

# **Vanuatu Community-based Climate Resilience Project (VCCRP)**

## **Annex 23: Vulnerability Assessment & Project Targeting**

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### 1.1. Determining Community Vulnerability to Climate Change

Vanuatu has the highest disaster risk score of 49.74 in the world disaster risk index, indicating it is the most highly exposed nation to natural hazard driven disasters (World Risk Report 2020). The population of Vanuatu (272,459 people, 2016) is concentrated in the coastal zone and are therefore highly exposed to climate extremes and change. Subsistence agriculture and fisheries are particularly exposed to both land-based and marine events. Therefore, the agriculture and fisheries sectors in coastal areas, which provide food for approximately 80% of rural communities, will be particularly vulnerable to climate change.

Climate vulnerability is a function of exposure to climate variability and hazards, sensitivity to that variability and those hazards, and the adaptive capacity of habitats, ecosystems, populations and/or social structures. Vanuatu communities will be affected differently by similar hazards depending on the specific location and characteristics of each community (their exposure). Sensitivity is determined by the physical, social, economic and cultural characteristics of an ecosystem or community and their responses to change. Adaptive capacity refers to the ability of an ecosystem or community to anticipate and manage the impacts of climate change and continue to have positive outcomes under the new realities.

In addition to Vanuatu's biophysical characteristics, socio-economic conditions such as low-income, social stratification and marginalization, and reliance on subsistence agriculture and fisheries for food security and livelihoods increase sensitivity and limit people's adaptive capacity, contributing to the country's climate vulnerability. Community and household structures and cultural practices can result in higher vulnerability among some groups – particularly women, children, people living with a disability or less-abled. These groups, and people under-represented in decision-making, suffer an adaptation deficit. That is, high levels of *exposure* to frequent *hazards* and insecure access to essential goods and services (e.g. food, water, healthcare) that undermines *adaptive capacity* and thus increases *vulnerability* (i.e. reducing *resilience*).

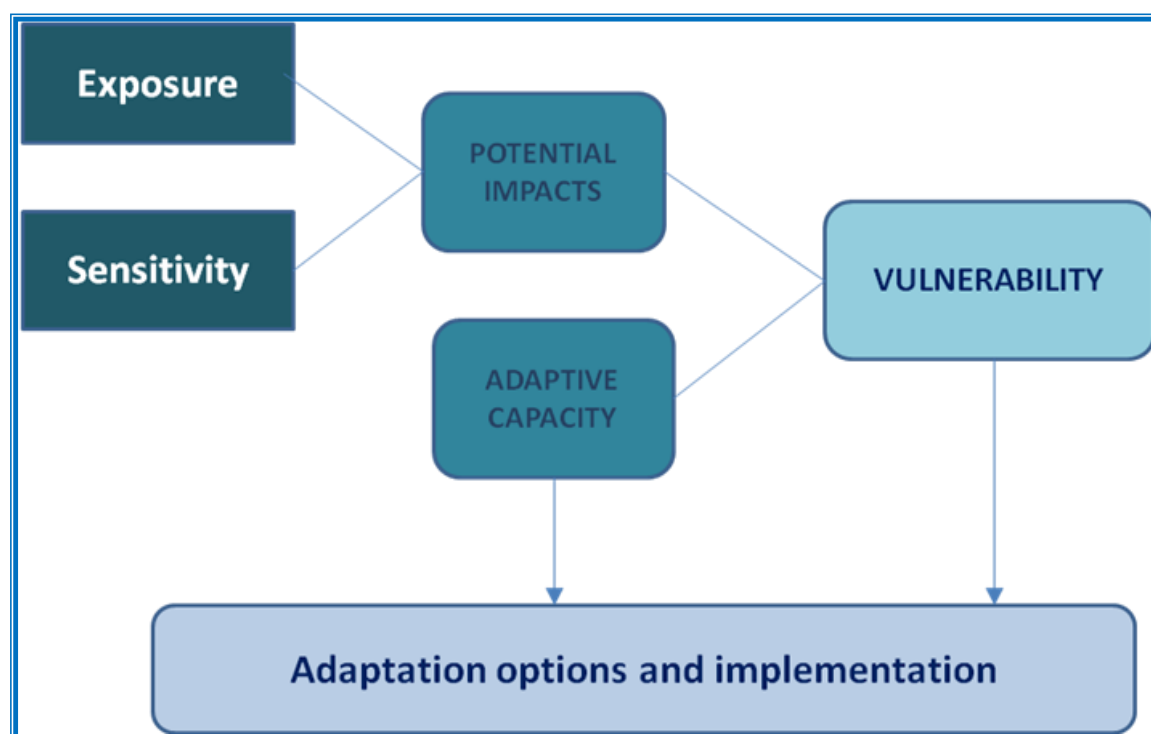
The vulnerability of local communities is reflected in their experience recovering from Tropical Cyclone (TC) Pam and TC Harold, two category 5 cyclones that devastated Vanuatu in 2015 and 2020, respectively. The National Disaster Management Office (NDMO) estimates it will take years for the most affected communities to fully recover, if no other major setbacks occur. As noted, climate change projections for Vanuatu show a trend towards increasing frequency of extreme rainfall events, more intense tropical storms and cyclones, continuing sea level rise and ocean acidification, and increases in the intensity and duration of heatwaves. The likelihood that communities significantly affected by TC Pam and TC Harold will not experience another major disaster event in the next five-years is diminishing, meaning recovery time is reduced. A notable example are those communities on the islands of Pentecost and Ambrym severely impacted by both TC Pam and TC Harold. This effectively means some communities may never fully recover from these or future events without additional support. If not addressed, these impacts will erode development gains, entrench the cycle of climate vulnerability, and place more lives and livelihoods at risk.

The project has the aspiration to target these vulnerable rural communities in Vanuatu to address their climate vulnerabilities and build resilience, at the spatial scale of Area Councils. The goal is to directly reach at least 90,000 people (ca. 45% of the rural population) and through government upscaling, indirectly reach 110,000 people (54% of the rural population). However, Vanuatu's communities and villages occur in 71 Area Councils

(and municipalities) across many islands representing a range of biophysical and socio-economic conditions. Therefore, it is critical that a robust, transparent and objective process is used to select target beneficiary communities for the project. Such an approach needs to use the best available existing data in a consistent framework that removes or at least minimises bias in the selection process, thereby making decisions about beneficiary communities as defensible as possible.

## 1.2. Assessment framework

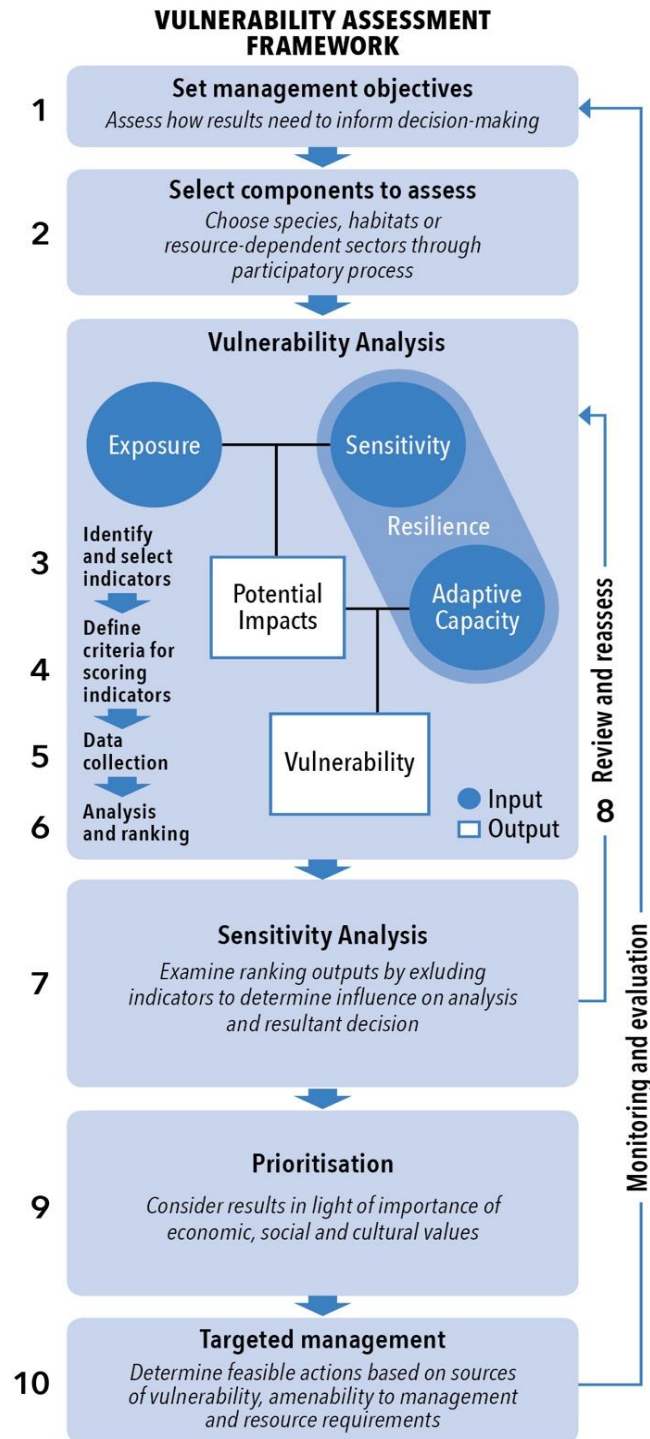
In order to select beneficiary communities, the design phase applied a semi-quantitative method, partially validated through community consultations, to assess all Area Councils in Vanuatu and rank their vulnerability to climate change. The method applied the IPCC structured framework that includes the elements of Exposure, Sensitivity and Adaptive Capacity, utilised by the IPCC and United Nations Framework Convention on Climate Change (UNFCCC) (adapted from Schneider et al. 2007; Figure 1).



**Figure 1.** Vulnerability assessment framework adopted by the Intergovernmental Panel for Climate Change (adapted from Schneider et al. 2007).

The components of the analysis and semi-quantitative approach are consistent with other vulnerability assessments applied in the broader region (e.g. Great Barrier Reef, Johnson and Marshall 2007; tropical Pacific island region, Bell et al. 2011, Thiault et al. 2021; Torres Strait islands, Johnson and Welch 2016; Solomon Islands, Basel et al. 2020; Arafura and Timor Seas, Johnson et al. 2021). The method uses a series of steps to apply a structured approach for determining the potential impacts of climate change on communities in Area Councils, their relative level of vulnerability and drivers of vulnerability (Figure 2). While the full method has 10 steps, a sub-set can be selected and customised to suit the local context and objectives of the assessment. Importantly, the process is transparent and objective, and

delivers clear results that can identify the most vulnerable components, sources of vulnerability, targets for management action as well as key information gaps.



**Figure 2.** The 10-steps for applying the semi-quantitative vulnerability assessment method (Source; Johnson et al. 2016).

### 1.3. Assessment method

Using available data and local knowledge, the assessment used indicators for hazard (climate and non-climate threats), exposure (shoreline geomorphology, topography/elevation), sensitivity (population density and growth, dependence on fishing for food,

dependence of crops for food, dependence on natural resources for income, condition of habitats, remoteness/accessibility) and adaptive capacity (access to services, education levels, health index) (steps 3–6).

The *hazard* and *exposure* indicators included those climate and non-climate threats that communities are likely to experience, based on historic exposure and future projections for Vanuatu. *Sensitivity* indicators were based on known factors that contribute to negative responses of social-ecological systems to changes in climate (e.g. resource demand – using population density and growth as proxy; Gombos et al. 2013, Basel et al. 2020), resource dependence for food and/or livelihoods (Wongbusarakum and Loper 2011), and resource condition. Sensitivity is largely determined by the relationship of individuals, households or a community to resources impacted by climate events, and by the degree of dependency on those resources (Wongbusarakum and Loper 2011). Indicators for *adaptive capacity* were based on characteristics (or traits) of communities that help them adjust to impacts or support recovery, ultimately conferring resilience (e.g. governance, education and health; see Wongbusarakum and Loper 2011, Gombos et al. 2013, Johnson et al. 2016).

Notably, many indicators of vulnerability are socio-ecological factors that influence the sensitivity of communities to climate change and their capacity to adapt to future risks and change. Scores were determined for each indicator using a 3-point scale based on specific criteria, and the data were reviewed by specialists who assigned scores for each indicator. The full list of indicators and criteria used to score the indicators are provided in Table 1. All indicators were given equal weighting, since interactions among the different assessment elements and the relative importance of different indicators are not well understood (Allison et al. 2009). Where it can be empirically demonstrated that indicators should be differentially weighted, such a system can be incorporated.

A vulnerability metric was used to quantify results so that components are systematically ranked based on their relative vulnerability at a national level to climate change. The analysis followed the method outlined in Johnson et al. (2016) to calculate a vulnerability index using the metric:

$$V=(ExSx[1-AC\ standardised])+1$$

where:

*V* = vulnerability

*E* = exposure index

*S* = sensitivity index

*AC* = adaptive capacity index

#### 1.4. Assessment data

The national vulnerability assessment drew on available published data, government statistics and local knowledge (see Table 1 for the datasets used). Some proposed indicators were removed due to lack of data, for example, ‘existing community level projects targeting climate change’. Importantly, because it is a relative assessment, the data used were consistently sourced and applied across the 71 Area Councils for each indicator.

Stakeholder consultation with communities and government during the Validation Workshop also provided data for the assessment process (see Appendix C of Annex 7b).

**Table 1.** Vulnerability indicators and criteria used for Vanuatu Area Council assessment.

Vanuatu community-based climate resilience site selection criteria: Area Councils					Data type	Data source
	Indicators	SCORING CRITERIA				
		Low = 1	Medium = 2	High = 3		
Exposure	Historic major climate hazards	0/year	1/year	2 or more annually	TC, severe storms, drought, floods, heatwaves (land or marine), storm surge/coastal inundation	Major hazards/ disaster record for past 20 years
	Non-climate major hazards	0/year	1/year	2 or more annually	Volcanic eruptions, earthquakes, saltwater intrusion in groundwater	Major hazards/ disaster record for past 20 years
	Shoreline geomorphology	steep or rocky	low-lying and mangrove/tree dominated	low-lying beach, limited vegetation	shoreline topography influences exposure to hazards	Topographic maps, satellite imagery
	Topography/elevation	inland or upland, far from rivers, extreme slopes	moderate elevation, no steep slopes, >5km to rivers	low-lying, near coast or rivers, steep slopes	topography/elevation to risks from flooding and erosion/ landslides (7 sub-indicators)	Topographic maps, satellite imagery ( <i>Google Earth</i> )
Sensitivity	Population density	<10	10 to 20	> 20	people/km <sup>2</sup> (increasing for Vanuatu since 1950 from 3.7 to 21.45 in 2015) World Population Data	Vanuatu mini-census 2016
	Population growth	<2%	2-3%	> 3%	% increase (or decrease) between 2009 and 2016 census (average for Vanuatu since 1950 1.78% in 1998 to 3.18% in 1973; currently 2.37% in 2020) World Population Data - global range -1.28 to +3.76	Change between Vanuatu census 2009 and mini-census 2016
	Dependence on fishing for food (% households' fish for subsistence)	<40%	40-60%	>60%	% households involved in fishing (marine or freshwater) for subsistence; national average 60%	Vanuatu mini-census 2016; Household income surveys
	Growing crops for own consumption	<40%	40-60%	>60%	% working-age people in household production for own consumption (crops)	Vanuatu mini-census 2016; Household income surveys
	Reported sale of fish/crops/handicrafts as main income source (% households)	<50%	50-75%	>75%	% household income that comes from sale of crops, copra, fish, shellfish, beche de mer, garden crops and handicrafts	Vanuatu mini-census 2016; Household income surveys
	Current primary water source (% HH using unprotected source)	<7.5%	7.5 to 15%	>15%	% HH primary drinking water source insecure, e.g. unprotected well, spring, river, creek, lake (national average 12%)	Vanuatu mini-census 2016; Household income surveys



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	<b>Condition of vegetation (e.g. mangroves, upland forests, coastal mosaic)</b>  <b>Remoteness/accessibility</b>	75-100% natural vegetation intact  peri-urban with good road/boat access; good communications	25-75% natural vegetation cover  remote with good road access; unreliable communications	Cleared landscape with <25% vegetation cover  remote and no/poor road; limited or poor communications	Cover of coastal vegetation and intact habitats; land-use change/clearing over last 10 years  Location, condition of roads/bridges, distance from nearest Provincial capital	Satellite imagery ( <i>Google Earth</i> )  Area Council maps, local knowledge
		<b>Low = 1</b>	<b>Medium = 2</b>	<b>High = 3</b>		
<b>Adaptive capacity</b>	<b>Service delivery - Sub-national support capacity (e.g. Provincial staff, extension officers)</b>	few staff and visits	moderate staff numbers; regular visits	adequate staff; regular and routine visits	Number of visits by extension officers/sub-national officer, staffing numbers	Local knowledge
	<b>Service delivery and facilities (# health facilities, dispensary, schools, Provincial office)</b>	none or limited (<=1 facilities in AC or adjacent AC)	some services for health, education or infrastructure available but not all services (2 facilities)	adequate health, education and infrastructure services (>2 facilities)	Functioning of Area Councils in terms of # available services and facilities	Area Council data; National socio-economic data
	<b>Education (literacy rate)</b>	<75%	75 to 85% (national average)	>85%	Literacy rate - % adults 15+ literate in Bislama (national=82% Bislama, 67% English, 37% French)	National socio-economic data
	<b>Education (primary school education)</b>	<50%	50-60%	>60%	Education level (INDEX=average % adults with primary education + % students enrolled in primary school)	National socio-economic data
	<b>Health proxy (access to gov Health facility)</b>	0 (in AC)	<1.0	>1.0	# Health facilities/1,000 people	National socio-economic data
	<b>Health &amp; equity (disability)</b>	>20%	10-20%	<10%	% adults report a disability	National socio-economic data
	<b>Households below NPL (%)</b>	>15%	7.5% to 15%	<7.5%	Headcount ratio (%); Vanuatu national head count poverty ratio 12.7%	National socio-economic data

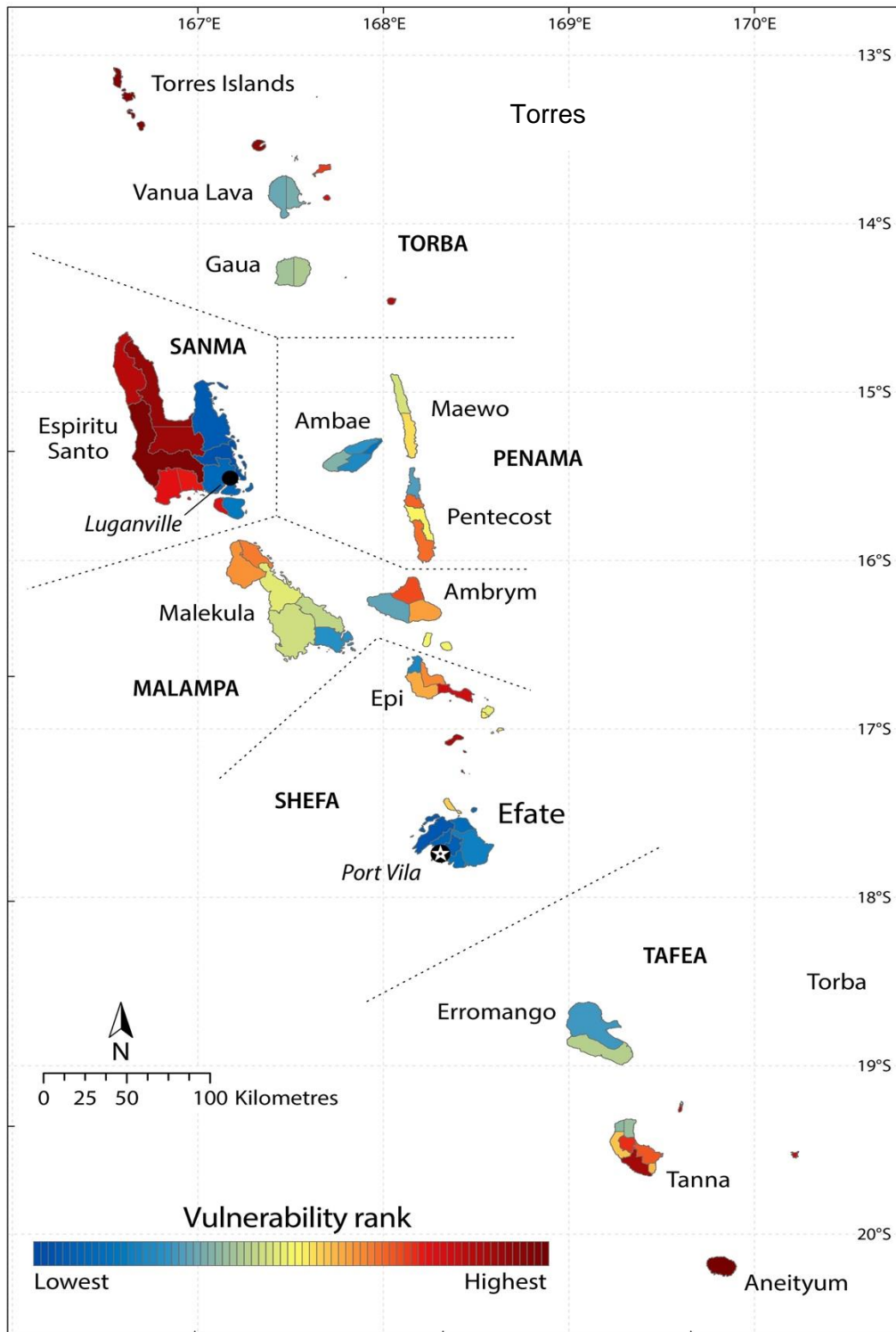
The results provided a relative ranking of all Area Councils in Vanuatu from highest to lowest vulnerability to climate change (see results in Table 2), and enable the project to strategically target beneficiaries (i.e. those that are most vulnerable and marginalised) in a transparent and defensible manner. Detailed scoring and results are provided in Appendix A. The results also identified the main drivers (or sources) of vulnerability, which were used to identify a suite of adaptation actions that specifically address the main sources of vulnerability and provide a 'menu' or package of adaptations for implementation (see Section 5 of Feasibility Report). During project implementation, suitable adaptation actions will be selected from this 'menu' (adaptation package) by communities and implemented in partnership with beneficiary communities to minimise vulnerability and build resilience to climate change.

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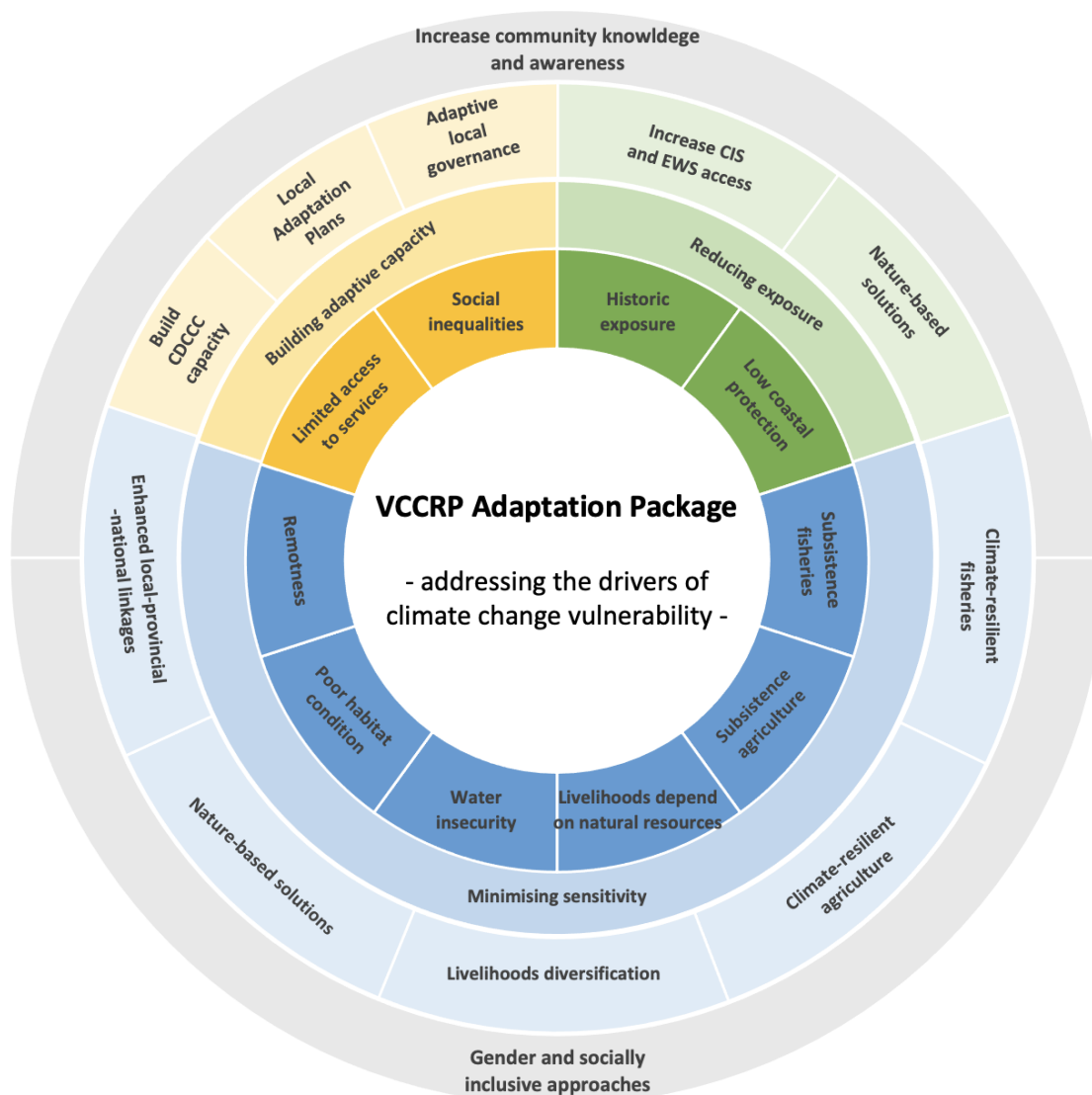
**Table 2.** Relative ranking of vulnerability of Area Councils in Vanuatu to climate change, and identification of drivers (sources) of vulnerability for each Area Council.

National Ranking	AREA COUNCIL	Historic exposure to climate hazards	Exposed shoreline /limited coastal protection	High population density and/or growth	High dependence on coastal fisheries for food	High dependence on crops for food	High dependence on natural resources for income	Unprotected drinking water source	Poor habitat condition*	Remoteness / isolated	Limited access to services	Below national average literacy / education level	Compromised health index / health facilities	Households below NPL (low income)
		Exposure	Sensitivity								Adaptive Capacity			
1	Aneityum													
2	West Santo													
3	Torres													
4	Makira/Mataso													
5	Ureparapara													
6	Big Bay Coastal Santo (nee North Santo)													
7	Big Bay Inland (nee North Santo)													
8	South West Tanna													
9	Emae													
10	Merelava (incl. Mérig)													
11	North West Santo													
12	Aniwa													
13	Futuna													
14	Yarsu (nee South Epi)													
15	Mota													
16	West Malo													
17	South Santo 1													
18	South Santo 2													
19	Central Tanna (nee Middle Bush)													
20	Motalava (incl. Rah, Reef)													
21	North Ambrym													
22	East Tanna (nee Whitesands)													
23	Central Pentecost 1													
24	South Pentecost													
25	North East Malekula													
26	Varsu													
27	North West Malekula													
28	South East Ambrym													
29	Vermaul													
30	South Tanna													
31	West Tanna													
32	Nguna/Pele													
33	South Maewo													
34	Tongariki/Buninga													
35	Central Pentecost 2													
36	Paama													
37	Tongoa													
38	Central Malekula													
39	North Maewo													
40	South West Malekula													
41	South East Malekula													
42	South Erromango													
43	East Gaua													
44	West Gaua													
45	North East Tanna													
46	North Tanna													
47	West Ambae													
48	East Vanua Lava													
49	West Vanua Lava													
50	West Ambrym													
51	North Pentecost													
52	North Erromango													
53	North Ambae													
54	South Malekula													
55	South Ambae													
56	Vermali													
57	Ifira													
58	East Efate (nee Eton)													
59	East Malo/Malokilikili													
60	East Ambae													
61	Eratap													
62	North Efate													
63	Canal - Fanafo													
64	Emau													
65	Mele													
66	Erakor													
67	East Santo													
68	North West Efate (nee Malorua)													
69	South East Santo													
70	Tanvasoko													
71	Pango													

The results are spatially variable and show both high and low Area Councils exist in each Province and sometimes on the same island (Figure 3), demonstrating the influence of local conditions (biophysical and socio-economic) and the need to tailor adaptation actions to local conditions. The adaptation package will provide a menu of actions to address these vulnerabilities (Figure 4).



**Figure 3.** Map of the relative ranked vulnerability of all Area Councils to climate change nationally, with dark red (1) being highest vulnerability and dark blue (71) being lowest vulnerability.



**Figure 4.** Proposed VCCRP adaptation package showing relationship between the drivers of vulnerability and local actions.

## 1.5. Targeting beneficiaries

### Direct Beneficiaries

The national vulnerability assessment provides an objective and transparent basis for identifying vulnerable Area Councils and therefore potential project beneficiaries. Relative vulnerability however is not the only consideration, and other factors are also relevant when selecting beneficiaries. Through further stakeholder consultation, additional information was collected on each Area Council to inform selection of direct beneficiaries for the project.

The results of the national vulnerability assessment formed the basis for engaging with national and sub-national government to incorporate data on existing projects and government priorities, to inform selection of Area Councils that will be targeted for VCCRP project activities. The selection of target beneficiaries considered:

- Current enabling activities (i.e. whether there are existing or emerging community-based projects) in each Area Council;
- Recent or current projects that may duplicate effort in each Area Council;
- Alignment with government/policy priorities (i.e. how potential VCCRP activities align with government priorities); and
- Affordability (based on accessibility) of working in each Area Council.

These three criteria were considered as a filter to review the ranked Area Councils from highest vulnerability to lowest to select the Area Councils for the project to target (Table 3).

**Table 3.** Target Area Councils selected; grey rows indicate those Area Councils not being targeted due to specific factors

Vulnerability Ranking	Area Council	Rationale
1	Aneityum	
2	West Santo	VCAP 2 project VCAP1, VCAP2 projects, Van-KIRAP agri-met site
3	Torres	
4	Makira/Mataso	
5	Ureparapara	
6	Big Bay coastal (nee North Santo)	
7	Big Bay Inland (nee North Santo)	VCAP2 project
8	South West Tanna	
9	Emae	
10	Merelava (incl. Mérig)	High cost to population ratio
11	North West Santo	
12	Aniwa	VCAP1, Pathways projects VCAP2, Pathways projects VCAP2 project VCAP2 project
13	Futuna	
14	Yarsu (nee South Epi)	
15	Mota	
16	West Malo	
17	South Santo 1	
18	South Santo 2	VCAP1 project
19	Central Tanna (nee Middle Bush)	
20	Motalava (incl. Rah Reef)	
21	North Ambrym	
22	East Tanna (nee Whitesands)	PEBACC1, PEBACC2 projects
23	Central Pentecost 1	
24	South Pentecost	
25	North East Malekula	
26	Varsu	
27	North West Malekula	
28	South East Ambrym	

29	Vermaul	
30	South Tanna	VCAP2, FAO-GEF6, Pathways projects
31	West Tanna	
32	Nguna/Pele	
33	South Maewo	VCAP2 project
34	Tongariki/Buninga	
35	Central Pentecost 2	
36	Paama	
37	Tongoa	FAO-GEF6 project
38	Central Malekula	
39	North Maewo	
40	South West Malekula	
41	South East Malekula	
42	South Erromango	Van-KIRAP agri-met site
43	East Gaua	Pathways project
44	West Gaua	

Based on this process, 90,157 direct beneficiaries will be reached (ca. 33% of the total population) and through scaling-up driven by sub-national governance, 110,000 indirect beneficiaries (ca. 40% of the total population) will be reached. This reflects the goal of the project to build climate resilience in the most vulnerable rural communities (Table 4). All members of targeted communities are considered direct beneficiaries because the scale of activities will increase the climate resilience of all women, men, girls and boys in each targeted community. The beneficiary selection process is outlined in Figure 5.

**Table 4.** Target beneficiary numbers by Province and population and household numbers

Province	Area Councils (#)	Population	Communities (#)*	Households (#)
Tafea	4	21,534	51	3,868
Sanma	4	10,618	37	2,325
Torba	3	3,361	15	924
Shefa	6	7,912	35	2,035
Malampa	8	33,301	99	7,397
Penama	4	13,431	45	3,007
<b>TOTAL</b>	<b>29</b>	<b>90,157</b>	<b>282</b>	<b>19,556</b>

\*Community numbers are estimated from Vanuatu National Statistics Office data as they are not reported in the census. A range of very small villages have been combined with neighbouring villages to form communities for the purposes of effective project implementation and service delivery.

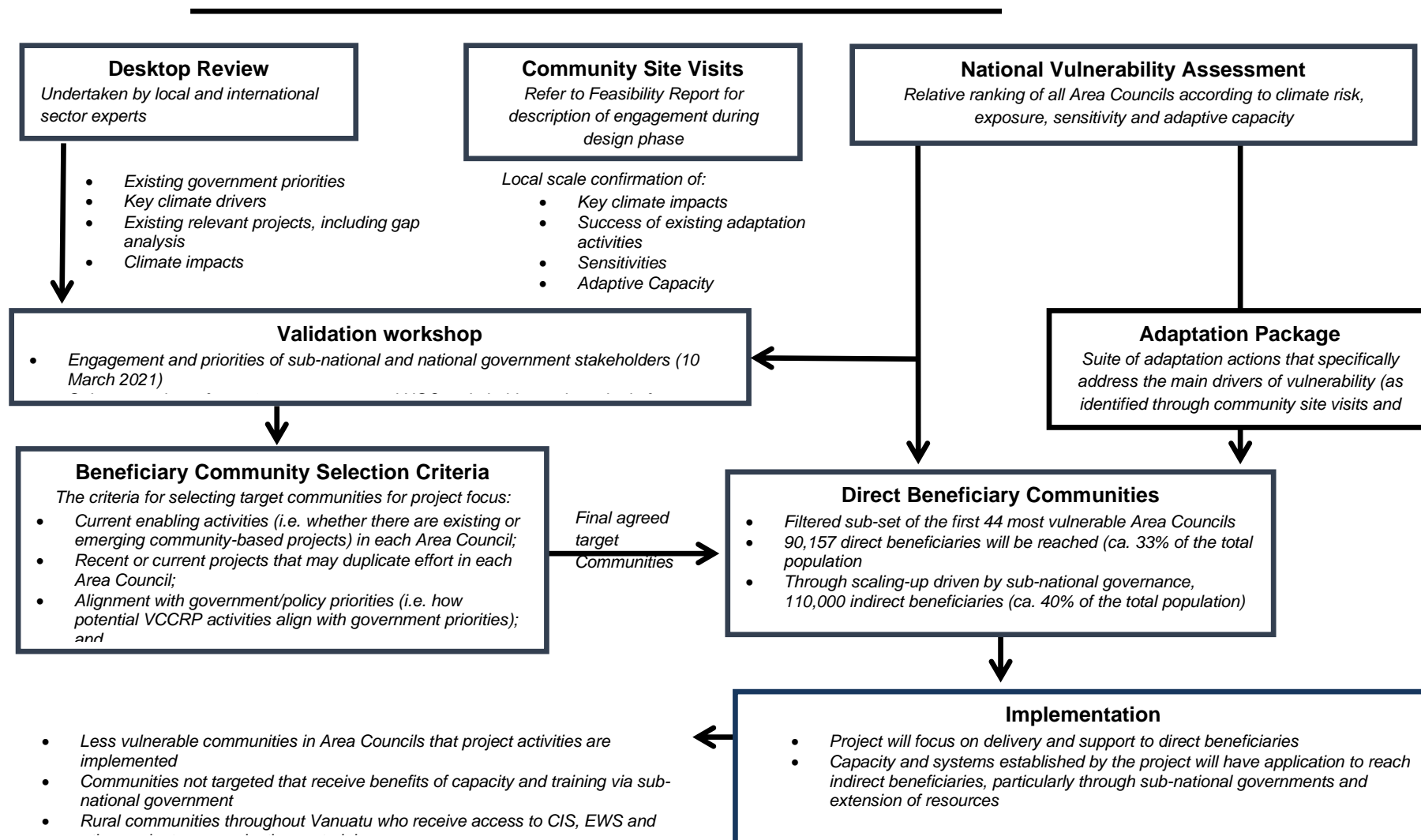
### Indirect Beneficiaries

While direct beneficiaries will be the primary focus of support to implement adaptations, the capacity building in sub-national and national government and the systems established will facilitate scaling-up of project adaptations and resources to many more indirect beneficiaries

(see Annex 2 Section 7.3). The indirect beneficiaries will be up to 110,000 people, living in Area Councils with lower relative vulnerability and peri-urban areas, who will be reached through up-scaling of adaptations by the Area Council and other government structures, and through delivery of CIS and DRR outreach.



**Figure 5.** Beneficiary (direct and indirect) selection process



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## APPENDIX A: NATIONAL VULNERABILITY ASSESSMENT RESULTS & ANALYSIS

National Ranking	AREA COUNCIL		Historic major climate hazards	Non-climate major hazards	Shoreline geomorphology	Topography/elevation	EINDEX	Population density	Population growth (% change between 2009 and 2016 census)	Dependence on fishing for food (% households fish for subsistence)	Growing crops for own consumption (% people in household production)	Reported sale of fish/crops/h and crafts as main income source (% households)	Main water source (% HH using unprotected well/river/stream)	Condition of vegetation (e.g. upland forests)	Remoteness / accessibility	SINDEX	PI Index (PI=E*SI)	Services INDEX	Literacy rate (% adults 15+ literate in Bislama)	Education level INDEX=adult s x current enrollments	Health proxy (access to gov HF)	Health (% adults reported a disability)	Households below NPL (%)	AC	AC Index=1- AC standardized	V=(PI*AC index)+1
		Hazards & Exposure (2020)					Sensitivity										Adaptive Capacity									
1	Aneityum		1	2	2	2.6	1.9	1	3	3	3	2	3	2	2.8	2.48	4.7	2	2	1	3	2	3	2.17	0.28	2.3063
2	West Santo		3	2	2	2.8	2.5	1	1	3	2	3	3	1	3	2.13	5.2	1.2	1	2	3	1	3	1.70	0.43	3.2560
3	Torres		3	1	3	2.8	2.5	1	1	3	3	2	3	2	3	2.25	5.5	1	2	3	3	1	2	2.00	0.33	2.8375
4	Makira/Mataso		2	1	2	2	1.8	3	3	3	3	3	1	2	3	2.63	4.6	1.35	3	3	1	1	2	1.89	0.37	2.6971
5	Ureparapara		2	1	2	2.2	1.8	2	1	3	3	3	3	1	3	2.38	4.3	1	1	3	3	2	1	1.83	0.39	2.6625
6	Big Bay Coastal Santo (nee North Santo)		2	2	2	2.2	2.1	1	2	2	3	3	3	2	3	2.38	4.9	1	1	3	2	2	3	2.00	0.33	2.6229
7	Big Bay Inland (nee North Santo)		2	2		2.8	2.3	1	2	1	3	3	3	1	3	2.13	4.8	1	1	3	2	2	3	2.00	0.33	2.6056
8	South West Tanna		2	1.5	2	2.2	1.9	3	3	1	3	3	1.8	2	1	2.23	4.3	2.4	1	1	3	3	1	1.90	0.37	2.5705
9	Emae		2.2	1	3	2.8	2.3	3	1	3	2	1.8	2	2	2.7	2.19	4.9	1.35	3	3	3	1	1	2.06	0.31	2.5449
10	Merelava (incl. Mérig)		1	1	2	2	1.5	3	1	3	3	3	1	1	3	2.25	3.4	1	1	3	2	2	1	1.67	0.44	2.5000
11	North West Santo		2	2	2	2.8	2.2	1	3	3	2	3	3	1	3	2.38	5.2	1.2	3	3	2	1	3	2.20	0.27	2.3933
12	Aniwa		1	1	2	2.2	1.6	3	3	3	3	3	1	2	2.2	2.28	3.5	2	1	1	3	2	2	1.83	0.39	2.3713
13	Futuna		2	2	1	2.2	1.8	3	3	3	3	3	1.5	3	3	2.81	5.1	1.2	2	3	3	2	2	2.20	0.27	2.3500
14	Yarsu (nee South Epi)		1	1.5	2	1.6	1.5	2	3	2	3	3	1	2	2.5	2.31	3.5	1.2	2	3	3	1.5	1.5	1.87	0.38	2.3323
15	Mota		1	1	2	1.8	1.5	3	1	1	3	1	1	2	3	1.88	2.7	1.2	1	3	2	1	1	1.53	0.49	2.3292
16	West Malo		2	2	3	2.2	2.3	3	1	1	3	2	2	2	2	2.00	4.6	1.9	2	3	1	2	3	2.15	0.28	2.3033
17	South Santo 1		3	2	3	2	2.5	2	1	2	3	2	3	2	2.2	2.15	5.4	1.8	1	3	3	2	3	2.30	0.23	2.2542
18	South Santo 2		3	2	3	2	2.5	2	1	2	3	2	3	2	2.2	2.15	5.4	1.8	1	3	3	2	3	2.30	0.23	2.2542
19	Central Tanna (nee Middle Bush)		1	2	2	1.4	1.6	3	3	1	3	2	3	2	2	2.38	3.8	2.1	1	2	2	3	2	2.02	0.33	2.2456
20	Motalava (incl. Rah, Reef)		2	1	2	2	1.8	3	1	2	3	3	1	2	2.2	2.15	3.8	1.2	2	3	3	2	1	2.03	0.32	2.2124
21	North Ambrym		3	2	2	2	2.3	2	1	1	3	3	1	2	1.8	1.85	4.2	1.85	2	3	2	1	3	2.14	0.29	2.1909
22	East Tanna (nee Whitesands)		2	2.75	2	2	2.2	3	1	2	3	2	3	2	2	2.25	4.9	1.9	1	2	2	2	2.5	1.90	0.24	2.1813
23	Central Pentecost 1		3	1	2	2.4	2.1	3	1	1	2	2	1	2	1.8	1.73	3.6	2.3	1	3	2	2	2	2.05	0.32	2.1471
24	South Pentecost		3	1.5	2	2.2	2.2	3	1	2	1	3	3	2	2.2	2.15	4.7	1.8	1	3	3	2	3	2.30	0.23	2.0911
25	North East Malekula		2	2	2	2.2	2.1	3	1	1	2	2	3	1	2	1.88	3.8	2	2	3	3	2	1	2.17	0.28	2.0677
26	Varsu		2	1.5	2	2	1.9	2	1	1.3	3	3	2	2	1.7	2.00	3.8	2	2	3	2	2	2	2.17	0.28	2.0417
27	North West Malekula		2	2	2	2	2.0	2	3	1	3	2	3	2	1.8	2.23	4.5	2.8	2	3	2	2	2	2.30	0.23	2.0383
28	South East Ambrym		3	1.5	2	2	2.1	1	1	1	3	3	1	1	2	1.63	3.5	1.75	3	3	2	1	2	2.13	0.29	2.0072
29	Vermaul		1	1.5	2	2.6	1.8	1	3	2	2	3	2	2	2	2.13	3.8	2.2	2	3	3	1	2	2.20	0.27	2.0058
30	South Tanna		1	1.5	2	2.2	1.7	3	3	3	3	3	1	1.5	2.19	3.7	2.1	1	3	3	3	1	1	2.18	0.27	1.9974
31	West Tanna		1	1.5	2	2	1.6	3	1	1	2	1	2	2	1	1.63	2.6	2.5	1	2	3	1	2	1.58	0.37	1.9682
32	Nguna/Pele		1	1	3	3	2.0	3	3	2	1	1.5	1	2	1.5	1.88	3.8	2.5	3	3	3	1	1	2.25	0.25	1.9375
33	South Maewo		1	1	2	2.2	1.6	1	1	3	2	3	1	2	2.7	1.96	3.0	1.6	2	3	3	1	2	2.10	0.30	1.9126
34	Tongariki/Buninga		2	1	1	1.8	1.5	3	1	3	2	1	1	2	3	2.00	2.9	1.35	3	3	3	1	1	2.06	0.31	1.9103
35	Central Pentecost 2		3	1.5	2	2.4	2.2	3	1	1	3	3	1	2	1.8	1.98	4.4	2.3	2	3	3	2	2	2.38	0.21	1.9033
36	Paama		1	1.5	2	2	1.6	3	1	2	3	2	1	2	2	2.00	3.3	2	2	3	2	1	3	2.17	0.28	1.9028
37	Tongoa		2	1	1	1.4	1.4	3	1	1	3	3	1	1	2	1.88	2.5	1.9	3	3	2	1	1	1.98	0.34	1.8578
38	Central Malekula		3	2	2	2	2.3	2	1	2	1	1	2	2	1.5	1.56	3.5	1.7	3	3	2	2	2	2.28	0.24	1.8398
39	North Maewo		2	1	2	2.6	1.9	2	1	1	3	1	2	2	1.5	1.69	3.2	2.4	1	3	2	3	2	2.23	0.26	1.8194
40	South West Malekula		1	2	3	2.2	2.1	1	1	2	2	2	2	2	2.2	1.78	3.6	2	2	3	2	2	3	2.33	0.22	1.8086
41	South East Malekula		2	2	2	2	2.0	2	3	3	2	2	3	2	2	2.38	4.8	2	3	3	2	2	3	2.50	0.17	1.7917
42	South Erromango		1	1.5	1	2.4	1.5	1	1	3	3	2	3	2	2.5	2.19	3.2	1.6	3	3	3	1	2	2.27	0.24	1.7887
43	East Gaua		1	2.5	2	2.2	1.9	1	3	3	3	3	2	2	2.2	2.40	4.6	2	1	3	3	3	3	2.50	0.17	1.7700
44	West Gaua		1	2.5	2	2.2	1.9	1	3	3	3	3	2	2	2.2	2.40	4.6	2	1	3	3	3	3	2.50	0.17	1.7700
45	North East Tanna		2.5	1.9	1	2	1.9	3	1	2	3	3	3	2	1.8	2.35	4.3	1.9	1	2	1	2	2	1.65	0.18	1.7608
46	North Tanna		2.5	1.9	1	2	1.9	3	1	2	3	3	3	2	1.8	2.35	4.3	1.9	1	2	1	2	2	1.65	0.18	1.7608
47	West Ambae		2.2	2.5	2	2.4	2.3	3	1	1	2	2	3	2	2	2.00	4.6	2	3	3	3	2	3	2.50	0.17	1.7583
48	East Vanua Lava		2.5	2	2	2.2	2.1	3	2	2.2	1.5	2.5	2	2.5	2.19	4.9	2.2	2.5	2.19	4.9	2	2	3	2.53	0.16	1.7571
49	West Vanua Lava		2.5	2	2	2.4	2.2	1	2.5	3	2	1.5	2.5	2	2.5	2.19	4.9	2.2	2	3	3	2	3	2.53	0.16	1.7571
50	West Ambrym		2	1.5	2	2.2	1.9	2	2	1	3	2	1	2	1.8	1.85	3.6	2.4	2	3	2	2	3	2.40	0.20	1.7123

## APPENDIX B: TARGETED COMMUNITIES BY AREA COUNCIL AND PROVINCE

The Vanuatu Government reports census data at Area Council level and does not publish village-level data. The VCCRP design team was able to access data from the Vanuatu National Statistics Office in order to complete the national vulnerability assessment and targeting process. In the target Area Councils, the number of villages ranges from 3 (in Ureparapara AC, Torba) to 66 (in South Santo AC, Sanma). The population of villages varies widely, from 2 people through to 482, and can vary widely within the same AC (i.e. in Central Malekula, Malampa, there are 44 villages which range in size from 2 people to 430 people).

As the project will work at the community level to support priority adaptation actions and support the development of local level adaptation governance and planning mechanisms, the VCCRP design (based on expert input from consultants and officials in Vanuatu) utilised Vanuatu National Statistics Office data (from the 2016 mini-Census) to collate a list of communities in each targeted Area Council. As this information is not publicly reported, a full list of villages targeted is not included in this proposal. A range of very small villages have been combined with neighbouring villages to form communities for the purposes of effective project implementation and service delivery. Government service delivery operates across similar combinations of villages.

An example from the province of Malampa is provided below

Area Council	Number villages	Number communities for VCCRP implementation	Population range for villages
North Ambrym	43	9	5 – 189
North East Malekula	49	15	8 – 482
North West Malekula	60	14	2 – 460
South East Ambrym	18	9	23 – 233
Paama	27	6	11 – 226
Central Malekula	44	16	2 – 430
South West Malekula	25	12	13 – 405
South East Malekula	41	18	13 – 289