this area. Undertaking culvert and table drain maintenance for all roads within the district (Townsend, 2016) has also beenaprioryformanyinthevillages. The Saleaula access road has been tarsealed but the absence of culverts and drains has exacerbated local flooding and inundation, with water pooling within the Saleaula Primary school and church grounds and areas of the village, where this road intersects with the main coastal road.

The existing watersupplyand electricitylinesarealsolocated in these hazardzones. During a disaster, these public utilities will be at high risk. Some reticulated water pipelines are not buried running exposed alongside access roads. Families of Saleaula within the hazard zones have property inland which is used mainly for plantations. Some families have moved inland since the tsunami and Cyclone Evan. Gagaemauga 2 district has access to electricity supply. Water is reticulated but supply is rationed not only to for sustainability of water source but also to conserve lifespan of electric water pumps.

In the Gagaemauga 2 district, mangrove scrub forests are dying from rising sea levels and human activities. In the medium to long term the decline in the health of the lagoons and reefs reduces the efficiency of these natural barriers to climate change and natural disasters. Additionally, a better understanding of the hydro-geological and water resources of the catchment and how they interact with land cover and land use practices, enables the identification of options to address water security issues.

For Saleaula, the coastal plateau is dominated by swamp and lava rock. As the land rises towards the inland mountain section to the middle of the island the soils are a combination of alluvial and volcanic. Householdfarming is a mixture of vegetables, fruit and small livestock. Cattle are grown inland in between the coconut plantation. Plantation crops dominate inland from the coast agriculture and small farm plots (Dews, 2016).

In order to have a resilient agricultural system for Gagaemauga 2, communities require access to water, conservation of soil nutrients, access to suitable varieties, a wide range of crop and livestock activities and well as markets outlets (Dews, 2016). Climate change will bring new challenges to food security and associated livelihoods development– namely related to water security, and hotter periods affecting breeding and husbandry.

[3]Developed by GWP Consultants LLP

4. Saleaula Village Interventions

CIM Plan Solutions

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant National, Sector Plans and Strategies
MainRoad: North Central Coast Road: inland relocation road	Consider in conjunctionwithadjoiningvillages,theconstructionofa newroadinlandbehindthefloodarea **Responsibility:LTA/MWTI/ MWCSD**	Improveinfrastructureresilience Climateproofnational road network Improve preparedness and readiness responseto natural disasters Reduce impact from flooding	Conduct drainage study of the flood area to identify overland flow paths and improved drainage patterns to the stream to the west UndertakefurtherconsultationwithvillageandpreareEnvironmentalImpactAssessmentforagreedalignment Identifyfunding/budgetrequirements andimplementationprogrammeforconstructionanddevelopment	CIM Strategy 2015 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1 Vulnerability Assessment of the Samoa Road Network (2016) and Road Network Adaptation Strategy, LTA
Drainage systems to be improved in high risk areas on North Central Coast Road and inland roads	Assess and upgrade culverts and cross drainage especially at junctions with access roads sitting within combined hazard zones– in accordance with Vulnerability Assessment of the Samoa Road Network recommendations Introduce new and widen existing culverts in wetland areas toimprovetidalflowandfishpassageinthewetlandarea 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**	Improves infrastructure resilience and rate of response and recovery to natural hazards and disasters Encourages coastal families to relocate inland Maintains lifeline access for all of Upolu Minimises national disaster recovery expenditure on damaged properties, public and private assets	Use existing information for guidance but not limited to: "Vulnerability Assessment of the Samoa Road Network (2017)"; "Review of National Road Standards in Samoa (2016)"; "Samoa Code of Environmental Practice (2007)" Undertake a Cost Benefit Analysis to weigh options for funding Incorporate environmental and social safeguards concerns in the design and undertake consultations with affected communities Apply for necessary permits as required by law Utilise hazard maps and Geomorphologist Infrastructure Drainage Database to inform designs Develop and register District/Village bylaws to include maintenance of	CIM Strategy 2015 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1 Community Sector Plan

			drainages and illegal rubbish dumping into waterways	
Upgrade access road containing school (evacuation shelter)	Maintain access road to school (evacuation shelter) **Responsibility:LTA/ MWTI**	Improve resilience of public infrastructure Improve preparedness and readiness response to natural disasters Reduceimpactfro mflooding	Conduct drainage study of the flood area to identify overland flow paths and improved drainage patterns Designation of the IFHZ, CEHZ and CFHZ as an "at risk" zone with appropriate landuse planning controls and restrictions	NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1 National Disaster Management Plan2017-2021
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 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**	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 NationalBuildingCode National Policy for People with Disabilities NISP2011 KESO 5

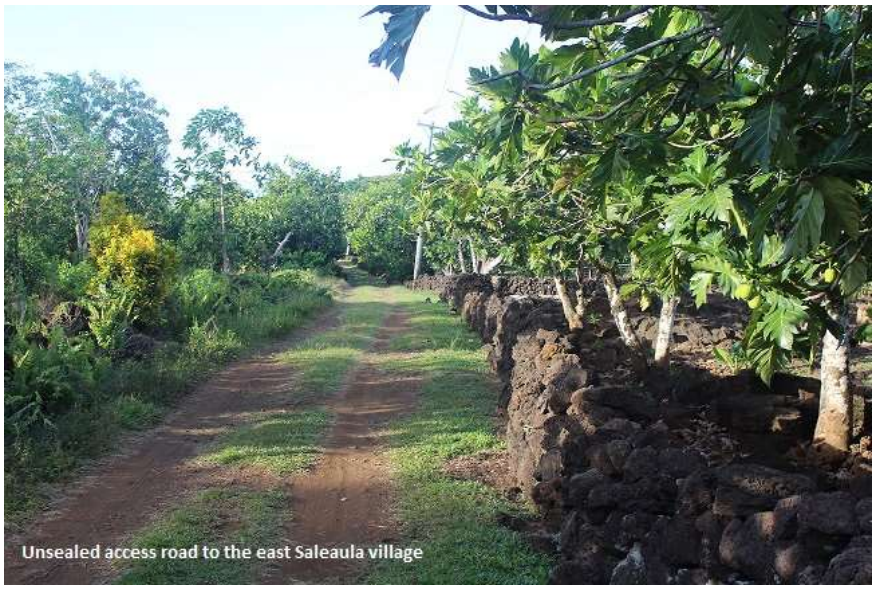
Village houses, school, church and other village assets in immediate fluvial hazard zone	Relocate outside of high risk hazard zones when building/infrastructure requires replacement Develop landuse planning and development controls to restrict developments within high risk hazard zones such as CEHZ and CFHZ Design infrastructure appropriately to take into account the immediate hazard zones; for example, raise floor levels of houses in flood prone areas Conduct awareness raising campaign on flood resilient building practices and designs for at risk communities living in and near high risk hazard zones Families and village to limit building and developing on natural overland flow paths exacerbating inland flooding and storm water surges Government and Village to liaise and collaborate on processes needed to protect riverbanks and coastline from land clearing and developments **Responsibility:Village / Families/MWTI/ MNRE/ MWCSD**	Minimise expenditure on damaged properties and personal assets Mitigatepotentialdamage fromcoastalerosion and floodingaccommodatingthehazard Safer villages, houses and roads	Planning provisions to be guided by the PUMA Act 2004 Enforcement of National Building Code 2017 Encourage insurance of significant investments and assets within hazard zones Utilise updated hazard maps and Geomorphologist Drainage Infrastructure Database to inform policy development and possible relocation of assets Designation of the IFHZ, CEHZ and CFHZ as an “at risk” zone with appropriate landuse planning controls and restrictions	CIM Strategy 2015 Draft NESP 2017-2021

Reticulated water supply, quality and network to be improved	Extendthewatersupplytofamiliesinlandwithnoaccessto water Procure rainwater harvesting systems for vulnerable families as a short term solution Procure rainwater harvesting systems for identified evacuation shelter(s) District and village to support SWA water rationing programmes during times of drought District to support SWA efforts at exploratory boreholes in district District and villages to support SWA efforts at protecting and conserving boreholes, intakes and catchment areas **Responsibility:SWA/ MWCSP/ MNRE / District/ Village/ CSSP**	Increase adaptation during drought periods Improveinfrastructureresilience and rate of recovery Improve health and sanitation Reduce contamination of water supply Reduce impact from inland flooding	Develop and register District/Village bylaws to include regulating developments around catchment areas and boreholes Include in budget programming design, andextension costs of water supply and procurement of rainwater harvesting systems Utilise hazard maps and Geomorphologist findings to inform designs Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes and responsibilities	CIM Strategy 2015 WaterandSanitationSectorPlan SWA 10 Year Investment Plan(2016) Community Engagement Plan Health Sector Plan Community Sector Plan
Natural Resources and Environment	**Best Solutions**	**Benefits**	**Guideline to assist with the implementation**	**Relevant Sector Plans, National Strategies & Policies**
Soft coastal protection measures needed for most vulnerable areas	Plant native species along coastal areas to strengthen existing seawall and to reduce coastal erosion and landslips; Talie, Fetau, Toa, Togatogo are known to have greater resilience to natural disasters and changing climate conditions To act as an effective wave barrier, a minimum distance of 200m of vegetation is needed **Responsibility: MNRE/ MAF/Villages**	Soft coastal protection measures will support and strengthen existing and new infrastructure along the coast Reduce impact from coastal erosion and natural disasters Implements an Ecosystem Based Approach	Develop an integrated land management plan for Gagaemauga 2 district with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area MAF to assist in establishment of pilot sites to trial climate ready plant varieties MNRE Forestry, DEC and MAF to collaborate on supply of climate resilient crops	NESP 2018-2022 Two Million Tree Planting Strategy 2015-2020 Restoration Operational Plan 2016-2020

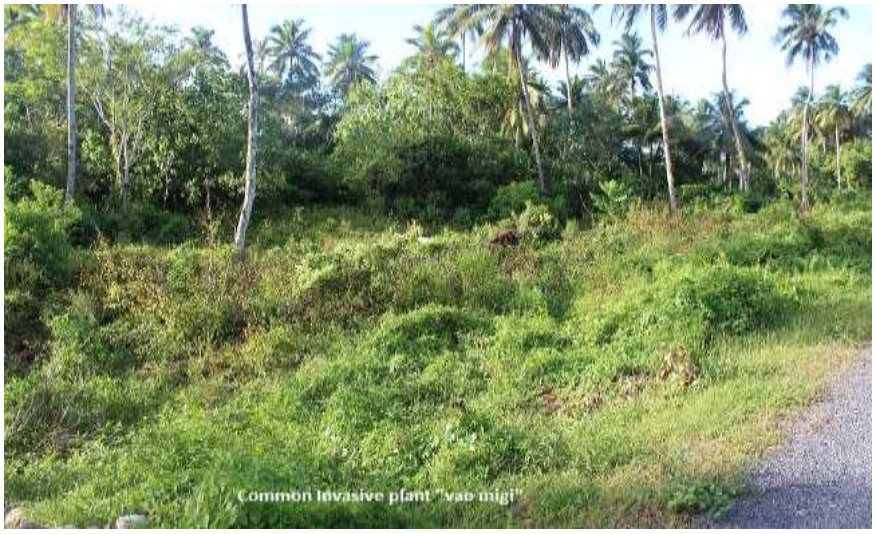
Reef "sand spit": 'open' to enable free flow of sea water in and out of bay	Undertake feasibility study to determine environmental effects of village proposed intervention – if works are implemented to open ip sand spit **Responsibility: Village/MNRE**	Maintainsnaturale cosystem connectivity Increase sandbuild upminimizingerosi on	Updateand register Saleaula 1998 village bylaws to enforce village laws on illegal rubbish dumping into waterways and around lava fields MNRE DEC to provide technical advice on management of "sandpit" to enable the free flow of seawater in and out of the Saleaula Bay MNRE to undertake feasibility study and implement relevant recommendations	NESP 2018-2022 Village Fono Act (Amendment Bill 2016) Saleaula Village By-laws
Unsustainable sand mining (commercial and domestic)	Identify alternative sustainable sources of sand/rocks for domestic use Research the impacts of sand mining Village consultation on sand mining policy and regulation Village and government to collaborate closely on designated areas for sand/rock mining Raise awareness and support of sustainable land use practices **Responsibility: MNRE/ Village/Families**	Mitigatepotentiald amage fromcoastalerosion and floodingaccommod atingthehazard 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 monitor progress of CIM Plan activities	Village Fono Act (Amendment Bill 2016) Draft Soil Resource Management Bill
Illegal rubbish dumping in wetlands, coastal areas, riverbanks and roadsides within fluvial hazard zones	Implement village awareness and cleanup programme to reduce illegal rubbish dumping Implement district/village drainage cleanup and awareness programme Produce posters and village signs for public awareness Introduce ban on illegal rubbish dumping in district especially around fluvial hazard zones Conduct campaign for	Improve health and sanitation Reduce leachate into environment and water supply Reduce contaminant from overland flooding entering sea	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 Utilise Waste Management Act/Legislation to guide process of effecting the 'polluter pays' principle Develop and register District/Village bylaws to include penalizing illegal rubbish dumping in	National Waste Management Strategy National Waste Management Policy Draft NESP 2017-2021 Village Fono Act(Amendment Bill 2016) Community Engagement Plan

	public awareness of district ban and establish a "neighbourhood watch" agreement with district to monitor and report on illegal dumping activities Government, district and villages to monitor, report and apply penalty on offenders **Responsibility: MNRE/ District/Village/CSSP**		district lands Utilise Sui o Nu'u monthly meetings to monitor progress of village programmes on waste management	
Livelihood and Food Security	**Best Solutions**	**Benefits**	**Guideline to assist with the implementation**	**Relevant Sector Plans, National Strategies & Policies**
Pest management; invasive plants and animals affecting mangrove area, plantations and vegetable gardens	Implement an eradication programme to eradicate, contain or exclude invasive species Replant with climate resilient native species Implement an inventory of invasive species and include information on their past, present and potential future distribution, as well as impacts and possible actions that can be taken Conduct education and awareness programmes on the impacts of invasive species Implement the Integrated Pest Management Programme Implement Sustainable Land Management (SLM) practices Build the capacity of farmers to manage stray animals (pigs, cattle) that are contaminating water sources Conduct pilot site trials for climate ready plant varieties District to fence domestic animals	Maintains natural ecosystem Builds resilience of community livelihood and food security	Develop an integrated land management plan for Gagaemauga 2 district with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area MAF to raise awareness of farmers on impacts to water flows from poor livestock management MAF to assist in establishment of pilot sites to trial climate ready plant varieties MNRE Forestry, DEC and MAF to collaborate on supply of climate resilient crops MNRE, MAF and SROS to implement aggressive, nationwide invasive species eradication programme based on inventory of invasive species and conduct campaign on public awareness accordingly Village to manage pig/cattle population (compounds, in particular around water supplies) Training for farmers on pests management particularly affecting fruit trees and crops	Agriculture Sector Plan 2016-2021 Draft NESP 2017-2021 Samoa's National Invasive Species Action Plan (NISAP)

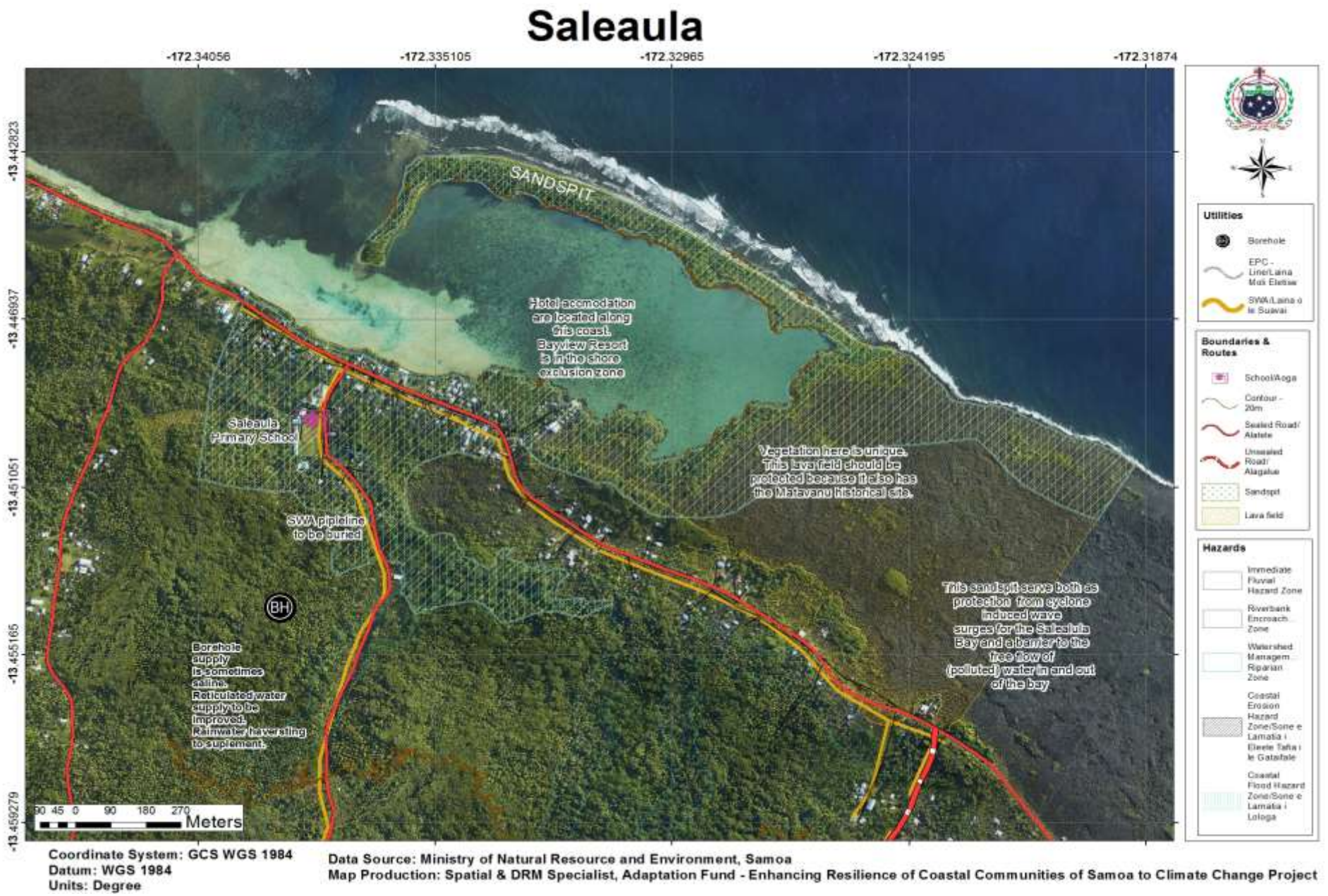
	Responsibility: Villages/District/ MNRE/MAF/ SROS			
Governance	**Best Solutions**	**Benefits**	**Guideline to assist with the implementation**	**Relevant Sector Plans, National Strategies & Policies**
Strengthen the governance of natural resources and land use through Bylaws	Update and/or develop bylaws 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 and near boreholes. Collaborate with Sui o Nuu to monitor the use of and impact on natural resources Facilitate continuous awareness raising programs with the villages **Responsibility: MWCSD /Village**	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation, Strategies, Plans and Policies Improve ability of communities to adapt, respond and recover quickly in the long term Improve accountability and enabling environment of communities	Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood and food security especially activities affecting water catchment areas and coastline 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


Unsealed access road to the east Saleaula village


Water shortage problems .


Common invasive plant "vao migi"

Saleaula 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

5. Salamumu Village Interventions

CIM Plan Solutions

Infrastructure	Best Solutions	Benefits	Guideline to assist with the implementation	Relevant National, Sector Plans and Strategies
Village houses, school, church and other village assets in immediate fluvial hazard zone	Relocate outside of high risk hazard zones when building/infrastructure requires replacement Develop landuse planning and development controls to restrict developments within high risk hazard zones such as CEHZ and CFHZ Design infrastructure appropriately to take into account the immediate hazard zones; for example, raise floor levels of houses in flood prone areas Conduct awareness raising campaign on flood resilient building practices and designs for at risk communities living in and near high risk hazard zones Families and village to limit building and developing on natural overland flow paths exacerbating inland flooding and storm water surges Government and Village to liaise and collaborate on processes needed to protect riverbanks and coastline from land clearing and developments	Minimise expenditure on damaged properties and personal assets Mitigatepotentialdamage fromcoastalerosion and floodingaccommodating thehazard Safer villages, houses and roads	Planning provisions to be guided by the PUMA Act 2004 Enforcement of National Building Code 2017 Encourage insurance of significant investments and assets within hazard zones Utilise updated hazard maps and Geomorphologist Drainage Infrastructure Database to inform policy development and possible relocation of assets Designation of the IFHZ, CEHZ and CFHZ as an “at risk” zone with appropriate landuse planning controls and restrictions	CIM Strategy 2015 Draft NESP 2017-2021 National Building Code

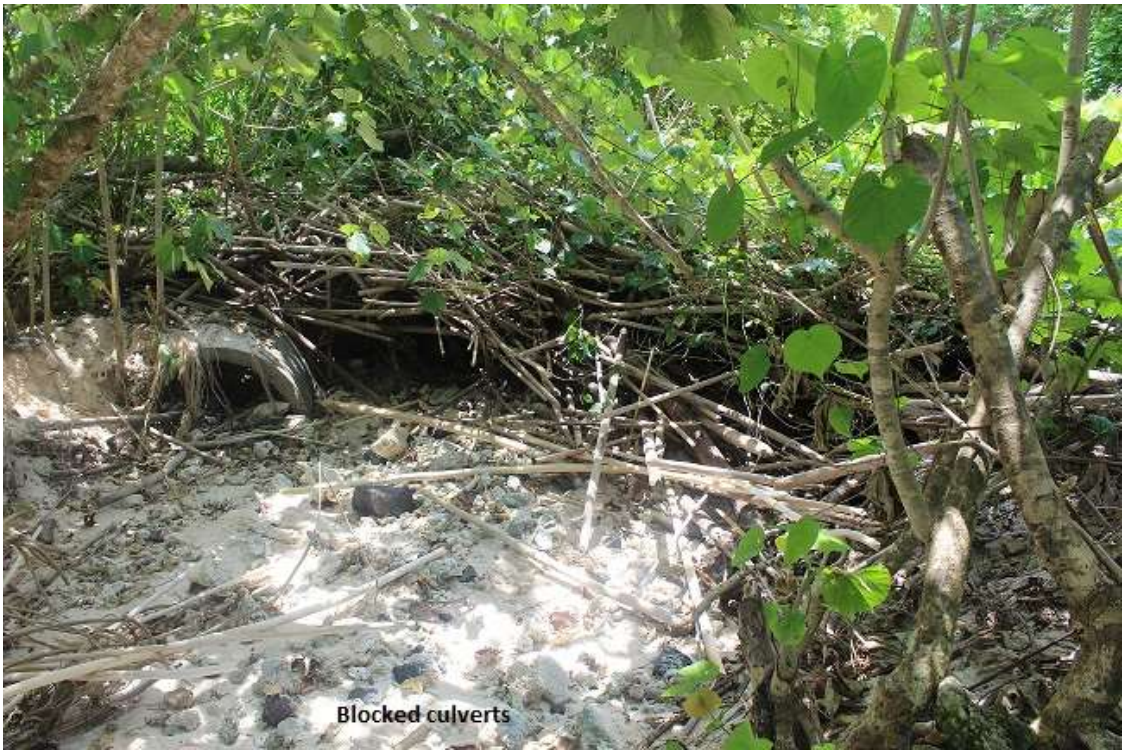
	Responsibility:Village / Families/MWTI/ MNRE/ MWCSD			
Electricity supply	Install streetlights along the roads where needed for community safety Relocate overhead lines to a more resilient location when being replaced Provide underground lines in the long term Install and connect to solar power supply if made available ***Responsibility: EPC /MWTI/ Villages***	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
Coastal access track and drains: upgrade	Properly form, construct and seal the coastal access track to the beach (approx 800m) including allowing for improved drainage along and under the road Relocatethebeachtrackandupgradetoasealedstandardasandwhenrequired ***Responsibility: /LTA/MWTI/ Village***	Improve resilience of public infrastructure Improve preparedness and readiness response to natural disasters Reduce impact from flooding	Conduct drainage study of the flood area to identify overland flow paths and improved drainage patterns Utilise Hazard maps/models and Geomorphologist Drainage Infrastructure Database to inform location and design Upgrade culverts and table drain maintenance to drain stormwater into sea for national roads Identify funding/budget requirements and implementation programme for construction and development	NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1
Drainage systems to be improved in high risk areas	Assess and upgrade culverts on most vulnerable parts of the local road especially at junctions with main road and access roads– in accordance with	Improves climate resilience of infrastructure resilience and rate of response and recovery to	Use existing information for guidance but not limited to: *"Vulnerability Assessment of the Samoa Road Network (2017)"; "Review of National*	CIM Strategy 2015 NISP2011 KESO 5 TSP2014-2019 Goal 2 KO 1

	*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***	natural hazards and disasters Encourages coastal families to relocate inland Minimise national disaster recovery expenditure on damaged properties, public and private assets	*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	Community Sector Plan
Evacuation Shelter and a connected escape route needed for Salamumu-tai 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	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

	program Install relevant signs to guide the community on emergency response procedures and to locations of evacuation shelters Where no suitable houses exist, build emergency shelter(s) outside the hazard zones Retrofit identified and approved schools or churches outside hazard zones and designate as evacuation shelter ***Responsibility: MNRE /DMO/ MWTI/Village /CSSP/Council of Churches/MWCSD***			
Natural Resources and Environment	**Best Solutions**	**Benefits**	**Guideline to assist with the implementation**	**Relevant Sector Plans, National Strategies & Policies**
Lagoon & reef systems: fishing grounds inaccessible (reef pass)	Undertake feasibility study to determine environmental effects of widening reef pass ***Responsibility:Village / MNRE/ MAF***	Improve preparedness and readiness response to natural disasters	MNRE / MAF to undertake a combined feasibility study, implement recommendations and provide advice to village on alternative options	NESP 2017-2021
Livelihood and Food Security	**Best Solutions**	**Benefits**	**Guideline to assist with the implementation**	**Relevant Sector Plans, National Strategies & Policies**
Food security: threatened by changes in climate and inadequate soil for planting	Promote and facilitate planting of root crops (i.eyams,sweet potato) which are more resilient to cyclones, droughts and floods Promoteagro-forestryandmixedplantingincludingfruittreesspeciestoreducecropvulnerabilitytopestsand diseases Implement the Integrated Pest Management Programme Implement Sustainable	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	AgricultureSectorPlan 2016-2021 Community Engagement Plan Two Million Tree Strategy 2015-2020 Restoration Operational Plan 2016-2020

	Land Management (SLM) practices Replanting of native forestry species of the upland forests to restore resilience and ecological function Conduct pilot site trials for climate ready plant varieties ***Responsibility: MAF/ MNRE/villages/CSSP***		ready plant varieties Develop an integrated land management plan with the aim of reducing any unnecessary actions that may adversely affect the natural habitats and ecosystems of the area MNRE Forestry to advice on appropriate species, depth and density of planting and provide seedlings for different vegetation types suitable to the habitats and planting materials for village	
Governance	**Best Solutions**	**Benefits**	**Guideline to assist with the implementation**	**Relevant Sector Plans, National Strategies & Policies**
Strengthen the governance of natural resources and land use through Bylaws	Update and/or develop bylaws to manage the use of natural resources, and to control land use impacts; such as drainage maintenance, rubbish dumping, sand mining, stray animals and unregulated developments in water catchment areas and near boreholes. Collaborate with Sui o Nuu to monitor the use of and impact on natural resources Facilitate continuous awareness raising programs with the villages ***Responsibility: MWCSD /Village***	Strengthen implementation of all national sector plans Strengthen monitoring of all National Acts, Regulation, Strategies, Plans and Policies Improve ability of communities to adapt, respond and recover quickly in the long term Improve accountability and enabling environment of communities	Develop and register district/village bylaw to protect all district/ village and government assets, environment, livelihood and food security especially activities affecting water catchment areas and coastline 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

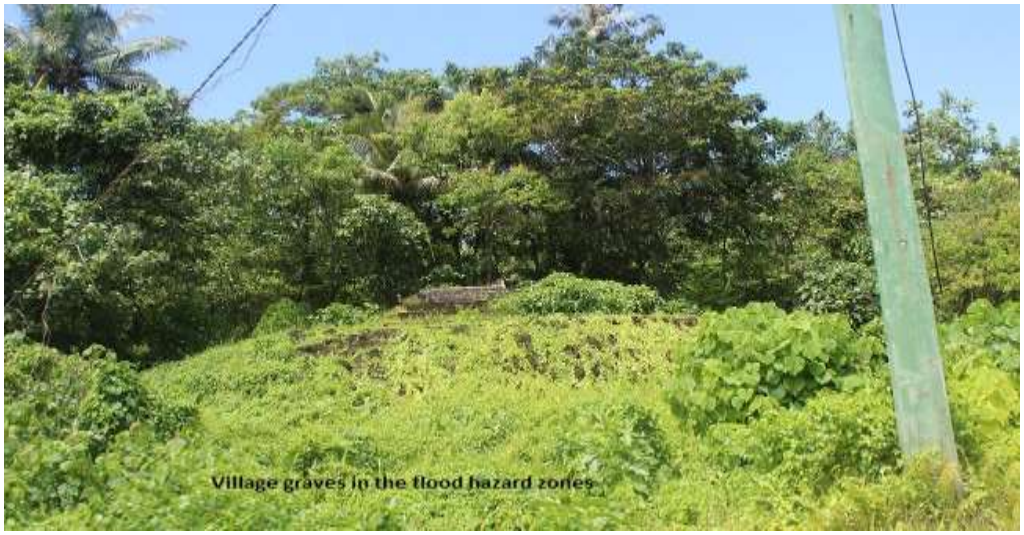
Salamumu Village

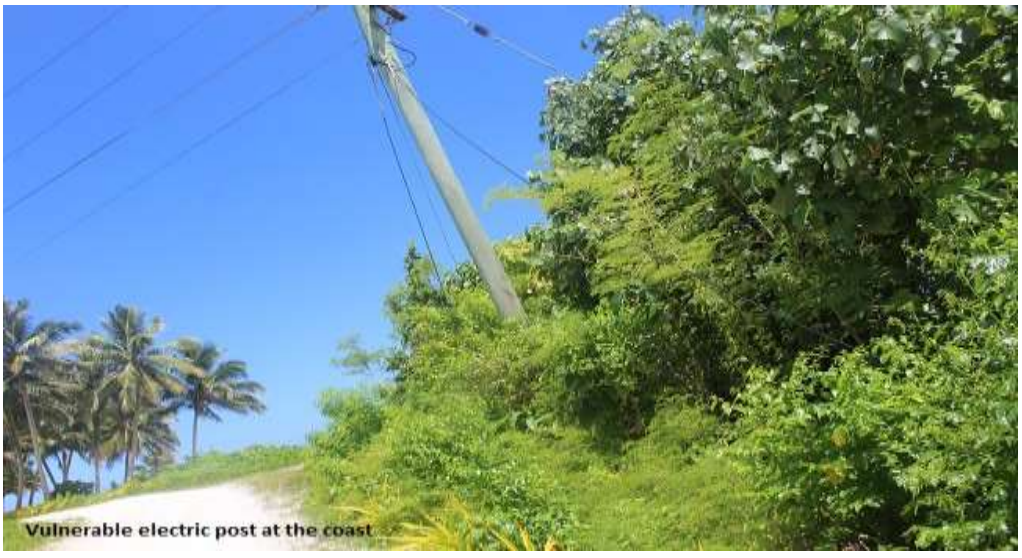


Blocked culverts

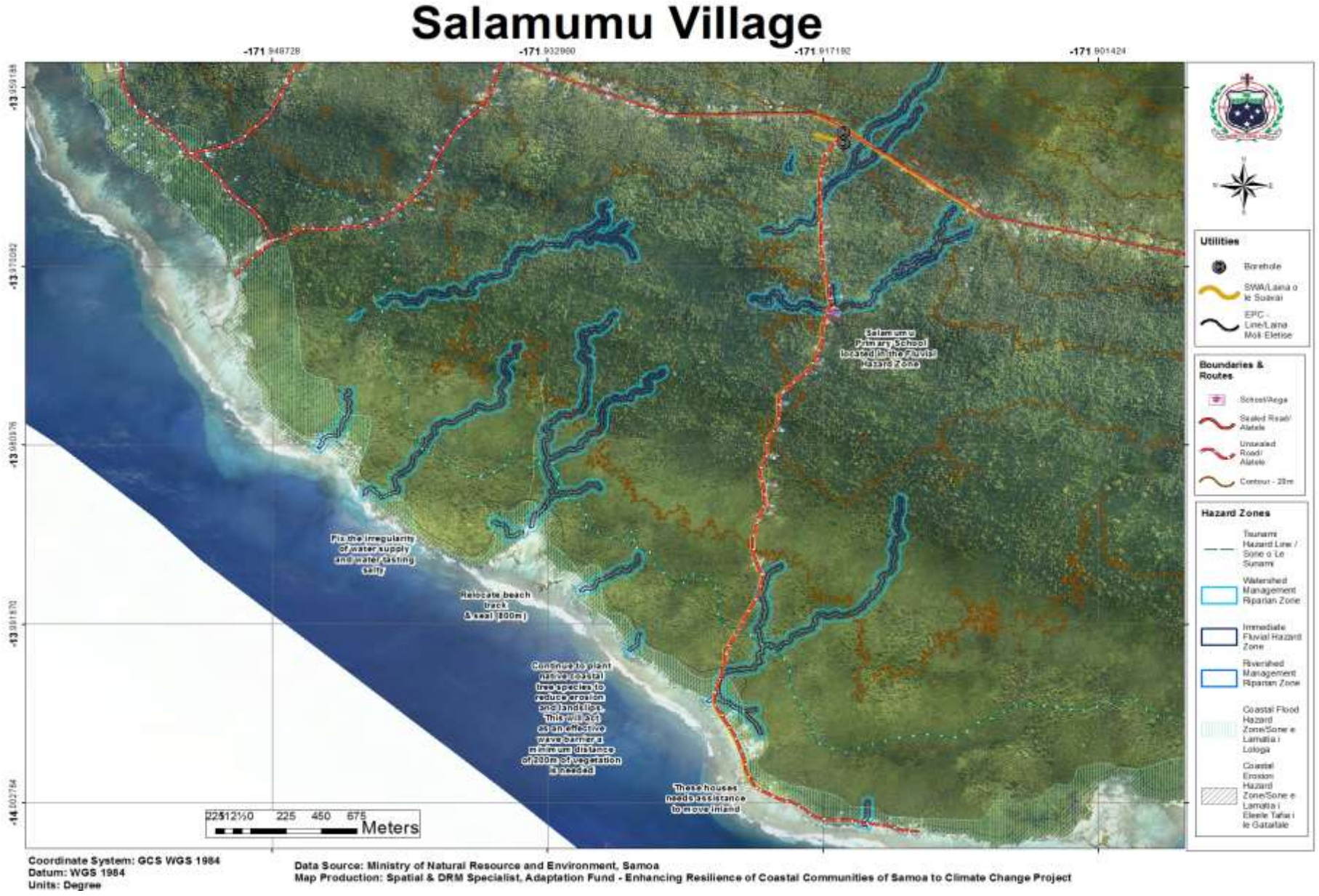
Resilient tree species for coastal protection


'fau' tree used by villagers for handicraft


Village graves in the flood hazard zones


Vulnerable electric post at the coast

Salamumu Village Map



Savaii AF Districts Overview Map of Coastal Inundation Zones