

West Epi, VCAP Site, Shefa Province



VULNERABILITY ASSESSMENT RESULTS - PROJECT SITE PROFILE

Community-based vulnerability assessments conducted by Basil Mael, Jackson Tambe, Louis Korah, Gideon Yonah, Graham Api, Corey Huber and Matthew Hardwick from 28.09.15 to 02.10.15. Analysis and report by Matthew Hardwick.



PHOTO: COLLAPSED BRIDGE NEAR YERVALI SCHOOL, WEST EPI



EPI ISLAND, SHEFA PROVINCE REPUBLIC OF VANUATU

Results elicited from communities during vulnerability assessments conducted in Mabfilau, Burumba, Ponkovoio, Ruwo / Yopuna and Malvasi villages in September & October of 2015.

This report developed with the support of the UNDP and “Adaptation to Climate Change in the Coastal Zone of Vanuatu” or “VCAP”, which is implemented by the Vanuatu national government through the Ministry of Climate Change Adaptation.

TABLE OF CONTENTS

1. Methodology	Pages 1 - 3
2. Summary of Key Vulnerabilities	Page 4
3. General Information	
3.1 Population	Page 5
3.2 Organizational Structures	
3.2.1 Provincial Government / Area Council	Page 5
3.2.2 Other Government Officers	Page 6
3.2.3 Traditional Chiefly Structures	Page 6
3.2.4 NGO's & International Organizations.....	Page 7
3.2.5 FBO's	Page 7
3.2.6 CBO's & Committees	Page 8
3.2.7 VDC's	Page 8
3.3. Livelihoods	Pages 9 - 10
3.4 Services	
3.4.1 Health	Page 11
3.4.2 Education	Page 11
3.4.3 Other (<i>security, airport, financial, communications, etc</i>)	Page 12
4. Conveyance Infrastructure	Page 13
5. Upland Resources	
5.1 WASH	Pages 14 - 15
5.2 Agriculture (<i>food security, invasive species</i>)	Page 16
5.3 Forestry (Commercial, Erosion Control)	Page 17
5.4 Livestock	Page 17
5.5 Upland Environment	Page 18
6. Coastal Resources	
6.1 Fisheries	Page 19
6.2 Coastal Environment	Page 20
7. Natural Disaster and Climate Change	Pages 21 - 22
8. Community Priorities for Development.....	Page 23 - 24
9. Annex Documents	
<i>Vulnerability Assessment - Mabfilau</i>	
<i>Vulnerability Assessment - Burumba</i>	
<i>Vulnerability Assessment - Ponkovio</i>	
<i>Vulnerability Assessment - Ruwo / Yopuna</i>	
<i>Vulnerability Assessment - Malvasi</i>	
<i>Area Council Meeting Sign-In Sheet</i>	

1. METHODOLOGY FOR VULNERABILITY ASSESSMENTS

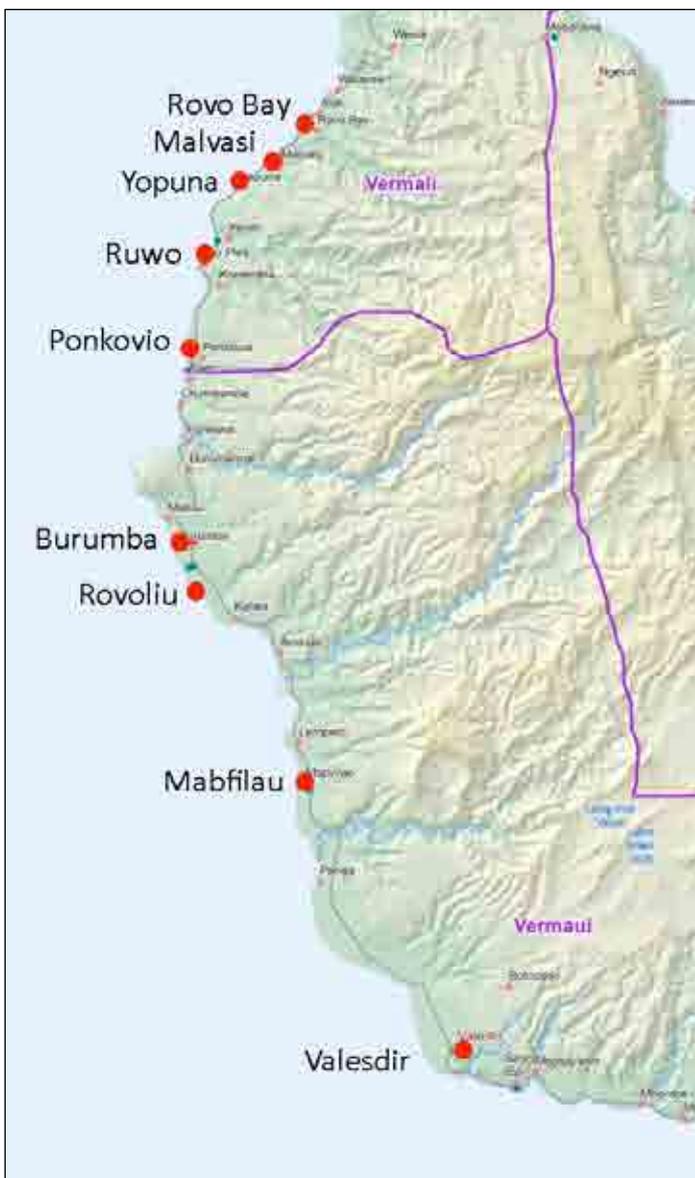
The term “Vulnerability Assessment” is sometimes used interchangeably with the term “Community Profile” within Vanuatu. Both terms refer to a participatory social engagement tool that elicits information in a group setting about communities in a comprehensive, multi-sector approach. Vulnerability assessments (or community profiles) allow for community members to identify for themselves any relevant vulnerabilities using their contextual knowledge (including those posed by climate change and natural disaster), contribute valuable baseline data about the community as well as define community priorities for development in a fairly short span of time.

There have been multiple methodologies and templates utilized by various stakeholders to conduct vulnerability assessments and community profiles within Vanuatu, however, the Department of Local Authorities (DLA) is attempting to standardize this process. The DLA approved the use of the draft assessment tool and methodology used to collect the data contained within this report (version 2.3 of the “Komuniti Profael Form”). The vulnerability assessment tool utilized was designed using the pidgin language, Bislama, and is intended for use by non-technical Ni-Vanuatu facilitators (a generalist with a secondary level of education should be able to facilitate the assessment process

with minimal training). The template for the assessment tool is currently in draft format and will be further refined by the DLA with the support of UNDP and other stakeholders throughout 2016.

The information contained within this report summarizes the results collected from vulnerability assessments conducted on **Epi Island in September and October of 2015**. These vulnerability assessments were conducted in a community meeting format that was open to the general public. Data was collected from community members through the assistance of facilitators, who led several public meetings and encouraged active participation throughout the meetings by asking a series of questions and putting forth discussion points, as detailed in the “Komuniti Profael Form” version 2.3. The facilitators attempted to elicit data without influencing the results provided by the community. At times, the facilitator attempted to help community members arrive at a consensus or agree upon an approximate answer if there happened to be any disagreement or varying answers provided by the group.

The results from these community vulnerability assessments often consist of estimations, provided by community members to the best of their knowledge. While the results contained within this report should provide relatively accurate information about a community’s vulnerabilities and resources, there may contain some inaccuracies as



(Map of West Epi containing VCAP Project Site)

non-technical community members are providing the information requested through a community meeting format and not a door to door survey. Data within this report should be considered as approximations made by community members (*example - population figures*).

The facilitators also utilized focus groups as part of the approach in completing the vulnerability assessments, allowing for further in-depth discussions regarding vulnerabilities and more inclusivity for local youth and women who sometimes face cultural limitations or inhibitions when expressing themselves publicly during community meetings. Focus groups utilized during this initiative included women's groups, youth groups (under the age of 25) and men's groups.

Key respondent interviews were also utilized to engage community leaders, including teachers, health workers, chiefly authorities and woman's group leaders.

Relevant chiefs and members of chiefly councils were informed of this community vulnerability assessment process and its potential benefits before any data was collected and permission was granted to carry out the assessments in accordance with local governance practices. Chiefly representatives participated in the community profiling initiative at all communities consulted on **Epi: Mabfilau, Burumba, Rovoliu, Ponkovio, Ruwo, Yopuna and Malvasi**. The relevant provincial authorities such as the **Area Secretary for the Vermaul Area Council, Mr. Gideon Yonah; the Area Secretary for Vermali Area Council, Mr. Graham Api** and the **District Administrative Officer (DAO) for Shefa Provincial Sub-District of Epi, Mr. Lois Korah** were engaged throughout the entire community vulnerability assessment process and actively facilitated sessions at each community meeting.

Notice was given to communities prior to each meeting regarding participating in the vulnerability assessments (public announcements were made and notices were hung on community notice boards) and the entire community was encouraged to attend, including women, youth and people with disabilities. Meeting attendance was encouraged regardless of land ownership claims, ethnicity, education, religion or gender. **Meetings took place in Mabfilau (28.09.15); Burumba (29.09.15); Ponkovio (29.09.15); Yopuna (30.09.15); Malvasi (30.09.15) and Rovo Bay (24.11.15)**. Although the entire community was encouraged to attend and participate in these vulnerability assessments, attendance was voluntary and some community members were unable to participate due to work or personal commitments.

Transect walks through the communities were also conducted by the facilitators before and after vulnerability assessments were completed. Photos were taken by the facilitators at these times.

This report will be shared with **Shefa Provincial Government Council as well as the Vermaul and Vermali Area Councils**, along with nationally implementing stakeholders and partners of "VCAP".

LOCATION & DESCRIPTION OF ASSESSMENTS	Male Participants	Female Participants
<u>Mabfilau Village</u> - Meeting conducted inside of a cooperative building on 28.09.15 facilitated by Matthew Hardwick and Gideon Yonah along with Jackson Tambe, Basil Mael & Corey Huber.	13	15
<u>Burumba Village</u> - Meeting conducted in Community Hall on 29.09.15 with representation from a geographic area including outlying settlements: Masou, Green Hill and Rovoliu. Meeting facilitated by Matthew Hardwick, Jackson Tambe and Lois Korah.	24	15
<u>Ponkovio Village</u> - Meeting conducted in Nakamal on 29.09.15 and facilitated by Corey Huber, Jackson Tambe and Lois Korah.	70	35
<u>Ruwo & Yopuna Villages</u> - Meeting conducted in Nakamal in Yopuna on 30.09.15 with representation from both villages in attendance. Meeting facilitated by Matthew Hardwick, Basil Mael, Gideon Yonah and Graham Api.	25	20
<u>Malvasi Village</u> - Meeting conducted in Nakamal on 30.09.15 and facilitated by Corey Huber, Jackson Tambe and Lois Korah.	17	15
<u>Rovo Bay</u> - Briefing of results by all facilitators with Vermaul & Vermali Area Council members and Village Development Committee representatives from within the project site took place on 01.10.15 at the Provincial Sub-District Headquarters in Rovo Bay.	17	8

2. SUMMARY OF KEY VULNERABILITIES AT EPI VCAP PROJECT SITE

Summary of key vulnerabilities identified by communities during vulnerability assessments. Please note that further information regarding these key vulnerabilities may require input from technical experts.

<p>Climate Resilience of Primary Roadway</p>	<p>The primary road has become increasingly inaccessible due to the impact of heavy rainfall resulting in land erosion, flooding and decaying infrastructure. There are some slopes along the roadway that become inaccessible to vehicles in rainy conditions. There is at least one reported death in the area directly linked with road conditions, when a vehicle driving along a very dangerous incline in the rain slipped off the road and over a steep ledge, killing the driver. There are no drainage systems in place or improved materials used to construct the road to strengthen its climate related resiliency.</p>
<p>River Crossings / Bridges</p>	<p>School teachers in the area reported that children frequently do not attend class because moderate rainfall produces flooded rivers and streams, which currently have no improved infrastructure to allow for safe access while crossing. Access to other services such as health centers, the bank and markets are also affected severely by this lack of climate resilient infrastructure. Children and adults are expected to wade across rivers and creeks to cross to the other side.</p> <p>A collapsed bridge near Yervali school (that can no longer be safely used by vehicles) also poses a significant environmental and health concerns as it obstructs the natural drainage and flow of the river and it reportedly creates severe coastal erosion during heavy rainfall or periods of coastal storm surge. A large pool of stagnant water is present near the school as well because of the obstruction caused by the collapsed bridge and locals report concerns that students may be affected by malaria or dengue as a result.</p>
<p>Water Security</p>	<p>Ponkovo reports severe water shortages affecting its population, especially during periods of drought, when rain harvesting can no longer be relied upon. There is no gravity feed water supply system available for Ponkovo's population of 600 people and the community's 10 rain water tanks are reportedly insufficient for 3 to 4 months at a time. There is one ground well used primarily by the community during periods of drought when other sources are no longer available. Some wells in the community reportedly suffer from salt-water intrusion along the coast while others are considered contaminated by sediment.</p>
<p>AC Office for Vermaul</p>	<p>Area Council members from Vermaul and provincial authorities state that they consider it an urgent priority to re-construct an AC office and ensure that the design is more resilient and can withstand future cyclones and disasters (<i>while possibly serving as a community disaster shelter as well</i>).</p>
<p>Erosion Control</p>	<p>No erosion control initiatives using soft measures have taken place here, such as the planting of trees, vetiver grass or other vegetation used to control erosion. Locals indicated there are severe erosion problems in almost every community assessed, however no action has been taken to address these problems. Limited inter-cropping with forestry species practiced in households gardens, resulting in erosion of top soil from gardens and sedimentation of rivers and coastal areas.</p> <p>Common agricultural practices such as slash and burn farming combined with livestock grazing on slopes produces high amounts of sediment. Villagers reported extreme levels of sedimentation in coastal waters near Malvasi and all communities reported that there was a steady decline in coastal resources. Sedimentation related to agricultural and livestock activities is believed to be causing enormous damage to coastal resources and the coral reef eco-system of Epi.</p>
<p>Declining Coastal Resources</p>	<p>Due to land disputes between certain communities or households, often traditional conservation methods are not respected by community members on Epi when there is disagreement over identifying the person who has the authority to establish conservation efforts in certain coastal areas. The lack of functional coastal "protected areas" to conserve fisheries stocks, plus COT's and sedimentation, is causing harm.</p>

3. GENERAL INFORMATION FOR EPI VCAP SITE

3.1 POPULATION

These figures have been provided by community members in consultation with Community Disaster Committees and the Provincial Area Council Secretaries. Youth has been defined as under the age of 25 years, household defined by VNSO as per kitchen rather than by individual housing units. Only those currently present on Epi during time of assessment included in figures.

	Men	Women	Youth	Disability	Total Pop	Households
Epi VCAP Site (Total)	865	909	810	55	1774	446
Mabfilau	160	129	120	15	289	54
Burumba (+Rovoliu, Masou, Green Hill)	270	230	250	7	500	110
Ponkovio	250	350	300	14	600	175
Ruwo / Yopuna	83	110	100	14	193	55
Malvasi	102	90	40	5	192	52

Remarks - Communities on Epi reported difficulty in providing population estimates, especially in Ponkovio and Malvasi villages. Figures should be considered as approximations by community members, allowing for inaccuracies. Largest community in project site is Ponkovio, followed by the Burumba area (including sub-communities of Rovoliu, Masou and Green Hill).

3.2 ORGANIZATIONAL STRUCTURES

3.2.1

PROVINCIAL GOVERNMENT / AREA COUNCIL (AC)

Area Secretaries (AS)	The VCAP site on Epi contains communities from two different Area Councils (Vermaul & Vermali) with two responsible Provincial Area Secretaries (AS) for this area. The AS for Vermaul AC from Mabfilau is Gideon Yonah has several years of working experience in this position. The AS for Vermali AC is Graham Api lives on Lamén Island and was just recently hired in September of 2015 and has no prior working experience. Duties of the AS's include tax collection, voter registration, supporting government departments & projects to coordinate work with communities.
Area Councils (AC's) & Sub-District (Governance body)	Both the Vermaul and Vermali Area Councils, which each contain communities located within the VCAP site, appear to be well-established and functional and consist of chiefly, women, disabled, youth, church and business house representatives. They each have established bank accounts and have had several Area Council seatings in 2015. There are four Area Councils on Epi that report that report directly to a Sub-District following the structure created by the provincial government. The provincial officer responsible the Epi Sub-District is the District Administrative Officer (DAO), Louis Korah. Sub-District Headquarters are located in Rovo Bay on an area of ground belonging to the provincial government. There is an administrative assistant working in Rovo Bay as well.
AC Offices / Resources	There is working space available within the Vermali AC in a very nice permanent office at the Sub-District Headquarters in Rovo Bay that is used by the Vermali AS along with the DAO. Suggested improvements to the facilities by AC members included providing solar power for the AC office and a laptop computer to assist the AS / DAO in performing work. Although the Vermali AS and DAO have access to several permanent buildings owned by the provincial government, some AC members are still requesting that a separate AC building be constructed in another village.

<p>... continued AC Offices / Resources</p>	<p>Unlike Vermali AC, Vermaul AC has no available provincial building or AC office building within its boundaries. The Shefa Provincial Government Council previously attempted to construct a building to serve as the Vermaul AC office near Mabfilau Village but only the timber framework of the building was constructed before being completed destroyed by Cyclone Pam on March 13th, 2015. Area Council members from Vermaul and provincial authorities state that they consider it an urgent priority to re-construct an AC office and ensure that the design is more resilient and can withstand future cyclones and disasters (<i>while possibly serving as a community disaster shelter as well</i>).</p> <p>The AS from Vermaul has access to a motor bike that he uses to access villages within his Area Council as well as travel to the Sub-District in Rovo Bay. Otherwise the Area Secretaries and DAO utilize boats and trucks when they have the funding required to charter a trip.</p>
---	--

3.2.2

OTHER GOVERNMENT OFFICERS

<p>Agriculture</p>	<p>There is an Agriculture officer, John Willie, stationed on Epi Island in an isolated area just north of Rovo Bay. This officer uses a motor bike belonging to DARD to visit accessible communities in the northern & western villages of Epi to assist and teach local farmers.</p>
<p>VCAP Site Coordinator</p>	<p>There is a field based coordinator, Basil Mael, from Masou, helping to facilitate VCAP activities with local communities as part of the five year CCA project.</p>
<p>Police</p>	<p>There is one member of the Vanuatu Police Department stationed on the island at the Rovo Bay Sub-District Headquarters.</p>
<p>Provincial Plumber</p>	<p>Shefa Province employs a plumber that is tasked with supporting water security initiatives and assisting with maintenance for water systems on Epi. He is based in Rovo Bay and assists when</p>
<p>Education</p>	<p>Government teachers are located in Mabfilau, Ponkovio and Ruwo / Yopuna where there is three primary schools total (Years 1 - 6); and at Burumba Centre School(Years 1 - 10).</p>
<p>Health</p>	<p>There is one government supported nurse aid at Burumba Dispensary.</p>
<p>Public Works Department</p>	<p>In September of 2015, there was one PWD staff based in Rovo Bay who was performing some maintenance work on road works machinery in preparation of additional staff arriving to work on Epi Island roadways in the near future.</p>

3.2.3

TRADITIONAL CHIEFLY STRUCTURES

<p>Status and Role of Chiefly System</p>	<p>The traditional Ni-Vanuatu chiefly system is the prominent governance system in Western Epi. The traditional chiefly systems in the target area suffer from a lack of unity due to Epi's tumultuous history. The chiefly system today is influenced heavily by the historic influx of Ni-Vanuatu arriving from other islands to perform manual labour during the "Black-birding" era and forced removal of local populations from their coastal lands by white settlers wanting land for plantations. As a result of this forced exodus of the original coastal inhabitants of Epi to the highlands and their recent return to the coast (1960's – 1980's), there are many communities with internal chiefly and land related disputes as the traditional systems and boundaries in place were disrupted by settlers.</p> <p>Several communities within the VCAP target site have disputing parties each claiming the title of Paramount chief (Burumba, Ruwo, Yopuna and Ponkovio) thus dividing and weakening these traditional governance systems.</p> <p>An island Council of Chiefs, consisting of paramount chiefs from the entire island of Epi, has annual governance meetings and a rotating Chairman. The chiefly councils here facilitate dispute resolution, enact and enforce social norms and must be consulted before any development may take place within their respective territories.</p>
---	---

3.2.4

NGO's & INTERNATIONAL ORGANIZATIONS

UNDP	VCAP project is just starting to support adaptation to climate change by communities, specifically regarding infrastructure strengthening and resource management in late 2015.
Save the Children	Led distribution of relief items in this area and organization of Community Disaster Committees after Cyclone Pam struck in March of 2015. Supports Shefa Health and Village Health Workers and Aid Post establishments in Ponkovio, Mabfilau and Malvasi with training, medicines and equipment.
Oxfam	Facilitated distribution of water storage and relief items after Cyclone Pam in 2015.
World Animal Protection	Has distributed relief food stock and medicine for livestock and domestic animals after Cyclone Pam struck in March of 2015 and has facilitated livestock trainings in the area for local farmers.
Secretariat of the Pacific Community (SPC)	Supported trainings for local cacao farmers.

3.2.5

FAITH BASED ORGANIZATIONS (FBO's)

Mabfilau	The largest denomination in Mabfilau is the Presbyterian Church with approximately 230 members and one church building made from permanent materials. Other faiths in Mabfilau without a permanent church building include Assemblies of God (AOG) with around 60 members and the SDA church who has approximately 10 members.
Burumba	In the Burumba area, the Presbyterian Church has around 300 members, AOG has a membership of nearly 100 people and there is a small group of 20 locals who attend the Catholic Church. All of these faiths have churches constructed with permanent materials. The SDA faith here has around 10 members and a temporary shelter. There are 5 Jehovah's Witnesses with no church house or shelter.
Ponkovio	Ponkovio has around 250 locals attending "Praise Church", 150 attending AOG and over 50 attending SDA, all of which have permanent church buildings. There are over 20 members of the Jehovah's Witnesses in Ponkovio with a temporary shelter they have constructed to conduct worship.
Ruwo / Yopuna	The largest denomination in Ruwo / Yopuna is the Presbyterian Church with approximately 134 members and two church buildings made from permanent materials, followed by AOG with 20 members and a very small church house. There are around 8 members of the SDA faith here with no church house.
Malvasi	There are around 100 members of the Presbyterian Church in Malvasi who worship in a church house made from permanent materials. There are approximately 25 members of SDA faith here who worship in a small, temporary shelter.

Note- These church networks have organized associations for women & youth members (the only formally organized woman's groups on the island aside from market associations are through FBO's).

3.2.6

COMMUNITY BASED ORGANIZATIONS (CBO's) & COMMITTEES

Mabfilau	Active committees and organized groups in Mabfilau include a chiefly committee, women's groups affiliated with individual churches, youth groups affiliated with individual churches, an Aid Post committee, a water committee, a school committee and a cooperative committee.
Burumba	Burumba has formed two different and separate chiefly committees due to a dispute over land ownership and chiefly status. It also has women's groups affiliated with churches, youth groups affiliated with churches, a water supply committee, a school committee, a health committee, a football committee, a cacao farming committee, an animal protection committee and a cooperative committee.
Ponkovio	Active committees and organized groups in Ponkovio include a chiefly committee, women's groups affiliated with churches, youth groups affiliated with churches, a school committee, an Aid Post committee and a Community Disaster Committee.
Ruwo / Yopuna	Due to the smaller populations of both Ruwo and Yopuna villages, committees here to tend to be smaller and less organized. There are disputes here regarding chiefly status, resulting in divided chiefly committees. There is a school committee, an Aid Post committee, along with women's and youth groups affiliated with individual churches.
Malvasi	Committees in Malvasi include a chiefly committee, women's groups affiliated with churches, youth groups affiliated with churches, an Aid Post committee and a Community Disaster Committee.

**Only CBO's & committees considered functional and active by community members are listed in this report (example, if a village committee was formed for water security purposes but it does not hold regular meetings or perform any recent tasks, it is not cited).*

3.2.7

VILLAGE DEVELOPMENT COMMITTEES (VDC's)

VDC's	<p>There are 5 VDC's present within the VCAP Project Site on Epi Island. The VCAP Site Coordinator working together with provincial Area Secretaries from Vermaul and Vermali Area Councils established these VDC's in July and August of 2015 after attending a VCAP training in Port Vila in June.</p> <p>In September of 2015, these VDC's were engaged in the creation of climate change adaptation planning activities as a part of VCAP.</p>
--------------	--

**VDC's are voluntary technical working groups comprised entirely of locally-based membership that addresses community oriented, multi-sector development issues and attempts to utilize representation from all existing organizational structures present within a community- such as chiefly systems / NGO's / FBO's / CBO's / Committees, such as those listed in previous tables above. VDC's are often used for planning or monitoring and evaluation purposes.*

VDC's are flexible, voluntary working groups whose membership comes from EXISTING organizational structures. VDC's should not be viewed as an additional organization within a community but rather as a collection of representatives from a community's existing structures, providing a wide-range of skill sets and the knowledge base necessary to create an informed technical working group familiar with local context and conditions.

3.3 LIVELIHOODS

3.3.1

INCOME GENERATION

Main Sources of Income	<p>The communities within the VCAP project site on Epi generate a majority of their income through agricultural activity. Copra, kava, cacao and peanuts are the main cash crops that are either sold to agents for export or directly to buyers in Port Vila for domestic consumption.</p> <p>Copra has a highly fluctuating market price that has resulted in many local farmers shifting their focus to other crops. The planting and sale of fresh kava to supply the production of “ready-made” kava bars in Port Vila has increasingly become a source of income generation for many in the area. Cacao is sold for export overseas and also to a local NGO called Activ that recently built a facility in Port Vila to process local cacao and produce chocolate. Peanuts are sold for consumption in Port Vila.</p>
Alternative Sources of Income	<p>There are 43 small household stores within the project sites, where food and basic household commodities are sold. There is a small but significant amount of money generated through the sale of livestock, such as cattle and poultry. A large number of community members opt to take part in seasonal work activities in New Zealand and Australia, such as fruit-picking. These opportunities to perform labor abroad are viewed as a quick way to generate a relatively large amount of money, as daily wages paid for manual labor are much higher in New Zealand and Australia than Vanuatu.</p> <p>Regular salaries are paid to provincial government staff, NGO project officers, staff of local schools, the nurse aid and staff from the two airlines operating on the island. There are no tourism activities within the VCAP project site on Epi, although there is a luxury guest house owned by an expatriate couple just outside of the project site that does regularly receive tourists. There are no active fishing projects or associations here.</p>

LIVELIHOODS INVENTORY

3.3.2

	Mabfilau	Burumba	Ponkovio	Ruwo / Yopuna	Malvasi	TOTAL
Stores (selling basic commodities)	5	10	16	8	4	43
Cooperatives	0	2	0	1	0	3
Guest Houses / Bungalows	1	4	0	0	0	5
Fuel Sales	4	5	6	1	3	19
Boat Transport	0	1	0	0	1	2
Truck Transport	0	3	2	0	2	7
Ready-Made Kava Bars	2	0	2	0	0	4
Markets (fresh produce, fish, etc)	0	0	0	0	0	0
Seamstress / Tailor	0	1	3	2	1	7
Baker (either local bread or “gato”)	3	6	5	3	1	18

3.3.3

MISCELLANEOUS - LIVELIHOODS

Outside Investors	<p>The land at Rovo Bay was recently purchased by Shefa Provincial Government Council (finalized in 2014) and development has been encouraged by provincial authorities although no outside investors have utilized this space yet.</p> <p>Some land has been sold by the Mabfilau and Burumba communities to outside investors but no development has yet occurred as a result (with the exception of using the acquired ground for cattle grazing).</p>
Employment Abroad	<p>At the time of this assessment, communities reported that a relatively large number of locals were performing seasonal work in New Zealand or Australia in an attempt to generate income. There were 73 locals from the Epi VCAP project site reported as currently engaged in seasonal work activities in November of 2015 (15 from Mabfilau, 25 from Burumba, 30 from Ponkovio, 3 from Ruwo / Yopuna and 10 from Malvasi).</p> <p>The seasonal work program is reportedly used by many locals who attempt to earn a higher rate of income to allow for the purchase of building materials needed to construct permanent houses for their families.</p>
Cooperatives	<p>Several prominent politicians created an organization called the Vanuatu People's Investment and Equity Fund (VPIEF), which is funding the construction of a cooperative building in Mabfilau Village, where many community members have invested in shares. VPIEF is not a traditional cooperative system and it reportedly has not yet shared any dividends with community members on Epi yet. VPIEF has constructed buildings and purchased vehicles for the use of its members in several islands in Vanuatu. Community members outside of Mabfilau report that they are joining VPIEF as well.</p> <p>There is a cooperative in Burumba that reportedly is very successful and sell food, alcohol and household goods. There are smaller cooperative stores in Ruwo and Rovoliu (near Burumba) as well.</p>
Markets	<p>There is a market that operates in Rovo Bay every two weeks (on government paydays). As Rovo Bay is home to the provincial government sub-district headquarters and has the only banking services on the island, local teachers and other workers who receive regular salaries frequently travel to Rovo Bay on paydays- where they can also do shopping to purchase local produce at the market. The market is located in a small market house considered to be in very good condition and women from several different villages sell their produce here.</p> <p>Otherwise there are no other regular markets in the area. Sometimes produce is placed atop small tables on the side of the road for sale.</p>
Value Added / Exports	<p>There is no valued-added processing of resources that takes resources locally on Epi. Exports include copra, kava, cacao and peanuts.</p>

3.4 SERVICES

3.4.1

HEALTH

<p>Health Facilities</p>	<p>The Burumba Dispensary has only one Nurse Aid working alone within the facility. The Nurse Aid is able to assist mothers with childbirth in emergency situations, provide medicines including antibiotics, share family planning methods and provide general treatment for mild to moderate medical conditions. A majority of the maternal and serious health cases are referred to the Vermali Health Centre located just north east of Lamén Bay. Access to Vermali Health Center by road is compromised during periods of rainfall for many in this area and sometimes boat charters must be arranged to transport sick patients if the conditions at sea allow for travel by boat. Serious medical cases are then referred from the Vermali Health Center to the hospital in Port Vila.</p> <p>Malvasi, Ponkovió and Mabfilau each have an Aid Post serviced by a voluntary Aid Post Worker along with their assistants. These Aid Posts are very small buildings and can provide basic assistance such as cleaning and dressing wounds or sores, sharing basic non-prescription medicines, distributing condoms and leading health awareness initiatives. Serious cases are referred from Aid Posts to the Burumba Dispensary. These Aid Posts are supported with training and medicine by Shefa Health & Save the Children.</p>
<p>Health Concerns / Common Illnesses</p>	<p>NCD's such as heart disease, hypertension and diabetes are reportedly growing in incidence among community members and are a common cause of death on Epi. Health workers believe this is related to a shift away from traditional diets, lifestyles and heavy tobacco use especially by males on the island. They report that often these deaths are blamed on supernatural forces such as "nakaimas".</p> <p>There are a few reported cases of malaria on the island in this area every year. The Nurse Aid working at the Burumba Dispensary can confirm that there were 2 confirmed locals who were treated for malaria in 2015 at his facility.</p>

3.4.2

EDUCATION

<p>Pre-Schools</p>	<p>There are 3 pre-schools in Burumba, 2 in Ponkovió and 1 located in Mabfilau. These schools are funded entirely by school fees paid by parents each term.</p>
<p>Primary Schools</p>	<p>Mabfilau Primary School is anglophone, has 58 students ranging from Year 1 - 6, and is staffed by 2 government teachers and 3 unregistered teachers from the community. The buildings on the compound are in good condition. Burumba Primary School is a francophone school in Burumba with 62 students ranging from Year 1 - 6, staffed by 4 government teachers and 2 unregistered teachers. The condition of the school buildings is moderate to good. Yervali Primary School is anglophone, located between Ruwo and Yopuna and has 92 students ranging from Year 1 - 6 and is staffed by 2 government teachers and 2 unregistered teachers from the community. The building appears to be in very good condition.</p>
<p>Centre Schools</p>	<p>Ponkovió Centre School is francophone, has 114 students ranging from Year 1 - 8, and is staffed by 7 government teachers and 2 unregistered teachers from the community. Its school buildings are in moderate to good condition.</p>
<p>Secondary Schools</p>	<p>Anglophone and francophone students wishing to further their education and who have passed their exams often attend Epi High School, Port Quime Secondary School or schools on Efate. Burumba College in Burumba is francophone, has 57 students (41 sleeping in school dormitories) ranging from Year 7 - 10 and is staffed by 3 government teachers. The school buildings are in moderate to good condition.</p>
<p>Technical Schools</p>	<p>While there are no technical schools location with the Epi VCAP project site, some students attend a Rural Training Center (RTC) on Epi located in Mate and others attend schools in Port Vila such as Vanuatu Institute of Technology (VIT). There were 33 total students from Epi VCAP project site currently enrolled in technical schools in November of 2015 (Mabfilau- 5, Ponkovió- 10 and Burumba- 18).</p>

Continued Education	Anglophone and francophone students wishing to further their education and who have passed their exams often attend Epi High School, Port Quime Secondary School to study at secondary schools on Tanna or Efate islands. Currently there are around 7 locals attending university level courses.
----------------------------	---

3.4.3

OTHER SERVICES

Airport	There are two airports on Epi Island, one is located in Lamén Bay and the other is called Valesdir airport located near Sara Village, which marks the southern boundary of the Epi VCAP site. The airport in Lamén Bay is typically more accessible as quite frequently flights to Valesdir are canceled in the wet season. Air Vanuatu and a private carrier named Belair Airways operates regular biweekly flights to Epi. Locals report that Belair Airways is currently providing more regular service to the island than the national airline, Air Vanuatu.
Shipping	There are many access points for ships to provide service and unload cargo for communities in the Epi VCAP site, although Rovo Bay is used quite frequently in addition to Lamén Bay for the larger passenger vessels. Epi receives frequent service from various ships traveling back and forth to Port Vila from the northern provinces.
Financial	The National Bank of Vanuatu has a satellite branch based in Rovo Bay that is open several days a week. Locals from the VCAP site on Epi must pay for transport to access these services or walk to Rovo Bay. Malvasi is a fifteen minute walk from Rovo Bay while Mabfilau Village requires an approximately two and a half hour walk to access Rovo Bay.
Communications	<p>Digicel and TVL companies provide network coverage to the Epi Island. Due to the network towers being located in different locations and the challenging geographic terrain on Epi, some villages receive network coverage from only one of the two service providers. Mabfilau, Burumba, Ruwo and Yopuna have access to both Digicel and TVL networks. Ponkovio only has access to the TVL network while Malvasi only receives clear reception with Digicel.</p> <p>There are no FM radio reception available within the VCAP site on Epi, but medium wave radios can pick up Radio Vanuatu programming. Very few households own medium wave radios and tend to rely primarily on mobile phone communications to receive information.</p> <p>A basic internet connection is only available through the mobile phone carriers.</p>
Security	<p>The police officer stationed in Rovo Bay is occasionally dispatched to attend to disputes or problems within the Epi VCAP site. In 2015, a large group of police from Port Vila travelled to Burumba Village due to a dispute over land that resulted in threats of physical violence among locals. Incidents involving alcohol / marijuana abuse, theft and domestic violence are commonly reported to the police officer in Rovo Bay.</p> <p>There is no holding cell located in Rovo Bay where the police officer is located. Sometimes locals who have been accused of serious criminal charges must sleep in the police officer's house awaiting the next flight off of the line where they will face charges.</p>
Community Halls or Meeting Venues	<p>Every community, with the exception of Burumba, has constructed its own "nakamal" using traditional building materials and is often used as a meeting place for community members in Mabfilau, Ponkovio, Ruwo / Yopuna and Malvasi. These "nakamals" are constructed under the authority of the chiefly councils that maintain them.</p> <p>Burumba has a small community hall is in good condition located close to the coastline. It is used commonly used for community meetings.</p>

4. CONVEYANCE INFRASTRUCTURE ON EPI VCAP SITE

Roads / Vehicles	<p>There is one primary roadway stretching from Moriu Village in the Varsu Area Council in northern Epi down to Votlo Village in Vermaul Area Council that serves as the primary accessway for communities in the VCAP project site on Epi Island. This roadway passes through stretches of the immediate coastline, coconut plantations and cattle pastures. The road has become increasingly inaccessible due to the impact of inclement weather, land erosion, flooded creek beds and decaying infrastructure. There are some slopes along this primary road that are inaccessible to vehicles in rainy conditions as the dirt roads become extremely slippery. There is at least one reported death in the area directly linked with the hazardous road conditions, which involved a vehicle losing traction in rainy conditions along a very steep incline on the road near Foreland and then rolling down a ledge killing the driver as the vehicle collided with a tree. Several other vehicles have been damaged at this location in the road and passengers have been injured. Locals felt that a safety railing should be installed along the roadside here.</p> <p>There is a small but vital sea-wall near Malvasi Village that protects the roadway from coastal erosion as the road narrowly passes along a sheer vertical cliff and would require serious engineering work to relocate. This sea-wall was built decades ago but requires maintenance in order to prevent coastal erosion from reducing accessibility of road.</p> <p>Community members report that the PWD has provided some maintenance and repair work for this portion of the roadway starting in late 2014. Severe degradation of road surfaces and bridges within the Epi VCAP site is not primarily due to vehicle traffic but rather, is weather related. This weather related degradation of roads includes erosion from rain and storm events, small landslides, flooding and is worsened by a lack of drainage systems & a lack of resilient materials used for road construction. There is a total of 7 trucks owned & operated by locals living within the immediate project area.</p>
Footpaths	<p>There are footpaths in every community used to access gardens or create shortcuts between households. However, the primary accessway between communities that is is the road. Locals who do not pay for vehicle transport walk along the main road when traveling between communities.</p>
Bridges / Water Crossings	<p>There is one river crossing between Mabfilau and Valesdir airport that experiences heavy flooding during rain times and becomes inaccessible for vehicles and pedestrians. There is no bridge of any kind at this crossing and vehicles must cross over large stones along the river bed. During heavy rains, the small crossing swells to around 45 meters across and becomes inaccessible to vehicles and pedestrians.</p> <p>There is a large collapsed bridge adjacent to Yervali School in Ruwo that can no longer be accessed by vehicles. This collapsed bridge is producing significant erosion problems according to local community members. A temporary route leading to an alternate (without any bridge) has been created approximately 100 meters further inland. This newly improvised crossing has requires that locals must regularly clear out large stones and logs blocking vehicle access. This crossing is only accessible in good conditions and not during the periods of frequent rainfall that impact Epi Island.</p> <p>There are approximately four smaller river / creek crossings along the main road in the area that are also inaccessible during periods of rainfall. School teachers in the area report that children do not attend class after moderate rainfall due to flooding and a lack of improved infrastructure to allow for safe access while crossing waterways. Access to other services such as health centers, the bank and markets are also affected severely by this lack of climate resilient infrastructure.</p>
Wharfs	<p>There is no wharf located within this area.</p>
Boats	<p>Travel by boat is infrequently used in this area, but the two boats in the area can be utilized in emergencies for transport when roadways are inaccessible due to rain.</p>

5. UPLAND RESOURCES ON EPI VCAP SITE

5.1 WASH (WATER AND SANITATION, HYGIENE)

5.1.1 Inventory of Drinking Water Sources by Community

	Mabfilau	Burumba	Ponkovio	Ruwo / Yopuna	Malvasi	TOTAL
1) Gravity Supply System	1	1	0	1	1	4
2) Poly / Fiber-Glass Rain Tanks	6	8	10	10	2	36
3) Above Ground, Cement Rain Tanks	3	4	7	1	1	16
4) Enclosed Ground Wells (Cement bottom)	3	2	0	5	1	11
5) Open Ground Wells (No cement)	3	8	0	0	0	11
6) Powered Pumps (Generator / Solar)	0	0	0	0	0	0
7) Hand Pumps	0	2	2	2	0	6
8) Coastal springs (water directly accessed from a spring located on the immediate coastline)	2	3	4	1	0	10
9) River / spring (water directly accessed and used at a river or spring, no use of pipes)	1	1	0	1	0	3

*Note- inventory includes functional water sources only, not those in need of repair or not utilized for drinking purposes

5.1.2

WASH

Brief Summary of Water Resources by Community

Ponkovio reports severe water shortages affecting its population, especially during periods of drought, when rain harvesting can no longer be relied upon. There is no gravity feed water supply system available for Ponkovio's population of 600 people and the community's 10 rain water tanks are reportedly insufficient for 3 to 4 months at a time. There is one ground well used primarily by the community during periods of drought when other sources are no longer available. Some wells in the community reportedly suffer from salt-water intrusion along the coast while others are considered contaminated by sediment.

Some households in Malvasi, Ruwo and Yopuna have access to the gravity feed water supply system, which also supplies the sub-district headquarters in Rovo Bay. Users of this gravity feed system report that it is vulnerable to sedimentation in rain times and low water pressure in dry times.

In Ruwo and Yopuna, communities reported that they struggled with water security challenges. A few households in a small area of Ruwo must walk up to 400 meters to access water each day, especially during dry periods. Rain harvesting takes place but some locals reported using bamboo for watch catchment, which they stated can contaminate the water if not replaced regularly.

The gravity feed system in Burumba reportedly works very well and does not experience sedimentation during rainy times or low pressure during dry times. Nearby Rovoliu does not have access to this gravity system and locals must carry containers of water over 200 meters for access.

In all communities consulted, villagers reported accessing coastal springs and small stream and rivers for drinking water in times of need.

Toilets	A majority of toilets on Epi consists of an uncovered, open pit latrine referred to locally as a “bush toilet”. There are a number of improved toilets constructed as local schools, health facilities and a few households. Ruwo & Yopuna despite being a smaller village have reportedly 17 Ventilated Improved Pit (VIP) toilets though, which is a large percentage for the 55 households located there. In contrast, Ponkovio reports that it has zero improved toilets for its approximately 175 households.
Water Committees	Ruwo & Yopuna, Burumba, Mabfilau and Malvasi all have formed community based water committees that are responsible for water security measures within the villages such as providing maintenance to water systems. Normally, a monthly fee of around 200 to 300 VT is charged to households with access to the gravity feed supply system. Malvasi reports that their water committee is not very active. Ponkovio was the only community within the Epi VCAP site without a functional community water committee.
Hand-Washing Access <i>(Access to Water + Soap)</i>	Some households, but not necessarily a majority of households, on Epi have access to a water source and soap to utilize for hand-washing that is located nearby toilets and kitchens.
Waste Disposal	It is common for households to dig large holes in order to dispose of their waste, burn garbage including plastics or to throw waste in a heap pile. No recycling service for used materials is available on Epi.
Access to Community Rain Catchment Tanks	Mabfilau, Burumba, Ruwo, Malvasi has several rain tanks that can be accessed by the entire community should the gravity feed supply temporarily stop working or experience sedimentation after rainfall. Some are located at community buildings such as schools, churches and the health facilities. While villagers in Yopuna have no public access to any community-owned rain catchment tanks and locals report this is a critical issue for them.

5.1.3 Inventory of Improved Toilets

	Mabfilau	Burumba	Ponkovio	Ruwo / Yopuna	Malvasi	TOTAL
Flush Toilet	0	0	0	0	1	1
Water-Seal Toilet	1	0	0	0	2	3
Compost Toilet	0	0	0	0	0	0
Ventilated Improved Pit Toilet (VIP)	0	6	0	17	0	23

**Majority of improved toilets located at community buildings such as schools, church housing or guest houses.*

5.2 AGRICULTURE

5.2.1

AGRICULTURE

Primary Crops	Primary staple crops for consumption include Fijian taro, manioc, sweet potatoes and yam. The ground on Epi is especially fertile and farmers report that their gardens typically perform quite well. Primary cash crops include kava, cacao, coconuts and peanuts.
Garden Space	Community members indicate that they believe there is sufficient space for gardening activities on the island over the next ten years.
Agricultural Sales	<p>The sale of local produce such as root crops and fresh fruit contributes significant income generation to households in the area. Rovo Bay has a market that operates on a bi-weekly basis every other Friday, on government paydays, when local government officers travel to the Shefa Provincial Sub-district Headquarters to access the bank and take part in sports leagues. A Shefa / UN Women project to support this market began in 2013 and the market in Rovo Bay has a well-organized association.</p> <p>There is another small market that used to operate on Wednesdays in Burumba Village but after Cyclone Pam impacted the island and reduced the produce available to sell, it has ceased operations.</p>
Food Security	<p>Food security has recently become more of a challenge as reported by local communities due to recent impacts caused by Cyclone Pam in March of 2015 followed closely by prolonged periods of drought associated with El Niño weather patterns. Many communities report that the on-going drought has resulted in their reducing their yield from the gardens although they expect that their food security levels will vastly improve after the cyclone and drought related disasters have passed.</p> <p>Dependency on rice and other store-bought foods is common in this area at the current time due to the agricultural problems associated with current drought conditions.</p>
Pests	Community members reported agriculture being affected by many pests including beetles that spoil taro crops and watermelons, butterflies that harm oranges and grapefruit, worms and "African snail" that damage island cabbage and diseases harming "laplap" leaves.
Impact from Invasive Species	Wild pigs, chickens and rats reportedly cause much damage to local gardens.
Diet (Use of Store-Bought Foods)	The communities members report a high incidence of use for store-bought foods even in times when disaster has not affected food reserves in the gardens.

5.2.2 Agriculture

Inventory	None Available	Some Available	Plentiful
Coconuts			✓
Kava			✓
Coffee		✓	
Vanilla		✓	
Pepper (black or white)		✓	

	None Available	Some Available	Plentiful
Cacao			✓
Fruits			✓
Vegetables		✓	

5.3

FORESTRY

Summary of Forestry Activities	There are limited reported forestry activities in this Epi VCAP site. A very small amount of local households plant various species such as sandalwood or whitewood but there are no community nurseries or logging activities taking place here currently.
Primary Species	Reports of very small quantities of sandalwood and whitewood planted.
Nurseries	No community nurseries reported within the Epi VCAP site.
Timber Sales	No timber regularly sold from the area as reported by community members.
Erosion Control	<p>No erosion control initiatives using soft measures have taken place here, such as the planting of trees, vetiver grass or other vegetation used to control erosion. Locals indicated there are severe erosion problems in almost every community assessed, however no action has been taken to address these problems. Limited inter-cropping with forestry species practiced in households gardens, resulting in erosion of top soil from gardens and sedimentation of rivers and coastal areas.</p> <p>Malvasi Village is experiencing extreme erosion and some community members have recommended relocation to a safer location in the upland area. No erosion control activities have taken place here.</p>

5.4.1 Livestock Inventory

5.4 LIVESTOCK

	Chickens	Ducks	Goats	Pigs	Cattle
Mabfilau	300	3	18	80	100
Burumba	500	7	7	75	80
Ponkovio	750	4	10	100	50
Ruwo / Yopuna	250	0	0	45	70
Malvasi	300	0	10	45	30
TOTAL: EPI VCAP SITE	2100	14	45	345	330

5.4.2 Livestock Summary

Summary of Livestock Activities	The sale of livestock also generates significant income for communities located within the Epi VCAP site. Livestock is typically sold domestically on the island however some locals export cattle to other islands such as Santo and Efate.
--	--

5.5

ENVIRONMENT - UPLAND

Geography / Description of Environment	Epi Island has two large peaks, one in the centre of the island that is around 800 meters high and the other in the southeast of the island, which is around 700 meters in elevation. The land from the ridges to the coastal zone associated within the project area has steep slopes and is largely used for agricultural purposes. The interior of the island is densely populated with native forest, with abundant ferns and hardwood trees. Villages and roads in Epi are located along the coast. The land immediately adjoining the coast is fairly flat, with some exceptions.
Pollution	Minimum pollution on Epi in upland areas, aside from household waste that may be improperly disposed of.
Persistent Organic Pollutants (POP's)	There is no reported use or presence of POP's.
Water Catchment Areas	There is no logging or construction of buildings in water catchment areas, however there may be some agricultural activity taking place near some water catchment areas, resulting in sedimentation in coastal waters. There is no formal recognition or protection of water catchment areas by community.
Conservation Areas	No upland resource / conservation area present on Epi.
Access to Traditional Building Materials	Communities report that they currently have difficulty in accessing traditional building materials due to the impact of Cyclone Pam in March of 2015 but that they had reliable access to these resources before this disaster struck.
Access to Firewood	There is sufficient access to firewood in all communities within the Epi VCAP site.
Erosion Related to Logging, Buildings	No erosion reported in the upland areas that is directly linked to logging or construction activities.
Invasive Species	The invasive vine species, referred to locally as "American rope" is present throughout this Epi VCAP site and has reportedly caused damaged to indigenous timber species as well as local garden produce. There is a large number of wild pigs, chickens and rats as well throughout the upland area.
Protected Species	Coconut crabs are infrequently encountered in the Epi VCAP site.
Mining	There are no reported mining activities in Epi VCAP site.
Management Plan	There is no reported management plan for upland resources but some communities expressed an interest in establishing one.

5.5.1 Environmental Resource Inventory

**While resources differ by community- results indicated below are inclusive of results from every community in Epi VCAP Site.*

	None	Some	Many
Coconut Crabs		✓	
"Nawempa"		✓	
Flying Fox			✓

	None	Some	Many
Fresh Water Prawns		✓	
Fresh Water Fish		✓	

6. COASTAL RESOURCES ON EPI VCAP SITE

6.1

FISHERIES

Inshore Fisheries Summary	Fishing remains an important activity at a subsistence level for most communities within the Epi VCAP site. However, most fishing is conducted on subsistence levels and not for income generation and local complained that inshore fisheries are steadily depleting.
Offshore Fishing <i>(Trolling or deep sea fishing)</i>	No reported regular offshore fishing activities with the Epi VCAP site.
Inshore Fishing Methods	Inshore fishing methods are not highly regulated within the Epi VCAP site. Nets, fishing lines and spear guns are used regularly by local fishermen.
Fisheries Exports / Sales	<p>A very small amount of fish is exported from Burumba, where fishermen sell by the kilo at the local cooperative and typically sales are made locally. There are fishermen in Malvasi and Ponkoviio that report occasional sales for their catch as well.</p> <p>Inshore fisheries reportedly does not contribute to income generation at all in Ruwo, Yopuna and Mabfilau communities.</p>
Preservation	There are 2 ice-boxes used on a regular basis in Burumba Village for fish preservation and 2 ice-boxes are used infrequently used for fish preservation in Malvasi Village.
Fish Aggregating Devices (F.A.D.'s)	There has never been a F.A.D. located within or near the Epi VCAP site according to local communities.
Resource Monitors	There are "resource monitors", recognized by the Fisheries Department as having the authority to enforce fishing regulations and standards, located in Ponkoviio, Mabfilau, Ruwo and Yopuna. These "resource monitors" have received training in marine resource management from Fisheries and the NGO called Wan Smol Bag.
Coral Reef	Almost every community consulted reported that the coral reef located within their coastal area was in very poor condition. Large areas of dying or bleached reef have been reported. The presence of COT's and sedimentation is believed to contribute to the poor condition of the coral reef here.
Crown of Thorns Starfish (COT's)	Locals reported a large number of crown of thorns starfish on local coral reefs. There have been no removal initiatives to date here.
Ciguatera	Community members reported that there is a moderate to high level of concern regarding ciguatera poisoning and consumption of local fish- especially in Burumba and Mabfilau.
Sea Cucumber	There are some sea cucumber in coastal areas; they are not sold or processed.
Traditional Conservation Methods	<p>A number of customary or "tabu" marine managed areas have been established by communities along the coast. These are managed through traditional management systems with decisions made by chiefly councils, customary landowners or selected representatives. There is a range of management systems in place for these sites, often allowing a fishery to recover its harvestable populations.</p> <p>Due to land disputes between certain communities or households, often traditional conservation methods are not respected by community members on Epi when there is disagreement over identifying the person who has the authority to establish conservation efforts in certain coastal areas.</p>
Marine Protected Areas (MPA's)	There are no Marine Protected Areas located within the Epi VCAP site.

6.2

ENVIRONMENT - COASTAL RESOURCES

Marine Pollution	There is a limited amount of reported marine pollution located within the area that includes some household waste, discarded batteries from under-water flashlights used for fishing at night and sediment deposits caused by upland erosion.
Coastal Erosion	<p>The collapsed bridge near Yervali school is located along the coastline and is currently causing significant erosion issues as the collapsed building materials are obstructing the natural flow of the river. During storm surge events or heavy rains, this obstruction is reportedly digging along both ends of the collapsed bridge crossing. While community members and provincial authorities report a desire to have the collapsed bridge removed or cleared enough to allow for drainage of the river. The current obstruction by the collapsed bridge near Yervali School not only causes coastal erosion but has also created a large pool of stagnant water in close proximity to school, which locals fear may impact the health of the nearby students.</p> <p>Coastal erosion threatens the community hall in Burumba, along with some school buildings (specifically pre-school and teacher's housing only). In Malvasi, a sea wall built decades ago maintains the integrity of a small but vital section of road threatened by coastal erosion.</p>
Sedimentation	Common agricultural practices such as slash and burn farming combined with livestock grazing on slopes produces high amounts of sediment. Villagers reported extreme levels of sedimentation in places like Malvasi and all communities reported that there was a steady decline in coastal resources. Sedimentation related to agricultural and livestock activities is believed to be causing enormous damage to coastal resources and the coral reef eco-system of Epi.
Dugongs	Community members report that there are dugongs that inhabit coastal waters within the Epi VCAP site. Ponkovio community reported sightings of at least 3 dugongs, Ruwo / Yopuna & Malvasi reported seeing at least 2 dugongs and the communities of Mabfilau & Burumba reported confirmed sightings of 1 dugong only.
Sea Turtles	Communities within the Epi VCAP site estimated that around 88 sea turtles are harvested for consumption each year. <i>(In Ponkovio, the community estimated that annually they consume over 60+ turtles, which by comparison seems like an unusually large quantity. Burumba community estimated 10+ turtles per year, Mabfilau estimated 8 turtles per year, Ruwo / Yopuna and Malvasi both estimated 5 turtles per year .)</i>
Mangrove Ecosystems	There no reported mangrove ecosystems along the coast of the Epi VCAP site.
Sand Mining	Sand-mining was reported in all communities with the Epi VCAP site. However, most communities <i>(with the exception of Ruwo / Yopuna)</i> reported that small scale sand-mining activities were not resulting in noticeable effects such as increased coastal erosion). Ruwo / Yopuna reported sand-mining has created erosion problems.

6.3 COASTAL RESOURCE INVENTORY

*While resources differ by community- results indicated below are inclusive of results from every community in Epi VCAP Site.

	None Available	Some Available	Plentiful
Reef Fish			
Bottom-Fish			
Sea Cucumber			

	None Available	Some Available	Plentiful
Trocha shellfish			
Lobster			

7. NATURAL DISASTER & CLIMATE CHANGE - EPI VCAP SITE

7.1

NATURAL DISASTER

Tsunami / Storm Surge / Cyclone	All communities within the Epi VCAP Site consider themselves very vulnerable to tsunamis, storm surge and cyclones. As every community in this area contains households located along the immediate coastline, these coastal disasters were reportedly a concern for villagers.
Volcanic Activity	There is no active volcanic activity affecting the population in this area. Lopevi is the closest active volcano but it is located on a small island off the north east coast of Epi.
Flooding	Flooding of homes and gardens is reportedly a very big problem in the area, particularly for Malvasi village, where households and community buildings such as the nakamal and Aid Post regularly experience flood events. Mabfilau community also reported cases of flash-flooding where water entered into homes and buildings within the community.
Erosion to Infrastructure	Upland erosion is a particular problem affecting the local coastline – affecting infrastructure near Burumba, Malvasi and Yervali School.
Landslides	There are no reported landslides that have affected people or resources in the area.
Drought	Current drought conditions caused by El Niño weather patterns have major impact of community food and water security levels.
Recent Disasters of Note	Cyclone Pam severely impacted this area in regards to food security in March of 2105. Most buildings and infrastructure were not damaged here as they were in south Epi, however local gardens were severely damaged.
Community Disaster Committees (CDC's)	Recently formed CDC's were established after Cyclone Pam struck the island in March of 2015 and they have been involved in relief distribution. No further training or awareness activities have taken place yet with community CDC's.
Disaster Plan	Communities have no formalized disaster plans on Epi and often are slow to prepare for impending disasters such as cyclones.

7.2

DISASTER WARNING

Radio	Some communities report that households with radios often relay warnings issued by Radio Vanuatu throughout the area.
CDC's	Most communities reported that CDC's were not established before Cyclone Pam and have not played a role in providing disaster warnings yet.
TVL / Digicel SMS Warnings	Locals report that before Cyclone Pam in March of 2015, warnings issued by SMS played a large part in preparing the local population for the impending cyclone.
Family or friends from Port Vila	Family and friends calling by mobile phones of an impending disaster such as a cyclone are reportedly a primary way that villagers first receive warning on Epi.
Traditional Knowledge	Traditional knowledge is no longer relied upon to predict disasters or issue warnings.
No Warning	All villagers within the area report that typically they receive some advanced warning before a disaster strikes.

7.3

DISASTER SHELTER

Status of Disaster Shelter by Community	There are no dedicated disaster shelters within the area and typically villagers take shelter in their homes, church buildings and classrooms. There is typically no safe structures located at higher elevations in the event of tsunami warnings.
Additional Community Buildings Used as Shelter	In Burumba, some community members report taking shelter in copra driers during tsunami warnings. Malvasi reported using churches, a youth hall & private homes as for shelter Ponkovio reported using the primary school & church for shelter. Some in Mabfilau use their school as a shelter but in Ruwo / Yopuna they are afraid to use the local school as a shelter due to its proximity to the river, which may flood.
Typical Building Materials Used / Condition - Housing	Houses on Epi consist mainly of semi-permanent buildings constructed with local timber, cement and copper roofing. Some houses utilize thatch palm leaves for roofing.

7.4

CLIMATE CHANGE

Sea Level Rise Observed?	Yes sea level rise has been observed.
Sea Level Rise Affecting Infrastructure?	Yes in a few locations such as Burumba where a teacher's house, the community hall and the local pre-school are considered as risk due to the rising sea level and also near Malvasi where a sea wall needs strengthening to protect the local accessway.
Water Security - Impacted by Climatic Effects?	Yes, extreme impact on water security due to impact from climatic effects, especially in communities such as Ponkovio, Malvasi and Ruwo / Yopuna.
Food Security - Impacted by Climatic Effects?	Yes, food security severely threatened by increased likelihood for severe disasters and extreme weather events, increased temperatures and seasonal fluctuations.

7.5 OBSERVED CLIMATIC CHANGES BY COMMUNITY (OVER LAST 20+ YEARS)

**While observations differ slightly by community, the results indicated below are inclusive of results from every community in Epi VCAP Site.*

	Yes	No
Increased Rainfall (total amount per year)?		
Increased Occurrence of Drought?		
Increased Temperature?		
Seasonal Changes? (timing of rainy / dry season)		
Bleaching of Coral Reef?		
Salt water intrusion of drinking water?		

8.COMMUNITY SELF-IDENTIFIED PRIORITIES FOR DEVELOPMENT - EPI VCAP SITE

*At the conclusion of each Vulnerability Assessment, communities were asked to divide into focus groups and identify two leading priorities for development for their entire community, not necessarily for the membership of their focus group alone. This activity allowed for group discussion of vulnerabilities and for the prioritization of needs. Communities were encouraged to identify actions that could be taken themselves instead of being wholly dependent on external donors.

8.1	No of Participants	MABFILAU
Women's Focus Group	11	1) <u>Improve footpath</u> - leading from village to the gardens and river crossing so population, including vulnerable people, have safe access to services 2) <u>Improve health services</u> - Improve health training for health worker, resources available & promote construction of improved toilets
Men's Focus Group	10	1) <u>Food security & Income Generation</u> - support initiative to improve agriculture and plant more root crops for economic and food security 2) <u>Clean Water</u> - Improve access of households to clean drinking water
Youth Focus Group	5	1) <u>Construct a Youth Office</u> - construction of a youth office to encourage local youths to stay organized and active 2) <u>Fisheries conservation</u> - Community needs support to organize improved conservation methods for coastal resources

8.2	No of Participants	BURUMBA
Women's Focus Group	12	1) <u>Improve Income Generation</u> - Initiatives needed to improve peanut production, kava production to increase generation of household income, fisheries 2) <u>Food Security</u> - maintain livestock fencing so animal do not spoil gardens, install FAD's, community nurseries
Men's Focus Group	20	1) <u>Erosion control</u> - start forestry initiative to control erosion issues affecting community 2) <u>Improve water security access</u> - improve water security and access to water for households in Rovoliu
Youth Focus Group	7	1) <u>Marine Conservation</u> - establishment of protected areas to maintain coastal resources 2) <u>Improved food security</u> - creation of agriculture nurseries and training for communities to improve agricultural productivity

8.3	No of Participants	PONKOVIO
Women's Focus Group	35	1) <u>Improved Access to Health Services</u> - creation of a health dispensary in the village for community members to have improved access to services 2) <u>Water Security</u> - installation of a gravity feed water system in the village
Men's Focus Group	41	1) <u>Improve Roadway</u> - improve community access to services by improving roadway, installing bridges as river crossings, etc 2) <u>Water Security</u> - installation of a gravity feed water system in the village
Youth Focus Group	30	1) <u>Construct a Youth Office</u> - construction of a youth office to encourage local youths to stay organized and active 2) <u>Fisheries support</u> - Community needs support to organize improved conservation methods for coastal resources, installation of FAD's

8.4		No of Participants	RUWO / YOPUNA
Women's Focus Group	15	<ol style="list-style-type: none"> 1) <u>Construct dining hall</u> - construct a dining hall that can be utilized by community churches 2) <u>Establish a small community market</u> - Start initiative to establish community market where local mothers can sell cooked meals or agricultural produce 	
Men's Focus Group	13	<ol style="list-style-type: none"> 1) <u>Reforestation</u> - curb soil erosion, create forestry nursery and possibly establish upland conservation areas 2) <u>Coastal resources</u> - support to organize improved conservation methods for coastal resources, installation of FAD's to alleviate pressures on inshore fisheries 	
Youth Focus Group	15	<ol style="list-style-type: none"> 1) <u>Construct a Youth Office</u> - construction of a youth office to encourage local youths to stay organized and active 2) <u>Income Generation - Community Guest House—</u> Construction of a community guest house where revenue collected could benefit youth committee 	

8.5		No of Participants	MALVASI
Women's Focus Group	15	<ol style="list-style-type: none"> 1) <u>Health Access</u> - - improve community access to services by improving roadway, installing bridges as river crossings, etc 2) <u>Market Initiative</u> - assist local women with training and resources to enable improved organization of local market committee 	
Men's Focus Group	13	<ol style="list-style-type: none"> 1) <u>Water Security</u> - improve access to water by improving gravity feed supply system, ground well sources and providing additional rain catchment as needed 2) <u>Forestry</u> - curb erosion by encouraging forestry initiatives, nursery, training 	
Youth Focus Group	4	<ol style="list-style-type: none"> 1) <u>Renewable Energy</u> - solar energy system or other renewable energy source needed to supply power for youth to engage in activities in the evenings 2) <u>Capacity Building for Youth</u> - Youth desire any training opportunities that can increase their skills and knowledge 	