

**SAFA'I VILLAGE
COMMUNITY –BASED
ADAPATION PROJECT**

**FULL PROJECT
PROPOSAL**

UNDP CBA Steering Committee

I le ava ma le faaaloalo lava, matou te tuuina atu ai lenei talosaga mo le iloiloaina e le Komiti mamalu.

Matou te faamaonia o lenei talosaga sa galulue faatasi ai le afioaga nei ma le afioaga ia Toeolesulusulu o le Pacific Environment Consultants Ltd o le sa tusiaao I ai le afioaga mo le tapenaina o lenei talosaga.

Sainia: Komiti mo Alii ma Faipule Safa'i:

1. _____

Pulenuu:

2. _____

Sui Komiti

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Sui Komiti

PROPOSAL SUMMARY

1. **Project Title:** Community-based adaptation against flooding and sea level rise
2. **Project Site:** Safai;
3. **Proponent:** Safai village
4. **Project Objective:** Reduce the vulnerability of communities and coastal ecosystems in Safai to climate change
5. **Authorized Representative:** Soa Matulino (Pulenuu: Village Mayor) and Project Committee members
6. **Cooperating Organizations:** GEF SGP; AusAID
7. **Start-Up Date:** July 2009
8. **Project Period:** 18 months
9. **Total Project Cost:** \$65,000 (CBA and co-financing by AusAID V&A Project and Safa'i village)
10. **Amount Requested:** USD\$30,000
11. **Brief Project Description**

O le poloketi o le a faatinoina I le fesoasoani mai I le UNDP ma le AusAID Vulnerability Fund o loo faamoemoe e toe faaleleia ai le ala o le vai agai I le sami ina ia faaitiitia le solo o le auvai ma faaleagain ai pea fanua ma maota ma laoa o le afioaga o Safa'i. E legata I lea, ae o loo faamoemoe foi e toe faalolotoina le alasima o loo sao atu ai le vai I le sami ona o loo ua afaina tele le afioaga I lologa ona o le sao o le vai I le sami. O le auga o le faamoemoe ina ia mafai ona faaitiitia ai le afaina o le afioaga mai lologa o le vai talu le fesuaiga o le tau. E le gata I lea, ae o loo faamoemoe foi, o lenei galuega o le a toe faaolaina ai togo ma toe maua ai nisi o matai ai a lenei afioaga ua mou atu sa tele I le vai e pei o le paalimago, ulua, atule, anae ma nisi o paa.

O se aoga faalesiosiomaga foi o galuega o le toe faaolaina lelei lea o laau sa masani ona puipuia le afioaga mai lologa, aemaise ai o ia ma figota ua mou atu.

O lenei poloketi o loo faamoemoe e faatinoina I totonu o le lua tausaga.

The proposed project is to reduce the vulnerability of Safai village and the surrounding ecosystems from the impacts of climate change. The village was totally destroyed by the cyclones of 1990 and 1991 when over 80% of the homes located on the coast were destroyed by strong winds and surging waves. The wetland ecosystem, the inshore coral reef systems, the mangrove forests, along with agricultural and livestock were all destroyed or damaged. The total lost of homes resulted in the majority of families relocating to customary lands further inland. Despite the movement inland, the road that leads to the new location of homes is still affected during heavy rainfall and extreme high seas flooding the road, and damaging the agricultural and

livestock farms. The wetland and coral reef systems also suffer damage during these extreme weather patterns from siltation, and salinization.

The project proposes activities to reduce the vulnerability of the community by ensuring the uninhibited movement of the water from the wetland to the sea while at the same time strengthening the resilience of the land to coastal erosion through the construction of appropriate retention wall together with replanting of wetland vegetation along the edge of the wetland.

Through the proposed activities, the project anticipates to reduce the wetland ecosystems impact from flooding with the regular flushing of water out into the sea, while continuing to provide a nursery for juvenile fish. The anticipated increase in the flushing of water into the sea should restore the balance in the movement of inshore currents that would reduce the speed of coastal erosion and improve the re-growth of the coral reef.

1.0 RATIONALE

O le tapenaina o leni faamoemoe sa amatalia mai I nisi o polokalame faatalatalanoa sa faia e le Malo o Samoa I 2007, lea na faasopolia uma ai afioaga ma alalafaga o le iutmalalo, aua lava le mataituina o aafiaga mai le fesuaiga o le tau.

Mai nei mafutaga ma semina, sa faapea ona faailoa ai e le afioaga ma faamaonia I suesuega vaega tonu o loo manaomia ai se fesoasoani aua le taofiofia o le tele vave o aafiaga mai le fesuaiga o le tau.

Sa maitauina ai foi le aafia tele o le olaga faalenatura o le siosiomaga I meaola, laau ma manu felelei ona o lologa. Ele gata foi I lea, ae o le afaina o le gataifale ma olaga o amu, ua vaaia ai foi le aafia o ia ma figota o loo mauaina I le aloalo.

O le taua la o leni galuega ona ia le gata I le toe faaitiitia o aafiaga mai le fesuaiga o le tau, ae o le toe faatuputeleina foi lea o laau, meaola, ia ma figota, o nisi o vaega taua o le siosiomaga o loo faamoemoe iai aiga mo le lumanai.

Community/Ecosystem Context

Safai village is part of the Gagaemauga III District located on the northern most point of the island of Savaii. It has a population of less than 400 inhabitants making up around 50 households. Safai villagers mostly depend on plantations and fishing as the main sources of income and livelihood. Prior to the cyclones of the 1990's, over 80% of the families resided on the coast.

The village fronts the sea with the outer reef approximately 200m from the beach. The reef was mostly covered with corals but was totally destroyed by the cyclones. Since then, coral re-growth has been great with now over 50% of the reef covered by corals. The area remaining area is covered by sand build up from the continued coastal erosion and siltation from the wetland.

Behind the old village location is part of the Satoalepai Wetlands, which is the largest wetland in Savaii Islands. The wetland is made up of mixed coastal swamp and mangrove forests. It is also amongst the main nursery for juvenile fish along the northern coast of Savaii with the only other mangrove forest over 30 miles on the east and west of the project site.

Behind the wetlands is solid ground which the most of the families have relocated since the cyclones, while some have rebuilt along the main coastal road.

The project site is home to threatened ecosystems such as coral reefs, mangrove forest, and mixed herbaceous coastal march which houses some threatened biodiversity as identified in the National Biodiversity Strategy and Action Plan. These include toloa (*Anas superciliosa*); tolaifatu (*Myiagra albiventris*); manuma (*Ptilinopus perousii*); manutagi (*Ptilinopus porphyriaceus*); and several of the smaller endemic birds.

For the marine biodiversity, the pavona and acropora species dominate the inshore reef with an estimation of over 40 coral species, and over 60 fish and marine invertebrates. Endangered hawksbill and green turtles are often caught by fishermen along the inshore reef and migrating whales are often seen from the villages during the winter months.

Within the wetlands, a vast majority of *Bruguiera sp* and *Rysphorra sp* mangroves were destroyed by flooding and the cyclones will need to be replanted, while the proposed works is also anticipated to restore some of the wetland species of importance.

The village of Safai is a sub-village of the bigger traditional village of Matautu, but now has its own village mayor and operated independently until traditional cultural gatherings. The village council of Safai is made up of high chiefs and orators who oversee the decision-making process for the peace and harmony as well as custodians of developments, lands and customs.

Climate Context

The climate is typical of all Samoa weather with the rainy season during the Oct-March and dry season from April to September each year. Gagaemauga 3 district lies in the rain shadow side of the island and thus tends to have low and uncertain rainfall during the dry season. During the rainy seasons, flooding is a major problem due to a combination of several factors, namely the location of the district being a main drainage for the surrounding mountain area, the wetland which is a location for several underground spring pools, and saltwater intrusion from the sea via the stream draining the wetland into the sea.

The coastline itself is exposed being the northern most point of Savaii. It is characterized by fine coral sand and is partially protected by a seawall but the 200m major reef break directly opposite Safa'i increases the vulnerability of the village to strong storm wave surges. Without the protection of a reef this area was severely damaged by cyclones Ofa and Heta. The coastline has receded approximately 20m. Approximately 80% of Safa'i village has relocated inland along the local work road.

Impacts Context

The central climate change risks to be addressed by this project include increases in flooding, and increases in coastal erosion. Both are separate problems, but with interlinked impacts on communities, and with a multitude of baseline (non-climate) and additional (climate change-driven) drivers

COASTAL EROSION

Since the 1990's, impacts of climate change have been heavily felt along this part of the country when Cyclones Ofa and Val eroded more than 20m of the old coastline and extending the full length of Safai village. Additionally, all the homes of Safai villagers which were once located within 100m of the beachfront were destroyed. Now a great majority of the families have

moved inland. Sea level continues to rise and with the seawall now protecting the beachfront, land bordering the wetlands is eroding faster, while within the wetlands, more of the wetland ecosystem and village spring pools have increasingly become saline. Increases in coastal erosion are driven by increasing intensities of storms, and by declining resilience of buffering coral ecosystems and littoral or wetland plants.

FLOODING

Increases in flooding largely affect inland access roads leading from the coast road, which pass over marshy lands and are prone to flooding. Inland flooding is driven by a number of baseline factors, including the development of roads without drains or culverts for water passage. Additionally, flooding lingers for longer periods of time due to the blockages along the waterway with walkways being built by the village for crossing and reclamations. However, climate change will increase the vulnerability of these areas to flood, as increasingly intense rainfall events deliver more rainfall in shorter amounts of time. The rising sea level further exacerbates the flooding as sea water intrusion into the wetland increases. Therefore having good natural drainage systems to minimize ponding of sea water in the wetlands and allowing for fast flushing of the floods into the sea will go a long way to minimizing some of the climate change impacts.

As villagers move inland, they become more vulnerable to inland flooding, as they become increasingly reliant on inland access roads, which in turn lead to the arterial coast road. Improving the resilience of ecosystems to the impacts of climate change is an important component of the overall adaptation response in the area, as intact coral and coastal vegetation will help to protect the coast road from erosion, thus protecting the access of community members to vital goods and services linked to the coast road. More directly, it will also buffer coastal settlements, plantations, and infrastructure against increasingly intense cyclones, storm surges, and coastal erosion.

In addition, climate change increases risks to local water supplies. Storm surges can threaten natural spring water supplies through flooding and salinization, while the local dam will likely see increases in sedimentation from increasing intensities of rainfall, against a backdrop of declining overall rainfall – leading to increased erosion and sediment deposit into the dam.

To the community, these impacts represent a ratcheting-up of historically familiar pressures. In addition, as priorities change due to autonomous adaptation activities (increasing inland migration), new climate change risks emerge – largely relating to increased flooding of access roads to the main coast road.

SEA LEVEL RISE

Additional to the flooding from the heavy rainfall, the wetlands along with households and livelihoods such as livestock and agricultural crops are also regularly inundated during rising tides as a result of continuing sea level rise.

DROUGHTS:

Another less severe climate risk identified by the village is prolonged periods of drought that affects mostly its agricultural crops. No immediate impacts were expanded on by villagers except that it is harder for them to work during these times, and the crops do not grow well.

Project Approach

The baseline for the Safai CBA project falls within the GEF Biodiversity Focal Area under Operational Program 2: Coastal, Marine and Freshwater Ecosystems. Additional climate change considerations address concerns related to sedimentation of coastal ecosystems, namely mangroves, corals and beach erosion. Community adaptation will incorporate considerations of climate change into baseline sustainable management, rehabilitation and increase resilience of natural systems.

Building the capacity of the village and providing the necessary infrastructure to relieve the impacts on the ecosystems, livelihood and households from climate risks is the main objective for this project.

The project outputs were identified from the village consultations during the planning phase of the project and issues recognized in the Coastal Infrastructure Management (CIM) Plan exercise. The CIM Plan work included extensive consultation with the village and Gagaemauga 3 District and coastal and climate change experts assessing the climate change issues against the coastal processes, and resulted in the CIM Plan highlighting actions to be undertaken.

The CIM Plans were intended as village planning processes to identify environmental and climate change risks to the villages, with the plans developed intended to be used when funding is available to support the implementation either from the Government of Samoa, or other sources such as is now available through the UNDP CBA and AusAID vulnerability fund.

From the studies and consultations, it was identified that climate variability and extreme weather patterns will result in continued coastal erosion, flooding and increasing the vulnerability of the wetlands.

As agreed during the CIM Plan consultations and reconfirmed in the CBA consultations, the village see the deepening of the under bridge passage, the construction of rockwall or building a retention wall along the wetland edge and replanting of littoral and wetland plant and mangroves along the edge of the wetland stream as important for allowing regular flushing of the flood waters into the sea. The village has also taken commitment that once the rock wall and replanting program has taken place, they will vigilantly monitor the ban on dumping rubbish into the wetlands or on the edges as a form of reclamation and stop the cutting of vegetation along the wetland edges. Previous efforts by the village to replant the mangroves were unsuccessful as flooding killed off the mangroves before they could grow properly.

To alleviate the problem of crossing the wetland, building a walk bridge will enable the village to take out the existing rock bridge that is contributing to blocking the flushing of the water.

On the environmental side, having the regular flushing of the water will reduce the salinization of the wetland area as sea flushes out during low-tide, thus enabling the wetland ecosystem to again naturally rehabilitate itself.

The accessibility of the juvenile fish into the wetlands will also ensure continued replenishment of the inshore reef fish populations. Having regular flushing go the wetland into the sea will also allow for even distribution of sand along the beach as was prior to the cyclone.

2.0 COMMUNITY OWNERSHIP

O le poloketi sa tapenaina lava faatasi e sui faapitoa o latou tomai I mataupu tau siosiomaga ma le fesuiaiga o le tau, ma le pule mamalu a Alii ma Faipule o Safa'i.

Sa faatinoina lea ini faatalatalanoaga ma ni semina faia I totonu o le afioaga e faamalamalamaina ai mataupu e uiga I le fesuiaiga o le tau ma aafiaga I le nuu, faape le siosiomaga.

Ma o nei faatalatalanoaga sa amatalia mai I le 2007 seia oo mai lava I le 2009 ma faamautu ai vaega eesese o loo faapea on manaomia mo le faaleleia.

O vaega foi o loo faapea ona tuuina I totonu o lenei poloketi, ua maea ona soalaupuleina e le afioaga ma sui poto faapitoa sa fesoasoani I le afioaga.

O le faatinoina o le poloketi o loo iai lava lea I aao o le afioaga e le ala I le pule mamalu a alii ma faipule, ma se komit faapitoa a le pulenuu o loo ua tofia latou te taimuaina le faagasologa o galuega manaomia.

O loo iai foi le faamoemoe o le afioaga a maea ona faatinoina galuega fuafuaina, o le a vaايا lelei e afioaga ma puipuia lelei nei galuega mo le lumanai.

2.1 Project Formulation

The project issues were first identified out of the community consultations undertaken between the village and Government of Samoa during the development of the CIM Plan for the district. In preparation of the CBA project concept, community consultations meeting were undertaken to revise the issues identified in the CIM Plans and conduct field visits with village members to the sites for confirmation of issues.

In the last phase of the planning, 2 visits were undertaken to conduct the VRA analysis and reconfirm the issues presented by the village in consultations that stretched back to 2007. Furthermore, several meeting were held with the village project committee for rechecking of the project activities, management and administration procedures for the completion of the proposal

This harmonization of the CIM Plan and the CBA project was possible as it was the same consultants used for both projects.

2.2 Project Implementation

For the implementation of the project, the village has selected a committee that includes representation from all sectors of village; women, untitled men and village council members to coordinate the activities and provide regular feedback to the community.

This community will report back to the village council for final approval and the provision of support from the different sectors of the village, namely the untitled men for labour work, and women's committee. The council will also assist the project is resolving any potential land issues or

2.3 Phase-Out Mechanism, Sustainability

In the planning phase and set out of the implementation of the project, it will be completed controlled and managed by the village. This way they will be directly involved. The only outside

roles proposed will be actual contractors for the infrastructural works and the technical advisors providing the needed technical background for the village in making its decisions.

As agreed in the discussion of the project, once the activities have been completed, the village council will take over the maintenance of the works with the village mayor and his committee tasked with the regular monitoring.

3.0 PROPONENT DESCRIPTION

3.1 Organization's background and capacity

Safai village is a traditional village which includes all the different components of a Samoan village. The village council is the supreme decision-making body that is represented by a matai from every family.

The women committee is represented by all women in the village, while the untitled men is an organ of the village council made up of young men from the village without matai titles. This group is mostly tasked with undertaking any labour work needed.

4.0 PROJECT DESCRIPTION

4.1 Objective, Outcomes, Planned Outputs:

<p>Project Objective: Reduce the vulnerability of communities and coastal ecosystems in Safai to climate change: AUTU: Faaitiitia le lamatia o le soifua o le afoaga ma le faaleagaina on siosiomaga mai fesuaiga o le tau</p>	
<p>Outcome 1.0: Coastal ecosystems increasingly resilient to climate change impacts, and better able to buffer communities against risks of increasingly intense floods, cyclones and storm surges.</p>	
<p><i>Output 1.1: Bridge underpass deepened</i> Iuga o Galuega 1: Faaloloto le ala sima</p>	<p>1.1 Liaise with MWTI and MNRE to deepen the bridge underpass 1.2 Hire contractor to deepen the underpass</p>
<p><i>Output 1.2: Retention wall constructed</i> Iuga 2: faia se taligalu talfeagai mo le vai</p>	<p>1.3 Hire contractor to work with village and PA on design and building of rockwall 1.4 Construct the retention wall</p>
<p><i>Output 1.3 wetland vegetation replanting program implemented</i> Iuga 3: toe totoina togo ma nisi laau talafeagai</p>	<p>1.5 Establish nursery, and conduct collection of plants for replanting program 1.6 Replanting 1.7 Monitoring of replanting program</p>
<p><i>Output 1.4: Flow of water between the wetland and sea is back to regular flushing</i> Iuga 4: suia ala maa I ni ala laupapa o loo ui I totonu o le vai</p>	<p>1. take out crossing rock bridges opposite the church and one next to the old committee house 2. build appropriate walking bridge that allows for better water movement</p>
<p>Outcome 2.0: Capacity developed among community members to manage local ecosystems to reduce ongoing climate change risks</p>	
<p><i>Output 2.1 Community adaptation and mitigation awareness raising programme implemented</i> Iuga 2.1: faatinoina aoaoga faasemina I mataupu tau fesuaiga o le tau</p>	<p>1. preparation of resource materials for awareness program 2. conduct awareness program 3. village commitment of actions to reduce climate risks</p>
<p><i>Output 2.2 wetland pollution prevented</i> Iuga 2.2: Taofia le lafoai o otaota I le vai</p>	<p>1. village council to pass village regulation on dumping rubbish into the wetlands 2. village mayor committee to monitor and report on monthly basis to village council</p>
<p><i>Outputs to be supported with co-financing: Nisi o galuega e faatinoina e isi vaega o le fesoasoani</i></p>	

Output 1: retention wall built and rock bridges taken out to allow better flushing of the wetland into the sea.: fausia o le talivai

4.2 Timetable

	2009					2010										2011					
	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
Outcome 1																					
Output 1.1 ¹ –	■	■	■	■							■	■						■			
Output 1.2 ²	■	■	■	■																	
Output 1.3						■	■	■	■	■	■						■	■	■		
Output 1.4						■	■	■			■	■					■	■			
Outcome 2																					
Output 2.1	■	■	■	■	■			■	■	■	■						■	■	■		
Output 2.2	■	■	■	■	■			■	■	■	■						■	■	■		

The proposed payment process for the CBA portion of the project is as follows (The AusAID will co-finance this payment schedule 1:1 at the same intervals):

UNOPS shall provide funds to the **Local CBO** in an amount of **USD\$30,000, thirty thousand US dollars** according to the schedule set out below, subject to the **Local CBO**'s submission of timely and accurate expense reports:

USD\$9,000, nine thousand US dollars (30%), upon signature of this Agreement by both parties if the following points are met:

- Submission of the CVs for all personnel that will be engaged in this project including but not limited to the Project Advisor and Engineers.

¹ This output will commence in August and be implemented over the next few months. It will then be monitored mid-2010 and the beginning of 2011 as part of the progress reporting

² See footnote above

- Submission of letters from MWTI regarding their estimates of the work for this project including the deepening of the bridge retention wall.

USD\$9,000, nine thousand US dollars (30%), October 2009 if the following are met

- Submission of 1st Progress Report, including IAS baseline indicators recorded
- Submission of a full engineering assessment including budget for the works to be carried out which includes a detailed design of the civil works to be completed and a copy of the contract for the retention walls and deepening of the bridge underpass
- Development Consent approved from PUMA MNRE
- Awareness raising programme plan complete and submitted;

USD\$9,000, nine thousand US dollars (30%), January 2010 if the following are met

- Submission of 2nd Progress Report, including IAS and VRA indicators recorded

USD\$3,000, three thousand US dollars (10%), January 2011 if the following are met

- Submission of 3rd Progress Report, including IAS and VRA indicators recorded

Since any potential changes in the project would happen after several months upon completion of the proposed activities, measuring the impact (IAS and the VRA) is best proposed to be undertaken and submitted together with the progress report for the third and final payments. One of the main forms of monitoring changes will be taking photos on 3 monthly period to see any changes along the wetland due to the civil works.

4.3 Risks and Barriers

Vaega e faaono aafia ai le faatinoina o le galuega: *O nisi o vaega e faaono aafia ai le faatinoina o le galuega e aafia ai le ono le faauauina ona vaaia lelei e le afioaga pea maea ona faaleleia. Peitai, ua faailoa e le afioaga o le a tuuina I lalo o le pule mamalu a alii ma faipule le vaaia lelei o le alavai, laau toto ma le puipuia o tulafono mo le lafoia o otaota I le vai.*

Barriers: The possible barriers foreseen in the project is the lack of commitment from the village. Once the rock wall, and the replanting program has been undertaken, there is the possibility that the village council might not be vigilant in its monitoring and maintenance work. To alleviate this, the project Advisor will work with the village council for 4 monthly inspections of the site at least for the first 3 years to ensure the maintenance.

Another barrier is the lack of understanding of awareness on the impacts of individual actions to the broader village. To alleviate this, an awareness program with some pamphlets will be produced during the project so families and individuals can read these outside of the scheduled meeting and workshops.

Risks: the potential risk for the rock walls is that the contractors might end up constructing a major rockwall that will have more impact on the wetlands. To minimize this happening, the project advisor will work with the contractors and the village on the most environmentally appropriate rock wall with funds available.

4.4 Monitoring and Evaluation Plan

Sa faatinoina se vaega taua o le suesuega I aafiaga mai le fesuiaiga o le tau I nisi o semina sa faataunuaina I le afioaga I le 2009. O nei faamaumauga sa toe faatalanoaina ai vaega ogaoga o le afioaga o loo aafia mai le fesuiaga o le tau. O lenei faatalanoaga na toe faamautina mai ai e le afioaga lo latou lagona, e faapea o le aafiaga o aiga mai lologa o le vai I taimi o timuga le vaega aupito I ogaoga. Ma o le vaega foi lea ua ala ai ona ave le faamuamua mo le faaleleia o le ala o le vai ma ala sima.

The assessment on the impacts of climate change on the communities started in the development of the CIM Plans in 2007. In these consultations, all sectors of the community were provided with maps of the area, whereby affected areas from climate change were identified and visited. These consultations identified cyclones, flooding, and coastal erosion as the main climate risks and were seen as extremely damaging noting that the majority of the old village was destroyed. In between the cyclones, the village identified flooding as the most regular climate risk issue where the inland road to the new homes mostly get blocked, while the stream overflows onto the road, the church and remaining homes along the coast.

The VRA analysis was process undertaken with the village over the last two years, attended by all sectors of the village but in several instances, by mixed group of participants. In the last workshop held May? 13th 2009, the village reiterated that rather than again going through the process, they supported all the issues raised in previous consultations.

In identifying possible options to reduce the climate risks, the village using information already gathered from the CIM Plan, identified the deepening of the bridge passage to allow for better flow of the water between the sea and the wetland as the most important issue. Additionally, the

village also identified the need to strengthen the retention ability on the edge of the wetlands, and specifically the stream linking up with the sea to reduce the erosion of homes and the church. The erosion of the stream edges is also eroding the vegetation on the edge of the wetlands and increase salinization of the mixed swamp vegetation. Therefore having a rockwall with a replanting program along the edge of the wetland is seen as immediate mitigation measures against the lost of vegetation, and reducing erosion along the village.

Another issue supported during the various consultations process including the CIM Plan process is the need to construct a suitable walking bridge for the village. This will allow for the existing rock bridge which is used for crossing to be dismantled thus allowing for better flushing of the water into the sea and movement of fish.

Other issues identified in the CIM Plan as impacts of climate change included the lack of water supply within the village and district, especially for families that have moved inland from the coast. The new project for the district for upgrading its water supply network has been approved for funding by the European Union. The maintenance of the public roads along the village has now been taken up by the MWTI with the recent tar sealing of the old village access road.

4.4.1 Initial VRA Analysis

Vulnerability Reduction Assessment Reporting Form	
1	Rate the recent impact of storm surges, flooding and coastal erosion on your livelihood
1	Rate the impact to your livelihood if recent storm surges, flooding and coastal erosion became twice as intense
4	What stands in the way of reducing flood and storm risks? How successful will these activities be in reducing these risks?
4	Will these activities continue to reduce risks from storm surges, flooding and coastal erosion after project period (and project funding) has concluded? Why or why not?
2.5	(= average of above)

The slight change in recording of the VRA was instead of recording individual persons values, the whole communities were asked on the collective answer to each question. This was done mainly due to the cultural structure of villages where villagers defer to the matai to provide the answers rather everyone and the fact that these issues have been extensively discussed with the village over the last 3 years.

In the discussions of the VRA at the village consultations, the following were the answers given in filling out the H-Forms:

Upon agreeing amongst the village council, women and untitled men that attended workshops that flooding was there main climate risk, the h-form was discussed with participants providing their opinions and answers.

1. ***How serious is the flooding for families:*** all the families considered flooding as very serious with varying reasons given ranging from impact on road crossing, damage to homes, crops and livestock. Another impact noted from this village was the absence of mangrove crabs and several of the fish species that once were found in the wetland, so they take longer to go fishing in the inshore reef. Reasons given for the loss biodiversity were damage to habitat from flooding,
2. When discussing how this could be improved, the main issues raised were the deepening of the bridge underpass and providing a retention wall along the river. Several folks also raised concerns about the rock bridges currently used for crossing as contributing to the increased in flooding. Families now residing closer to the mangroves also raised the issue that all the mangroves that once provided the barrier between the village and wetlands are all gone.
3. In trying to gather information on reasons why these were or were not important to villagers, we found out that the issues is important to everyone as they are all affected by flooding during the rainfalls in more than one way. Most importantly, all families now living inland and those still living close to the main coastal road are affected by the flooding as it prohibits regular movement both for cars and people as the flooding blocks the access road inland and the rock bridges.

Impact Assessment System

The project will not only be measuring the anticipated changes in the vulnerability of the project site on climate risks as identified in the VRA, it will also be measuring the environmental impact of global environmental benefits. The monitoring program will focus on identifying changes in the wetland and marine environment after the proposed civil works.

As a baseline for the biodiversity impact assessment, the project will put under protection all the endangered bird species in the area by banning shooting within and around the project sites and identify marine species found in the wetland prior and after the civil works. . The proposed mangrove replanting program will also be monitored to see how well it grows along with other wetland species.

In the form of land degradation, it is anticipated that once the civil works have been done, the project will measure through discussions with families if there are any more damage to plantations from flooding or not..

The monitoring will conducted 3 times in the life of the project with the first one at the start, the second one after the initial civil works; with the thirds round 6 months after the civil works or at the end of the project.

Monitoring program:

Indicators	Baseline Value	Target Value
Biodiversity: Number of globally significant species protected by project		• 10 endangered or threatened species

Biodiversity: Hectares of globally significant biodiversity area protected or sustainably managed	0	<ul style="list-style-type: none"> • 12 hectares of wetlands and mangroves (see Figure 2) • 10 hectares of marine area (see Figure 2)
Land degradation: Hectares of degraded land restored	0	5 hectares of degraded land under village customary restored (see Figure 2)

E tusa ai ma aiaiga o le fesoasoani, o loo ua faataatiaina foi nei o le faia se suesuega I le ogatotonu o le poloketi mo le vaaia lea pe o I ai ni suiga e ala I laau ma meaola o loo maua I le vai talu ona maea faaleleia le alavai ma toe totoina togo..

4.5 Project Management

O le faatinoina o le poloketi ua maea tapena I ai le afioaga. O pule mamalu a alii ma faipule o I latou ia e pule faamalumalu; ae o le a avea le komiti faafae ua tofia e ala I aiaiga mai le UNDP; latou te galulue faatasi ma le pulenuu e vaaia le faatinoina o le galuega.

O le a tofia foi se faufautua faapitoa e fautuaina le komiti aemaise le afioaga, faapea ai ma konekarate ina ia faia lelei le faatinoina o galuega. O le faufautua faapitoa o loo faamoemoe foi o le a feagai ma le faatinoina o nisi o vaega taua o le poloketi faapei o le tusiaina o lipoiti talafeagai ma manaoga o le UNDP. O lenei faufautua, o le a ia faatinoina se suesuega faapitoa e faailoa ai pe ua iai se suiga I totonu o le nuu aemaise le siosiomaga talu ona maea galuega o loo faatulagaina I le poloketi.

4.5.1 Management Structures

The project will be managed by the Village Mayor and the project committee on behalf of the village council. The project committee already includes representatives of the village council, women’s committee and untitled men, already. The role of the project committee will be mainly to ensure the funding is used properly. The project committee will also oversee and monitor the effective implementation by the different contractors or consultants required for the project, and obtain support from the village council for activities requiring in-kind support such as labour work or potential land disputes during the proposed work.

Due to the limited ability of committee members in providing reporting for the project, funding is set aside for an advisor to the village committee that will be responsible for compiling the reports, and conducting the monitoring of the project, and provide technical advise to the construction of the retention wall, the replanting program and deepening the bridge.

4.5.2 Relationship and Responsibilities of Proponent and Project Partners

Village Project Committee: the VPC will be responsible to the overall implementation of the project and consultations with the CBA committee. They will work with the project advisor to

reconcile the disbursement and use of funds as well as ensuring the continued village commitment to the project in terms of providing the in-kind support identified.

The proposed funding allocation for the village project committee is not as payment for potential allowances when travelling on project related activities to Upolu; Salelologa or meetings with the PA, PE and/or contractors.

Village council: the village council as the main decision-making body at the village level will receive monthly reports from the VPC on the progress of the project and act on actions that will be needed from the village side to support the project.

The in-kind support provided by the village is for the use of the taulelea and other village people to support the project. The number of people and hours cannot be determine as these will depend on what is needed for the project.

Other Partners: The PA and PE will liaise with relevant government ministries such as the LTA for road construction, MNRE PUMA for development consents, and MNRE Met Office for awareness raising activities.

Project Engineer: The project will work with an engineer to oversee the proposed civil works such as the deepening of the bridge, the retention wall and the crossing bridges. The proposed engineer is someone that has extensive knowledge of road construction and was used by the district in the preparation of the proposal

Project Advisor: the project advisor will be recruited by the VPC based on the recommendation of the village council and will be responsible for writing the progress reports to CBA committee, providing technical advise on the designs and replanting program. The PA will also be asked to conduct the monitoring and evaluation of the project mid term and provide any adjustments needed for a successful completion of the project. The project advisor will also be responsible with the soliciting of technical assistance from other Government Ministries or organizations as needed during the duration of the project.

The project engineer and project advisor fees are higher than USD\$100 a day, but in trying to make sure that the compensation is adequate, the district have agreed to spread the costs over the 5 projects so they all have the same consultants. The rationale is that by combining the funds, the consultants need to take one trip at a time but can inspect and over see all the projects, as compared to each consultant dealing with individual projects thus saving on village travel and time costs. Also for retention walls, the same design would be used but with small modifications to suit each site. Furthermore by having the same engineer and advisor, they will be able to match the activities especially for Fagamalo, Safai and Satoalepai so that they all work in harmony to resolve the flooding problem in the district.

5.0 PROJECT COSTS AND OTHER SOURCES OF FUNDING

5.1 Total Project Cost and Amount Requested:

	Budget Item (Description)	Amount from CBA	Amount from Proponent		Amount from AusAID		Total
			In Cash	In kind	In Cash	In Kind	
			In Cash	In kind	In Cash	In Kind	(should equal sum of lines to the right)
Outcome 1	Coastal ecosystems resilience increased						
<i>Output 1.1:</i>	<i>Bridge underpass deepened</i>	\$6,000		\$1,000	\$7,000		\$14,000 ³
<i>Output 1.2</i>	<i>Retention wall constructed</i>	\$16,000		\$2,000	\$18,000		\$36,000 ⁴
<i>Output 1.3</i>	<i>Wetland vegetation replanting program implemented</i>	\$1,000					\$1,000
<i>Output 1.4:</i>	<i>Rock bridges replaced with appropriate bridges</i>	\$2,000		\$1,000	\$2,000		\$5,000
Outcome 2.0:	Capacity developed among community members to manage local ecosystems to reduce ongoing climate change risks						
<i>Output 2.1</i>	<i>Community adaptation and mitigation awareness programme implemented</i>	\$1,000					\$1,000
<i>Output 2.2</i>	<i>wetland pollution prevented</i>				\$1,000		\$1,000
Project Management	Village Project Committee: ⁵	\$1,000		\$1000			\$7,000
	Project Advisor: Monitoring and evaluation: (TOR in Annex II)	\$2,000					
	Project Engineer : design and supervision (TOR in Annex I)	\$1,000			\$2,000		
Total		\$30,000		\$5,000	\$30,000		\$65,000

³ This is a only indicative budget. A full engineering report and budget will need to be conducted before work. The report will determine if it is an easy job or not. If it is easy, like the Lano bridge, the US\$13,000 should cover it, however, if the job proves to be too large, then the report can be used by the LTA to include it in their budgeting. It is anticipated to be much like the work done for the Lano bridge, but if it is to be a bigger operation, than this will be as a request to LTA and MNRE for a proper construction, that will be much higher than is allowed under this budget. If LTA funds it, these allocated funds will be returned to the UNDP SGP CBA programme.

⁴ Retention wall estimates based on MWTI figures of SAT\$400/meter (see Annex III), therefore approximately 120m per side of the stream will be covered by the retention wall. Retention wall rocks will use those discarded from the Fagamalo rock jetty. Community co-financing will be in the form of manual labour

⁵ This money is for travel expenses for the committee

Figure 1: Satellite imagery



Figure 2: Proposed protected areas for IAS monitoring



Annex 1: Terms of Reference: Project Engineer: (20 days over 18 months)

The project will work with an engineer to:

- facilitate the discussions with MWTI on the deepening of the bridge underpass
- oversee the designed and construction of the retention walls and the walking bridges crossing the wetland.

Necessary Qualifications:

- High level of understanding on how Climate Change impacts the proposed civil works
- Extensive knowledge of road construction

The proposed engineer is someone that has extensive knowledge of road construction and was used by the village in the preparation of the proposal. For any development consent and engineering applications, the project advisor and project engineer will be working with relevant Ministries to obtain them.

Annex II: Terms of Reference: Project Advisor

Community-based project are geared towards community development and implementation. Nevertheless, several of the activities required for the implementation will need technical input which might not be readily available to members of the community. Additionally, the project requirements of reporting, monitoring and evaluation and accounting of funds are sometimes stumbling blocks between the enthusiasm of the communities and commitment by the donors.

These needs to ensure the projects are implemented to both parties satisfaction are the main reasons for the requirement of a Project Advisor.

Roles and Responsibilities:

Technical advise

1. Assist the village project committee in the implementation of the work plan
2. Provide technical advise in consultations with the engineers and contractors on the construction of the retention wall, the deepening of the bridge and the construction of walking bridges
3. Provide technical advise and support in the establishment of the nursery, and plant collection methodologies, as well as the replanting program

Administration:

1. Assist the village council in writing of progress reports as per requirements by the UNDP CBA program
2. Review and advise the VPC on the utilization of funds to be in accordance with the requirements of the project
3. Conduct the monitoring component of the project

Annex III: Quote from LTA for civil works

Mr Petrini,

This is to confirm the rates used by PECL for the CBA report were acquired from the LTA data base. These estimated rates were obtained from our ongoing tendering process for specific projects.

Ie.

Seawall – ST\$400/m

Retaining Walls – ST\$400/m

Access Road Construction – ST\$300/m

Should you have any further queries, please do not hesitate to contact the undersigned. Manuia le aso.

Kind regards,

Namulau'ulu Lameko Viali
Manager - Road Operation Division
Land Transport Authority
Telepone: (685) 21611 Ext. 68