FAGAMALO 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 iloiloina e le Komiti mamalu.

Matou te faamaonia o lenei talosaga sa galulue faatasi ai le afioaga nei ma le afioga 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 Fagamalo:

1. _____

   Pulenuu:

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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**: Fagamalo;
3. **Proponent**: Fagamalo village council
4. **Project Objective:** Reduce the vulnerability of communities and coastal ecosystems in Fagamalo to climate change
5. **Authorized Representative**: Tuipoloa Tapelu (Pulenuu: Village Mayor) and Project Committee members
6. C**ooperating Organizations**: GEF SGP; AusAID
7. **Start-Up Date**: July 2009
8. **Project Period**: 18 months
9. **Total Project Cost: $56,000** (CBA and co-financing by AusAID V&A Project and Safa'i village)
10. **Amount Requested**: USD$25,000
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 auala galue tuai o le nuu o loo I tua tonu lava o maota ma laoa, e tuaoi ai ma le vai. O le auga o le faamoemoe mo le toe faaleleia o lenei auala galue, ina ia mafai ona faaitiitia ai le afaina o le afioaga mai lologa o le vai talu le fesuiaiga o le tau. E le gata I lea, ae o loo faamoemoe foi, o lenei auala o le a fai ma mapusaga e mafai ai e aiga o le nuu ona vave oo atu I vaega maualuluga pea oo mai afa, matagi malolosi aemaise o galulolo.

O se aoga faalesiosiomaga foi o lenei auala, o le taofia lea o le oo atu o otaota ma faaleagaina ai le olaga faalenatura o laau aoga ma meaola o loo faapea ona nofoia eleele faataufusi ma le vai, aemaise ai o le gataifale.

O se tasi vaega taua mo le poloketi o le toe aveeseina lea o le uafu maa o loo faapea ona iai I se vaega o le gataifale o le afioaga. O le faanaunauga mo lenei galuega ona ia mafai ai ona faaitiitia le tafia vave ese o le matafaga o loo faapea ona tafia ese pea I taimi o galu malolosi aemaise ai afa. O aveeseina foi o lenei uafu maa o le a mafai ai ona toe lelei le fetafeai o le sami aemaise o le ola lelei ai o amu o loo faapea ona aoga tele mo le puipuia o le matafaga, maota ma laoa ma nisi o aseta taua a le afioaga ma le malo.

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

The proposed project is to reduce the vulnerability of Fagamalo village and the surrounding ecosystems from the impacts of climate change. Fagamalo village was once the government centre for the north of Savaii with the district hospital, district secondary school, government offices, and businesses all located here. But cyclones Ofa and Val in the early 1990's totally

destroyed all of this these government infrastructure, businesses and most of the village residences along the foreshore. The cyclones and subsequent strong wave surges has eroded away around 50m of old coastline. Whilst several families have relocated inland, the majority of the village still resides on the coast due to the convenience of access and most importantly, a lot of the traditional lands and family gravesites are still around.

To reduce the impacts of cyclones and flooding on the households, the wetland and coastal ecosystems around Fagamalo, the project is proposing to take out the existing rock jetty acting as a groin which is contributing to the rapid coastal erosion, and affecting the coral regrowth in the inshore reef. The village is also highly vulnerable to climate risk from the flooding of the Satoalepai wetlands directly behind village homes. To slow down the flooding risk and provide easy access for families along the coast to higher grounds during natural disasters such as tsunami's cyclones, and strong wave surges, the existing access road will be upgraded. The upgraded unsealed access road will also provide the buffer between the flooding and the family homes while on normal days, it will reduce land-based pollution from affecting the wetlands.

1.0 RATIONALE

O le tapenaina o lenei 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 iutmalo, aua lava le mataituina o aafiaga mai le fesuiaiga 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 fesuiaiga 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 lenei galuega ona ia le gata I le toe faaitiitia o aafiaga mai le fesuiaiga o le tau, ae o le toe faatuputeleina foi lea o laau, meaola, ia ma figota, o nsi o vaega taua o le siosiomaga o loo faamoemoe iai aiga mo le lumanai.

Community/Ecosystem Context

Fagamalo village part of Gagaemauga III District located on the northern most point of the island of Savaii. It has a population of less than 700 inhabitants making up around 80 households. Fagamalo villagers mostly depend on plantations and fishing as the main sources of income and livelihood. Prior to the cyclones of the 1990's , most of the families resided on the coast, with plantations located inland beyond the Satoalepai wetlands on Fagamalo customary lands.

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 70% of the reef covered by corals on the eastern side of the existing rock jetty.

Directly behind the village 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.

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 Samoa 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 sub-species endemic birds such as the Samoan whistler (*Pachycephala falvifrons*), Samoan fantail (*Rhipidura nebulosa*) and the flatbilled kingfisher (*Todirhamphus chloris*).

For the marine biodiversity, the pavona 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 *Rhysphorra sp* mangroves were destroyed by flooding and the cyclones will need to be replanted. The wetlands was also once a haven for fish but since is now mostly muddy substrate.

Fagamalo is the traditional centre of the greater Matautu village which includes, Safa'i, Fagamalo, Lelepa, Avao, Vaipouli and Salei'a. Under the existing government system, Fagamalo has village mayor as the village liaison with government while the autonomous village council is charged with the daily management of village affairs.

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 but is totally exposed to a 300m reef break directly in front of the village which increases the vulnerability of the village to strong storm wave surges. As seen from the attached aerial photographs between 1950's and 2004, the coastal erosion is substantial and as relayed by the village is an on-going risk during extremely high tides, strong wave surges and cyclones.

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 50m of the old coastline and extending the full length of the district with Fagamalo the most affected. As the sea level continues to rise the beachfront of the village is rapidly lost on an annual basis with homes that were once far inland now located right along the beach while others have all been eroded either by cyclones or high waves. 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

The village of Fagamalo faces constant threat from flooding every time heavy rains reach the area as the wetlands is the central drainage location. Furthermore, in times of cyclones or rising tides and storm surges, the wetlands also experiences increases in water level. During these periods, the family homes, crops and livestock for over 70% of the village whom still reside along the main coastal from flooding. Several of the families in trying to save homes and crops have started dumping rubbish behind their homes as forms of barrier protection and reclamations to escape the flooding, but with not much success. Several families have also started plantation inland due to the constant threat of damage from flooding, while those with the means have begun relocating homes further inland beyond the wetland

As several of the villagers have started to move inland especially with plantations, flooding has largely damaged the old access road, while several of the families as the primary school are only linked through a walking track. Although a new access road has been put on the boundary of the Fagamalo and Lelepa village, the majority still reside a fair way away from this road. And in times of natural disasters such as cyclones or flooding, families living on the eastern end of the village are handicapped from accessing high grounds due to the distance factor.

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.

Project Approach

The baseline for the Fagamalo 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.

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. Therefore in efforts to minimize the overall impacts, some of the priority adaptation and mitigation measures have been addressed either by the Government of Samoa, support from other donors such as the EU or other donors. The remaining impacts which affect the ecosystems are now the focus of the proposed project. A long term goal of the national adaptation plan of action is to relocate the main roads and high risk infrastructure further inland. Nevertheless, this will not be possible in the new foreseeable future due to the high costs.

Specifically, the major government assets such as electricity, roads and telephones are addressed by the Government of Samoa. The water supply network for the district which is still under district control is being support by the EU to improve both the catchment and the distribution to include families relocating to inland areas.

As agreed during the CIM Plan consultations and reconfirmed in the CBA consultations, the village identified the upgrading current walking track into a proper unsealed access road to link with the new access road will provide a solution for flooding which the main climate risks facing the village. That is, the access road, will act as a natural barrier to the village from the wetland flooding, as it will be raised above the high water mark, thus protecting homes, agricultural crops and livestock for families. The barrier will also doubly act as barrier for the pollution to the wetlands as families will stop dumping rubbish behind home as forms of reclamation since flooding will not be an issue. Reducing pollution will be assist in rehabilitating the degrading wetland and improve it as a habitat for both marine and wetland species. Having a rehabilitated wetland ecosystem does goes along way into also reducing climate change risks. (See figure 1) It will further act as an evacuation route during severe weather such as cyclones.

These are proposed short to mid term measures until a long term relocation of the road and necessary infrastructure is realized before families can permanently moved to higher grounds.

On the sea front, the proposed activity to take out the existing rock jetty is foreseen as both relieving the added pressure of beachfront erosion from climate related changes such as sea level rise, and cyclones. Taking out the rock jetty is also an ecologically important action to restore and rehabilitate the coral reef systems especially on the western end of the village. Having healthy coral reefs throughout the village will provide added protection for the beachfront. The normal inshore current flow is from east to west. With the existing rock jetty going all the way to the reef inlet, it is blocking the natural flow of sand and current along the inshore. But this most dangerous during storm surges and cyclones as described by the villagers. By restoring the inshore into its natural flow by taking out the jetty, it is anticipated that the coral regrowth will flourish on the western end like the eastern end. It is also anticipated that more of the sand will settle on the beach rather therefore providing stronger beach resistance compared to the sand currently settling along the eastern end of the rock jetty and undoubtedly a large amount has gone out into the open sea based on the current flow.

The village has also taken commitment that once the access road has been upgraded and the rock jetty is taken out, they will vigilantly monitor the ban on dumping rubbish into the wetlands or

on the edges to pollution of the wetlands as this has been to date the only form protection they could do.

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 Fagamalo.

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 vaaia lelei e afioaga ma puipuia lelei nei galuega mo le lumanai.

2.1 **Project Formulation**

The project was first formulated out of the community consultations undertaken between he village and Government of Samoa during the development of the CIM Plan for the district. In this consultation, the village were presented with maps of the area both historical and present time. The CIM plan team and village than identified the changes over time and develop a Management Plan for actions to be undertaken to minimize the villages vulnerability to climate change. As was identified at the time, the main issues were for the village to relocate inland away from the coast, but to do this, appropriate infrastructure needed to be upgraded to better service the area.

In preparation of the project concept, over four community consultations meeting were undertaken including field visits with village members to the sites for confirmation of issues. Assessments undertaken by the CIM Plan team were presented with potential solutions in which the village acknowledge as most appropriate for their needs.

In the last phase of the planning, 2 visits were undertaken with the village to reconfirm the issues presented by the village in consultations that stretched back to 2007.

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 while the project advisor and engineer will assist the village in dealing with the contractors and the necessary approvals such as development consent.

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**

Fagamalo 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.

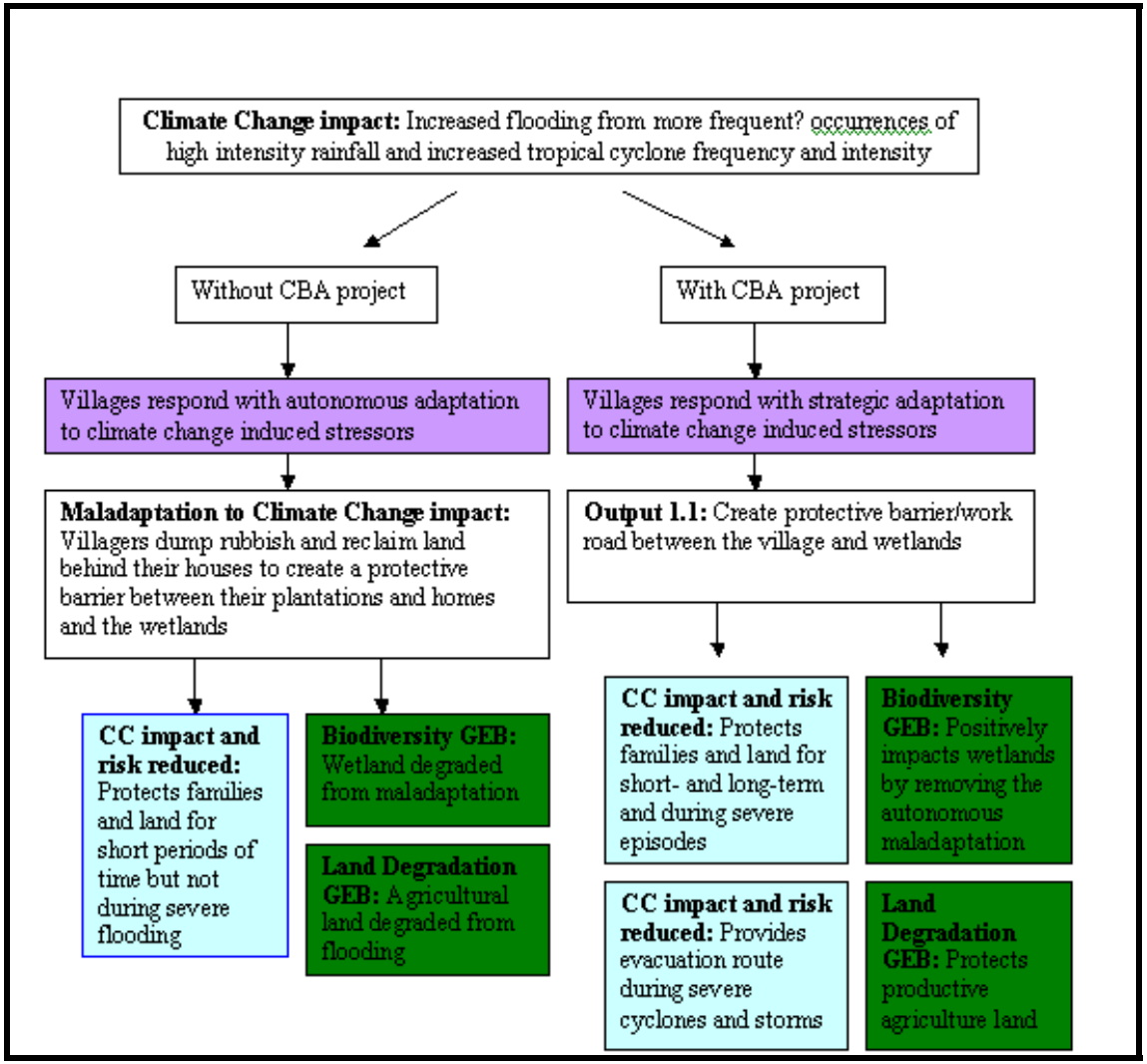
4.0 PROJECT DESCRIPTION

4.1 Objective, Outcomes, Planned Outputs:

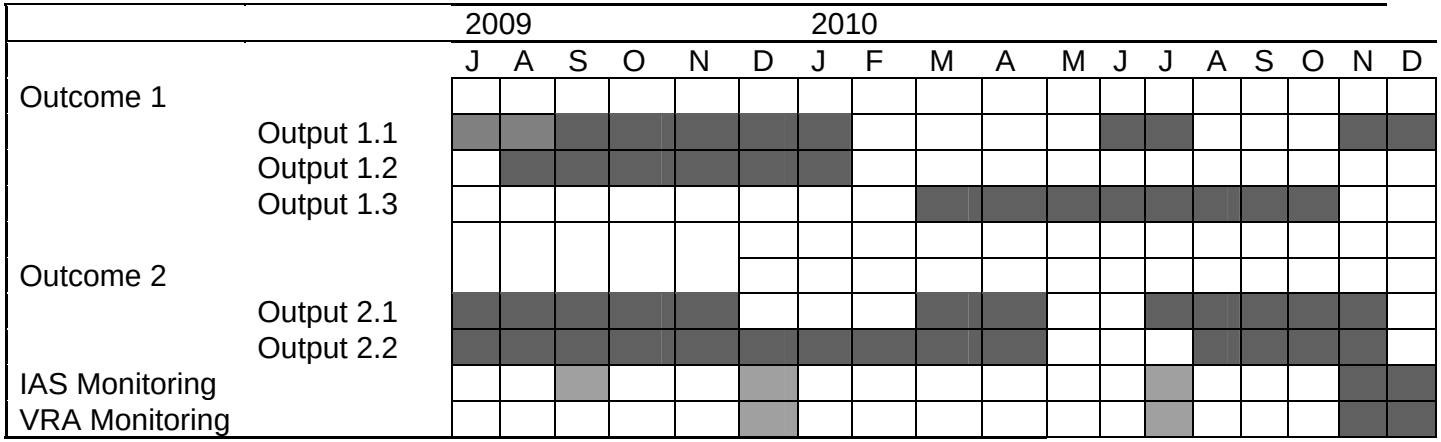
<table>
<tr><td colspan="2">Autu: Faaitiitia le afaina o le afioaga ma le siosiomaga faalenatura mai le fesuiaiga o le tau:
Project Objective: Reduce the vulnerability of communities and coastal ecosystems in Fagamalo to climate change</td></tr>
<tr><td colspan="2">Manulauti 1: Puipuia le siosiomaga tu-matafaga ma eleele faataufusi mai le fesuiaiga o le tau
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.</td></tr>
<tr><td>Iuga o le Galuega 1: faaleleia le auala galue
Output 1.1: Upgraded access road</td><td>1.1 Hire contractor to work with village and PA advisor on design and upgrading the access road
Faamaonia le konekarate mo le faia o le auala galue
1.2 Upgrade the access road : Faaleleia le auala galue</td></tr>
<tr><td>Iuga 2: Aveeseina le uafau maa
Output 1.2: Rock Jetty Removed</td><td>1. obtain contractor to work with village in taking out the rock jetty
2. take out rock jetty
faamaonia le konekarate e aveeseina le uafu maa</td></tr>
<tr><td>Iuga 3: Totoina laau aoga I le gataifale ma le vai
Output 1.3: Coastal ecosystems replanted</td><td>1. Establish nursery, and conduct collection of plants for beach replanting program
Faia se fale laau ma aoina laau talafeagai mo le toe totoina o le matafaga ma eleele tuaoi ma le vai
2. Replanting
3. Monitoring of replanting program</td></tr>
<tr><td colspan="2">Manulauti 2: Faatupulaia le malamalama o afioaga I galuega fai mo le faaitiitia o aafiaga mai fesuiaiga o le tau
Outcome 2.0: Capacity developed among community members to manage local ecosystems to reduce ongoing climate change risks</td></tr>
<tr><td>Iuga o Galue 2.1:Faataunuuina semina
Output 2.1 Awareness-raising programme</td><td>1. preparation of resource materials for awareness program
2. conduct awareness program
3. village commitment of actions to reduce climate risks
tapena pepa faalauiloa ; faatinoina aoaoga faasemina</td></tr>
</table>

Iuga 2.2: Faaitiitia le lafoai o otaota I le vai *Output 2.2 Wetland pollution prevention programme implemented*	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 *tapenaina fuafuaga ma tulafono a le afioaga e taofia ai le lafoia o otaota I le vai*
Outputs to be supported with co-financing: Galuega e faatupeina I si vaega o le fesoasoani:	
Output 1: upgrading the access road and taking out rock jetty: faaleleia o le auala ma le aveeseina o le uafu maa.	

Figure 1: SPA eligibility flow-chart for Output 1.1.


Climate Change impact: Increased flooding from more frequent? occurrences of high intensity rainfall and increased tropical cyclone frequency and intensity
Without CBA project
With CBA project
Villages respond with autonomous adaptation to climate change induced stressors
Villages respond with strategic adaptation to climate change induced stressors
Maladaptation to Climate Change impact: Villagers dump rubbish and reclaim land behind their houses to create a protective barrier between their plantations and homes and the wetlands
Output 1.1: Create protective barrier/work road between the village and wetlands
CC impact and risk reduced: Protects families and land for short periods of time but not during severe flooding
Biodiversity GEB: Wetland degraded from maladaptation
Land Degradation GEB: Agricultural land degraded from flooding
CC impact and risk reduced: Protects families and land for short- and long-term and during severe episodes
Biodiversity GEB: Positively impacts wetlands by removing the autonomous maladaptation
CC impact and risk reduced: Provides evacuation route during severe cyclones and storms
Land Degradation GEB: Protects productive agriculture land

4.2 **Timetable**



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 village an amount of **USD$25,000, twenty five thousand US dollars** according to the schedule set out below, subject to the **Local CBO**'s submission of timely and accurate expense reports:

USD$7,500, seven thousand five hundred 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.
- Submission of letters from MWTI regarding their estimates of the work for this project

USD$7,500, seven thousand five hundred 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 of 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 building of the box culverts
- Development Consent approved from PUMA MNRE
- Awareness raising programme plan complete and submitted;

USD$7,500, seven thousand five hundred US dollars (30%), January 2010 if the following are met

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

USD$2,500, two thousand five hundred 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.

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 aofia ai le ono le faauauina ona vaaia lelei e le afioaga le aual 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 auala 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 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 faataunuuina 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 auala galue.

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 changed 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 on May 14th 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, and the VRA process, identified flooding, cyclones and coastal erosion as the main climate risks. The impacts of flooding, cyclones and strong wave surges were identified as safety of people, agricultural crops, livestock, and homes. Environmentally, it was also recognized that the climate risks also impact on the critical ecosystems such as coral reefs, and the wetlands that provide ptertinent ecological services that support human.

To reduce the vulnerability to cyclones, flooding and coastal erosion, the main activities agreed upon were the upgrading of the access road so families could easily access the uplands when cyclones, high waves and flooding affect village. This actions was also seen as a way of protecting the wetlands and biodiversity from continued pollution from household activities, waste disposal and feral pigs.

To reduce the vulnerability on the increasing sea level rise, the village agreed to take out the existing rock jetty to allow for the natural flow of sand and inshore currents, thus reducing coastal erosion.

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 existing public roads along the village has now been taken up by the MWTI.

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
3	What stands in the way of reducing flood and storm risks? How successful will these activities be in reducing these risks?
3	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	**(= average of above)**

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: for all the families between the road and the wetlands, they all rated it as being very serious

2. When discussing how this could be improved, the majority felt that some form of sea wall or retention wall is needed to protect the village from further flooding. But the

suggestion by the village council of upgrading the walking track into an unsealed access road was supported by everyone.

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, while the families along the beachfront are affected by high waves during strong waves, while everyone gets affected during cyclones.

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. To show this, the project will use the baseline of the existing wetlands under village ownership, plants and animals as well as the size of fish found in the wetlands. The monitoring program will focus on identifying changes in the wetland and marine environment after the upgrading of the access road and taking out of the rock jetty to reflect changes either positive or negative in the size of the wetland area.

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. IT will also put a ban on the cutting of mangrove trees so it can continue to grow.

In the form of land degradation, it is anticipated that once the access road is connected, the village will ban anymore developments or waste disposal into the wetland as it works to making a protected area. The impact assessment will therefore be to show how much of the wetland under Fagamalo ownership will be protected.

The village will set the baseline at the beginning of the project by identifying the types and size of fish within the wetlands and the plants. 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: • Hectacres of globally significant biodiversity area protected or sustainably managed	0	• 12 hectares of wetland and mangrove ecosystem (see Figure 2) • 50 hectares of marine area (see Figure 2)
Biodiversity: Number of globally significant species protected by project	0	10
Land degradation: Hectares of degraded land restored	0	10 hectares of degraded land

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 auala. O le faia foi se suesuega e asia ai ni suiga o le gataifale pe a maea le aveeseina o le uafu maa.

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 faafoe 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 on faia galuega o loo faatulagaina I le poloktei.

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 liase 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 design and construction of the access road as well as the clearing of the rock jetty. 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 adequeate, 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 other partner		Total
		In Cash	In Cash	In kind	In Cash	In Kind	(should equal sum of lines to the right)
Outcome 1	Coastal ecosystems resilience increased						
Output 1.1	Upgraded access road	$10,000		$3,000	$20,000		$33,000[1]
Output 1.2	Rock Jetty Removed	$8,000		$2,000	$5,000		$15,000[2]
Output 1.3	Coastal ecosystems replanted	$2,000					$2,000
Outcome 2	Capacity developed among community members to manage local ecosystems to reduce ongoing climate change risks						
Output 2.1	Community members engaged in an awareness raising programme focusing on climate change risks and adaptation	1,000					$1,000
Project Management	1. Project Advisor: Monitoring and evaluation: (TOR in Annex II) 2. Project Engineering (TOR in Annex I) 3. Village Project Committee:[3]	$2,000 $1,000 $1,000		$1,000			$4,000
Total		$25,000		$6,000	$25,000		$56,000

(Note.) The village in-kind support will be in the form of manual labour for the proposed works

[1] The access road estimates provided by MWTI is $300 per m (see Annex III), therefore it is estimated that 300m of road will be upgraded

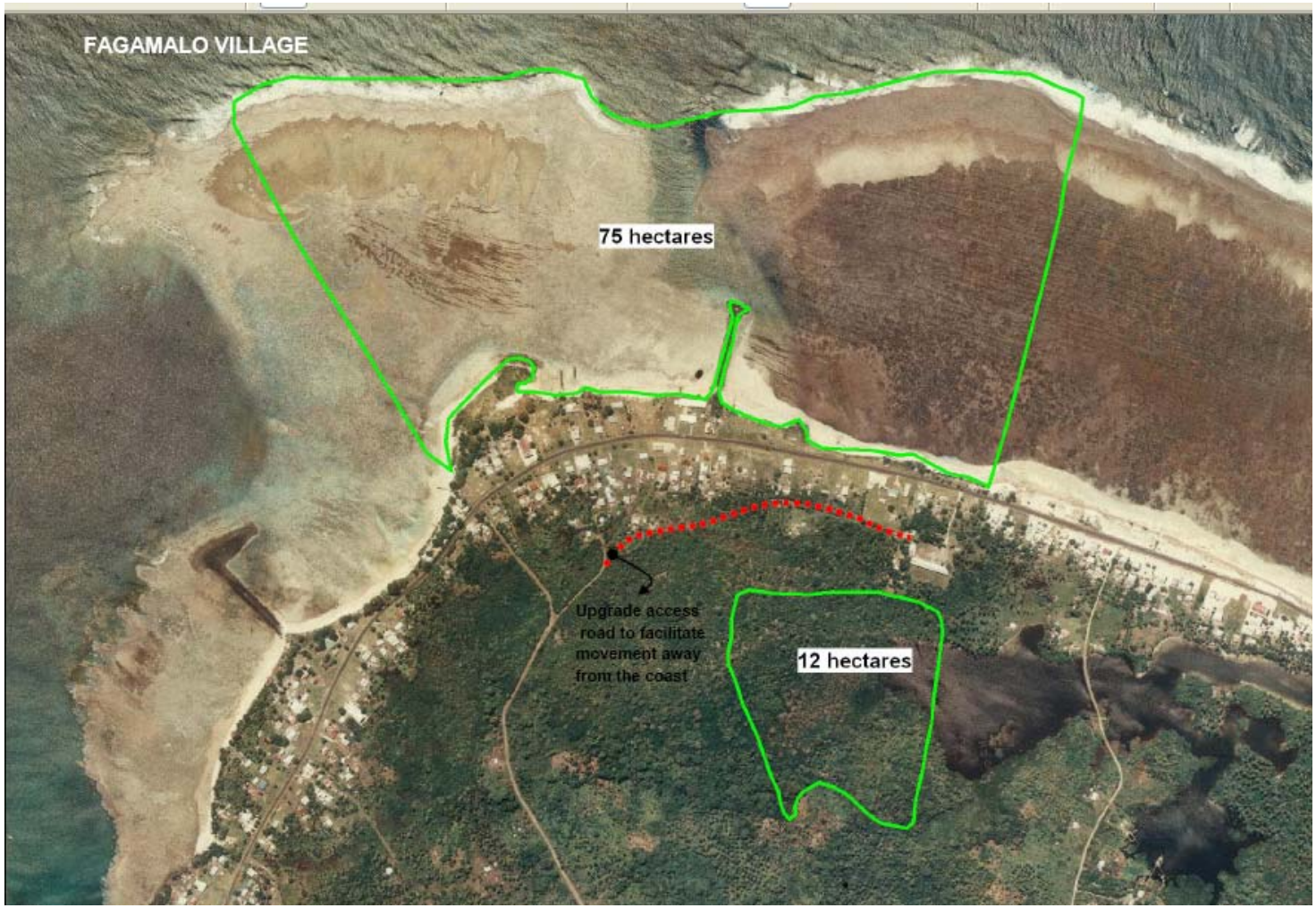
[2] The rock jetty removal will use a loader and trucks. It is anticipated that much of the rocks from the jetty will be used up in the upgrading of the access road. The rate for a loader is ST$150/hr and for a truck ST$400/load The estimated work is 3-4 weeks. 175 hours of loader (US$11,250) and 25 loads (US$3,750)

[3] This money is for travel expenses for the committee

Figure 1: Satelite imagery


Lelepa
Safa'i
Sale'aula

Figure 2: Proposed protected areas for IAS monitoring



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

The project will work with an engineer to

- facilitate the discussions with LTA on the access road upgrading works and necessary permits
- oversee the designed and construction of the access road
- design and oversee the rock jetty clearing process

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 stream including the MNRE PUMA Development Consent process

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