

**VAIPOULI/AVAO/SALEI'A
VILLAGES**

**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 Avao:

1. _____

Pulenuu:

2. _____

Sui Komiti

3. _____

Sui Komiti

4. _____

Sui Komiti

5. _____

Sui Komiti

6. _____

Sui Komiti

UNDP CBA Steering Committee

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Sainia: Komiti mo Alii ma Faipule Vaipouli:

7. _____

Pulenuu:

8. _____

Sui Komiti

9. _____

Sui Komiti

10. _____

Sui Komiti

11. _____

Sui Komiti

12. _____

Sui Komiti

UNDP CBA Steering Committee

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Sainia: Komiti mo Alii ma Faipule Salei'a:

13. _____

Pulenuu:

14. _____

Sui Komiti

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Sui Komiti

18. _____

Sui Komiti

PROPOSAL SUMMARY

1. **Project Title:** Community-based adaptation against flooding and sea level rise
2. **Project Site:** Gagaemauga III District
3. **Proponent:** Avao/Vaipouli/Salei'a villages
4. **Project Objective:** Reduce the vulnerability of communities and coastal ecosystems in Avao/Vaipouli and Salei'a villages to climate change
5. **Authorized Representative:** Tiatia Lino (Avao Pulenuu: Village Mayor); Toa (Vaipouli matai) Pili Falanisi (Salei'a Pulenuu) and the respective and Project Committee's for each of the villages
6. **Cooperating Organizations:** GEF SGP; AusAID
7. **Start-Up Date:** July 2009
8. **Project Period:** 18 months
9. **Total Project Cost: \$159,000** (CBA and co-financing by AusAID V&A Project and Avao, Saleia and Vaipouli villages)

Village	AusAID	CBA	Total
Avao	\$25,000	\$25,000	\$50,000
Vaipouli	\$25,000	\$25,000	\$50,000
Salei'a	\$25,000	\$25,000	\$50,000

10. **Amount Requested:** USD\$25,000 for Vaipouli; \$25,000 for Salei'a; and \$25,000 for Avao; thus making up USD\$75,000 for three village communities

11. Brief Project Description

O le poloketi o loo ua tapenaina nei mo afioaga o Salei'a, Avao ma Vaipouli o le fia faaleleia lea o le alavai tuai sa faapea ona ui ane I tuamaota o le afioaga ma oo atu I Vaimea. Peitai, o afa malolosi ma uaga I tausaga ua tuanai sa faaleagaina ai lea alavai ma ua malosi ai le tafe a le vai I tua tonu o maota ma laoa o afioaga pei ona faataunuu ai lenei poloketi.

O le faatetelina o uaga malolosi, I tausaga taitasi aemaise le lamatia pea o le atunuu I afa ma galu malolosi, o lea o loo aafia tele ai afioaga nei i le pa o le vai ma faaleagaina ai maota ma laoa, ae le gata I lea o faatoaga ma lafu manu o loo faaaoga mo le tausia o aiga.

O le galuega la o loo faataua I le poloketi o le toe tatai lea o le vai I se tasi o alavai tuai o loo maomao ese atu ma le aai, ina ia taofia ai le afaina pea o afioaga. O loo faamoemoe foi ina ia toe faalelei le alavai o loo I tuamaota mo le tafe a le vai aemaise ai le toe totoina togo ma nisi laau aoga I le puipuia o eleele faataufusi.

O se tasi vaega taua o le galuega o le toe totoina lea o laau ma le faasaoina lea o le vaomatua o loo ola I auvaemauga aemaise le vaega tonu o loo tafe mai ai le vai agai atu I le aai. O le taua o lenei polokalame mo le toe totoina o laau, ina ia taofia ma faaitiitia ai le tafe o palapala I le vai ma punitia ai le alavai.

O lenei poloketi o loo galulue faatasi ai alii ma faipule o Avao, Salei'a ma Vaipouli, ma o loo faamoemoe ia faamaeaina I totonu o le tausaga galuega faatino, ae mo le lua tausaga le poloketi ina ia mafai ona vaavaaia ai ni suiga lelei o galuega faatino.

The proposed project is to reduce the vulnerability of Avao, Saleia and Vaipouli villages and the surrounding ecosystems from the impacts of climate change. The villages of Salei'a and Vaipouli and part of Avao village suffer from regular flooding from the stream and wetland directly behind these villages. The flooding from the stream and wetland caused severe damage to the villages with the loss of homes, land, and the destruction of agricultural and livestock several times a year.

Rather than having individual village projects, whereby funds for each village will not be enough to cover the necessary costs for the project, the 3 village councils agreed that by combining the funds from the three projects (USD\$25,000 or \$50,000 for each village) only then will they have the necessary funds to build the proper retention wall and redirect the stream to protect the villages from climate risks. So in essence, these are 3 projects for each village but being implemented together.

The project proposes activities to reduce the vulnerability of the communities by redirecting the river flow to one of its historical pathways. This was blocked due to fallen trees and sedimentation from the cyclones and heavy rainfall during the rainy seasons. The project further proposes a replanting program for the wetland, the watershed area and the ridges along the stream to reduce sedimentation build up along the stream banks and pollution of the inshore reef.

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 itumalo, aua lava le mataituina o aafiaga mai le fesuiaiga o le tau.

Mai nei mafutaga ma semina, sa faapea ona faailoa ai e 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.

Peitai, ona o le faataatiaina o le uluai fesoasoani mai le UNDP, o lea sa tuueseese ai afioaga taitasi, ae ina ua faaalua finagalo o afioaga I le vaega tonu o loo fia faalelei, o lea na tasi ai le faamoemoe ina ia tuufaatasia afioaga e tolu I se poloketi se tasi ina ia mafai ona faamaeaina le galuega o loo fuafuaina.

O le mafatiaga ogaoga sa faalia e afioaga uma, o le faaleagaina lea o maota ma laoa aemaise faatoaga mai lologa.. Ele gata foi I lea, ae o le afaina o le gataifale ma olaga o amu, ua vaia ai foi le aafia o ia ma figota o loo mauaina I le aloalo ona o le tafe atu o le palapala I le sami..

O le taua la o lenei 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 nsi o vaega taua o le siosiomaga o loo faamoemoe iai aiga mo le lumanai.

Community/Ecosystem Context

The villages of Salei'a, Avao and Vaipouli are next to each other in Gagaemauga III District located on the northern most point of the island of Savaii. It has a population of just over 700 inhabitants making up around 100 households. Agriculture and fishing are the main sources of income and livelihood for the villages.

The villages fronts the sea with the two extensive reef breaks approximately 60m from the beach. The first one directly fronts Avao village and is the location of rapid coastal erosion over the past 10 years where several homes and beach fale tourism development were washed away. The western end of this break extending the length of Vaipouli and Salei'a is now protected by a well constructed seawall.

Behind the old villages of Salei'a and Vaipouli and part of Avao is an extensive wetland formed out of the stream. The stream is the only river system on this northern part of Savaii. This river has an extensive water-catchment and reservoir which the water system for the district is piped from.

The wetland was once a mixed of mangrove forest and herbaceous coastal marsh, but since the 1990's, the mangroves were mostly decimated while the coastal marsh has also diminished. It does perform a fish nursery function for juvenile fish.

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 villages of Avao, Vaipouli and Salei'a are sub-villages of the bigger traditional village of Matautu, but now have their own village mayors and operated independently until traditional cultural gatherings. The village council for each village 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 extending the length of Salei'a and Vaipouli, and the western part of Avao. The eastern border of Avao is not protected by any seawall and has witness the most dramatic coastal erosion over the past 20 years and it highly vulnerable to high waves for the reef break in only about 50m from the coast. Over the past 4 years, graves and homes for families on this stretch of land fro Avao were swept away due to rising level and strong waves.

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 Saleia and Vaipouli villages. Additionally, all the homes on the northern part of the main coastal road have been destroyed. The villages of Salei'a and Vaipouli now only have approximately 100m width of land between the main coast road and the stream for residential settlement.

As the only road connecting the island of Savaii runs in front of the village gets destroyed regularly from the surging waves and the flooding waters, a sea wall has now been installed to provide protection. This has also provided relief for the villages as protection.

FLOODING

The increasing intensity and amount of rain falling has seen regular flash flooding in this area resulting in the damaging of homes for all the families living along the stream pathway. Inland flooding is driven by a number of baseline factors, including the clearing of the watershed area for plantations while closer to the village, the narrowing of the waterway due to falling trees and silt build up all contribute to the intensity of the flash flooding. The flooding also damaged the agricultural plantations and livestock farms behind the village. To reduce the constant threat of damage to homes, and to revive agriculture and livestock farming closer to the homes, the proposed redirecting of the stream will be a welcomed mitigation measure against climate change

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 Avao/Saleia/Vaipouli 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 the this project.

The project needs were initially identified in the CIM Plan exercise and expanded upon during the planning phase of the project. The CIM Plan work included extensive consultation with the individual villages and then collectively as the Gagaemauga 3 District together with coastal and climate change experts assessing long term impacts of climate change on coastal communities, the environment and government assets.

From the studies and consultations, it was identified that climate variability and extreme weather patterns will result in continued flooding affecting the safety and livelihood of families and increasing the vulnerability of the wetlands and marine ecosystems. 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, such as the seawall on the front of the village as this is important for the country. Other government assets such as electricity, roads and telephones are being 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. Global Greengrants Fund provided some relieve funding to widen the channel for the stream. Although some relief was made, it was only a short term solution.

As was firstly identified by the villages during the CIM Plan consultations and reconfirmed in the CBA consultations, the village see the widening of the old stream channel which is further away from the village as a more permanent long term solution. By having the old channel functioning again, flooding through the village will be stopped, thus protecting homes and plantations. The project also proposes to replant mangroves and the rehabilitate the coastal marshlands which will provide a important natural filtering system needed to reduce siltation in the inshore reef that kills corals.

In efforts to also address the flash flooding from the source, the project proposes to conduct a replanting program and establish a water-catchment conservation program to ban deforestation along the stream edges and watershed area.

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 Avao, Salei'a ma Vaipouli.

Sa faatinoina lea ini faatalatalanoaga ma ni semina faia I totonu o afioaga e faamalamalamaina ai mataupu e uiga I le fesuiaiga o le tau ma aafiaga I le nuu, faapea 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 afioaga ma sui poto faapitoa sa fesoasoani I le afioaga.

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

O loo iai foi le faamoemoe o 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 the 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 then identified the changes over time and develop a Management Plan for actions to be undertaken to minimize the village's 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. Therefore, mid term measures were identified to minimize the impacts of the changing climatic conditions with forecasted regular and higher intensity of rainfall and cyclones, prolonged and pronounced drought periods.

In preparation of the project concept, several meetings were conducted with each village individually and as the whole district. In each of the meetings discussions almost always touched on the village developmental needs and actions to protect from the flooding.

In the last phase of the planning, 2 visits were undertaken with individual villages followed by meetings which all three villages were present. A combined meeting with was held between Avao and Vaipouli where they agreed to combining the funds to resolve the climate risk. After the village meeting with Salei'a on May 13th 2009, they also agreed to combine with Avao and Vaipouli. The subsequent consultations were with the village committees on as one group whereby the 3 villages all agreed on the proposed approach. The one issue agreed by the committees is that each village allocation should still be deposited into its project account, but will all share equally for the payment of activities identified.

2.2 Project Implementation

For the implementation of the project, the villages have 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. These committees will be responsible for the managing of projects funds disbursed to the village and working together with the other 2 villages on the project.

These committees will report back to their respective village councils 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 councils will also assist the project is resolving any potential land issues.

The village committees have also endorsed the assistance of the district member of parliament to provide technical advise on areas where needed

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 villages. 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 councils will take over the maintenance of the works with the village mayors and his committee tasked with the regular monitoring.

3.0 PROPONENT DESCRIPTION

3.1 Organization's background and capacity

Avao, Salei'a and Vaipouli are traditional villages 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:

Project Objective: Reduce the vulnerability of communities and coastal ecosystems in Safai to climate change: SINI AUTU: Faaitiitia lamatiaga o afoaga ma vaega o le siosiomaga mai fesuaiga 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. Manulauti 1: Faamalosa puipuiga faalesiosiomaga mo le taofiofia o aafiaga mai le fesuaiga o le tau	
<i>Output 1.1: Rock barriers put into place and stream pathway cleared</i> <i>Iuga o Galuega 1.1: fausia faaleleia le alavai</i>	1.1 Design an appropriate retention wall to redirect the stream away from the new flood area behind the village 1.2 Construct the retention wall and deepening of the stream by taking out the silt and fallen trees blocking the stream pathway
<i>Output 1.2 Vegetation barriers strengthened</i> <i>Iuga 1.2: toe totoina laau talafeagai mo le faaleleia o le siosiomaga</i>	1.3 Establish nursery, and conduct collection of plants for replanting program 1.4 Replanting 1.5 Monitoring of replanting program
Outcome 2: Terrestrial Ecosystems rehabilitated to reduce risk associated climate risks of flooding, shortage of water supply and erosion.	
<i>Output 1: Reforestation programme implemented.</i> <i>Iuga o Galuea .1: Toe totoina le vaomatua mo le faaitiitia o tafega ma eleele solo.</i>	1. Identify the catchment area and stream ridges for replanting program 2. Establish watershed conservation area 3. implement replanting program
Outcome 3.0: Capacity developed among community members to manage local ecosystems to reduce ongoing climate change risks	
<i>Output 3.1 Awareness raising programme on climate change risks and adaptation conducted in the communities</i>	1. preparation of resource materials for awareness program 2. conduct awareness program 3. village commitment of actions to reduce climate risks
<i>Output 3.2 Wetland and stream edge rehabilitated by stopping reclamations using solid waste</i>	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

Outputs to be supported with co-financing: Galuega e faatino e nisi vaega o le fesoasoani

Output 1: construction of the retention wall:

Iuga 1: fausia faalelei ole alavai

4.2 Timetable

		2009					2010													
		J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J
Outcome 1																				
	Output 1.1	■	■	■	■	■	■	■												
	Output 1.2		■	■	■	■	■	■	■	■	■	■								
Outcome 2																				
	Output 2.1		■	■	■	■	■	■	■	■	■	■								
Outcome 3																				
	Output 3.1				■	■					■	■								
	Output 3.2				■	■	■	■	■	■	■	■								
IAS Monitoring				■			■							■						
VRA Monitoring							■							■						

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 each of the villages 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

1.

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 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.

O se tasi o vaega e faaono aafia ai le faagaioiga o le galuega ona e faaono tulai mai se feeseeseaiga I va o afioaga e tolu o loo faapea on galulue faatasi. Peitai, ua faaalua e sui komiti ma pulenuu, o I latou o le galulue malosi ina ia foia se faafitauli ona tulai mai. O loo iai le pule mamalu a Alii ma Faipule o Afioaga taitasi latou te soalaupuleina I le faasamoa ni tulaga e ono tulai.

Barriers: The possible barriers foreseen in the project is the lack of commitment from the villages Once the proposed works and the replanting program has been undertaken, there is the possibility that the village councils might not be vigilant in its monitoring and maintenance of the 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 retention wall 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 retention wall with funds available.

4.4 Monitoring and Evaluation Plan

Sa faatinoina se vaega taua o le suesuega I aafiaga mai le fesuiaga 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 afioaga o loo aafia mai le fesuiaga o le tau. O lenei faatalanoaga na toe faamautina mai ai e 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 lea. Ma o le vaega foi lea ua ala ai ona ave le faamuamua mo le faaleleia o le ala o le vai.

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 villagers identified flooding as the most regular climate risk issue where homes get flooded and ruined all the time.

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 April 13th 2009, the villages 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, again reconfirmed the problems suffered from flash flooding every time there is rain, apart from the extreme high tides and cyclones. Therefore redirecting the stream to one of its old channels that was blocked by sedimentation due to the cyclones, will go a long way in relieving the pressures of flooding.

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 to cross over to plantations on the other side of the stream.

Other issues identified in the CIM Plan as impacts of climate change included the lack of water supply within the village and district. 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:** as shown in the VRA, every family in Vaipouli and Sale'ia are regularly affected by the flooding. For Avao, several families of the village actually live along the stream and they are the ones most affected. The majority of Avao families are not affected from the stream, but have all agreed to utilize the CBA project to relieved the pressure flooding for those affected. Another impact noted from Avao since the blockage of the stream pathway is the rising silt which is some flooding end up in family homes.
2. When discussing how this could be improved, everyone identified in the affected areas, namely all of Vaipouli and Salei'a and some Avao families, recognized that redirecting the stream is the only way that they can be protected. They also recognized that by redirecting the stream, they will be able to again replant and farm land closer to homes which is now desolate due to the flooding.
3. In trying to gather information on reasons why these were or were not important to villagers, all the villages agreed that it was important and it affects everyone during the rainfalls in more than one way.

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 and reforestation program along with the protected areas to be established.

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: Hectares of globally significant biodiversity area protected or sustainably managed		<ul style="list-style-type: none"> • 20 hectares of wetland ecosystem • 6 hectares of ridge rainforest 20 hectares of watershed area

Biodiversity: • Number of globally significant species protected by project •	0	<ul style="list-style-type: none"> • 10 threatened species •
Land degradation: Hectares of degraded land restored	0	10 hectares of degraded land under village customary restored

E tusa ai ma aiaiga o le fesoasoani, o loo ua faataatiaina foi nei o lea faia se suesuega I le ogatotonu o le poloketi mo le vaia 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 vaia 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 poloketi.

Ona e tolu nuu o loo faapea ona faatinoina ai le poloketi, o le alu lava vaega tupe a le afioaga ia I latou tusi tupe, ona galulue faatasi ai lea o komiti mo le faasoasoin o seleni mai afioaga taitasi aua le faaleleia o le ala vai aemaise le toe totoina o le vaomatua. O pulenuu foi o le a fesoasoani iai le faufautua faapitoa mo le tapenaina o ripoti mo le UNDP e tusa o le faaaogaina o seleni.

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 advice 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 and MAF for planting materials

Project Engineer: The project will work with an engineer to review designs and provide technical input for the construction of the retention wall and the rock barrier. He will also inspect the construction to ensure. The proposed engineer is someone that has extensive knowledge of road construction and was used by the village 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:

Avao

	Budget Item (Description)	Amount from CBA		Amount from other partner		Total
		In Cash	In kind	In Cash	In Kind	
Outcome 1	Coastal ecosystems resilience increased					
Output 1.1	<i>Rock wall and retention wall along the stream constructed</i>	\$53,500	\$3,000	\$72,000		\$128,500 ¹
Each village pays the following toward this output	<i>Avao</i>	\$16,500	\$1,000	\$24,000		
	<i>Saleia</i>	\$18,500	\$1,000	\$24,000		
	<i>Vaipouli</i>	\$18,500	\$1,000	\$24,000		
Output 1.2	<i>Replanting along the stream channel using native species</i>	\$4,000	\$1,500			\$5,500 ²
Each village pays the following toward this output	<i>Salei'a</i>	\$2,000	\$500			
	<i>Vaipouli</i>	\$2,000	\$500			
Outcome 2	Terrestrial Ecosystems rehabilitated to reduce risk associated climate risks of flooding, shortage of water supply and erosion					

¹ The estimated cost for the 100 m rock wall at a cost of ST\$400/meter (see Annex III) is ST\$40,000 (US\$15,000) based on information provided by MWTI while the retention wall along the stream including deepening is estimated to be SAT\$400.00 per meter. Therefore approximately 760m of the stream will have retention wall at the cost USD\$118,500.

² Along the ridgewhich is inland along the stream from the proposed retaining wall there is potential for landslides. With this budget a nursery and collection system will be set up to plant along this ridge to stabilize the soil.

Output 2.1	Reforestation program implemented along the ridge and the watershed area using native species	\$3,000		\$1,000			\$3,000
	Avao	\$3,000		\$1,000			
Outcome 3	Capacity developed among community members to manage local ecosystems to reduce ongoing climate change risks						
Output 3.1	Community awareness raising programme focusing on climate change risks and adaptation implemented	\$1,500		\$1,000			\$2,500
Each village pays the following toward this output	Avao	\$500					
	Salei'a	\$500					
	Vaipouli	\$500					
Output 3.2	Stream clean up program implemented to take our solid waste that have been disposed in the wetland over the years as a form of reclamation but now pollutes the wetland and causes pollution onto the sea.			\$1,500	\$3,000		\$4,500 ³
Each village pays the following toward this output	Avao			\$500	\$1,000		
	Vaipouli			\$500	\$1,000		
	Salei'a			\$500	\$1,000		
Project Management	Village Project Committee: ⁴ Project Advisor: Monitoring and evaluation: (TOR in Annex II) Project Engineer : design and supervision (TOR in Annex I)	\$3,000 \$3,000 \$7,000		\$1,500			\$14,500
Each village pays the	Avao	\$4,000		\$500			
	Saleia	\$4,000		\$500			

³ Over the past 10 years families have adopted an autonomous adaptation by dumping rubbish behind their homes to protect them. This budget will go towards the trucks and loaders that will remove the accumulated rubbish. Loaders cost ST\$150/hr and trucks are approximately ST\$400/load. Which would be 40 hours of loader work (US\$2250)and 5 truck loads (US\$750)

⁴ This money is for travel expenses for the committee

following toward this output	Vaipouli	\$5,000		\$500			
Total		\$75,000		\$9,500	\$75,000		\$159,500

Village Budget breakdown

Village	Aus AID	CBA
Avao	\$25,000	\$25,000
Salei'a	\$25,000	\$25,000
Vaipouli	\$25,000	\$25,000
Total	\$75,000	\$75,000



Figure 1: Satellite Imagery

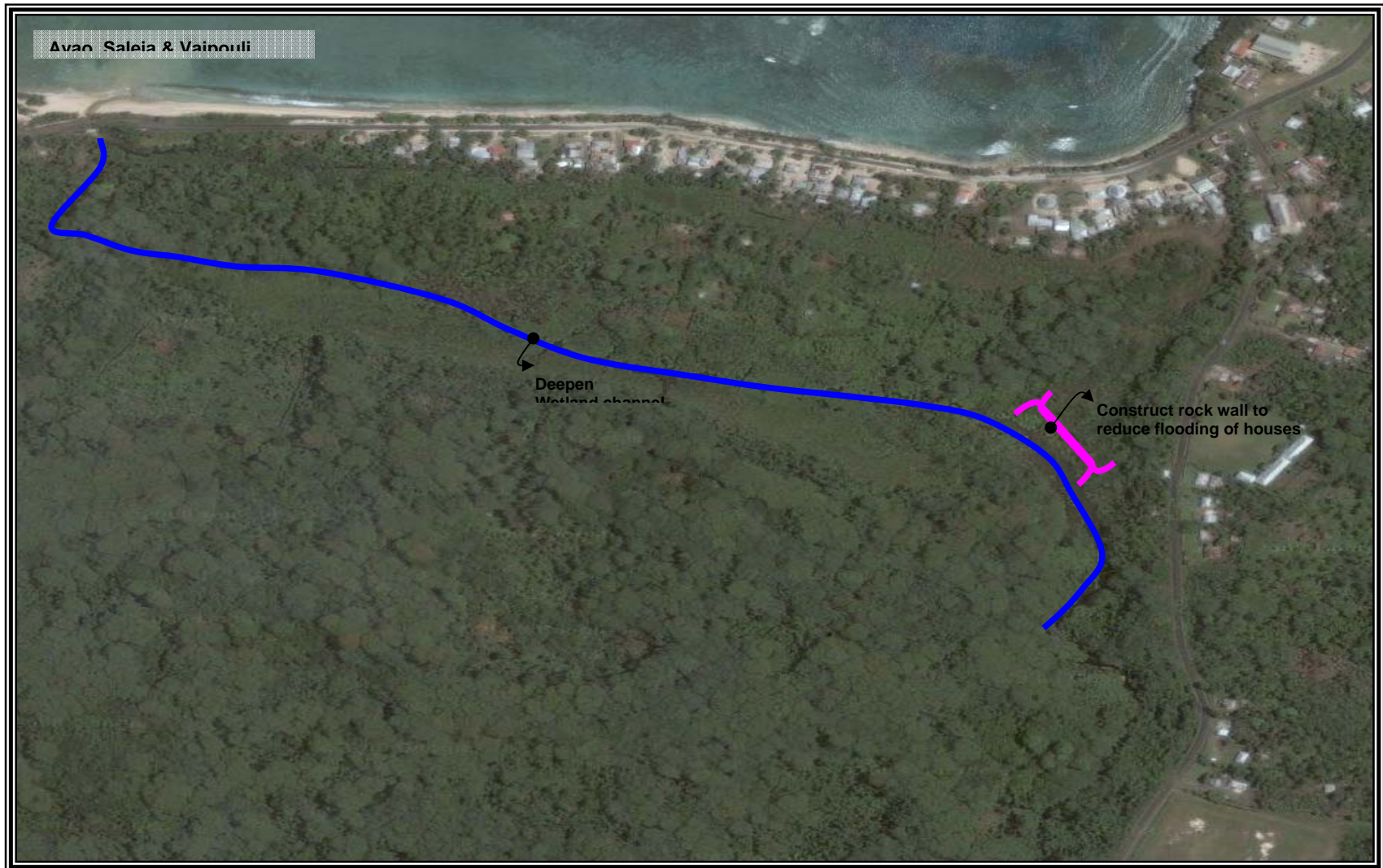
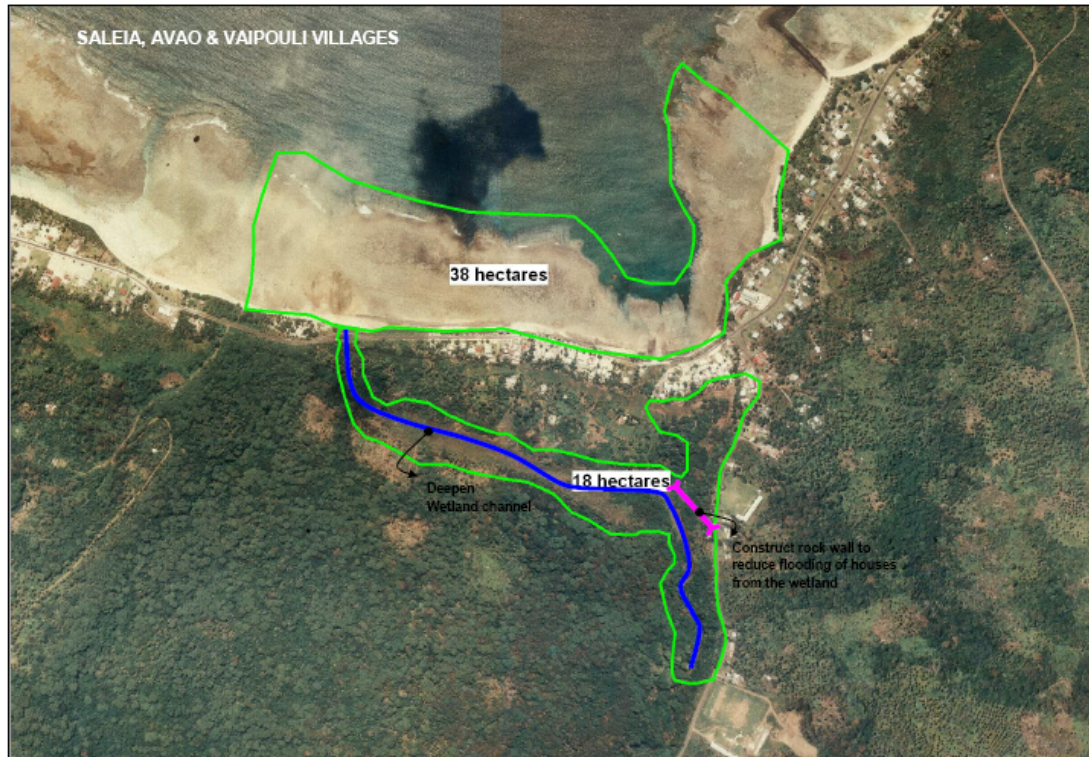


Figure 2: Proposed areas for IAS indicator monitoring



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

