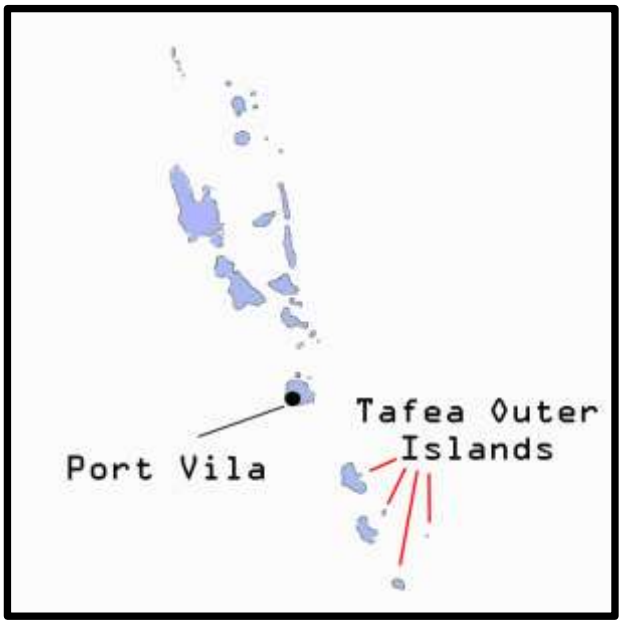
Aniwa, Futuna, Aneityum & Erromango Islands; Outer Islands of Tafea Province

1 Project context and background

Tafea is the most southerly province in Vanuatu, consisting of 5 islands, some of which are among the most isolated in Vanuatu. Each island in the province has a diverse array of geographic features and natural resources.

The province has an estimated population of 32,540 people and an area of 1,628 km². The most populated island is Tanna, although its land mass is smaller than that of Erromango. Tanna contains over 80 percent of the Tafea's population. The provincial capital Isangel is located here along with Tafea's only municipality and its most developed commercial centre, Lenakel. An active volcano called Mt. Yassur attracts a large quantity of tourists to the island. A majority of the soil quality on Tanna is regarded as very rich and prime for agricultural activity.

The three largest islands in Tafea Province are Melanesian, but the smaller two, Aniwa and Futuna, have a distinct Polynesian influence due to early settlers and missionaries from Samoa. Futuna is rich in marine resources, although its rugged terrain composed of sheer cliffs and steep hillsides along with its strong coastal seas provide many challenges to locals.



(Figure 1- Map of Site in relation to full Vanuatu)

Aniwa Island is the only coral island in Tafea, while the other four islands are volcanic and reach much higher elevations. Of the outer islands, it has the closest access to Tanna island and provincial services. Water security is a major concern on the island, although Aniwa is rich in its coastal fisheries, orange plantations and has many sandalwood trees.

Aneityum is the southernmost populated island of Vanuatu. It has a vibrant tourism industry and receives regular visits from large Carnival Cruise line ships among other operators. It has the second largest coral reef system in Vanuatu and is rich in coastal resources as well as having a substantial pine plantation and large quantity of sandwood trees.

Erromango is the largest island in the province and is renowned for its forest resources, including an abundance of wild game, numerous sandalwood trees and hardwood forests. It is the largest island in the province by far but it is sparsely populated considering its land area, though it is the second highest populated island in Tafea.

Increased pressure on resources resulting in water & food security concerns combined with a lack of access to services has resulted in a substantial migration away from some islands.

(Figure 2- Geographic features & Population data)

Island	Largest Village	Land Area (km²)	Population	Highest Peak	Height (meters)
Aneityum	Anelcauhat	161	915	Mount Inrerow Atahein	852
Aniwa	Ikaokao	9	341	.	42
Erromango	Potnarvin	891	1,950	Mount Santop	886
Futuna	Mohoun'gha	11	535	Tatafou	666
Tanna	Isangel	561	28,799	Mount Tukosmera	1,084

1.1 Conveyance Infrastructure

Foopaths and small boats are used primarily for conveyance purposes in the Tafea Province outer islands. There is an extremly small series of vehicular roads located on Aniwa, Aneityum and Erromango. Futuna has no vehicles whatsoever.

There is one primary road that runs through the center of Aniwa. There is a small portion of this road with noticable erosion that prevents passage during inclement conditions. A secondary road has been developed to bypass this impassable section of the road. The road on Aniwa lies along the southwestern coast of the island, bypassing some communities. As a result, the communities located at the center of the Aniwa have no vehicle access. The northern portion of the road becomes impassable sometimes during the rainy season due to muddy conditions. However, it should be noted that there are only 2 vehicles on the island. The primary means of convenience on the island is by foot.

On Futuna, there are no roads or vehicles due to the extreme geological formation of the island with its many vertical, sheer face cliffs. Villagers on Futuna occasionally use small boats for transport between villages, however a vast majority of the time they depend on a footpath that circles the whole island providing access to every village. This footpath was upgraded and maintained over the past decade by communities on Futuna under the direction of the Public Works Department and with donor funding assistance. A series of ladders, cement stairways and safety rails were installed along several potentially dangerous areas of the footpath, greatly increasing the access by locals, particularly those vulnerable groups who had difficulty travelling on the footpath before its upgrade.

(Figure 3- Steep footpath with safety raiing on Futuna)

Currently on Futuna, there are several areas along the footpath where erosion issues have caused blockages, toppled the safety hand rails along its edge and

decreased accessibility along short distances. A small coastal portion of the footpath near Matangi village has experienced extreme corrosion issues due to its frequent submersion and exposure to the corrosize ovean water and spray during inclement weather. Smaller footpaths on Futuna leading to gardens at higher elevations are often trecherous in wet conditions and villagers consulted stated that men primarily access these footpaths instead of women due to the difficulty in accessibility.

There are no vehicles operating on Aneityum as of 2013, with the exception of a small truck and an older tractor used to transport timber sporadically by the Aneityum Forest Timber Committee over a short distance in the Anelcauhat area. There are many old roads that were previously used by foreign-owned logging companies leading into the inner forest reserve. However, these roads have not been maintained since the 1970's and they are currently in very poor condition. A coastal footpath circles the island and villagers depend on it for regular access around Aneityum. It is often inaccessible in certain areas during wet conditions.

There is a dangerous portion of the primary footpath bordering the coast near Umej village, where two children died years ago. The sea submerges the path at high tide and there is often a strong current at this location, which swept away the children around a decade ago. River crossings are extremely difficult after heavy rains on Aneityum. An older man died in 2012 and his body was never found but it is believed he was swept out into the ocean after falling down in a small stream. Another man drowned in a small stream in Anelcauhat in 2013, where it is believed he slipped on a "make-shift" bridge (a slippery log) and knocked himself unconscious before falling in the water.

(Figure 4- Child in front of river on Aneityum with no pedestrian crossings; villagers must wade across)

Erromango has a very small series of roads where a handful of trucks are used to transport passengers to the airports as well as transport forestry and agricultural products. A vast majority of the island is accessible through an extensive series of walking trails.

Shipping:

Regular commercial shipping services access the communities on Aniwa. These small ships specialize in transporting local produce such as oranges or forestry products such as sandalwood as well as delivering cargo and supplies for local villagers. The island of Aniwa has frequent shipping services due to its proximity to Tanna and its location near the regular shipping route that connects Tanna to Port Vila.

Commercial ships rarely service Futuna and Aneityum, unless charter trips are arranged for the delivery of goods for government projects. Otherwise, Futuna and Aneityum receive approximately 2 – 4 small commericial ships a year, with Futuna receiving considerably less commercial ships than Aneityum. No passenger ships service these outer islands, although passengers from these islands often endure arduous conditions traveling on the commercial ships, travelling for hours without designated seating, crowded amongst cargo and livestock.

Erromango receives a small to moderate amount of cargo ship service, depending on the demand from locals, as ships traveling between Tanna and Efate regularly pass by the island.

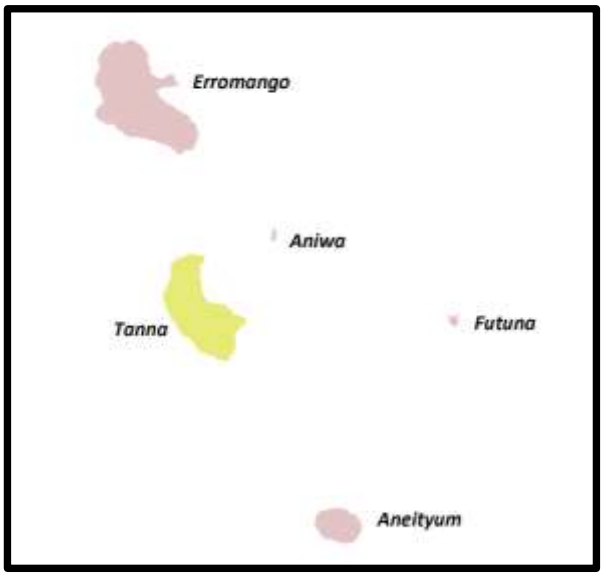
Airports:

There is one airports located on each Aniwa, Futuna, Aneityum islands and two airports located on Erromango with regular flights operated by Air Vanuatu. On Aniwa, the airport is located at the northern coast of the island, just to the east of the lagoon and villagers indicate that there is a minor erosion issue at the airport. The airport on Futuna is located in Mission Bay, along the coast. The airport on Aneityum is located on Mystery Island and the effects of coastal erosion have begun to threaten the use of the landing strip. To access the Mystery Island airport, villagers must pay for boat transport or paddle a canoe to reach the smaller island. Relocation of the airport from Mystery Island to the mainland of Aneityum has been discussed intensively and a piece of ground has been nominated by locals through a series of meetings by their chiefly councils. The airports on Erromango are located on opposing ends of the island.

2 Proposed project site and resources

2.1 Proposed site

This V-CAP project site consists of Aniwa, Futuna, Aneityum & Erromango, which are considered the “outer islands” of Tafea Province because they are distributed around the more populated and centrally located Tanna Island. In relation to Tanna, Aniwa is located approximately 20+ kilometers to the north, north east of Tanna; Futuna is located approximately 70+ kilometers due east of Tanna; Aneityum is located 50+ kilometres south, south-east of Tanna; and finally Erromango is located approximately 30+ kilometers north, north west of Tanna island.



(Figure 5- Map of Tafea Province)

Small communities, family compounds or settlements are scattered throughout the Tafea Outer Islands but there are 3 main villages on Aniwa, 4 main villages on Futuna, 4 main villages on Aneityum and 6 main villages on Erromango as detailed in the charts below:

(Figure 6- Population of target sites by island and gender)

Province	Island	AC	Immediate Beneficiaries	M	W	Total
Tafea	Aneityum	Aneityum	915	481	434	915
Tafea	Futuna	Futuna	535	264	271	535
Tafea	Aniwa	Aniwa	341	164	177	341
Tafea	Erromango	Erromango (2)	1,950	969	981	1950
		TOTAL	**3741**	**1878**	**1863**	**3741**

(Figure 7- Most populated villages by island)

Island	Village	Total Population
Aniwa	Ikaukau (Vangawe)	80
	Imatu (Itangutu, Rutapeka, Nirao)	76
	Isavai (Imasa)	182
Futuna	Mission Bay	148
	Harold Bay	202
	Matangi	80
	Isia	72
Aneityum	Anelcauhat (Galili)	410
	Umej	259
	Port Patrick (Anwamet, Injepdev, Inpeke)	185
	Uje	62
Erromango	Ipota	350
	Dillons Bay	750
	Hapiland	100
	South River	150
	Port Narvin	550
	Antioch	50

**Data derived from 2009 Census figures provided by VSO along with updated data collected during community consultations with Provincial Area Secretaries.*

2.2 Planning and local governance

2.2.1 Traditional System

The traditional chiefly system is the main governance structure visible throughout the project site in Aniwa, Futuna, Aneityum & Erromango. Each village within the target area has a chiefly council. Chiefly status is hereditary and primarily patriarchal, although chiefly status can be passed through the female line or through designated caretakers outside of the chiefly line if there are no suitable male heirs available. Village chiefly councils oversee a majority of the village level planning, community work and disciplinary meetings and dispute resolution that occurs regularly in the villages.

There are no reported disputes over chiefly titles on Aniwa and Futuna, therefore the traditional chiefly system works quite effectively at these sites. The chiefs from these islands oversee a “chiefly community work day” once a week where villagers either hold meetings or perform voluntary community work together as directed by the chiefly council. However, on Aneityum there has been a long-standing dispute over the chiefly title in Anelcauhat Village, which has resulted in community division. Very rarely are there organized community workdays in Anelcauhat, with the church groups taking a more active leadership role at times. Elsewhere on Aneityum, the communities are more cohesive and generally work quite effectively under the chiefly council’s directives. Umej and Port Patrick each have dedicated one day a week to performing community work for the chief of the village. Much of the dispute over the chiefly title in Anelcauhat Village is due to the competition for resources and finances from the thriving tourism industry.

The V-CAP design team was not able to consult with the communities on Erromango therefore it is unknown currently whether there are currently chiefly diputes on Erromango or not.

There is an island wide council of chiefs on Aniwa, Futuna, Aneityum and Erromango. These island wide councils set broader policy, rules and regulations for their respective islands as well as hearing the more serious and demanding disciplinary cases between villagers as well as performing dispute resolution services.

2.2.2 Area Councils

The Area Councils on Aniwa, Futuna, Aneityum & Erromango (2) have all been established under the direction of the provincial government and with supervision by the provincial Area Secretaries. However, their meetings are often irregular and there is confusion regarding their responsibilities and the funding allocation received by provincial authorities within the Area Councils.

Throughout 2013, there has been an Area Council office under construction on the island of Aniwa to support the administrative work and meetings required by the Area Council and the Area Secretary. On Aneityum, the Area Council office was constructed in 2009 and has been hosting Area Council meetings and the provincial Area Secretary. The status of the Area Council offices on Futuna and Erromango is unclear although provincial authorities have stated their intent to strengthen facilities available to Area Councils throughout Tafea Province.

2.2.3 District / Provincial:

Aniwa, Futuna and Aneityum each have 1 Area Secretry working within their Area Councils & Erromango has 2 Area Secretaries working within its 2 Area Councils. These Area Secretaries are field officers employed by the Tafea Provincial Government Council and they live and perform provincial services within their respective Area Councils. Their basic duties include the following services: tax collection, voter registration, government awareness duties, Statistics enumeration duties and assisting development projects within their respective Area Councils. The Area Secretary will play an integral role in facilitating future V-CAP implementation and community meetings.

2.3 Brief profile

The target communities in Tafea group indicated during V-CAP PPG consultations that they generate a majority of their household income through a diverse range of means including fisheries, forestry, agriculture and tourism-based activities.

2.3.1 Marine and coastal areas:

The majority of the coastal waters of Aniwa are exposed rock covered with reef. The water along the coast is mildly turbid from sediment runoff. The reef around the island is healthy with a substaintial amount of fish. The largest source of income on the Island is from fishing. However, the fishermen voiced concerns over declining fish catches and fish sizes due to overfishing.

The northern portion of Aniwa Island consists of a lagoon, which hosts nine species of mangrove and several large beaches. Part of the seabed within the lagoon had a healthy sea-grass covering. The sediment deposits on the bed of the lagoon are deep and there is very little coral. The mangroves of the lagoon are prolific and appear very healthy. However, an introduced species of snail are believed by locals to pose a threat to the mangrove system. It is rumored that a local arriving back to Aniwa from the island of Malekula recently introduced the invasive snail species and that the snail has greatly reduced the local crab population. Locals from Aniwa regularly consume the snail and even sell the snail to customers on Tanna Island. Outside of the lagoon there is ample reef. The reef is generally healthy with some threat imposed from the crown of thorns starfish.

(Figure 8 – Mangrove eco-system at Aniwa's lagoon)

Large fish, such as tuna and wahoo, are caught by local fishermen on Aniwa using traditional canoes and trolling techniques and are then sold locally or temporarily stored in one of the island's 4 ice freezers before being transported to Tanna for sale. Locals on Aniwa own 8 small boats with motors that actively take part in fishing activity. Locals consulted indicated that during good weather, approximately two small boats travel to Tanna each week to sell fish. Lobster from Aniwa is also sold to small hotels and resorts in Tanna during these trips.

Aniwa contains several marine Community Conservation Areas (CCA's). Traditional chiefly councils established and continue to maintain these CCA's. The village of Asavaii with the aid of the NGO Wan Smol Bag and its Marine Monitoring Network established the primary CCA at the lagoon. The CCA's protect a designated portion of the reef by outlawing any fishing or harvesting within the area. The Network Monitor has been actively monitor the coastal marine environment, tagging turtles and reporting his findings at the annual Monitoring Network Meeting for eighteen years. The lagoon remains restricted with occasionaly exceptions, a few times a year, for customary fishing rituals.

Tabu areas on Aniwa are less strict. These areas are typically restricted for three to four years, allowing the reef an opportunity to recover marine wildlife populations. Generally, both the CCA's and Tabu areas are well respected by the communities. Village councils enforce fines when coastal conservation rules are violated.

Like much of Vanuatu, Aniwa practices partial conservation, but suffers from over fishing. Inspections of the reefs, mangroves and beaches and consultations with the villages on the island illuminated several key issues. The mangroves are protected by custom Tabu practices, managed by the chiefly consul of Asavii. The only evident problem is an invasive species of snail brought from Malekula. In the village consultation the villages spoke highly of their commitment to conserve the lagoon area and expressed interest in expanding and networking conservation areas. There was a definite concern the decrease in fish size and fish catch.

Income generation is a particular challenge on Futuna being a small island located in such a remote area. Thus, locals indicate that a major portion of their personal income is derived from fishing activities, as there are relatively few alternatives available. A community fisheries project purchases fish and lobster by the kilo from locals on Futuna and provides storage in a solar powered freezer until transport by plane to the island of Tanna where eventual payment is received.

Futuna Island is known for its rich coastal resources, with small areas of coral reef containing an abundant quantity of marine life surrounding much of the island, athough many of these areas are difficult for locals to access due to strong currents and wave breaks. The ocean depth drops off suddenly outside of Futuna.

(Figure 9-Fishermen on Futuna, preparing wahoo for export and sale to Tanna Island)

On Aneityum, the coral reef appears to be in excellent condition and locals consulted do not indicate problems with coral bleaching or crown of thorns starfish, which commonly occur elsewhere in Vanuatu. There are 2 registered Marine Protected Areas here that the Vanuatu Fisheries Department regularly uses to support its stock of trocha, green snails and giant clams to distribute out to other islands. There is large fringing reef that encircles Aneityum and an extensive shelf system, which extends outwards hundreds of meters from the shore at certain places. Fish Aggregating Devices (FAD's) have been placed outside of the reef in southern Aneityum with the assistance of a JICA fisheries project.

Locals on Aneityum sell the “trocha” sea snail extensively to an agent who exports them to Asia for use in the manufacturing of buttons. Trocha are increasingly rare in Vanuatu and Aneityum is one of the last coral reef systems in the country with an ample supply.

Tourism has had a major impact on coastal resources for the people of Aneityum. Lobster has been extensively collected, cooked and sold to tourists due to its high revenue potential, as one lobster is sold on average for around $30 – 50 Australian dollars. Locals who are experienced in harvesting lobster from Aneityum can regularly sell between 10 and 30 lobsters each time the tourist ship arrives. Since 2012, the level of tourism ship visits has drastically increased resulting in a perceived drop in lobster stock levels by Aneityum communities. The MPA’s and chiefly committees regularly put restrictions on the sale of lobster, even forbidding certain villages from selling due to suspected violations of MPA or tabu area rules. The provincial Area Secretary of Aneityum records size and quantity of lobsters sold each time a tourist ship visits. Game fish such as tuna and wahoo are regularly caught during tourist ship visits as well, with tourists paying to charter fishing boats to go trolling.

Erromango has an abundant level of marine resources as well but only subsistence level fishing activity takes place due to the challenges in export and a lack of markets.

Across all the V-CAP community target sites in Tafea Province, the sediment issues threaten coastal fisheries. Sediment causes an increase in water turbidity, which is harmful to fish and marine wildlife populations. In addition to these environmental concerns villages also reported declines in fish catches, a main livelihood for many within this site. Another major cause of the decline in catch is likely due to over-fishing and a lack of fisheries conservation efforts. While there are some conservation areas, the enforcement of no-fishing rules at the sites is often limited.

(Figure 10- Aneityum family with dead turtle)

The consumption of sea turtle across all V-CAP sites in Tafea Province is commonplace, even with the presence of Wan Smol Bag Turtle Monitors. Often, communities will restrict turtle collection along certain areas of coral reef and allow collection to take place in other areas. The consumption of turtle eggs in Tafea Province is now considered rare by the communities consulted by the V-CAP PPG team as awareness about turtle being an endangered species has begun to take place, especially with the assistance of Wan Smol Bag. Consumption of turtle is considered a cultural practice.

2.3.2 Terrestrial

Upland agriculture

Aniwa was formed from uplifted limestone reef from the late Miocene or Holocene eras related to the Australian Plate subducting zone. Presently, the island experiences frequent earthquakes. The surface of the island is mildly erosional covered with a thin layer of topsoil. The southern, eastern and western coasts of the island are exposed limestone. The northern

coast is a depositional system. The majority of the northern portion of the island is composed of a lagoon with long sandy beaches and ample mangroves.

Aniwa is known for its oranges. The oranges grow in mass on the island. In recent years, the oranges have started producing fruit several times a year. Every community consulted complained that the oranges have become less sweet in recent years. The oranges are also being threatened by an increasing number of fruit bats and invasive parrots. The target communities on Aniwa indicate that they generate a majority of their household income through the sale of oranges, which is further supplemented by the harvest of sandalwood and through fishing activity. Oranges are collected on Aniwa several times a year and then transported to Tanna or Efate (depending on available shipping services) and are then sold by family members at local markets. Sandalwood trees are planted and sold upon maturity to licensed sandalwood agents during a government regulated time period. These licensed sandalwood agents then export the sandalwood internationally for further processing.

(Figure 11- Oranges on Aniwa Island)

The agrarian nature of Aniwa has resulted in several environmental issues facing the project area and is largely due to impacts of food production. The primary crops of the island are taro and oranges. The associated land management issues consist of coastal erosion due to goat grazing, mild logging and unsustainable land management processes, such as slash and burn farming. These practices have resulted in the erosion of topsoil and more turbid coastal waters along with secondary impacts such as the formation of gullies and rills on the road and erosion of footpaths. The natural geology lends itself to shallow topsoil enhancing these environmental issues.

Locals on Futuna indicate that they previously used the land located at the top of the plateau for gardening purposes. Traditionally they planted yam and taro at this highest location until almost a decade ago, when a sickness suddenly affected crops at this location. Income generation is a particular challenge on Futuna being a small island located in such a remote area. Locals indicate their personal income supplemented by the production of hand-woven mats and baskets, which are made from “pandanus” leaves. Also, the domestic sale of agricultural produce and cooked meals provides a meagre income for those on the island. A range of issues was identified in relation to agriculture and terrestrial management. These are summarized in the table of issues in the section below.

The island of Aneityum had much of its environmental resources exploited by traders in the 1800’s, who clear-cut large portions of its forests in order to harvest valuable timber. Soil erosion occurred along much of Aneityum’s steep hillsides due to the over-harvest of local timber, which led to the serious degradation of soil quality further resulting in barren hill sides with sparse vegetation along much of the coastline. Locals also reported the erosion had an adverse effect on marine resources in certain areas, making fishing and the collection of shellfish difficult due to excess sediment deposits.

A forestry initative was started on Aneityum with support from NZ Aid and Vanuatu's Forestry Department in the 1960's and 1970's, which encouraged the local population to create nurseries and plant Carribean Pine in areas where there was sparse vegetation. The planting of vertiver grass in strategic areas where erosion was a serious issue also occurred around this time on Aneityum. By the 1980's, locals indicate that negative effects from erosion were seriously alleviated by the forestry and vertiver grass initiatives. Today, most of the coastline is in pristine condition and soil erosion has been seriously adverted. However, there are some areas in Anelcauhat and Port Patrick which have extreme erosion issues to this day and where vertiver grass has had limited impacts due to the complete loss of top soil and acidic quality of soil present at these sites.

(Figure 12 – Severe erosion in Port Patrick, Aneityum despite vertiver grass planting)

The harvest of Carribean pine on Aneityum began in the late 1980's and continues in 2014. A community project operated and managed by local villagers called Aneityum Forestry Timber Community Project (AFT) is sporadicly harvests the timber and is dependent on the condition of the machinery it uses to harvest. For example, AFT produced and sold 224.50 cubic meter of pine timber in 2007 compared to 82.59 cubic meters of timber in 2009 when mechanical problems involving the project's tractor and sawmill affected production. There is limited capacity and initative in the past decade involving the replanting of pine timber after harvesting. The Carribean pine naturally regenerates and the original pine plantation has expanded further by many hectares.

Some locals have indicated their belief that the pine plantations planted by the community with assistance from the New Zealand government attract a large number of wild pigs, which then proceed to damage local gardens located close by. Therefore, some locals on Aneityum regularly burn down large sections of the forest in an attempt to keep wild pigs away from their gardens.

(Figure 13- pine timber harvested on Aneityum)

Forestry activity on Aneityum has historically produced much revenue for the island; however, less timber has been sold in recent years. This is due to an influx of cheap pine timber from New Zealand to the Port Vila market, the degradation and poor maintenance of saw mills and tractors donated by the New Zealand government in the 1980's, the expensive and infrequent shipping services available to transport the timber and a growing interest and focus by the people of Aneityum on the tourism sector.

Sandalwood sales contribute significantly to the local economies of Erromango and Aneityum and are planted and sold upon maturity to licensed sandwood agents during a government regulated time period. These licensed sandalwood agents then export the sandalwood internationally for further processing.

Across all project sites in Tafea Province, coastal waters and inland groundwater sources are threatened by contamination from livestock and waste disposal. Waste from pigs being farmed (both in pens and roaming) in villages that were susceptible to flooding can result in the pig waste being transported into the villages and the coastal environment. Better management of domestic pigs, i.e. fencing, sitting away from water courses, ensuring waste does not enter the village would make a useful contribution to dealing with disease, environmental and human health issues that may exacerbated by climate change. There are not many cattle on the Tafea Outer Islands. There are a few wild cattle on Erromango. Wild goats and wild pigs are prevalent in Erromango and Aneityum.

Water supply and security:

Each V-CAP commuity has a variety of means of water supply. These range from:

- ***Rainwater harvesting*** – rainwater is reportedly harvested in almost every location but is most prevalent on Aniwa, Futuna and Aneityum. However, this requires "tin" roofs (corrugated galvanized iron). In some locations, such as Aniwa, where there is limited "tin" roofing available, small shelters with metal roofing were constructed purposefully to supply the rainwater storage tanks. The water storage tank composition varies between concrete and polyethylene. This is the preferred drinking water source for many communities. Previously on Aniwa, tanks were built in fibreglass but these were reportedly highly unpopular due to the heat and direct sunlight damaging the tanks. On Aniwa especially, the number of tanks has not been

adequate enough to meet the demand of the villages. The tanks typically are empty or nearly empty by the end of the dry season. It should be noted that many of the observed tanks on Aniwa were not properly maintained and often contained unsanitary water.

- ***Water wells***- On Aniwa, ground wells served as a secondary water supply for certain villages. These coastal ground wells are located just a few meters below the surface and have sand and gravel walled pits. They are uncovered. These wells on Aniwa are commonly used at the end of the dry season when the rain tanks are depleted. On occasion, these wells were reported to by slightly brackish during dry times and after storms. The communities on Futuna, Aneityum and Erromango do not rely much on wells for their water supply needs.

(Figure 14- open ground well on Aniwa used by communities during dry conditions)

- ***Gravity feed supply systems***- these are present on Futuna, Aneityum and Erromango. The supply systems on Futuna and Aneityum are functioning quite well and have almost no reported sedimentation problems. The status of the supply systems in Erromango is unknown.
- ***Rivers, streams and springs***- there are many communities that rely mainly on small coastal springs to collect their drinking water. Households using springs as their main water source generally are located in more isolated areas on Futuna, Aneityum and Erromango, where improved gravity feed systems have not been established. The sources at these coastal springs are often piped a small distance by bamboo or PVC piping to a small catchment such as a steel drum, in order to collect excess water. There are no rivers or streams on Aniwa or Futuna. Aneityum and Erromango have a

great quantity of rivers and streams whereas Futuna has only small springs where freshwater emerges along the coastal zone.

Overall there are a number of water related issues that will be made worse by climate change. The V-CAP PPG team recommends that the project secure the upland water supply systems and ensure that the water supply is adequate both in terms of quality and quantity. In particular, a need was identified to secure the water supply systems during natural disasters through the improvement of storage tanks with a focus on schools, health centres and places that would serve as disaster evacuation centres during extreme weather or emergency events.

Hygiene and sanitation issues vary between villages and islands. On Aniwa, there are concerns over the number of toilets. Existing toilets are typically constructed of bush materials have potential to infiltrate the groundwater and also spill over during periods of high rainfall. An NGO, Live and Learn, has introduced composting toilets to communities on Aniwa Island, but they are not prolific. Across all Tafea V-CAP sites, open bush toilets create health issues as well as contribute to the nutrient loading on near shore coastal ecosystems. This issue will be worsen with climate change due to rising sea levels and increased wet season intensity.

These water-related issues need to be addressed through a comprehensive program to improve management of water resources, pollution, contamination and health and sanitation related issues in each village in the field site.

2.4 Other socio-economic information

Health:

On Aniwa, the Rotapeka Dispensary is currently staffed by one Nurse Aid who is is skilled in assisting with childbirth and reported that she had delivered 11 children between January and October of 2013. The Dispensary has a staff house, office space, rain tanks and basic medical supplies available. There is also a boat that is managed by the Health Committee on Aniwa, which is available to transport sick patients during medical emergencies. Serious health concerns above the capacity of the Nurse Aid are often referred on to the hospital on Tanna Island with the most serious cases eventually being referred to Port Vila

There is one Health Centre located in Anelcauhat Village and it is staffed by 1 Registered Nurse, 1 Village Health Worker and 1 part-time staff who screens plane and ship passengers for malaria. Serious health concerns above the capacity of the Nurse Aid are often referred on to the hospital on Tanna Island, with the most serious cases eventually being referred to Port Vila. There are 2 Aid Posts on Aneityum, one located in Umej Village and one located in Anawamet, Port Patrick. The Health Centre and the 2 Aid Posts each have a boat that is managed by the Health Committees in their respective villages and is intended to be used to transport sick patients during medical emergencies and to generate income for the health committee to meet any expenses they may incur.

There are similar health facilities on both Futuna and Erromango, consisting of Aid Posts and Dispensaries, with major medical issues being referred to the hospitals in Tanna and Port Vila.

Finance:

Aniwa does not have any banks and the small number of persons employed by the government in educational or health capacities must access banking services in Tanna. However, there is an agent of Western Union, which is used extensively by the population. Futuna does not have a bank branch either so a vast majority of villagers do not use banking

services. There is a National Bank of Vanuatu branch on the islanda of Aneityum and Erromango along with Western Union agents and these financial services are used extensively.

Security: There is one police post on the island of Aneityum with 2 officers normally assigned to this post. Aniwa, Futuna and Erromango do not have a police posts or officers. The main police station for Tafea Province is stationed on the island of Tanna and officers are occasionally sent to the outer islands as needed and as their operating budget allows.

Government Extension Workers: Aside from the health and education sectors, there are no government extension workers currently based out of Aniwa, Futuna or Erromango. Over the span of the past years, the Departments of Fisheries, Forestry, Agriculture & Livestock have sent out representatives to work on specific projects. However, their presence has been temporary and contingent on project implementation.

Currently on Aneityum, there is an officer from the Forestry Department working on a nursery initiative to encourage the replanting of valued timber species after harvest (along with police officers mentioned above).

Schools and education:
There are multiple schools located within the target area , including those shown in the chart below:

*(*Note- schools in Erromango not listed due to the unavailability of data)*

SCHOOL (ISLAND)	TYPE	LANGUAGE
Irumori (ANIWA)	Primary	English
FUTUNA Harold Bay	Secondary	French
FUTUNA Harold Bay	Primary	English
FUTUNA Mission Bay	Primary	English
Teruja (ANEITYUM)	Secondary	English
Anelcauhat (ANEITYUM)	Centre	English
Port Patrick (ANEITYUM)	Primary	English
Umej (ANEITYUM)	Primary	French

(Figure 15 – Aniwa, Futuna & Aneityum schools)

Pre-school- Kindergarten classes are offered on Aniwa, Futuna, Aneityum and Erromango and villagers actively enroll their children at these pre-schools for a nominal fee of approximately $10 a term per student (3 terms in one year).

2.5 Other development projects

2.5.1 Mining

There are no mining interests reported in the Tafea Outer Islands.

2.5.2 Tourism

Aniwa experiences a small amount of tourism. The two bungalows on the island typically cater to government officers and volunteers making field visits. Eco-tourism was briefly promoted with a community-operated bungalow located at the lagoon but it closed in 2012 due to mismanagement and also a criminal offense that allegedly was committed against two tourists by a local boy.

Futuna Island however receives almost no tourists and has no developed tourism activities or facilities on the island. There is a “guest house” in Mission Bay, which is frequented sporadically by government and NGO workers travelling on business.

Aneityum derives its primary source of income through tourism. Cruise ships operated by major carriers operating out of Australia and New Zealand make regular visits to the nearby Mystery Island, or Inyeug as it is known in local language, which lies within the main harbor of Anelcauhat Village, on the southern coast of the island. The amount of visiting cruise ships each year on Aneityum fluctuates greatly, but during 2013 the island received approximately 1 to 2 visiting ships on Mystery Island a week. These ships pay an anchorage fee of approximately five thousand US dollars per visit to the Mystery Island Tourism Committee.

Mystery Island or Inyeug is an unpopulated island approximately 1 kilometer long and on average 150 meters wide, which was traditionally used by locals as a base for fishing expeditions and later as a medical quarantine site when introduced Western diseases nearly decimated the local population. No one permanently settled on this very small island due to a lack of water sources and poor soil fertility, although now there have been lengthy disputes regarding ownership of the islands due to the significant tourism revenue generated by visitors who enjoy its pristine beaches and healthy reefs.

(Figure 16- Satellite image of Inyeug and its fringing coral reef, Aneityum)

Four family leaders, who each claim customary land ownership of Mystery Island, control the Mystery Island Tourism Committee. The income generated by the anchorage fee is used to pay a local work force to provide maintenance and basic custodial services on the island. Anchorage fee revenue is also used by the Mystery Island Tourism Committee to operate a small cooperative store that sells hardware and food. Remaining anchorage fee revenue is also divided among the families claiming ownership of the island, although the land ownership is disputed for Mystery Island and has been under review by the island council of chiefs for many years. Many locals are not satisfied with the expenditures of the Mystery Island Tourism Committee, but being a private organization, their financial operations are non-transparent.

Even though there is a reported strong level of dissatisfaction over the use of the cruise ship anchorage fees, a majority of families on Aneityum are able to benefit financially from tourism. Many locals pay a fee to the Mystery Island Tourism Committee to sell merchandise, refreshments, kava or handicrafts to tourists at the markets. Others have created snorkelling tours of the Marine Protected Area, fishing charter tours, cultural tours and other activites that generate a large amount of money. Some receive payment for massage sessions, hair-plaiting or by performing music for the tourists. The Mystery Island Tourism Committee employs locals to act as security guards, maintenance staff, custodians and salesmen temporarily on Mystery Island when there are visiting cruise ships. The entire population of Aneityum takes part in these activities; no villages or groups are excluded.

Yachts and private sailing vessels make regular visits to Anelcauhat harbor outside of the cyclone season and these tourists contribute to the local economy as well. Often they purchase goods from stores or take tours around the island.

2.5.3 Small business

Small businesses and income-generating activity contribute to local economy within the Tafea Outer Islands as well. For example, on Aniwa there are approximately 13 small stores, 7 local bakers, 2 truck tansports, 8 boat transports and 2 bungalows / guest houses located within the target site. The sale of livestock also generates a very small level of income for the target communities, although a majority of communities consulted indicated that livestock such as chickens, goats and pigs were raised primarily for personal consumption rather than for income generation.

Small businesses also support the lively local economy on Aneityum, which is mostly bolstered by tourism. There are currency-exchange agents, wholesale stores, small stores, markets, fishermen, ready-made kava “nakamals”, local bakers, 3 guest houses and other small businesses operating on the island.

Production of hand-woven mats and baskets also generates a modest supplemental income for local women on Aniwa and Futuna. Family members employed and working in Port Vila, Efate or elsewhere in Vanuatu also contribute significant amounts of money to those on the islands as well throughout the target areas, but in particular for those on Futuna and Aniwa.

2.6 Other development projects

There are a significant number of development projects in the Tafea Outer Islands. These are outlined below:

- ***The "Community Resilience and Coping with Climate Change and Natural Disasters in Vanuatu"*** or "***VCR"- (ANIWA)-*** project admistered by the Department of Local Authorities (DLA) & the funded through Unicef, UNDP & FAO. One of its 12 target sites is based on the island of Aniwa. The total budget for this project is approximately $2.9 million US dollars, although the specific amount allocated for work on the ground in Aniwa is unclear. The main components of the project on the community level include water security, food security, income generation and disaster risk reduction activities. The project was intended to start in 2011 but began roughly a year later in 2012 and is scheduled to close in June of 2014 although there is a possibility that the project could be extended for an additional year. Implementation of work on Aniwa with the "Community Resilience" project started in 2014: the provison of several rain tanks, the promotion of a food security garden plots for households on Aniwa and the planting of Climate Change resilient agricultural species, the construction of several improved toilets (Ventilated Improved Pit toilets), a micro-finance scheme for small income-generating activities and extensive CC and DRR training for community members.

- ***Pacific Risk Resilience Project or "PRRP" (All TAFEA OUTER ISLANDS)–*** funded through UNDP, site selection originally started with the island of Aniwa in Tafea Province and now includes all of the Tafea Outer Islands in addition to Tanna Island, just like V-CAP. The PRRP team has not provided detailed information regarding its site selection or coordinated extensively with the V-CAP PPG and there are concerns about duplication of efforts, especially regarding governance components of the two projects and working on the village and Area Council levels to establish Disaster / Climate Change plans as well as funding the implementation of these plans. It is unclear when the PRRP will begin to create CDC plans on the Tafea Outer Islands and the funding to implement these plans.

- ***Integrated Household Resource Management (IHRM)***- **(ANEITYUM)-** funded by UNFPA, this project is based on Aneityum from 2013 to 2017. It works to promote income generation and health components for youth by providing training and improvements to existing health facilities on the island as well strengthening local governance structures, such as the Aneityum Area Council, Technical Working Group (TAG) which would provide oversight, leadership, ownership and sustainability of IHRM activities.

- ***ADRA (Adventist Development and Relief Agency)***- **ANIWA**- in 2012 has funded 9 large cement rain tanks on Aniwa containing 10,000 liters each. 6 of these were functional upon the V-CAP PPG visit and 3 were either damaged or missing catchment materials with which to collect water. These rain tanks were provided to the community members who were SDA members and who lived in Ikaokao Village.

- ***JICA***- (***ANIWA, ANEITYUM & FUTUNA)-*** is currently funding the construction of a new double classroom building at the Irumori Primary School on Aniwa, which should be completed sometime in 2014. They have assisted the Aneityum by recently funding the repair of a gravity feed water system in Umej Village and the provision of a Fish Aggregating Device in southern Aneityum. It is believed that JICA has supported fisheries initiatives on Futuna island as well.

- ***Aus Aid "Nabanga Sports"- (ANIWA)-*** an athletics project that aims to improve the health of the population by encouraging villagers to engage in athletics. Funding for a netball and basketball court system has been given and construction is underway. Also the project supports the local football and volleyball league on the island with facilities improvements and equipment.

- ***CARE International- (ANIWA, FUTUNA & ERROMANGO)-*** working on projects involving Climate Change Adaptation and Disaster Risk Reduction. Approximately $350,000 US dollars has been budgeted for project components on Futuna involving food security & nutrition, including food preservation techniques, the introduction of climate resilient agricultural species, linking with DARD and the Agriculture College in Santo as well as the introduction of new farming techniques. A previous phase of funding on Futuna was spent in the creation and support of CDC's (Community Disaster Committees). Project officers from CARE routinely visit Futuna along with government line agencies throughout the implementation of their work. Scoping missions to Erromango and Aniwa have taken place and CARE has been in discussions with UNDP to possibuly support with the implementation of certain governance components.

- ***Anti-Malaria Program (ANEITYUM)-*** There is an island wide anti-malaria program supported by the Japanese government, which screensthe blood of arriving passengers from both ships and airplanes for malaria. This program is cited for ending malaria on the island and for protecting the population from the potential arrival of infected persons.

- ***Fisheries (IRD / JICA)- (ANEITYUM)-*** several ongoing projects which involve surveying the Marine Protected Areas here and the collection of certain shell and snail species to distribution for other coastal areas in Vanuatu.

- ***Desalinization Facility- (ANIWA) –*** Japanese government reportedly funding small facility for desalinization of ocean water on Aniwa in the near future according the Department of Rural Water Supply.

- ***US Peace Corps- (ANEITYUM & ERROMANGO)-*** In early 2014, 3 volunteers located on Erromango and 3 located on Aneityum, working for 2 year assignments to teach English literacy, IT and work with health components including WASH.

2.7 Vulnerable Groups

During the discussions with women, youth, elderly and disabled persons at community level and with provincial sub-district staff and committees, the primary development concerns are outlined in the Gender and Social inclusion strategy in the relevant annex.

3 Overview of key climate change vulnerabilities, threats and priorities for action

There were detailed discussions were held at 6 different community meetings and one provincial consultation, and through in-depth village inspections and upland and coastal inspections. These are outlined in Annex 1.

A wide-range of development and climate related development issues were highlighted at each of the consultations. The analysis of outcomes of the stakeholder consultation and site inspection process in the area of Tafea Outer Islands, combined with information gathered from government sources (including national, provincial and area council initiatives and plans), NGO and development partner projects (current and upcoming) has resulted in identification of a number of integrated development and climate change related challenges to address and immediate priority development issues to build long-term resilience to climate change. These are outlined in the table below (please see next page).

1. Overview of Project Development Process on Aniwa

- When preparing to consult with villagers on the island of Aniwa, the V-CAP team followed the government protocol and met with Secretary General and Project Officer from the Tafea Provincial Government Council on Tanna Island first. The Project Officer accompanied the team in travelling to Aniwa and in facilitating the community consultations. However, the main facilitator who helped arrange and organize these meetings was the Area Secretary for the island of Aniwa. This field worker for the provincial government arranged with the chiefly councils for our meeting times and locations as well as guiding the V-CAP team throughout the project area.
- The community assessment meetings also had focus groups to allow technical V-CAP team members to further explore their respective fields. In respect to gender, a women's focus group was also held to allow women to express their views openly, which does not happen typically within the presence of men in public meetings in Melanesia.
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DATE	CONSULTATION SITE	M	W	Total
Oct 10	Tafea Province HQ – Secretary General of Tafea Kethy & Project Officer Steven	1	1	2
Oct 11	Aniwa – Imatu Community Consultation	16	7	23
Oct 11	Aniwa – Imatu Nakamal Consultation	34	0	34
Oct 11	Aniwa – Imatu Nakamal Consultation	0	4	4
Oct 12	Aniwa – Ikaukau Community Consultation	7	8	15
Oct 14	Aniwa – Isavae Community Consultation	14	6	20
Oct 14	Aniwa – Isavae Nakamal Consultation	25	0	25

- Ridge to reef explorations

The V-CAP team explored the island from reef to ridge by walking, boating and snorkling off the coast. The team drove and walked the length of the center of the island. Members of the team then walked through the garden areas, southern, eastern and western coasts. Inspections were done of the topography, coastline, geology, water sources and ecosystems.

The team also took a boat cruise around the western and northern coast of the island. After gaining permission from the paramount chief, the team was able to boat through the lagoon and mangrove area on the northern portion of the island. The mangrove ecosystem was inspected, as were the beaches and the bed of the lagoon.

2. Overview of key climate change issues

The analysis of outcomes of the stakeholder consultation and site inspection process on Aniwa Island, combined with information gathered from government sources (including national, provincial and area council initiatives and plans), NGO and development partner projects (current and upcoming) has resulted in identification of a number of integrated climate change related initiatives to address immediate priority issues while also building capacity and resilience for long-term sustainability.

Key issues arising through stakeholder consultations and site inspections are summarized below.

2.1. Agriculture, Horticulture and Erosion

The majority of farming and livestock practices take place on the center of the island, near the villages. The farms are elevated above the coast. The island is covered with a thin top soil. This has been depleted with time as the soil is being eroded

Currently there is amount of sediment being generated by farming practices in the upland center region of the island. The sediment is moved through seasonal streams and rivers and is deposited on the coast; however, no large sediment deposits were observed except for the

sandy portions of the lagoon to the north. Increasing wet season rainfall will aggravate the erosion issues in the central portion of the island. An increase in inland erosion also results in a loss of valuable top soil. The increase in the intensity of the wet and dry seasons as a result of climate change is also expected to increase the risk of major bedload transport events, such as landslides. Wet and dry season dynamics due to climate change will require more climate resilient crops to insure food security.

V-CAP interventions in Aniwa will address issues of soil erosion and topsoil loss through a series of training and demonstration programs coordinated through the Department of Agriculture and possibly NGO's such as the Farm Support Association.

2.2. Public Infrastructure

There are limited roads and public infrastructure on Aniwa. Possibly climate proofing and strengthening to prevent erosion issues at the Aniwa airport and along a small portion of the road may take place should the community prioritize these issues in their work plans.

Strengthening water catchment systems for the storage of rain water at community buildings is considered a priority at this site.

Water and Sanitation –

Water security is a major issue on Aniwa. Villagers report major water shortages after experiencing 2 months without significant rainfall. The communities on Aniwa indicated that they access the following sources and reserves for water security during V-CAP assessments:

Poly Rain Tanks: the preferred water catchment tank for providing drinking water as indicated by the villagers consulted. Some of these tanks provided recently by Aus Aid, NZ Aid, "Community Resilience" project by UN Joint Program and JICA:

- Ikaukau Village- 26 poly tanks (5 of which are large +6,000 liter capacity)
- Imatu Village- 11 poly tanks
- Isavai Village- 21 poly tanks (7 of which are large +6,000 liter capacity)

Fiberglass Rain Tanks: during the V-CAP assessment several villagers stated that many had health concerns about drinking water from fiberglass tanks. They say that with extreme heat the fiberglass lining inside the tanks begin to deteriorate, especially during drought conditions when there is not much water inside. Health authorities have issued several warnings to villagers on Aniwa to stop using these tanks but use continues due to water shortages:

- Ikaukau Village- 5 fiber-glass tanks
- Imatu Village- N/A
- Isavai Village- 6 fiber-glass tanks

Cement Rain Tanks: some cement tanks function well while others require maintenance due to cracking from earth quakes and from pro-longed sun exposure. ADRA contributed 9 cement tanks recently to Ikaukau village, 3 of which were not functional upon V-CAP inspection:

- Ikaukau Village- 16 cement tanks that are fuctional, 8 cement tanks are not functional
- Imatu Village- 4 cement tanks that are fuctional, 6 cement tanks are not functional
- Isavai Village- 9 cement tanks that are fuctional, 6 cement tanks are not functional

Alternative Water Sources: There are 4 cement wells located on Aniwa used for washing and cooking purposes only and not considered adequate for drinking. One cement well is used for drinking purposes. There is also one hand pump located in Ikaukau that also provides water for washing and cooking only. There are 2 ground wells located by the coast which are also utilized for washing and cooking by communities especially during prolonged dry periods. These wells are used for drinking purposes when water resources become scarce.

BASELINE: Current potential threats and vulnerabilities – TAFEA Islands Group from community assessments and other reports

	Observation / threat	Causes	Risks – without intervention	Potential climate induced impacts	Level of threat	Potential adaption activities
Community governance and planning related issues	Climate related disasters impacting on communities	- Weather related, i.e. cyclones, storms and unseasonal rain - Some villages have disaster management plans, but need mechanisms to implement the plans	- Communities will continue to be heavily impacted by natural disasters made worse by climate change	- Severe impacts on livelihoods at household, community and Area Council level	**HIGH**	- Development of Community Climate Change Adaptation Plan - Development and implementation of Community DRR Plan - Strengthen communications and National Early Warning System - Link to Decentralisation Act Amendment 2014
	Lack of integrated community level planning process to integrate and mainstream climate change into village development planning and associated systems	- Processes already established and operating along sectoral lines - Processes need long-term strengthening	- Lack of integrated and cohesive planning processes impacting on ability to respond to internal and external challenges and build resilience to climate change	- Impacts on livelihoods at household, village, community and Area Council level due to lack of ability to respond to CC related impacts -	**MEDIUM**	- Development of Community Climate Change Adaptation Strategy - Operation of effective Community Disaster Committee - Development and implementation of Community DRR - Link into National Early Warning System - Link to Decentralisation Act Amendment 2014
	Voluntary migration within and between islands and issues impacting on livelihoods and natural resource usage	- Coastal erosion - Increasing population - Decreasing water quality - Reduction in natural resources (e.g. coconut crab)	- Continuing village level conflicts and challenges at the village and community level	- Decreased social cohesion - Increasing health impacts - Decreased livelihood opportunities	**MEDIUM**	- Development of Community Climate Change Adaptation Strategy - Establishment of Community Disaster Committee - Development and implementation of Community DRR
Issue: Marine ecosystem/ resource degradation	Potential for Coral Reef degradation due to Crown of Thorns Seastars (COTs)	- Degraded ecosystems - Removal of COTS predators - Increasing nutrients (?)	- Increasing threat from COTs due to increased larval dispersion - however not reported as a major problem	- Continued degradation of coastal ecosystems - Increasing sea temperatures and acidity will reduce ecosystem resilience	**Medium-High**	- Implementation of regime to enhance ecosystem health - Monitoring COTS status to understand populations - Active removal of COTs if identified as an issue in key sites

	Observation / threat	Causes	Risks – without intervention	Potential climate induced impacts	Level of threat	Potential adaption activities
	Mangrove cutting and removal has potential to enhance coastal erosion	- Mangroves used as source of fuel and timber - Lack of appropriate coastal management regimes	- Reduction in ability to provide ecosystem services (i.e. coastal protection, nursery grounds) - Increased coastal erosion	- Seasonal high tides related events will inundate villages / coastal communities	**Medium**	- Some areas of mangroves need management regimes - Mangrove management planning - Mangrove planting - Develop sustainable use programs
	Sediment and nutrient being deposited on nearshore coral reefs	- Poor upland agricultural activities - Logging - Erosion - Particularly an issue on island with larger populations	- Continued deposition on reefs, seagrass and mangroves systems - Potential for smothering of coral reefs near creeks and river mouths - Ecosystem health will continue to decrease	- Diminishing quality of coral reef, seagrass and mangroves to provide ecosystem services - Reduction in ecosystem services including fish and other livelihood support	**Medium**	- Development of Upland management plan - Upland erosion control measures - Education and awareness activities - Enhanced agricultural practices
	Coastal fisheries catches decreasing	- Overfishing - Tabu areas not effective management systems - Lack of planning of marine resource management - Lack of enforcement of laws	- Continued overfishing and loss of breeding stock and biodiversity - Ecosystem health will continue to decrease - Some locations are reported as remaining health due to lack of fishing pressure - Population continues to increase	- Increase sea temperate will increase coral bleaching and ecosystem damage - Increasing acidity will impact on ecosystems	**Medium**	- Development and implementation of Integrated Coastal Zone Management Plan - Develop integrated system of MPAs and fisheries management approaches - Installation of FADs
Coastal issues	Coastal inundation from king tides and related events	- Increased construction in coastal margins combined with erosion	- High as some communities constructed in proximity to the coastal zone - Potential for impacts on infrastructure and coastal assets	- Water table will become increasingly salinized - Coastal infrastructure will be flooded and degraded	**high**	- Ensuring vegetation of shoreline - Securing alternative water supplies - CC Adaption Planning ensuring re-location of infrastructure assets away from coast

	Observation / threat	Causes	Risks – without intervention	Potential climate induced impacts	Level of threat	Potential adaption activities
	Areas of coastline eroding endangering coastal infrastructure	- Loss of coastal vegetation - Sand mining from beaches - Inappropriate planning of infrastructure - Lack of maintenance of infrastructure	- Increasing danger – particularly in extreme weather events	- Currently houses, churches, schools potentially are threatened	**medium**	- Ensuring vegetation of shoreline - Securing alternative water supplies - CC Adaption Planning ensuring re-location of infrastructure assets away from coast - Consider options for communities in case of community decision to relocate
	Changes in seasonal weather eroding the coast related to el-nino and la-nina	- Coastal erosion is occurring in unpredictable manner due to season (long-term weather patterns)	- Increasing danger – particularly in extreme weather events -	- Change in wave regimes may potentially impact on the coastal process enhancing erosion in some areas	**mediuem**	- Ensuring vegetation of shoreline - CC Adaption Planning ensuring re-location of infrastructure assets away from coast - Consider options for communities in case of community decision to relocate
- **Land-based issues**			-			
- **Water quality and supply**	Water sources for communities polluted	- Groundwater is increasingly salinized from saline water intrusion - Polluted from septics and pit toilets - Sediment entering water sources from poor upland management	- Saline water instruction becoming an issue in some coastal villages; - May become worse under cc scenarios;	- Community health impacts, particularly on women, elderly and children	**medium**	- Development and implementation of community agreed plan on upland areas – including water catchments and source - Provision of WASH Training
	Lack of potable water (seasonal)	- Not enough capacity to harvest rainwater - Increasing variability in rainfall - Increasing populations	- Seasonal water shortages – - Households consuming less than optimal water for periods of the year -	- Impacts on human health - Continued provision of emergency water supplies	**Extreme**	- Installation of additional water storage at schools and in selected villages - Securing open wells - Assistance in planning for water sources on the main islands in preparation for migration from small islands - WASH program to ensure water quality

	Observation / threat	Causes	Risks – without intervention	Potential climate induced impacts	Level of threat	Potential adaption activities
	Damage to the water distribution system post natural disaster	- Physical damage to system - No emergency back-up system	- Continued in ability to manage post-disaster - Risk to human health	- Not enough water resulting in increase in health problems following a natural disaster	**Medium**	- Development of DRR Plan and Area Council and Village Level - Climate proof current water systems
- **Upland management - Erosion and soil management**	Deforestation	- Need for timber and related income - Lack of alternative to timber for construction	- Cutting continues without replanting - Increased access into site will result in increase in level of logging - Erosion may become worse	- Intense rains will further damage forests, resulting in soil instability and increased erosion - Changes in climate will influence forest structure	**MEDIUM**	- Development and implementation of Integrated Upland and Catchment Management Plans - Nursery to support production of tree saplings for reforestation programs - Identification of opportunities for terrestrial protected areas / CCAs
	Upland erosion issues	- Poor upland management - Agricultural activities - Logging - Erosion of riverbank	- Continued erosion - Loss of top-soil - Impacts on marine and coastal ecosystems	- Loss of top soil - Impacts on coastal and marine environment	**High**	- Development and implementation of Integrated Upland and Catchment Management Plans - Nursery to support production of tree saplings for reforestation programs - Agricultural extension
	Farming practices cause erosion	- Lack of understanding of alternative practices - Lack of access to different crop varieties - Impacts of livestock on the island topsoil	- Continued erosion - Loss of top-soil - Impacts on marine and coastal ecosystems	- Several farming practices, such as slash and burn farming, causes less soil stability and an increase in sediment generation and top soil loss	**Medium**	- Education outreach and distribution of erosion preventing species for erosion control
Livestock and natural resources	Coconut crab harvest is decreasing in most islands	- Overharvesting - Changes in utilization of terrestrial areas - Conversion from forest into agricultural areas	- Continued decline and local extinction of coconut crab -	- Change in terrestrial ecosystem functioning will impact ecosystem ability to support crabs	**High**	- Development of coconut crab management strategy to promote long-term sustainable harvesting and utilization - Build upon community conservation initiatives in selected islands
Agriculture and Horticulture	Changes/difficulties in growing seasons	- Change in season timing / fruiting	- Impact on crop yield - Impact on seasonality	- Potential impact on food security through timing of food	**MEDIUM**	- Education outreach Extension on agricultural species - Identification of climate change resilient crops

	Observation / threat	Causes	Risks – without intervention	Potential climate induced impacts	Level of threat	Potential adaption activities
	and crop management	- Possible link to climate change reported		production at household level		
	Diseases and pests in agricultural produce	Uncertain, but maybe related to: - Changes in agricultural practices - Introduced diseases - Lack of alternative agricultural crop seedlings	- The problem will continue to get worse with a reported loss of crops of up to 40%	- High impact on food security through food wastage	**MEDIUM**	- Education outreach and distribution of climate change resilient crops
	Droughts	- Part of a natural cycle - Increasingly will be linked to climate change	- Occasional crop failure - Food shortages - Starvation	- Not enough water, an increase in crop health problems	**MEDIUM**	- Increase system capacity - New varieties of crops
	Horticulture erosion and sanitation issues	- Existing issues that will enhance the impacts of climate change	- Pigs, cows, goats and chickens are left to graze in various locations. Often their grazing locations cause problems of soil erosion and sanitary conditions.	- Changes in rainfall patterns may enhance erosion and water run-off / flooding	**low**	- Education outreach and distribution of materials for animal management (fencing)
Public conveyance infrastructure	Pier and other transport infrastructure tracks become unusable and dangerous during wet season	- Design / siting specifications - Financial resources required for high quality infrastructure - Absence of maintenance	- Ports will remain unusable in wet season and local communities will be reliant on dangerous ocean crossings -	- Lack of safe access to markets, education, health and other government facilities -	**medium**	- Identification of opportunities for strengthening port infrastructure - Regular maintenance program - Involvement of island based contractors/ communities in maintenance if resources are available
	River crossings and steep cliff present risk to pedestrian traffic (Secondary paths)	- Increased rainfall and extreme events made river crossing hazardous to pedestrian traffic	- Disruption to lives of rural communities - Lack of access to education, etc.	- Lack of access to markets, education,, health and other government facilities - Human injury and deaths	**Medium**	- Build / rehabilitate public walking tracks /

	Observation / threat	Causes	Risks – without intervention	Potential climate induced impacts	Level of threat	Potential adaption activities
	Ensure walkways and pathways are constructed to specifications in line with climate projections	- Increased rainfall and extreme events damage public conveyance infrastructure	- Roads and infrastructure will continue to deteriorate without intervention - Road and related infrastructure will be unusable	-	**Medium**	- Ensure appropriate design to ensure “climate proofing”

4 Proposed interventions

Situations change, project supporter's move on, projects get delayed in starting. Based on experience, it is recommended that the design of this project is reviewed by the NAB prior to any implementation at the proposed site(s). The project needs to be presented and discussed with local stakeholders during the establishment of the Pilot Project Committee in the Inception Phase of V-CAP. Expectations, confusions, further information and explanation can then be provided at project start – and the design of the project adjusted to fit new realities at the site in order to ensure project interventions are clear and understood by all – and stakeholder support is provided throughout implementation.

The above table provides an insight into the various adaptation options identified in the process of community consultations in the various sites as outlined in Annex 1 below.

The following sections provide a framework for the V-CAP response to the community profiling, baseline survey and rapid vulnerability assessment and field visits.

The V-CAP response to these issues will be delivered through:

- Component 1: Integrated community approaches to climate change adaptation
    - 1.1. Integrated CC-Adaptation plans mainstreamed in the coastal zone
    - 1.2 Improved climate resilience of coastal areas through integrated approaches
        - 1.2.1: Increased resilience of coastal ecosystem to climate change
        - 1.2.2: Enhanced resilience of terrestrial areas
        - 1.2.3: Climate proofing of infrastructure.

The proposed activities, baselines, interventions are targets are outlined in the tables below.

The proposed activities outlined below are based on an intensive field visit during the PPG mission and follow-up dialogue at the Area Council, Provincial and National Levels. However, a comprehensive Inception phase followed by a targeted information gathering and planning period will ensure the development of a comprehensive program that meets the needs of all stakeholders.

Component 1.1.1: Tafea Outer Islands, selected Area Council - Climate Change Adaptation Planning – Strengthening Village and Community Approaches

No.	Category	Details
1.	**Summary title name**	Tafea Islands – Area Council & Village Climate Change Adaptation Planning – Strengthening Village and Community Approaches
2.	**Thematic area**	*Integrated CC-A plans mainstreamed in the coastal zone* *Cross-cutting* • *Gender / special needs groups*
3.	**Province**	Tafea Province
4.	**Site description**	All villages in the Tafea islands as described in the site profile.
5.	**Target communities**	Initially the focus of activities will be Aniwa and Futuna, and then will expand to other outer island in the Tafea provinces.
6.	**Description**	Local governance institutions and structures are strenghtened to allow for Climate Change Adaptation plans to be created and effectively delivered on village, Area Council and District levels.
7.	**Rationale – addressing what climate change issue**	**Problem Identification** • There are limited and CC vulnerability assessments / CC Adaption Plans at the village and Area Council levels • Lack of awareness and capacity to integrate CC Adaptation into Area Council level and Community Disaster Committee level planning • Lack of formal institutional structure to address CC adaption planning processes and implement adaptation measures • Monitoring and evaluation capacity of local governance structures is limited. Report writing capacity is limited.
8.	**Impact of proposed activity**	• 5 Area Councils and their coastal communities more resilient to CC through development and implementation of integrated CC-A plans in the coastal zone
9.	**Base line**	• 5 of 5 Area Councils established • 0of 5 Area Council 5 Year Development Plans created • 0 of 12 Community CC Adaptation Plans made for target communities by CDC's with DRR and ICZM components • 2 of 5 CDC's created in target communities • 1 of 5 Area Councils in target areas have CC / DRR Centers which also serve as the Area Council Office building
10.	**Activity Output**	• 5 Area Council CC Adaptation and Coastal Zone Management Plans made including preparedness and response plans and development priorities, formulated in the context of ICZM. • 3 of 5 Area Council has created 5 year development plans incorporating CC Adaptation & coastal zone management
11.	**Proposed Specific Activities**	**Planning Phase** • Local governance institutions and structures are strengthened to allow for climate change adaptation plans to be created and effectively delivered on village and Area Council levels.

		Existing village level ***Community Disaster Committees*** to be strengthened in selected target communities. A number of islands have well-functioning CDC's that were established with support of CARE, but little has been done in regards to CCA and ICZM planning. V-CAP integration with existing CDC plans in the Tafea is vital to this component. • Undertake vulnerability assessments at the community level and develop coastal CC Adaptation Plans including coastal zone management plans, • Involve representatives from VMGD and NDMO in undertaking these assessments of disaster and CCA risks, providing any necessary technical input to these CDC's while they create their plans • 4 CDC's from target communities create development plans considering CCA, DRR and ICZM. Area Council level ***Tafea V-CAP Project Implementation Committee*** is linked to the Tafea Province Technical Advisory Committee. To meet regularly on a quarterly basis. • Identify capacity needs of the various Area Councils and Community Disaster Committees within and strengthen institutional development action plan (planning, writing and evaluation) considering inputs from the individual CCA plans created by CDC's • By end of planning phase develop comprehensive project workplan with agreed targets for remainder of project. • Development of an Area Council CC Adaption Plan for the selected Area Councils **Implementation phase** • Regular meeting of Tafea V-CAP Project Implementation Committee to evaluate the progress of the project implementation against agreed targets • Regular meetings of Tafea Area Council (quarterly) to evaluate progress of Area Council Development Plans during implementation phase • Implementation of the institutional development plan for project area • Implementation of the CDC Plans at the village level • Village small grant scheme providing support to villages to implement the CC Adaptation and CDC Plans • Maintain an oversight of implementation of CC Adaption Plans and DRM Plans in conjunction with other project components (link to 1.2.1, 1.2.2, 1.2.3) • Monitoring and evaluation of implementation of plans against an agreed schedule
12.	**Component Link**	Links and complementarities with other V-CAP Components: • This component will monitor and evaluate work completed in components 1.2.1, 1.2.2 & 1.2.3
13.	**Other Projects**	Links with other activities/projects/donors: • CARE is supporting development planning, profiling and DRR planning in selected sites including Aniwa and Futuna • Live and Learn is supporting implementation of the PRRP in selected outer island of Tafea

14.	**Implementation**	Implementing Agency (Ministry and Department)/ reporting requirements and coordination arrangements **Coordination and Dissemination** • This component to be coordinated by the Ministry of Internal Affairs through the Department of Local Authorities with delegated responsibilities given to the Tafea Provincial Government Council & the Natural Disaster Management Office. Affiliating partners will include the Ministry of Climate Change through the Vanuatu Meteorology & Geo-Hazards Departments
15.	**Indicators**	• 4 Area Council Development Plans modified for Tafea AC containing CCA measures in addition to its DRR components (DLA, VMGD & Torba Province) • 10 Community Climate Change Adaptation Plans created for 4 target communities by CDC's (VMGD, NDMO & Torba Province) • 2 CCA / DRR centres rehabilitated which will also serve as the Area Council office for Tafea AC
16.	**Benefits**	Supporting the local governance institutions to plan for CC Adaptation on the district, Area Council and village levels, which will considerably mitigate the possible adverse effects sustained through the effects of Climate Change. It will also allow the target communities and local government to take ownership of the V-CAP project, increasing their capacity to manage and implement future development projects as well as to effectively monitor and evaluate the project to ensure maximum efficiency.
17.	**Gender**	Mandate from the National Government concerning the formation of Area Councils to include representative members for Women, Youth and People with Disabilities. These Area Council representatives will be a part of the CCA planning process at the Area Council level and the monitoring and evaluation of CDC plans to ensure that they effectively cater to the needs of Women, Youth and the Disabled.
18.	**Environment**	*Is there a need for IEE, EIA? Actions proposed / screening needed?* • No
19.	**Risks and Assumptions**	**Risks** • Risks involve the possibility that internal community disputes involving chiefly titles or land ownership may pose challenges or have adverse effects on the formation or functioning of the Project Implementation Committee or the village level CDC's. • Challenges will be to maintain contact with each of the outer islands in an effective manner **Assumptions** • Community representatives will be willing to participate in the Project Implementation Committee, CDC's & Area Councils.
20.	**Prepared by**	Matthew Hardwick, Bernard O'Callaghan

Component 1.2.1: Tafea Area Council - Increased resilience of coastal ecosystem to climate change

No.	Category	Details
1.	**Thematic area**	• NAPA Adaptation Strategies 6 and 9 • Project component 1.2.1 Cross-cutting • Gender / special needs groups and youth
2.	**Site description**	The Tafea island group contains the important and valuable marine ecosystems including fringing coral reef system, mangroves and open ocean. The V-CAP site will comprise the outer island of Tafea and the coastal ecosystems close-by.
3.	**Description**	Tafea has rich marine and coastal resources. The lower levels of populations and relative difficulty in accessing markets the pressure of these resources in currently limited. These is an opportunity to enhance fisheries and coastal zone management to serve as a demonstration of community engagement to build resilience in coastal resources. The focus of these activities will be to build village, community and area level Integrated Coastal Zone Management Adaptation Plans (ICZMA Plans) to enhance resilience of coastal ecosystems to climate change. A particular focus at this site will be to build a resilient MPA / tabu area system within and perhaps between each of the island's marine ecosystem through a planned process. The communities at the sites reported declining coastal fisheries catch issues, but also realised that their relatively low populations assisted in protection. However, there were declines in key species including lobster that were supplied to external markets. However, they were concerned that with increasing populations access to markets would place additional pressure on the resources. There were also relatively high number of Crown of Thorn Sea-star (COTs) and efforts will be undertaken with communities to ensure their removal and review of current fishing practices. This project will be achieved through a comprehensive baseline assessment of the marine and coastal environment, dialogues and consultations with key stakeholders including traditional owners, resource users, and representatives from government agencies. A comprehensive International Coastal Zone Management Adaption Plan (ICZMAP) will be developed with clear goals towards monitoring, implementation, and evaluation will be established for each island. The ICZMAP will then be implemented. It is anticipated that elements of this plan will include: • Education and outreach to fishers and coastal users, with particular focus on ensuring that women are activity engaged in training programs; • Sharing of experience between all the island in the Tafea outer island group; • Encouraging the participation of youth in the removal of COTs; • Development of alternative income activities;

		• Installation of Fish Aggregating Devices (FADs) to enhance nearshore and coastal building upon successful models in some of the islands.
4.	**Rationale – addressing what climate change issue**	**Problem Identification** The greatest threat to the coral reef system from climate change in Tafea is an increase in sea temperature and seawater acidification. These are major threats and the key adaptation approach will be to build ecosystem resilience; Additional threats include: • Increases in precipitation during the wet season due to climate change, resulting in an increase in the generation of sediment in areas close to the larger islands; • Ecosystem health has been degraded, due to factors such as overfishing, thus reducing the resilience to climate change – which will exasperated with additional stressors from climate change.
5.	**Impact of proposed activity**	Increased resilience to climate change through healthier marine ecosystems supported by an increase in the area of Tabu Areas, CCAs and MPAs proposed by local communities to enhance ecosystem resilience, and link into the national Integrated Coastal Zone Management Strategy.
6.	**Base line**	Identify baseline – but also identify additional baseline information needs if required • There are a number of "kustom Tabu" areas around most of the islands and several CCAs. • There are yet to be MPAs that have been formally approved; • Coastal water is degraded by increased water turbidity from small rivers and streams; • There are Crown of Thorn Sea-stars degrading the reefs; • There are areas of mangroves which act as important stores of biodiversity and breeding areas of fish and other marine species; • The quantity and quality of the marine resources is decreasing due to fishing pressure. •
7.	**Proposed specific activities**	**Break down of specific activities** ***Planning Phase:*** **Issue identification, intervention identification and planning** • Field staff will be appointed to support and facilitate community dialogues, baseline development and outreach training session held to engage the community in the marine monitoring project • Baseline surveys will be completed by Department of Fisheries and technical specialists • Development of Integrated Coastal Zone Management Adaption Plans (ICZMAP),and • Identification of suitable locations for expansion of the Tabu system and the creation of additional LMMAs and CCAs. ***Implementation Phase:*** **Implementation of specific interventions** • ICZMAP will be implemented • LMMAs, Tabu areas and CCAs will be refined and management plans will be developed and implemented • Field staff will establish a program of marine ecosystem education for the fishers, including women • Specific programs and activities will engage the youth in activities such as removal of Crown of Thorns Seastars; • Training will also focus on the value and importance of protecting the dugongs; • The Youth Club will seek to create innovative programs to engage and educate the youth, and

		• Field staff will work with current turtle monitors to support community initiatives to manage marine resources. ***On-going*: Monitoring and Evaluation** • Develop, implement and evaluate annual work plans together with local communities • Undertake community monitoring of Tabu areas and CCAs • Turtle Monitors, include female monitors will partake in the Monitoring Network activities, including One Small Bag's annual conference, and the sub regional Monitoring activities • Trainings/educational programs for the fishers including women and youth will be held at least twice a year as per the annual plan, and • A specific focus should be monitoring marine ecosystems following natural disasters to assess the resilience;
8.	**Activity output**	**Proposed specific outputs of activities** • Trainings for the communities, targeting the fishers, on the value and importance of establishing marine protected areas. Training topics will include: the value of marine conservation, establishing conservation areas, endangered/protected species, and invasive species removal. • Assistance to the area in the selection of another Network Monitor to work with the current Network Monitor • Youth club and women's group trainings on marine ecosystems, healthy marine management practices and endangered species. Training topics will include: the value of marine conservation, endangered/protected species, e.g. Coconut crab and dugong; Specific outputs will include: • The establishment of at least four additional MPAs. • The establishment of at least eight more marine Tabu areas. • Increase in number and size of fish populations. • Assistance linking MPAs/CCAs into a local network.
9.	**Indicators**	**Baseline and performance indicators to be used to monitor that activity and/or output** • Baseline biodiversity, habitat and fisheries surveys based on adapted Reefcheck and other suitable methodologies; • Development of 5 Integrated Coastal Zone Adaptation Plans (one per island) approved by the national, provincial and local governments • Creation of new CCAs • Enhanced Tabu Area Management Plans for existing tabu areas • Decrease in coastal water turbidity; • An increase in fish catch and fish size; • Increase in fish catch and fish size as evidenced by repeated detailed base-line surveys, and • A reduction in the number of Crown of Thorn Seastars.
10.	**Other Projects**	**Links with other activities/projects/donors (current/potential**) • Link to ongoing activities of the CARE and other partners in the Tafea outer islands including Live and Learn, and other NGOs; • Links to Turtle Monitoring Network • Link to MACBIO – GIZ/ IUCN

11.	**Implementation**	**Coordination and Dissemination** This component of the project will be implemented by a Field Officer appointed by the Project Implementation Unit (PIU) together with the Area Secretaries from the Tafea outer islands supported by the province. International and national specialists on marine ecosystem management will be appointed to lead and assist in the development of the planned interventions. A period of two weeks in the project site will be required to undertake these surveys and develop plans in consultation with local communities, Fisheries Department, DEPC and provincial agencies. • In addition, support will be provided to the District Officers of the Department of Fisheries to coordinate delivery of these activities with their agency work plans. • In addition, links will be established with relevant nongovernmental organizations, such as Wan Smol Bag, to engage them in the education process. In addition, the role of the Field Officer will include: • Initial planning and consultation with local communities • Facilitating initial assessments with expert consultant and communities and development of plan • Supporting community training for fishers and appropriate community representatives; • Working with District /Provincial Fisheries Office for planning and deliver training; • Using GESI strategies to ensure full engagement of women and youth and develop and implement specific activities for these beneficiaries.
12.	**Outline Terms of Reference**	**TOR to be developed for International and national specialists on marine science.** One Field Officer will be employed at a full-time basis to support this and other components for at least 3 years. The Field Officer will be based in Tafea Provincial Offices to support activities in selected outer islands. The duties of this person will include: • Identify, plan, coordinate community training; • Facilitation the linkages and coordination between the 4 Turtle Network Monitors based in the site; • Support development, capacity building and activities for a climate change Youth Club; • Support a Climate Change Youth Club and organize trainings and programs on marine ecosystems • Organize marine education and training for area women • Link the LMMAs and the Tabu areas into the LMMA network, • Link the LMMAs to the national conservation system through the Department of Fisheries and One Small Bag.
13.	**Benefits**	**Expected benefits** Enhanced marine ecosystem resilience to CC on Tafea to the impacts of climate change, with benefits including:

		• Developing the local system of marine conservation areas and Tabu areas, as well as larger marine conservation areas to:
		  ○ Increase biodiversity and ecosystems resilience
		  ○ Increase fish populations through protecting breeding nursery, and feeding grounds
		  ○ Promoting spill over into the non-protected areas, improving the abundance of fish available for harvest
		• Providing opportunities for marine monitoring to assess and identify issues, educational outreach and invasive species mitigation, and
		• Increase the focus for the turtle conservation and management as indicators of ecosystem resilience.

14.	**Gender**	**Links to Gender Action Plan** This project links to the GESI Strategy by engaging women and youth in customized training sessions. Through hands-on educational programs women will learn about marine resources and sustainable fisheries. • This project links to the GESI Strategy by engaging women and youth through specific training programs.
15.	**Environment**	*Is there a need for IEE, EIA? Actions proposed / screening needed?* • Not required based on existing activities
16.	**Risks and Assumptions**	**Risks** • Community members do not engage in training programs and do not adhere to the governance of the LMMAs and Tabu areas • Effects of climate change could kill the reef or severely impede the reef unless action is taken • Lack of desire from communities for LMMA or Tabu area expansion, and • Communities choose not to apply material learned from the training program. **Assumptions** • The success of previous LMMAs and Tabu areas supports the idea that the communities will adhere to the rules and management procedures of additional LMMAs and Tabu areas. • Based on consultations conducted in this project area the design team assumes that the communities being targeted by this project will engage in training and apply the new knowledge offered and will support the development of additional LMMAs and Tabu areas. • Success of previous training projects around Vanuatu and community interests suggests that the trainings will be influential and beneficial in marine ecosystem sustainability.
17.	**Prepared by**	Bernard O'Callaghan and Virginia Smith

Component 1.2.2: Tafea Outer Islands Area Councils - Enhanced resilience of terrestrial areas managed to minimize erosion, provide clean water resources to both communities and ecosystems enhancing livelihoods

1.	**Thematic area**	1.2.2: Enhanced resilience of terrestrial areas managed to minimize erosion, provide clean water resources to both communities and ecosystems enhancing livelihoods: Cross-cutting - Gender / special needs groups and youth
2.	**Site description**	The outer islands in the Tafea Province
3.	**Description**	**Technical description of the activity/investment** The focus of the these activities will be to build village level, community level and Area Council levels approaches to enhancing resilience of terrestrial areas managed to minimize erosion, provide clean water resources to both communities and ecosystems, support sustainable agriculture through an integrated planning process. These activities will operate at the following levels: • Village level • Community level (communities may contain a number of villages) • Various Area Councils in the Tafea Island Group; This component will address the key challenges identified during PPG field consultations and from surveys by other organisations, in particular those issues considered as sensitive and high risk based on the likely impacts of climate change and the urgent priority to build resilience in this area. In particular, this project will focus on the following: Minimizing and upland soil erosion and maximizing coastal protection through • Active planting / revegetation of catchments and coasts • Establishing and operating nurseries for breeding suitable species • Development of coastal and upland vegetation programs • Establishing management measures for management of livestock including goats and pigs • Focus planting in sensitive areas(i.e, water catchments) and erosion hotspots, and • Establishing erosion management measures around and upland of villages. Supporting provision of secure clean water through: • Enhancing dry season water storage through tank provision; • Identification of suitable mechanisms for groundwater management and protection; • Soft measures including planning for catchment management and erosion control; • Hard measures to reduce pollution of water sources; • Securing the water source through appropriate infrastructure, and • Providing emergency and disaster water supply backup. Enhancing catchment management through: • Enhancing a planned approach to upland and coastal management;

		• Providing support for plant species to reduce erosion; • Providing alternative timber species and sources; • Managing cattle, goats and livestock grazing; and • Identifying opportunities for establishment of community conservation and protected areas. Enhancing climate resilient agriculture through: • Providing agricultural extensions services • Planting of climate resilient species that can withstand heat, drought and disease • Providing climate change resilient species, and • Improving access to markets. An integrated approach to addressing these issues will be achieved through the development of Integrated Upland and Catchment Management Plans (IUCMP). These plans will incorporate specific land management plans. A particular element of this component will support agricultural and forestry education outreach to farmers, including women and youth in consultation with provincial level agencies.
4.	**Rationale – addressing what climate change issue**	**Problem Identification:** **Increased variability in rainfall patterns** • Will impact on the seasonality and availability of groundwater upon which many of the island communities rely; • Increases in precipitation due to climate change, particularly during the rainy seasons, may result in increased erosion on the hill slopes, resulting in the generation of more sediment; • Increases in the intensity of the wet and dry seasons as a result of climate change may increase the risk of major bedload transport events, such as landslides; • Current agricultural practices, such as slash and burn farming and allowing cattle grazing on steep slopes, create unstable soil conditions; • Increases in upland erosion results in a loss of valuable top soil; and • Sediment being transported to the coast where it increases coastal water turbidity and deposits sediment on the coral reefs. **Higher temperatures** • Wet and dry season dynamics due to climate change will require more climate resilient crops to insure food security, and • Crop diseases are predicted to become more pervasive. **Higher sea level and associated issues** • Climate change impacting and changing coastal processes, and • Potential flooding of lowland areas.
5.	**Impact of proposed activity**	**Outcome:** The expected outcome of this component in Tafea outer islands will be better planning and implementation of management activities to ensure enhanced

		resilience of terrestrial upland and coastal areas to minimize erosion, provide clean water resources, establish sustainable agriculture practises by communities and improved ecosystem health which additionally contributes to enhanced food security.
6.	**Base line**	It has been demonstrated that healthy upland and costal terrestrial ecosystems will be more resilient to climate change. On the islands of the Tafea outer islands, the relative inaccessibility and relatively low populations have to-date protected the over-use of terrestrial resources. However, with connections to the market economies through enhanced transport routes these pressures are increasing. Thus, efforts and planning processes are needed to be established to ensure: • Erosion in upland and coastal areas generating substantial amounts of sediment that is washed into coastal waters does not increase; • Loss of valuable topsoil in island ecosystems decreases; • Ecosystem degradation and climate change does not severely impact on agricultural production; • Plans are developed for the provision of clean water to villages; • Logging, land encroachment, agricultural expansion is planned with consideration of ensuring resilience to climate change; and • Potential for sediment moving into marine and coastal systems in minimized.

7.	**Proposed specific activities**	**Break down of specific activities**
		• ***Baseline:*** Develop baselines of issues and threats of terrestrial upland and costal ecosystems with a particular focus on impacts of climate change on agriculture, water supply, forestry and protected area management and related resources in the outer island of Tafea province:
		  • Identification of highly erosive sites and factors associated with erosion causation
		  • Field Officer appointed to support the province and coordinate baseline, facilitate community planning and support implementation
		• ***Planning***: In conjunction with project partners identify suitable approaches to enhance catchment and upland management
		  • Develop Integrated Upland and Catchment Management Plans (IUCMP) through the use of participatory approaches that integrate forestry, agriculture, water resources and traditional management regimes at village, community and areas council level that identify time-bound actions for long-term management including tabu and community conservation areas.
		  • Survey of area to identify focus areas for erosion conservation, and.
		  • Develop plans for the demonstration garden and nurseries in selected villages.
		• ***Implementation*** of Integrated Upland and Catchment *Management* Plans including nurseries, agricultural training and extension, provision of climate-resilient crops, though development of time bound annual work plans.
		  • As part of the implementation of IUCMP develop specific cooperative programs with forestry, agriculture and water resources agencies to deliver an agreed series of comprehensive work plans with time bound outputs to be delivered in conjunction with Field Officers, Area Council and appropriate provincial officials.
		  • Establishment of the demonstration training gardens and nurseries to demonstrate and grow grasses for slope stabilization, saplings for re-forestation and climate change resistant crops to be disseminated to the communities for their individual farms.
		  • Farmer, women, and youth (via the youth club) outreach training and education Trainings will include topics, such as:
		  ▪ Sustainable land management in the uplands
		  ▪ Sustainable land management in the lowlands

		▪ Climate change resistant crops and farming practices • Develop and disseminate erosion control materials; such as, stabilizing grasses and tree saplings. • ***On-going- Monitoring and evaluation:*** • Monitoring, evaluation and work planning will be based on the IUCMP prepared in Year one, and annual participatory reviews will identify progress and lessons learnt to be incorporated into the workplans for the following year • Survey the forest and other coverage on islands to assess the amount of forested area (initial period and month 40) • Survey the villages to see if there are shifts in farming practices (annual review / scorecard) • Assessments of the size of the sediment deposits at the reef and coastal water turbidity (Marine Network Monitors) • Monitor implementation of the plan, and will seek to expand the areas, and. • Monitor the occurrences of landslides.
	Activity output	**Proposed specific outputs of activities :** • Trainings for community farmers, including women on better farming practices to reduce erosion and conserve top soil • Distribution of resources to community farmers to facilitate top soil conservation practices • Establishment of a Training Garden and Nursery to house saplings, stabilizing grasses and climate change resistant crops • Youth club trainings on better farming practices to conserve top soil • Women's trainings on better farming practices to conserve top soil • Reduction in the farming practices resulting in upland farming practices to reduce sediment transport. • Halting the building of sediment deposits at the reefs and the increase water turbidity.
12.	**Indicators**	**Baseline and performance indicators** • Baseline biodiversity, habitat and agriculture and forestry surveys based on adapted suitable methodologies • Development and implementation of *Integrated Upland and Catchment Management Plans (IUCMP)* • Annual IUCMP work plans developed, implemented and reviewed • Establishment of four terrestrial CCA • Enhanced management plan for 1 terrestrial tabu areas • Reduction in erosion and runoff as indicated by decrease in coastal water turbidity • Number of farmers adopting measures to actively reducing sediment run-off • Number of erosion areas along road-sides with reduced erosive potential • Area of upland planted with slope stabilizing species to reduce soil runoff • Amount of forested land in the upland area, and • Number of landslides occurring in areas of highlands • Number of communities with effective coconut crab management plans.
13.	**Other Projects**	**Links with other activities/projects/donors (current/potential**) • Related agriculture sector projects • Related forestry sector projects

14.	**Implement-ation**	This component of the project will be implemented by the Field Officer appointed by the Project Implementation Unit (PIU) together with Tafea Province. Technical experts will be drawn from the Department of Agriculture and Department of Forestry. V-CAP will support operational expenses in relation to the delivery of technical activities. International and national specialists on forestry and erosion control will be appointed to lead and assist in the development of the planned interventions. A variety of surveys will be rolled out in the Tafea outer islands over the first year of the project. Plans based on these surveys will be implemented together with local communities. Additionally, they will develop plans for the nursery and training garden. • In addition, support will be provided to the Departments of Agriculture and Forestry to coordinate delivery of these activities with their agency work plans. • In addition, links will be established with relevant institutions including Santo Agricultural Research Centre and Farmers Support Association. The Field Officer based in Tafea Provincial offices (50% time) will coordinate the delivery of this component. Their role will include: • Undertaking initial planning and consultation with local communities • Facilitating initial assessments with expert consultant and communities and development of plans • Supporting community training for farmers and ensuring women are actively engaged • Working with Provincial Forestry and Agriculture Office to establish nursery and training gardens for climate resilient crops and erosion prevention plants; and • Developing and implementing specific activities under the auspices of the CC Youth Club to support erosion reduction initiatives.
15.	**Benefits**	**Expected benefits** • A structured approach will be developed to ensure the planning for the future land-use to build resilience towards the long-term management of land resources in the outer Islands of Tafea. • The project will identify mechanisms to minimize the amount of erosion from the upland slopes of the site resulting in the following benefits: o Increase topsoil conservation o A healthier coastal marine ecosystems ▪ Less sediment deposited at the reef ▪ Less turbid coastal waters. • The project education and outreach will provide male and female farmers with the technical and physical resources to improve their farming practices and promote climate change resilient farming; • The project will enhance food security through insuring improved farming practices and promoting climate resilient crops, and • The project will enhance household livelihoods through improved quality and quantity of market produce available for sale.
16.	**Gender**	**Links to Gender Equity and Social Inclusion Strategy (GESI)** • This project links to the GESI Strategy by engaging women through training sessions. Through hands-on and locally relevant educational women will learn new farming techniques for sustainable farming.

		• This project links to the Gender GESI Strategy by engaging youth in training sessions and involvement in the training garden and nursery. Through a range of training activities, youth will learn new farming techniques necessary for a sustainable future.
17.	**Environment**	*Is there a need for IEE, EIA? Actions proposed / screening needed?* • Not required
18.	**Risks and Assumptions**	**Risks** • Communities are unable or unwilling to engage in planned trainings or outreach. • Communities engage in training programs but do not apply new knowledge and change current farming practices. • Communication will be difficult with the Tafea outer islands **Assumptions** • Communities are interested in this type of training, as expressed during project design consultations. • That when individuals within targeted communities are trained to use erosion reducing materials and have access to them, they will utilize these approaches on their farms, and encourage others to do the same. • The project will be able to demonstrate locally applicable models, and • Erosion reducing measures promoted by this project actually reduce current erosion problems.
19.	**Prepared by**	Bernard O'Callaghan and Virginia Smith

Annex 1: Summary of PPG activities related to Tafea Outer Islands Area Council

4.1 Community Consultations

- When preparing to consult with villagers in the Tafea Outer Islands, the V-CAP team contact key agencies and institutions working on the islands.
- Plans were developed for a visit and the Area Secretary of the Aniwa. Several meetings were held with CARE officials based in Port Vila.
- The Secretary General for Tafea Province was visited as the mission travelled to Aniwa.
- The main facilitator who helped arrange and organize community meetings in Aniwa as Lennon, the Area Secretary. This field worker for the provincial government did an excellent job arranging with the chiefly councils for our meeting time and locations as well as guiding the V-CAP team throughout the project area.

- Community meetings went smoothly due to the superior organization of committees already established by the Red Cross on the islands. The V-CAP team met each community on Aniwa and with the Community Disaster Committees
- The community meetings also had focus groups to allow technical V-CAP team members to further explore their respective fields. In respect to gender, a women's focus group was also held to allow women to express their views openly, which does not happen typically within the presence of men in public meetings in Melanesia. The engineers and environment specialists on the V-CAP design team met with the area's fishermen, hunters and others familiar with local resources as well as touring relevant community infrastructure.

In addition, the field mission undertook:

- Village surveys – guided walks through the village to identify and document key issues;
- Surveys of water sources where specialist joined local communities to review water supply and sanitation ;
- Surveys of island to observe coastal erosion, development challenges in the villages;
- Observation of farming and livestock management practices;
- Observations of coast line noting beach erosion, beach aggradation, and species of interest and points of environmental concern;
- Underwater observation surveys – shallow water surveys – less than 10 metres
- Confirmation and explanation of issues of concern raised by villagers, e.g. plant diseases (i.e. Lap lap Leaf disease);

4.2 Community development priorities indentified in consultations

During the discussions on Aniwa with women, youth, elderly and disabled persons at community level and with provincial sub-district staff and committees, the primary development concerns expressed included:

Imatu Village:

1.) Water supply- tanks & pumps desired (replacement of existing hand-pump)

2.) Infrastructure- wharf desired
3.) Communications tower for mobile phone access desired

Isavai Village:

1.) Water Security
2.) Infrastructure- improve muddy road and stop erosion at airport
3.) Evacuation center for cyclones desired

Ikaukau Village:

1.) Water security
2.) Road- improvement to 30 meter section of road that blocks access
3.) Pest control- rats damaging local crops
4.) Forestry & agricultural CC resilient species requested