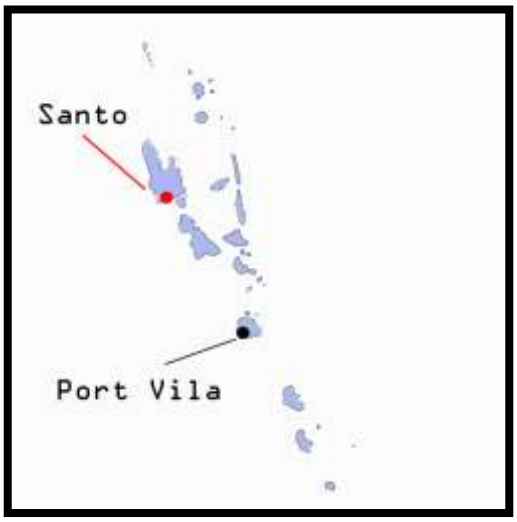
South Santo 2 Area Council, Sanma Province

1 Project context & background

As of the 2009 Census, the total population on the island of Santo was 39,606 people. Santo is the second highest populated island in Vanuatu, second only to Efate. Luganville, with a population of 13,167 is the second largest town in Vanuatu and is located on the southern coast of the island, approximately a 1.5 hour drive from the project site. According to the 2009 Census, the annual population growth rate for Santo is 2.4%.



As the largest island in Vanuatu, Santo has an extensive mountain range along its southern & western coasts with many large rivers and creeks extending into the uplands. The eastern coast is relatively flat in comparison and is primarily used for agricultural purposes. A large natural harbor is present in the north called Big Bay, where a significant portion of the island's population is located. The interior of the island is inaccessible and populated sparsely by tribes of Ni-Vanuatu living traditional subsistence agrarian lifestyles, many of whom do not speak Bislama or wear Western clothing. A majority of the offshore islands in Sanma Province are located off of the southeast corner of Santo.

There is substantial road access throughout the vast island of Santo, although there are many areas where road access is poor or there is no road access whatsoever and where communities rely only on footpaths or boats for transportation. The road from Luganville to Port Olry, which spans the eastern coast of Santo, is in excellent condition with tar-sealed bitumen and drainage provided through funding from the US government through the Millenium Challenge Corporation and was recently completed in 2011. The wide roads in the main town of Luganville are in good condition despite the need for minor repairs in certain areas and were originally built by the American armed forces during World War II when Santo served as a base for American troops.

The road that proceeds in a westward direction from Luganville to Tasariki along the southern coast of Santo is regularly maintained by the PWD, although these roads are frequently impassable after heavy rains due to due to damaged bridges or a lack of resilient infrastructure to allow passage over the numerous wide river crossings. Several bridges have collapsed along South Santo's road in the past. The Chinese government has indicated an interest in providing support to the Vanuatu government by possibly funding the construction of bridges along this stretch of road according to the Sanma PWD who has assisted with creating the plans for this work. The conditions of this road deteriorate drastically proceeding further West until the road's end at Tassariki.

(Collapsed bridge along main road in South Santo leading to Wailapa

A majority of the western, northern and central areas in Santo do not have reliable road infrastructure and rely on boats or footpaths for travel. Agricultural feeder roads in South Santo are often in poor condition, especially during the wet season.

Regular commercial and passenger shipping services access many coastal communities throughout Santo with Luganville serving as a main shipping hub for the northern provinces. The passenger ship “Big Sister” operates a bi-weekly service to Santo, connecting with Epi, Malekula, Paama & Port Vila, Efate. There is a frequently used permanent wharf located in Luganville and containers are often imported and exported here. Visiting tourist boats with P&O, operated by Carnival Cruise, travel to Lunganville and unload passengers at the main wharf several times a month.

There is currently one airport on Santo with regular commercial flights operated by Air Vanuatu and one airport where service is infrequent. The operational airport is located in Luganville and it serves as a connecting hub for the provinces of Torba, Malampa and Penama. Another airport is located along the north west coast of Santo but Air Vanuatu infrequently provides service there due to limited demand from customers and safety concerns.

2 Proposed project site & resources

2.1 Proposed site

The proposed project site is located on the southern coast of Santo Island, Sanma Province from Asevae village proceeding westward along the road to Wailapa. The identified V-CAP target sites are located within the boundary of South Santo Area 2. The target villages included within the project site are Wailapa & Asevaia, including nearby Tangoa and Araki island communities as well.

There are an abundance of small villages located directly inland from this V-CAP site in South Santo, although they have not been included in the proposed project site due to the fact that they are often located a considerable distance from the coastal zone and there is a general lack of information regarding these extremely isolated and rural villages.

The proposed project site covers 1 Area Council (although beneficiaries are derived from 3 total Area Councils) and a number of villages as outlined in the adjacent map and table:

Province	Island	Village	AC				Immediate Beneficiaries	*Additional Beneficiaries
Sanma	Santo	Wailapa (+Namalo, Parisa, Naone, Vimele)	South Santo Area 2	177	0			177
Sanma	Santo	Asevae (+Vunarara, Vipaka & Vunkalato)	South Santo Area 2	182	0			182
Sanma	Tangoa		South Santo Area 2	394	0	199	195	394
Sanma	Araki		South Santo Area 2	140	0	65	75	140
Sanma	Santo	Nasulnun to Sarete	South Santo Area 2	0	1,100	0	0	1,100
Sanma	Santo	Namoru to Tasariki	South Santo Area 1	0	2,400	0	0	2,400
Sanma	Santo	Kerevinop to Linduri	West Santo	0	2,805	0	0	2,805
Sanma	Santo	(GENDER)				3,428	3,236	
			TOTAL	**893**	**6,305**	**3,692**	**3,506**	**7,198**

Male to Female % for Santo island according to 2009 Census is: 1.05905901

Gender data disaggregated by applying this Male to Female ratio against 2009 Census data for total Area Council population figures provided by the VSO for South Santo and West Santo.

*Additional Beneficiaries Explanation- Santo: A large portion of the population along the road spanning through South Santo Area 1 and 2 (ending at Tasariki) travels frequently to Luganville to access health, educational, inter-island transport, market and shopping services. West Coast villagers travel to Luganville occasionally, especially in times of major sickness or pregnancy. Improving pedestrian access by building climate resilient crossings will help facilitate the travel of villagers in times of emergency, as they travel from Area 1 or West Coast Santo, should motor vehicle transport be impossible due to flooding. Also, the remaining population of the South Santo Area 2 Area Council (from Nasulnun to Sarete village) will benefit from V-CAP component 1.1.1, which will establish an Area Council development plan. Resources will be allocated to provincial workers and government department field officers, which will allow them to work and provide assistance to portions of the population not located within the immediate V-CAP working site.

2.2 Planning and local governance

2.2.1 Traditional System

The traditional Ni-Vanuatu chiefly system is the prominent governance system present within the villages of South Santo and it is efficiently organized.

The “Tabuemastna” Chiefly Council is an organization comprised of all representatives from all of the chiefly councils in Sanma Province. Underneath this provincial grouping, there is a chiefly organization comprised of representatives from the chiefly councils from each village within South Santo 2 Area Council. The South Santo Area 2 Council of Chiefs is responsible for the overseeing the communities located within the V-CAP target site in Sanma.

On the village level, Asevaia has a chiefly council called “Sarah Mele” which has a Paramount Chief by the name of Patului and Wailapa Village has a village chiefly council called the “Isu Chiefly Council” whose Paramount chief is called Romanisu Nambatu. Under the “Isu Chiefly Council” are various chiefs and assistant chiefs who are responsible for the sub-communities of Parisa, Namalo and Naone in addition to Wailapa village.

There are no reported chiefly disputes within the target area regarding chiefly titles and authority. Minor land disputes involving customary land-ownership boundaries, displinary hearings of community members and other important community development issues are resolved on the chiefly level in South Santo through meetings.

The target communities indicate that there are no regularly scheduled meeting or work days for the village chiefly councils each week. Instead, the chiefs summon the villagers to meetings as need arises. This will impact V-CAP as community work cannot be scheduled around a previously established community working day, this initative may need to be attempted during project implementation with the assistance of chiefs at project sites.

2.2.2 Area Councils

The Sanma Provincial Government Council is in the process of establishing and supporting its Area Council within the target area, named South Santo Area 2 Council. The Area Councils will include Area Councilors consisting of village representatives from within the

target area consisting of Chiefly reps, Women reps, Youth Reps, Disabled Persons reps, Church reps and Business House reps. Currently on in South Santo Area 2 there are AC members nominated but there is no Area Council Office building, Council development / work plans or capacity building initatives to improve the AC's efficiency.

There is one Area Secretary living and working within the target area, employed by the Sanma Provincial Government. This Area Secretary lives and works within South Santo Area 2 Council. The Area Secretary's 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 work and meetings.

2.3 Brief profile

2.3.1 Marine and coastal areas

Locals indicate that sharks are abundant in the waters near the project area and that tiger shark attacks are not uncommon historically, especially for the offshore island of Tangoa. This threat of shark attack affects local fishing techniques with some community members avoiding the use of spearguns and avoiding wading in the water for fishing. There are no official records kept concerning the abundance of shark attacks in this area but there are numerous amputees who have lost limbs because of shark bites living within the target site.

A majority of fishermen within the target site use canoes for fishing along the coast and only 2 small boats with motors are engaged occasionally in fishing activities in Asevae. Although women in Vanuatu typically are very active in small-scale reef fishing, they generally do not fish within this target area as the fishing generally requires the use of boats or canoes.

(Students returning to their homes on Tangoa Island by canoe)

2.3.2 Terrestrial

2.3.2.1 Upland agriculture

The target communities generate a majority of their income through agricultural activity such as the production of kava and copra, as well as the sale of produce at markets.

Kava, copra and selling fresh produce from their gardens at markets are the main sources of income. Historically, copra was a focus in this area but due to fluctuating market prices the local population has been trending away from this commodity over the past decade. The planting and sale of fresh kava to supply the production of “ready-made” kava bars in Luganville has increased to become a primary source of income generation for many in the area. Locals indicate that they sell cacao as well, though not as much as kava and copra.

The sale of local produce such as root crops and fresh fruits contributes significantly to local income generation as the project area is located approximately 1.5 hours drive to Luganville, a commercial hub for Vanuatu’s northern provinces and the second highest populated town in the country. The target community of Wailapa indicated that their average household travels to Luganville to sell agricultural produce once every 2 months. Their community takes part in the Luganville Market and their community is alloted space to sale twice a month for a period of 3 days each. The community of Asevaia indicated that their households sold produce at the Luganville Market on average 2 to 5 times a year. While entire families are involved with the farming of produce to sell within the market, the women typically take a lead

role in the sale at local markets, where they often sleep several nights before returning to their respective villages.

Little to no value-added production of agricultural products takes place within the target sites.

The sale of livestock also generates much income for the target communities. The target communities (excluding Tangoa) estimate that they collectively own 300+ cattle, 38 pigs and around 600+ chickens. Livestock is typically sold domestically within the communities or to buyers in Luganville.

Villagers in the target communities indicated that they occasionally sell timber from hardwood trees to buyers in Luganville. Occasionally flying foxes are shot and sold to buyers in Vila / Lunganville. The sewing of hand-woven mats and baskets also generates a modest amount of income for local women.

Tourism does not currently produce revenue for locals within the target area. However, there is significant tourism activity taking place in Luganville and South Santo in areas such as Millennium Cave tours- although villagers from the target area do take part in any such tourism activities.

2.3.2.2 Upland agriculture and freshwater management

There are substantial water quality issues in relation to the freshwater creeks, streams and rivers running from the mountainous areas on the mid-east coast and the flatter land in central Santo. These issues include:

High nutrient levels:

- High levels of nutrients in the water coming from upland agriculture – in particular from cattle grazing in upland areas;
- Lack of riparian vegetation on creeks, rivers and streams to screen nutrient prior to entering water ways
- Livestock in the waterways without control and producing waste that contaminates the waterways
- Lack of fencing around water sources / cattle to resure that cattle are not able to enter the waterways.

Fast and erosive river flows

The natural system in the lower parts of the rivers in South Santo are fast flowing and "flashy" – meaning they river flow changes quickly in response to upland rain events quickly creating faster flows. However, this can also be made worse by a number of factors. These include:

- Conversion of forest to coconut plantation
- Conversion of forest to grazing land
- Loss of riparian vegetation
- Mining of sand and gravel from the river bed

Villagers in the target communities indicated that they occasionally sell freshwater resources such as fish and prawns to buyers in Luganville.

Water supply

Communities within the target site have a variety of means for providing water supply. These range from:

- ***Gravity feed systems*** from ”water sources”, typically small springs or rivers, where the water has been contained and is then piped – sometimes over a number of kilometres to the village where there are typically shared taps to provide water to a number of households. Often sedimentation occurs after heavy rains and a lack of a filter makes these supply systems frequently unsafe for drinking purposes. Land disputes have resulted in intentional damage being caused to gravity feed water supply systems within the project site, with pipes and and source materials being vandalized in the past in locations such as Asevaea and Ebenezer school.
- ***Tank supply from metal roofs*** – There is a low presence of rainwater tanks (both cement and poly tanks) in South Santo. School buildings and community halls have tanks in certain areas but often the traditional thatch roofing materials used by locals within the project site makes using rain tanks impractical.
- ***Open containers***– plastic containers, buckets, drums and other various containers are sometimes used by villagers to collect rainwater for later use.
- ***Pumps & wells***- cement wells are used infrequently by communities within the target site
- ***Rivers and streams-*** Water collected straight from rivers and streams directly by many households in the target site. Bathing and washing of clothes takes place in rivers and streams quite frequently although the villagers indicated that they are concerned about the water quality during seasonal algae blooms and also because of livestock affecting waterways.

The provision of secure water supply through all seasons was a high priority of most communities consulted. Communities highlighted a number of issues in relation to water supply. These are highlighted in the following sections.

2.4 Other socio-economic information

Health

Excluding Tangoa and Araki islands, there is only one Health Dispensary at Wailapa Village that is located within the target area on South Santo. This Health Dispensary has one staff member only who is responsible for treating minor to modest ailments including dressing wounds and sores and providing anti-biotics and painkillers.

More intensive medical care requires travelling to the hospital located in Luganville.

Finance

Banking services are available in Luganville although many villagers consulted in the target area indicate that they rarely or never use any sort of banking services.

Security

The closest police officers are stationed in Luganville and they make occasional visits to the target area when the need arises.

Government Extension Workers

There are no government extension workers currently living and working within the target sites.

Schools and education

There is one school located within the target area (excluding Tangoa & Araki islands):

School Name	Language	Classes	Govt Teachers (Temporary)	Students
Ebenezer Centre School	English 1-8 French 1-4	1 - 8	2 (1)	86

Pre-school classes are attached to Ebeneezer School but many locals in the target area do not enroll their children in pre-school, depending on their family's ability to pay school fees and their access to the service.

2.5 Other development projects

- **UNDP- PRRP**: a community based CCA / DRR project is being coordinated through the NGO, Live & Learn, and is based in nearby South Santo Area Council 1. This PRRP will aim to create community and Area Council level preparedness plans and fund the implementation of these plans.

- **UNDP- VCR:** nearby in Ipayaoto Village in South Santo Area Council 1, there is a UNDP project called "Community Resilience and Coping with Climate Change and Disaster Risk Reduction in Vanuatu" or "VCR" which focuses on village level water security, food security, income security, local governance capacity and disaster risk reduction. This project is nearing the end of its 4-year life span, though it may likely be granted a 1-year extension starting in June of 2014.

- **World Vision:** has a presence in Asevaia and Wailapa, as well as many other South Santo communities, working to establish Disaster Committees and DRR plans. Funding to fully implement these DRR plans is lacking however. World Vision has provided community based disaster committee training and facilitated disaster simulation exercises. Also, World Vision started an Organic Copra project in 2013 to assist local communities in the target area with income generation as well as Savings & Loans projects in select communities. VIP toilet training has been provided to community representatives as well by World Vision.

- **Save the Children**: is also supporting income-generating activities within the target area including very small cooperatives managed by youth groups, which sell fuel and mobile phone credit.

- **Red Cross**: has funded community based first aid trainings in cooperation with World Vision.

- **US Peace Corps**: there is currently a volunteer working at Ebenezer School within the target site on a program assisting with English literacy.

- **Chinese government**: Vanuatu government officials have been in discussions with Chinese officials about possible funding of improvements to the road proceeding to

Tasariki along with possible funding for bridges. Engineers funded by the Chinese government in cooperation with the Sanma PWD have created surveys of the road twice in the past 3 years, however no clear offer of assistance has been provided at this time.

2.6 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.

Frequent flooding events exacerbated by the effects of climate change are quite common in the area due to its many rivers and streams with erosion isues threatening village infrastructure in Asevae & Wailapa communities as well as the primary roadway and water crossings along all of South Santo. At particular crossings where there are large rivers with no bridges, the villagers have moved large boulders and stones to allow for trucks to cross. After heavy rains, villagers must spend several work days clearing these boulders and stones from the river crossing again

Access to vital social services and support is threatened due to climate related vulnerabilities. The School Headmistress at Ebeneezer School reported that occasionally a sudden rain takes place after children have crossed the neighbouring creek to attend class and the teachers and staff are unable to return to their homes in the afternoon. She reported that the students and teachers who cannot cross the flooded waters to return home must then find accommodation somewhere near the campus instead. Access to medical care, gardens, schools and markets are threatened constantly by the flooding of waterways in South Santo.

Villagers consulted throughout the target area indicated that heavy rains, erosion and landslides threaten water security constantly as well. Sedimentation frequently occurs after rain events, contaminating the village water supply system for days at a time. Physical damage to gravity supply systems is common too and water committees actively perform repairs to ensure functionality of their systems.

Throughout V-CAP consultations, villagers indicated that food security was an issue with climate related disasters affecting food supplies. Slope farming along the steep mountainous contours of South Santo often results in a loss of crop yield in the rainy season and in particular when disaster strikes.

One example of a large scale disaster in South Santo Area Council 2 recently took place in March of 2014 after heavy rains from Cyclone Lucy affected the area resulting in a landslide in Puarante Village which killed 6 women and 1 small child. Puarante is a small isolated community located 4-5hrs walk (10-15km) inland via bush track. The landslide occurred around 9 PM on the night on March 11th. Nine out of thirteen total households evacuated to higher ground during the day prior to the incident in response to the risk of flooding in the low-lying village. 4 households remained in the village, and were present when the landslide took place resulting in the 7 deaths.

BASELINE: Current potential threats and vulnerabilities – Epi Island from Community Assessment

	Observation / threat	Causes	Risks – without intervention	Potential impacts	Level of threat	Potential adaption activities
Community governance and planning related issues	Climate related disaster impacting on communities	Weather related, i.e. cyclones, storms and unseasonal rain Lack of disaster management plan at community and area council level	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 Establishment of Community Disaster Committee Development and implementation of Community DRR Link into National Early Warning System Link to Decentralisation Act Amendment 2014
	Lack of integrated community level planning process to address village development planning and associated systems	Processes not yet established	Lack of cohesive planning processes impacting on ability to respond to internal and external challenges, e.g. enhancing resilience to climate change	Severe impacts on livelihoods at household, community and Area Council level	HIGH	Development of Community Climate Change Adaptation Plan Establishment of Community Disaster Committee Development and implementation of Community DRR Link into National Early Warning System Link Decentralisation Act Amendment 2014
Issue: Marine ecosystem/ resource degradation	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	Continued degradation of coastal ecosystems	HIGH – VERY HIGH	Implementation of regime to enhance ecosystem health Monitoring COTS status to understand populations Active removal of COTs
	Mangrove cutting and removal	Mangroves used as source of fuel and timber Lack of appropriate coastal management regimes	Reduction in ability to provide ecosystem services (i.e. coastal	Severe events will inundate villages / coastal communities	LOW	Not large areas of mangroves in Epi site

	Observation / threat	Causes	Risks – without intervention	Potential impacts	Level of threat	Potential adaption activities
			protection, nursery grounds) Increased coastal erosion			
	Sediment and nutrient being deposited on nearshore coral reefs	Poor upland agricultural activities Logging Erosion Landslides	Continued deposition on reefs, seagrass and mangroves systems Smothering of coral reefs near creeks and river mouths	Diminishing quality of coral reef, seagrass and mangroves to provide ecosystem services Reduction in ecosystem services including fish and other livelihood support	HIGH – VERY HIGH	Upland erosion control measures
	Coastal fisheries 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	Reduced ability of coast to meet food security needs of local communities with increasing population	HIGH – VERY HIGH	Development and implementation of Integrated Coastal Zone Management Plan
Coastal issues	Coastal inundation from King Tides and related events	Increased construction in coastal margins combined with erosion and	High with increasing certainty	Water table will become increasingly salinized Coastal infrastructure will be flooded and degraded	MEDIUM	Ensuring vegetation of shoreline Securing alternative water supplies CC Adaption Planning ensuring re-location of infrastructure assets away from coast
	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		MEDIUM	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 impacts	Level of threat	Potential adaption activities
						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)	Continued	Change in wave regimes may potentially impact on the coastal process enhancing erosion in some areas	MEDIUM	Ensuring vegetation of shoreline CC Adaption Planning ensuring re-location of infrastructure assets away from coast
Land-based issues						
Water quality and supply	Water sources for communities polluted	Livestock in the water sources (pigs, etc.) Sediment entering water sources from poor upland management	Continue and become worse under cc scenarios	Community health impacts, particularly on women, elderly and children	HIGH	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 catch rainwater Increasing salinization of groundwater Increasing variability in rainfall Increasing populations	Continued water shortages – seasonal Schools are running out of potable water	Impacts on human health Battles between communities over access to water Continued provision of emergency water supplies	MEDIUM – HIGH	Installation of additional water storage at schools and in selected villages
	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, an increase in health problems following a major storm	HIGH	Development of DRR Plan and Area Council and Village Level Climate proof current water systems
Upland management -	Deforestation	Need for timber and related income Lack of alternative timber	Cutting continues without replanting Erosion gets worse	Forests are currently experiencing deforestation in the area. Intense storms will	HIGH	Development and implementation of upland management plan

	Observation / threat	Causes	Risks – without intervention	Potential impacts	Level of threat	Potential adaption activities
Erosion and soil management				further damage forests, resulting in soil instability and increased erosion		Nursery to support production of tree saplings for reforestation programs
	Increasing upland erosion issues	Poor upland management Agricultural activities Logging Erosion of riverbank Landslides	Continued erosion Loss of top-soil Impacts on marine and coastal ecosystems	Loss of top soil Continued impacts on castal and marine environment Need to	HIGH	Development and implementation of upland management plan Nursery to support production of tree saplings for reforestation programs Agricultural extension
	Farming Practice caused erosion	Lack of understanding of alternative practices Lack of access to different crop varieties	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	HIGH	Education outreach and distribution of erosion preventing species for erosion control
Agriculture and Horticulture	Changes/difficulties in growing seasons and crop management	Change in season timing / fruiting Possible link to climate change reported	Impact on crop yield Impact on seasonality	Potential impact on food security through timing of food production at household level	MEDIUM	Education outreach Extension on agricultural species Identification of climate change resilient crops
	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	HIGH	Education outreach and distribution of climate change resilient crops
	Droughts	Part of a natural cycle Increasingly may be linked to climate change	Occasional crop failure Food shortages Starvation	Not enough water, an increase in health problems	MEDIUM	Increase system capacity
	Horticulture erosion and	Existing issues that will enhance the impacts of climate change		Pigs, cows, goats and chickens are left to graze in various locations. Often their	This is a problem at all	Education outreach and distribution of materials for animal management (fencing)

	Observation / threat	Causes	Risks – without intervention	Potential impacts	Level of threat	Potential adaption activities
	sanitation issues			grazing locations cause problems of soil erosion and sanitary conditions.	of the project locations	
Public conveyance infrastructure	Transport – vehicle and walking tracks become useable and dangerous during wet season	Rain and weather affecting roads, water tracks and river crossings Weathering of road, and related erosion Lack of maintenance	Roads and infrastructure will continue to degrade without intervention Road and related infrastructure will be unusable	Lack of access to markets, education,, health and other government facilities Human injury and deaths	HIGH	Invest in climate proofing roads and related infrastructure Regular maintenance program Involvement of island based contractor in maintenance
	Increased Erosion of road sidings	Increased rainfall will increase erosion in steep hillsides	Roads and infrastructure will continue to deteriorate without intervention Road and related infrastructure will be unusable	Lack of access to markets, education,, health and other government facilities Human injury and deaths	HIGH	Revegetation of road sidings
	Damaged river crossings / concrete pavement	Increased rainfall and extreme events will enhance erosion and breakdown of infrastructure	Roads and infrastructure will continue to deteriorate without intervention Road and related infrastructure will be unusable	Lack of access to markets, education,, health and other government facilities Human injury and deaths	HIGH	Rehabilitation of river crossings, bridges, etc
	River crossings 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. Death of children	Lack of access to markets, education,, health and other government facilities Human injury and deaths	MEDIUM	Build / rehabilitate public walking tracks /
	Ensure road 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		HIGH	Ensure appropriate design to ensure “climate proofing”

Proposed interventions

Situations change, project supporter's move on and projects get delayed in starting. Based on this experience, it is recommended that the design of the following recommended projects are carefully reviewed by the NAB and relevant provincial authorities prior to implementation at community level. Given the gap in time between the project design phase and implementation, all proposed interventions also need to be fully reviewed and discussed with local stakeholders during Project Inception.. Expectations, confusion, and requests for additional information can then be addressed by project staff, and the project design adjusted to fit new realities as needed. This initial dialogue with stakeholders and beneficiaries is essential in building support and ownership for future V-CAP activities, which is a necessary condition for sustainability.

Table 1 provides insight into the various adaptation options identified through the community consultations. The following sections provide a framework for the V-CAP response to observed community profiles, baseline surveys, rapid vulnerability assessments and field visits.

In addressing these issues, V-CAP responses 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, Epi Island, Shefa Province.

1.2.2: Enhanced resilience of terrestrial areas

1.2.3: Climate proofing of infrastructure

1.2.4: Rovo Bay Market Development and CC Training and Resource Centre Project, which is a targeted GESI component of V-CAP.

The proposed activities, baselines, interventions and targets are outlined in Tables 2, 3 and 4 below. The proposed activities 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.

(Local man and response team member at landslide site in South Santo-

Coastal erosion is also an issue for some communities such as Asevae, which is situated on limited land space between a meandering river and the ocean. The small islands of Tangoa and Araki are particularly vulnerable to cyclones and coastal erosion due to their exposure and lack of fringing reefs for protection.

1.1.1 South Santo Area Council & Village Climate Change Adaptation Planning – Strengthening Village and Community Approaches, Sanma Province-

No.	Category	Details
1	Summary title name	Santo - Area & 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	Sanma Province
4	Site description	All villages in targeted selected sites in Santo as described in site profile. The focus will be the South Santo Area 2 Area Council and communities within the target site.
5	Target communities	There are 3 target communities included within the project site: Wailapa & Asevaia, and the communities living on nearby Tangoa island.
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 no 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	• 3 coastal communities more resilient to CC through implementation of integrated CC-A plans in the coastal zone
9	Base line	• 0 of 1 Area Councils established • 0 of 1 Area Council 5 Year Development Plans created • 0 of 3 Village Climate Change Adaptation Plans made for target communities by CDC's with DRR and ICZM components • 2 of 3 CDC's created in target communities • 0 of 1 Area Councils in target areas have Area Council Office
1	Activity Output	• 3 community CC Adaptation and Coastal Zone Management Plans made including preparedness and response plans and development priorities, formulated in the context of ICZM. • 1 Area Council has created 5 year development plans incorporating CC Adaptation & coastal zone management
1	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. Village level ***Community Disaster Committees*** to be created in 1 target communities and will be comprised of at least a chiefly representative, woman's representative(s) so that gender components are considered, village water committee representative, village health committee representative along with representation from other development groups / committees in the village so that the CDC may be multi-purpose and can effectively

		steer the implementation of the various technical components of V-CAP on the village level as well as those of other future projects. Village ***CDC's*** to be ***strengthened*** in 2 target communities, Aseavae and Wailapa, as the International NGO World Vision has assisted with the formation of disaster committees at these locations. Climate Change Adaptation measures will be intergrated into existing CDC plans and activities. • 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 • 3 CDC's from target communities create development plans considering CCA, DRR and ICZM. Area Council level ***Santo V-CAP Project Implementation Committee*** comprised of a representative, most likely the Chairman, from each of the 3 target communities' CDC's, the Area Secretary from South Santo Area 2 along with relevant government department officers that have attached with Sanma Province such as the Environment Officer and Woman's Officer. To meet regularly on a quarterly basis. • Identify capacity needs of South Santo Area 2 Area Council and Community Disaster Committees within and develop an 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 a Area Council CC Adaption Plan for South Santo Area 2 Area Counil

		Implementation phase • Regular meeting of ***Santo V-CAP Project Implementation Committee*** to evaluate the progress of the project implementation against agreed targets • Regular meetings of South Santo 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
1	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
1	Other Projects	Links with other activities/projects/donors: -Links with World Vision activities carried out throughout South Santo, in particular the establishment of Community Disaster Committees and the creation of DRR plans. Incorporation CCA plans with the existing CDC plans will be a main priority for the V-CAP team.

1	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 Sanma Provincial Government Council & the Natural Disaster Management Office. Affiliating partners will include the Ministry of Climate Change through the Vanuatu Meterology & Geo-Hazards Departments
1	Outline Terms of Reference	
1	Contract Packages	
1	Indicators	Baseline and performance indicators to be used to monitor that activity and/or output – indicating source of data and entity responsible for collection and monitoring of that data. • 1 Area Council Development Plans created for South Santo Area 2 AC containing CCA and DRR components (DLA, VMGD & Sanma Province) • 3 Village Climate Change Adaptation Plans created for 5 target communities by CDC's (VMGD, NDMO & Sanma Province) • 1 Community Disaster Committees created and 2 CDC's strengthened to include the capacity to plan for CCA from the 3 target communities which are responsible for the implementation, monitoring & evaluation of Village Climate Change Adaptation Plans (MoIA – DLA / NDMO) to collect data

		• 1 CCA / DRR centers which will also serve as the Area Council office for South Santo Area 2 AC.
1	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.
1	Use of Models	
2	Beneficiaries	
2	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 monitioring and evaluation of CDC plans to ensure that they effectively cater to the needs of Women, Youth and the Disabled.
2	Environment	Is there a need for IEE, EIA? Actions proposed / screening needed? • No
2	Risks and Assumptions	Any Risks related to this activity/project. Any Assumptions made in relation to this activity/project

		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. Assumptions • Community representatives will be willing to participate in the Project Implementation Committee, CDC's & Area Councils.
2	Lessons learnt	
2	Prepared by	Matthew Hardwick, Bernard O'Callaghan

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

No.	Category	Details
2	Summary title name	Community Conservation Areas
2	Thematic area	• NAPA Adaptation Strategies 6 and 9 • Project component 1.2.1 Cross-cutting • Gender / special needs groups • Youth
2	Province	Sanma Province
2	Site description	The focus area of this is the south central coast of the Island of Santo, crossing the districts of South Santo Area 1 and Area 2.
3	Target communities	The villages included in the project site are: Ipayato, Vunapisu, Puama, Kerevalis, Matai Pevu, Natsara, Kisule, Tasmalum, Pakataura, Nasulesule, Ukoro, Namoru, Paria, Wailapa, Namalo, Naone, Vimele, and Asevaia.
3	Description	The focus of the these activities will be to build village level, community level and area level Coastal Community CC Adaption Plans to enhance resilience of coastal ecosystems to climate change. In particular, ecosystem based management of Tabu Areas will be strengthened, CCAs established and specific activities undertaken to reduce pressure on marine ecosystems (e.g. CTS removal and review of current fishing practices.

		This will be achieved though baseline assessments and consultations, development of Coastal Community CC Adaption Plans and the implementation, monitoring and evaluation of these plans.
3	Rationale – addressing what climate change issue	Problem Identification • Increases in precipitation during the wet season due to climate change, will result in an increase in the generation of sediment. • Sediment is ultimately transported to the coast, where the fines create an increase in water turbidity and the bedload is deposited on the coral reefs. This is debilitating to marine ecosystem health. • Ecosystem degradation and over exploitation has resulted in a reduction in fish catch and fish size • Ecosystem health has been degraded (this is due to factors such as overfishing, crown of thrones starfish and an invasive white sponge fungus) thus reducing the resilience to climate change – which will exasperated with additional stressors from climate change. • Potential changes due to climate change, such as ocean temperatures increasing, threaten the health of the marine ecosystem. • Increase in runoff due to an increase in the wet season intensity will result in an increase in the nitrogen transport to coastal waters creating hypoxic conditions that will negatively impact ecosystems.
3	Impact of proposed activity	Outcome: Increased resilience to climate change through healthier marine ecosystems supported by an increase in the area of Tabu Areas

		and CCAs proposed by local communities to enhance ecosystem resilience.
3	Base line	Identify baseline – but also identify additional baseline information needs if required • There are five coastal Tabu areas and two CCAs within the project site. • Coastal water is degraded by increased water turbidity. • Reef health is impeded by large sediment deposits. • The reefs are being degraded by high numbers of Thrones sea stars • Local communities report shark fins dealers travel to the villages to purchase the product from local fishermen. • The quantity and quality of the marine species has decreased due to over fishing.
3	Proposed specific activities	Break down of specific activities • *Planning Phase:* Issue identification, intervention identification and planning o A conservation coordinator will be hired to schedule and facilitate community outreach training session is held to engage the community in the marine monitoring project. o The new coordinator will then be trained by One Small Bag to become part of their Network. o Identification of priority communities to create LMMA and Tabu plans. • *Implementation Phase:* Implementation of specific interventions

		○ New LMMAs and Tabu areas will be designated and management plans will be developed and emplaced. ○ The program coordinator will establish a program of marine ecosystem education for the Fishers, men and women, and the Youth Club at Rovo Bay Training Center. These programs will include education concerning marine ecosystems as well as programs to engage the youth in activities such as invasive species removal, particularly Crown of Thrones. ○ The Youth Club will seek to create innovative programs to engage and educate the youth. ○ Coordinator and local area monitors will work with the communities to create a LMMA. • *On-going*: Monitoring and Evaluation ○ Maintain the programs emplaced conservation areas ○ 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 and youth will be held at least twice a year to learn about marine ecosystems. ○ Monitor activities will be particularly import after disaster events in order to assess the environmental resilience of the areas. ○ Monitors and implementing partners will seek to expand the area and number of marine protected areas.
3	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 assist Morris Jack, the existing Network Monitor • Youth club and women's group trainings on marine ecosystems, healthy marine management practices and endangered species at the Rovo Bay Training Center. Training topics will include: the value of marine conservation, endangered/protected species, and invasive species removal. • The establishment of at least two more marine LMMAs. • The establishment of at least five more marine Tabu areas. • Increase in number and size of fish populations. • Assistance linking LMMA into a local network.
3	Indicators	Baseline and performance indicators to be used to monitor that activity and/or output – indicating source of data and entity responsible for collection and monitoring of that data. • Baseline biodiversity, habitat and fisheries surveys based on Reefcheck and other suitable methodologies • Development of 5 Community Coastal CC Adaptation Plans approved by the national government • Increase the size of the CCAs by 100% • Improved Tabu Area Management Plans for 5 existing tabu areas • Establishment of Area Coastal climate change Adaptation Plan including a network of CMAs and Tabu Areas through • Link at least two of the LMMAs to the national Marine Protected Area (MPA network) • Decrease in coastal water turbidity.

		• An increase in fish catch and fish size. The reporting will be done using One Small Bags format. • A reduction in number of Crown of Thrones
3	Other Projects	Links with other activities/projects/donors (current/potential) This project will link to the climate change plan project, as the planning portion of this project will be a component of that project. Additionally, this project will link to the Sustainable Land Management and the WASH projects because they will share a training center and several topics, such as sediment reduction and coastal water contamination. The training center will be the Rovo Bay Training Center, an additional project for this site.
3	Implementation	Coordination and Dissemination • The Department of Fisheries will coordinate this project through their provincial officers in Samna Province. These officers will coordinate with relative nongovernmental organizations, such as, One Small Bag. The conservation areas will also be registered with the Department of the Environment when relevant.
4	Outline Terms of Reference	TORs for consulting services required for that activity, including person months, required expertise and schedule. One person will be employed at a half time basis. The duties of this person will entail the following: • Planning community training for marine protection areas • Facilitation for an additional Network Monitor selection

		• Create a Climate Change Youth Club and organize trainings and programs for marine ecosystems. • Organize marine ecosystem training for the area women • Link the LMMAs and the Tabu areas into a local marine management network. • Link the LMMAs to the national conservation system through the Ministry of Fisheries and One Small Bag.
4	Benefits	Expected benefits Enhanced ecosystem to CC in the coastal areas of Epi Island. This will have additional co-benefits including: • Developing more marine conservation areas and Tabu areas, as well as larger marine conservation areas and Tabu areas has several benefits: o Increased biodiversity and ecosystems resilience o Increased fish populations through acting as a breeding ground, nursery, and feeding ground o Ideally, the fish populations in the protected area will be successful enough that there will be spill over into the non-protected areas, improving the abundance of fish available for harvest • This project also provides opportunities for marine monitoring to assess and identify issues, educational outreach and invasive species mitigation. • The project also increases the project area for the turtle and dugong conservation and management
4	Beneficiaries	Description of beneficiaries Through the village consultations we were informed that everyone in the villages was dependent on the local fisheries. In

		that case the beneficiaries of this project include the entire population of the project area (1,324 people).
4	Gender	Links to Gender Action Plan • This project links to the Gender Action Plan by engaging women through training sessions. Through the training courses women will learn about marine resource education. • This project links to the Gender Action Plan by engaging youth through training sessions and programs. Through the programs and activities the youth will learn new invasive species removal.
4	Environment	Is there a need for IEE, EIA? Actions proposed / screening needed? • Not required
4	Risks and Assumptions	Risks • The community does not engage in the trainings and does not adhere to the governance of the LMMAs and Tabu areas. • Effects of climate change could kill the reef or severely impede the reef. • No desire from communities for LMMA or Tabu area expansion. • The communities do not engage in the trainings or outreach. Or, the communities choose not to apply material learned from the trainings 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. • From the consultations administered during our project area assessment we assume that the communities being targeted by this project will engage and apply the training being 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.
4	Prepared by	Virginia Smith

Component 1.2.2: South Santo Area Council - Enhanced resilience of terrestrial areas managed to minimize erosion, provide clean water resources to both communities and ecosystems enhancing livelihoods

No.	Category	Details
4	Summary title name	Lowland Erosion Control Project
4	Thematic area	• NAPA Adaptation Strategies 6 and 7 • Project component 1.2.2 Cross-cutting • Gender / special needs groups • Youth
4	Province	Sanma Province
5	Site description	The focus area of this is the south central coast of the Island of Santo, crossing the districts of South Santo Area 1 and Area 2.
5	Target communities	The villages included in the project site are: Ipayato, Vunapisu, Puama, Kerevalis, Matai Pevu, Natsara, Kisule, Tasmalum, Pakataura, Nasulesule, Ukoro, Namoru, Paria, Wailapa, Namalo, Naone, Vimele, and Asevaia.
5	Description	Technical description of the activity/investment The focus of the these activities will be to build village level, community level and area level Coastal Community CC Adaption Plans to enhance resilience of coastal ecosystems to climate change.

		The plan will incorporate a land management plan. An important aspect of coastal ecosystem management is sustainable land management, because the healths of both environments are directly linked on many levels. To combat the land management vulnerabilities impacting coastal communities conservation areas will be established, This project aims to reduce the sediment generation through agricultural and forestry education outreach to farmers, women and youth by advisors and though the community outreach program officers (through the ministry of agriculture and forestry). The project will provide resources for erosion reduction measures and climate change resistant crops for the educators to disseminate to the communities. The projects will also include materials for fencing livestock and planting riparian vegetation to protect water resources and decrease the amount of nitrogen run off being deposited in coastal waters.
5	Rationale – addressing what climate change issue	Problem Identification • Increases in precipitation due to climate change, particularly during the rainy seasons, will result in an increase erosion on the hill slopes, resulting in the generation of more sediment. • The increase 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. • An increase in upland erosion results in a loss of valuable top soil. • Sediment is ultimately transported to the coast, where it increases coastal water turbidity and deposits sediment on the coral reefs. • Wet and dry season dynamics due to climate change will require more climate resilient crops to insure food security.

		• Increase in precipitation due to climate change will increase runoff transport, resulting in a greater transport of livestock waste into surface water systems and coastal water. The increase in livestock waste runoff will result in higher nitrogen loads in the water, which is harmful to fish and marine life.
5	Impact of proposed activity	Outcome: A decrease in the generation of upland sediment production and a decrease in the sediment being deposited at the reef, resulting in a healthier marine ecosystem. And, climate resistant crops will help to ensure food security. This project will also help to maintain cleaner coastal waters and protect marine species.
5	Base line	Identify baseline – but also identify additional baseline information needs if required • Sediments are being deposited on areas of coral reef. • Marine habitats are being degraded by increased water turbidity and nitgrogen from livestock waste runoff • Slash and burn farming practices and logging are occurring without approaches to mitigate run-off of sediment (area remains to be documented – i.e. current area of utilizing this type of practice). • Grazing lands boarder rivers and stream. In many cases animals are allowed to wade into the rivers. • Limited consideration of steepness of land (gradient) in the planting of agricultural crops or grazing animals. • Landslides occurring in areas of highlands (area to be confirmed). • Crops being planted are at risk of being unsuccessful due to climate change.

		• There is little riparian vegetation allow the river banks.
5	Proposed specific activities	Break down of specific activities • *Planning Phase:* - Issue identification, intervention identification and planning : o Identification of priority sites and issues to increase erosion control in the study site and develop baselines. o Identification of priority sites for runoff from livestock. o A land conservation coordinator will be hired to schedule and facilitate community planning and oversee the project management. o In conjunction with project partners identify suitable interventions at specific sites to reduce sediment run off. o Survey of area to identify focus areas for erosion conservation. o Develop plan for the nursery in the study area for disseminating erosion control species. • *Implementation Phase*- Implementation of specific interventions: o Establishment of the Training Garden/ Nursery : The Training Garden will grow grasses for slope stabilization, saplings for re-forestation and climate change resistant crops to be disseminated to the communities for their individual farms. o 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 o Develop and disseminate erosion control materials; such as, stabilizing grasses and tree saplings. o Dissemination of fencing materials and vegetation to protect the river banks to mitigate livestock runoff. • *On-going*- Monitoring and evaluation: o Survey the forest villages to assess the amount of forested are (initial period and month 40). o Survey the villages to see if there are shifts in farming practices (annual review / scorecard). o Assessments of the size of the sediment deposits at the reef , coastal water turbidity and nitrogen load in the coastal waters (Marine Network Monitors) o Monitor implementation of the plan, and will seek to expand the areas. o Monitor the occurrences of landslides.
5	Activity output	Proposed specific outputs of activities : • Trainings for the community farmers on better farming practices to reduce erosion and conserve top soil and to reduce water contamination from livestock. • Distribution of resources for the community farmers to facilitate top soil conservation practices and establishment of a Training Garden to house saplings, stabilizing grasses and climate change resistant crops. • Distribution of fencing resources and vegetation to protect rivers and streams from livestock. • Youth club trainings on better farming practices to conserve top soil.

		• Women's trainings on better farming practices to conserve top soil. • A 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.
5	Indicators	Baseline and performance indicators to be used to monitor that activity and/or output – indicating source of data and entity responsible for collection and monitoring of that data. • Reef sediment deposits size • Coastal water turbidity • The number of farms actively reducing sediment run-off • Modification of traditional farming practices to adopt more sustainable practices (e.g. reduction in use of fire, slash and burn agriculture) • Area of upland planted with slope stabilizing species to reduce soil runoff • Amount of forested land in the upland area • Landslides occurring in areas of highlands • Nitrogen load in the coastal waters
5	Other Projects	Links with other activities/projects/donors (current/potential) This project will link to the climate change plan project, as the planning portion of this project will be a component of that project. Additionally, this project will link to the Marine Conservation Management and the WASH projects because they will share a training center and several topics, such as sediment reduction and coastal water contamination.

6	Implementation	Coordination and Dissemination This component of the project will be implemented by a Project Officer (PO) appointed by the Project Implementation Unit (PIU) together with the District Officer (DO). The PO will report to the PIU and act as a direct counterpart to the District level administration of Epi Island. The PO will also establish links with Forestry and Agriculture Officers for Sanma Province and the National level. In addition, the PO will support regional trainings. International and national specialists on forestry and erosion control will be appointed to lead and assist in the development of the planned interventions. A period of two weeks in South Santo will be required to undertake these surveys and develop plans in consultation with local communities. Also to develop a plan for the nursery and training garden. • In addition, support will be provided to the District Officers of the Ministry of Agriculture and the Ministry of Forestry to coordinate delivery of these activities with their agency work plans. • In addition, links will be established with relevant nongovernmental organizations, such as the Farm Support Association, to engage them in the education process. A Project Officer (50%) is will be appointed to coordinate the delivery of this component. Their role 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 farmers • Work with District /Provincial Forestry and Agriculture Office to establish nursery and training garden (climate resilient crops and erosion prevention plants) • Develop and implement specific activities for women and Youth Club to support erosion reduction initiatives • Support establishment of Regional Training Center
6	Outline Terms of Reference	TOR to be developed for International and national specialists on forestry and erosion control. One field person will be employed at a half time basis for 4 years. The duties of this person will entail the following: • Planning community training for sustainable land management • Facilitation for community outreach and resource material dissemination through the Rovo Bay Training Center • Engage the Climate Change Youth Club and organize trainings and programs for marine ecosystems • Organize land management and climate change resistant crops training for the area women and men farmers.
6	Benefits	Expected benefits • The project will reduce 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 ▪ Lower nitrogen load, less/no hypoxic conditions • The project education and outreach will allow farmers the technical and physical resources to improve their farming practices and promote climate change resilient farming practices. • The project will enhance food security through insuring improved farming practices and promoting climate resilient crops and healthier marine ecosystems.
6	Beneficiaries	Description of beneficiaries Through the village consultations we were informed that everyone in the villages was dependent on the local farms. In that case the beneficiaries of this project include the entire population of the project area.
6	Gender	Links to Gender Action Plan • This project links to the Gender Action Plan by engaging women through training sessions. Through the training courses women will learn new farming techniques to maintain sustainable farms. • This project links to the Gender Action Plan by engaging youth through training sessions and a training garden at the Rovo Bay Training Center. Through the training activities the youth will learn new farming techniques to maintain their farms for a more sustainable future.
6	Environment	Is there a need for IEE, EIA? Actions proposed / screening needed?

		• No EIA or IEE is required.
6	Risks and Assumptions	Risks • The community is not able to engage in the trainings or outreach. • The communities engage in the trainings, but do not change their farming practices. Assumptions • Communities are interested in this type of training (communities expressed an interest during initial consultations). • If individuals within the community are trained to use the erosion reducing materials and have access to them they will utilize them on their farms. • If individuals within the communities are trained and given materials to reduce livestock runoff they will utilize these resources. • Able to demonstrate locally applicable models. • Therefore, the erosion reducing measures promoted by this project actually reduce the erosion problem.
6	Prepared by	Virginia Smith

4 Annex 1: Summary of PPG activities related to South Santo and V-CAP sites

When arranging village consultations, the V-CAP team followed the typical protocol for communities in this area, meeting with Provincial government representatives first. The Secretary General of Sanma Province, Sakaria Daniel Loi recommended that an Environment Officer by the named of Anaclet Phillip, who is based with the Province, to schedule and help facilitate V-CAP team meetings in South Santo as this particular officer is from the area.

The community facilitations 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.

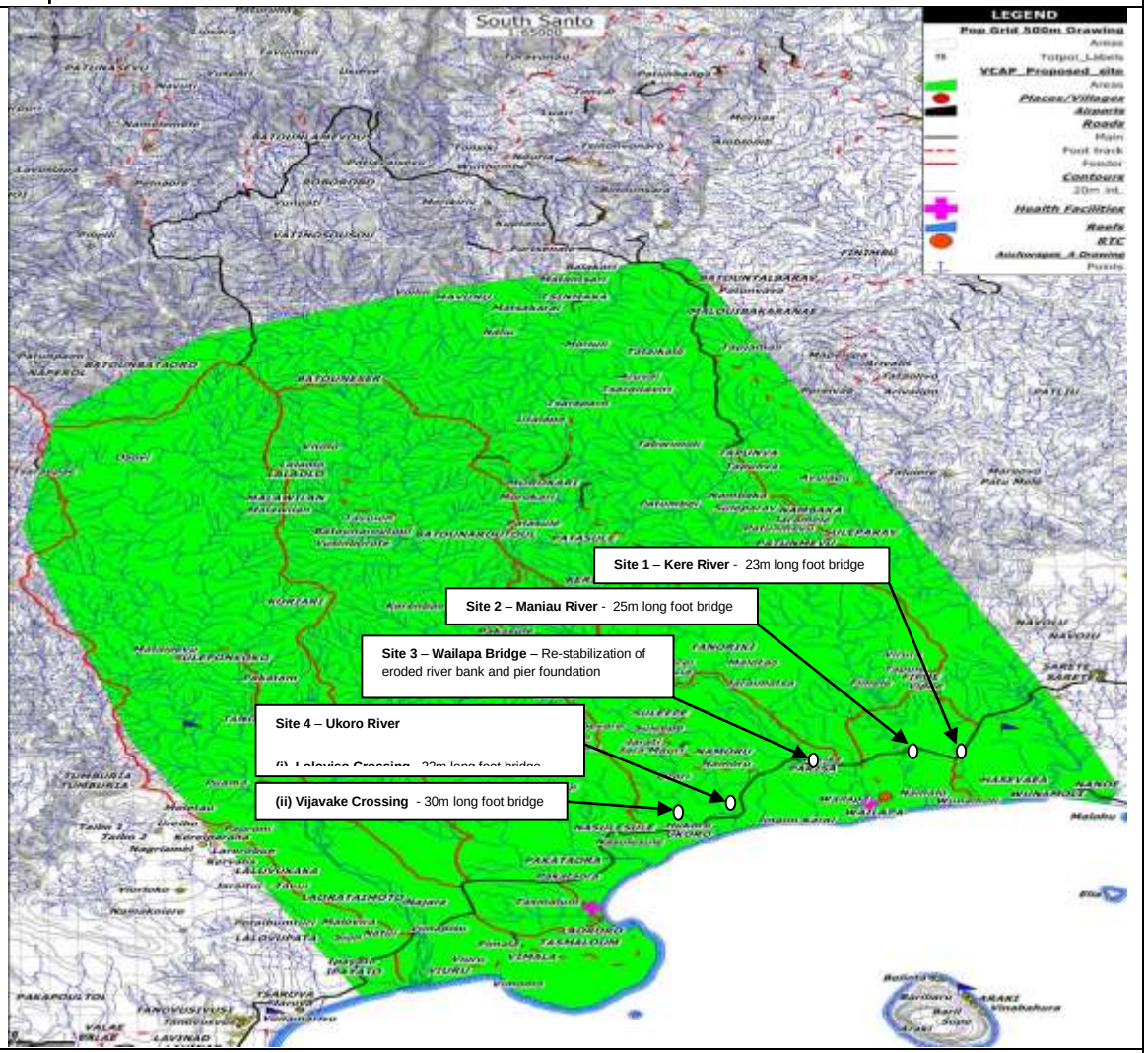
Date	Stakeholder Consultation	Men	Women, Youth & Disabled	Total
Sept 13	Sanma Provincial Government Council- Secretary General of Sanma Province Sakaria Daniel Loi, Simeon- Sanma / Torba Manager of PWD, Anaclet Philip- Sanma Environment Officer, Provinicial Planner- Prosper Buletari, Area Secretary of South Santo Area 2- Lulu Vula, Sanma Women's Officer	6	1	7
Sept 13	World Vision- Santo Office- Manager Kathryn Munnell, Monitoring Officer- Pallen Philip	1	1	2
Sept 15	Ipayaoto Community Consultation (with sub-communities: to FILL IN WITH DONALDS INFO)	32	18	50
Sept 15	Ipayaoto Community Women's & Youth Focus Group	0	13	13
Sept 15	Ipayaoto Community Environmental / Infrastructure Focus Group	16	0	16
Sept 16	Wailapa Community Consultation (with sub-community Nalamo)	25	14	39
Sept 16	Wailapa Women & Youth Focus Group	0	8	8

Sept 16	Wailapa Environmental / Infrastructure Focus Group	`16	0	16
Sept 16	Asevae Community Consultation	3	2	5
Sept 16	Asevae Women & Youth Focus Group	2	15	17
Sept 16	Asevae Environmental / Infrastructure Focus Group	4	0	4
Sept 17	Ebenezer Centre School Headmistress- Sarah Mele	0	1	1
Sept 18	Presentation of Results to Sanma Province- SG of Sanma,	6	2	8

In addition, the field mission undertook:

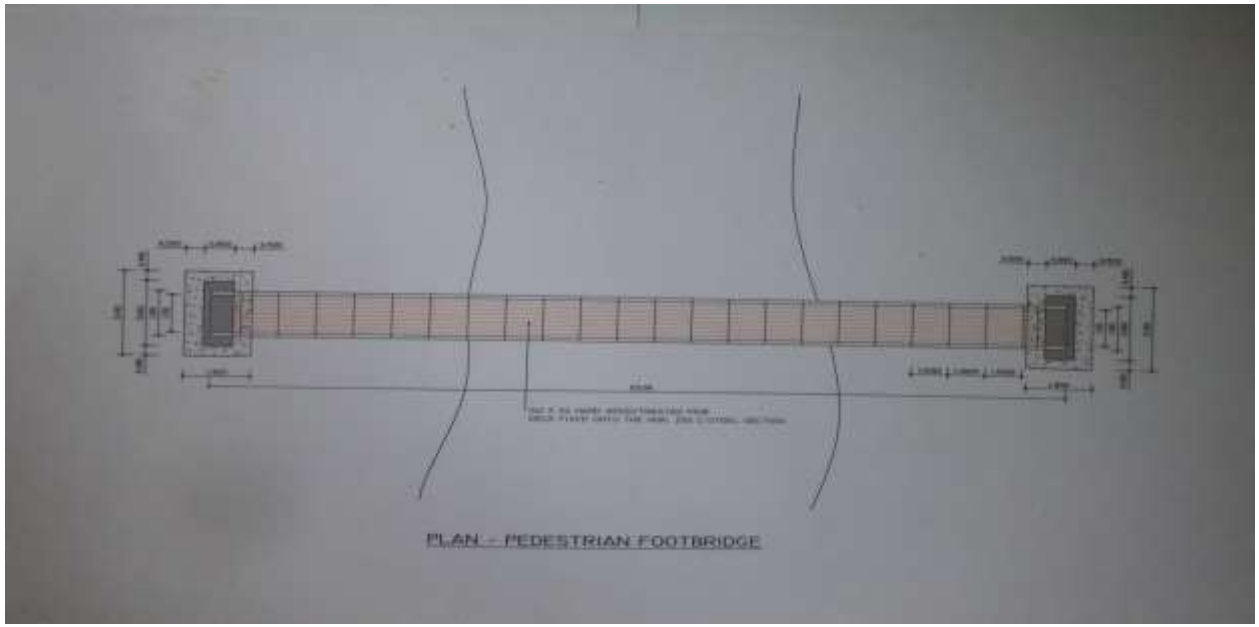
- Village surveys – guided walks through the village to identify and document key issues
- Surveys of water sources where specialist joined local communities to review water supply and sanitation
- Observation of farming and livestock management practices
- Observations of coastline noting beach erosion, beach aggradation, and species of interest and points of environmental concern.
- Confirmation and explanation of issues of concern raised by villagers, e.g. plant diseases (i.e. Lap lap Leaf disease) or invasive species (i.e. American Rope).
- Inspection of infrastructure, including roads river crossings, walking paths, bridges, etc.

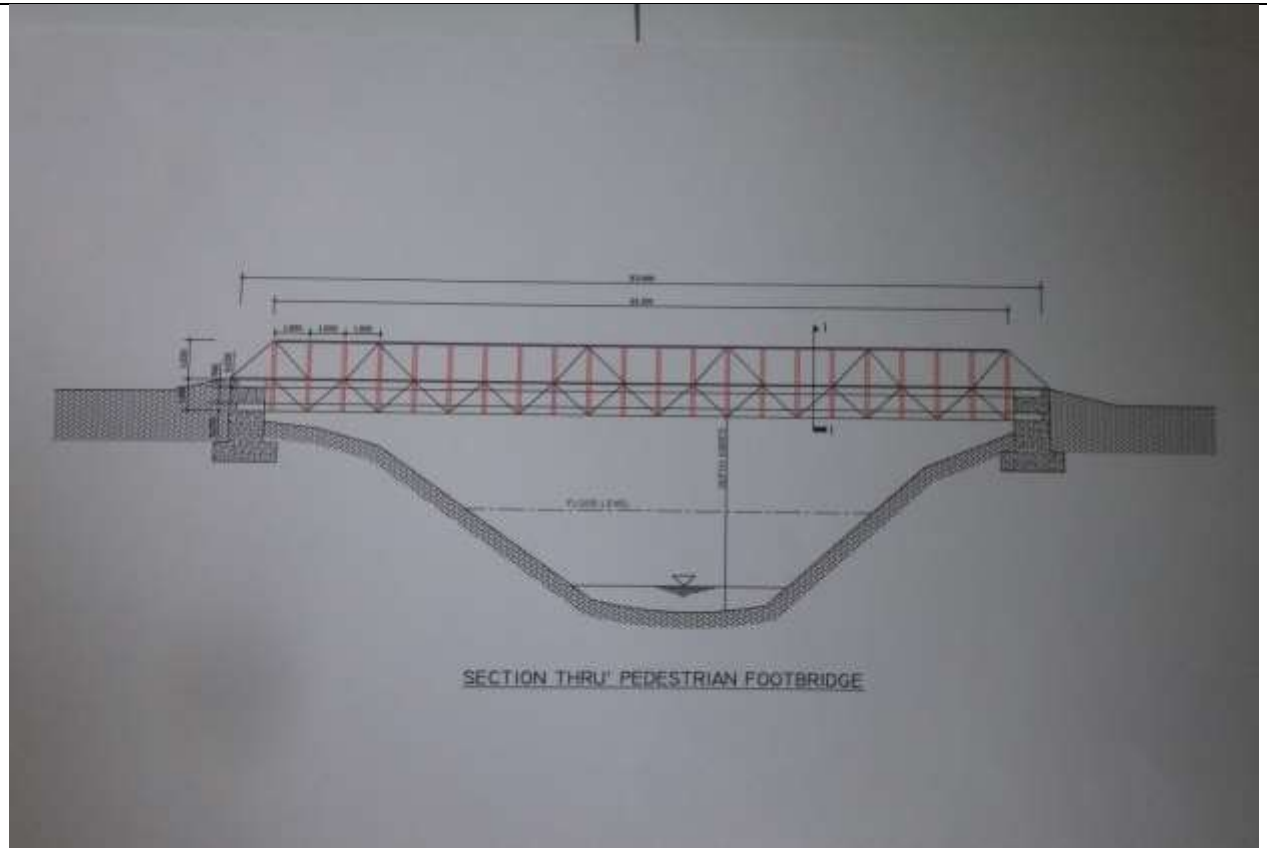
Component 1.2.3: Santo Island

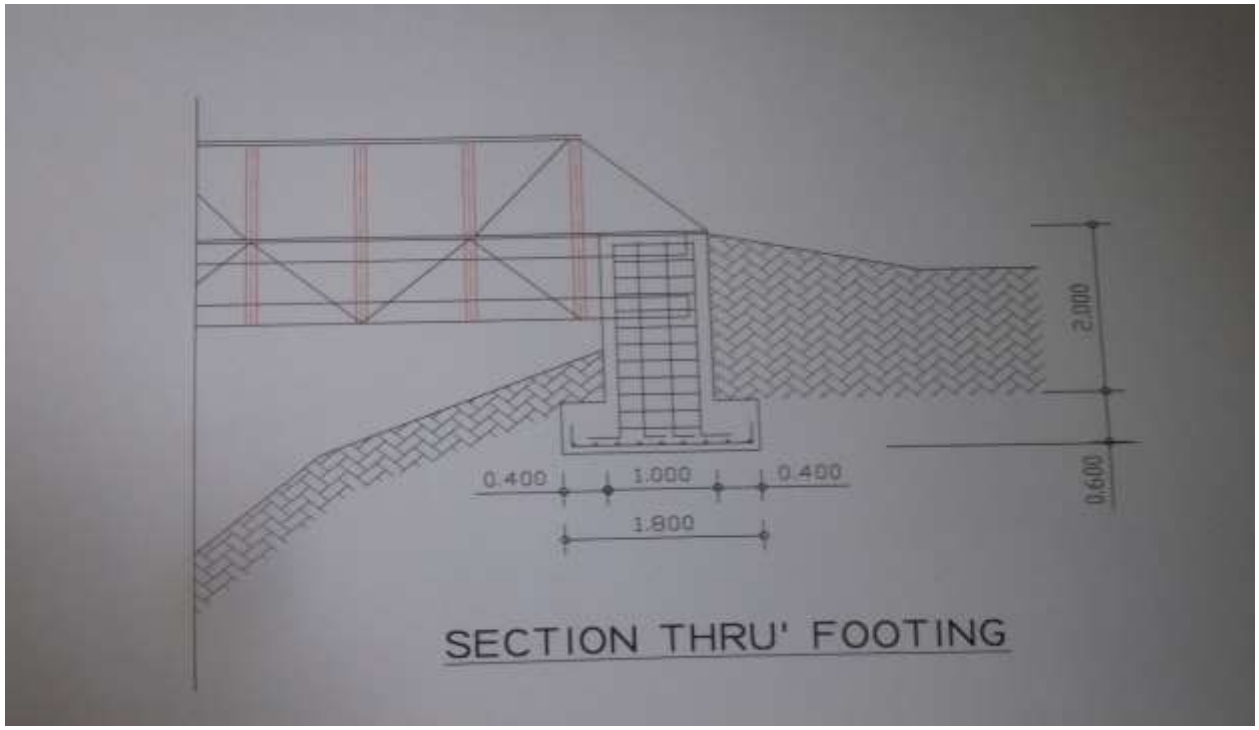
No.	Category	Details	Map of Santo Island
68.	Summary title name	Improved resilience through climate proofing of selected public conveyance infrastructure (i.e.: access way and foot bridges) in the coastal zone in at least 5 priority river crossing areas along the Chinese planned road rehabilitation project.	
69.	Thematic area	Climate proofing of river/tributary crossings and public access way.	

70.	Province	Sanma
71.	Site description	High mountainous terrain covered by thick secondary forests and vegetation. Rain water accumulates within catchments and flows through basaltic rock tributary channels- discharging down steep slopes across public roads into the coastal zone below.  

A footbridge will be built along the above river crossing to make access by foot at all times. These river crossing cannot be crossed by anybody during period of heavy rain and high flood waters.


PLAN - PEDESTRIAN FOOTBRIDGE


SECTION THRU' PEDESTRIAN FOOTBRIDGE

		
72.	Target communities	Ipaiato, Vunapisu, Kerevalis, Wailapa, Parisa, Namalo, Naone, Asivaea and Tasmalum communities.
73.	Description	Improve the resilience of selected public conveyance infrastructure (i.e.: access way, foot bridges), etc. in the coastal zone in at least 5 priority river crossing areas along the Chinese planned road rehabilitation project. .
74.	Rationale – addressing what climate change issue	Public use the road to travel between villages and public facilities for their everyday needs. This includes traveling to and from health, education and employment facilities and their village farms. The roads are also used for transport for goods and services to local markets.

		To project aims to maintain public network conveyance systems by reducing flood risks associated with climate change that builds a more resilience transport sector network.
75.	Impact of proposed activity	Climate impacts such as increased precipitation increase floods which destroy and increases risk to public conveyance systems and impedes the flow of both mobile and pedestrian traffic along formed roads. . Destroyed or impassable roads impacts the flow of goods and services between villages nodes. It impacts public livelihood activities
76.	Base line	• The existing constructed southern coastal public conveyance system; • The road transports goods and services between villages; • Sections of roads has deteriorated due to lack of maintenance and bridges have been washed away by huge floods; • Road constructed of in-situ materials; • Road crosses rivers and creek tributaries; • Flooded river crossing has in the pass endangered the safety of public traversing the crossings; • Chinese road upgrading program commences in 2015/2016
77.	Activity Output	Improved resilience through climate proofing of selected public conveyance infrastructure (i.e.: access way, roads, and foot bridges), etc. implemented by the Public Works Department) in the coastal zone in at least 5 priority river crossing areas along the Chinese planned road rehabilitation project.
78.	Proposed specific activities	1. Site 1 – Kere River - 23m long foot bridge made of lattice steel and concrete decking plus concrete pier support on each end of the side of the river. Cost = 1,150,000 Vatu (Labour Cost – 230,000 Vatu, Material, transport & equipment – 920,000 Vatu) 2. Site 2 –Maniau River - 25m long foot bridge made of lattice steel and concrete decking plus concrete pier support on each end of the side of the river. Cost = 1,250,000 vatu (Labour Cost – 250,000 Vatu, Material, transport & equipment – 1,000,000 Vatu) 3. Site 3 – Wailapa Bridge – RE-Stabilization of eroded river bank and pier foundation. Cost = 5,750,000 Vatu (Labour Cost – 1,150,000 Vatu, Material, transport & equipment – 4,600,000 Vatu) 4. Site 4 – Ukoro River (i) Loloviso Crossing - 22m long foot bridge made of lattice steel and concrete decking plus concrete pier support on each end of the side of the river. Cost = 1,100,000 Vatu (Labour Cost – 220,000 Vatu, Material, transport & equipment – 880,000 Vatu) (ii) Vijavake Crossing - 30m long foot bridge made of lattice steel and concrete decking plus concrete pier

		support on each end of the side of the river. Cost = 1,500,000 Vatu (Labour Cost – 300,000 Vatu, Material, transport & equipment – 1,200,000 Vatu)
79.	Cost of the project activities at Santo	The cost of the Project Activities are as follow • 4 No. Foot Bridges and 1 re-stabilization of eroded river bank and pier foundation = 10,750,000 Vatu
80.	Component Link	This component will link with the other outputs i.e. 1.1 and 1.2.1. and 1.2.2. It will work with local communities on the implementation of these activities. Communities will be involved in the maintenance of appropriate areas of the road.
81.	Other Projects	Chinese planned road rehabilitation project
82.	Implementation	Implemented by Public Works using Community base contracts.
83.	Outline Terms of Reference	Site 1,2,3,4,5 – Suspension foot bridges • Conduct site survey/investigation; • Consultation to be done with VTSSP in regard to coordination and facilitating the construction of the project by using IBC or Public Works resources; • Design the appropriate type of crossing in accordance with best engineering practice, standards and codes to address the climate threat and its impacts; Implement the designed activity.
84.	Contract Packages	To be determined in consultation with, Sanma Provincial Council and PWD
85.	Indicators	4 foot bridges to be constructed and re-stabilization of eroded river bank and pier foundation of Wailapa bridge. .
86.	Benefits	Travel along the public conveyance systems will be safer and the public will be protected from climate related flooding. The project will provide a more efficient movement and flow of traffic along the road connecting other private and public facilities. The project will provide for an all-weather access between villages and other public and private facilities.
87.	Use of Models	• Vulnerability Assessment Tools appropriate to the given environment was used to determine the impacts and vulnerability of the public conveyance systems to climate change including determining adaptation options of those climate change threats • Best engineering practice are used to design and recommend appropriate adaptation options to climate change threats.

		• Case studies and lessons learned from similar island environment in the pacific were used to determine adaptation options;
88.	Beneficiaries	• Ipaiato, Vunapisu, Kerevalis, Wailapa, Parisa, Namalo, Naone, Asivaea and Tasmalum communities.
89.	Gender	• Women could set up local stores to sell food for the workers at each site during construction; Women can participate in public/community awareness of the risks associated with climate change threats and risk; • Increased access to markets will encourage more women to participate in community business development in their respective areas;
90.	Environmental screening	Project of this nature will be given environmental approval by the Physical planning of the Sanma Provincial Government.
91.	Risks and Assumptions	• Flooding of surrounding area; • Damage to road infrastructure; • Road transport impeded; • Public access between public nodes is compromised; • Environment destruction of surrounding properties; • It isolate and separate communities from services and help;
92.	Lessons learnt	• The lack of maintenance of the road has impeded the flow of traffic between villages and public nodes. • Emergency and safety of the communities has been compromised and has caused facilities at these river crossings; depends on these road infrastructure • The flow of goods and services have been affected and disrupted; • Destroyed roads l limits trade between villages.
93.	Total Cost (VT)	10,750,000
94.	Prepared by	Nathaniel Bue and Isikuki Punivalu,