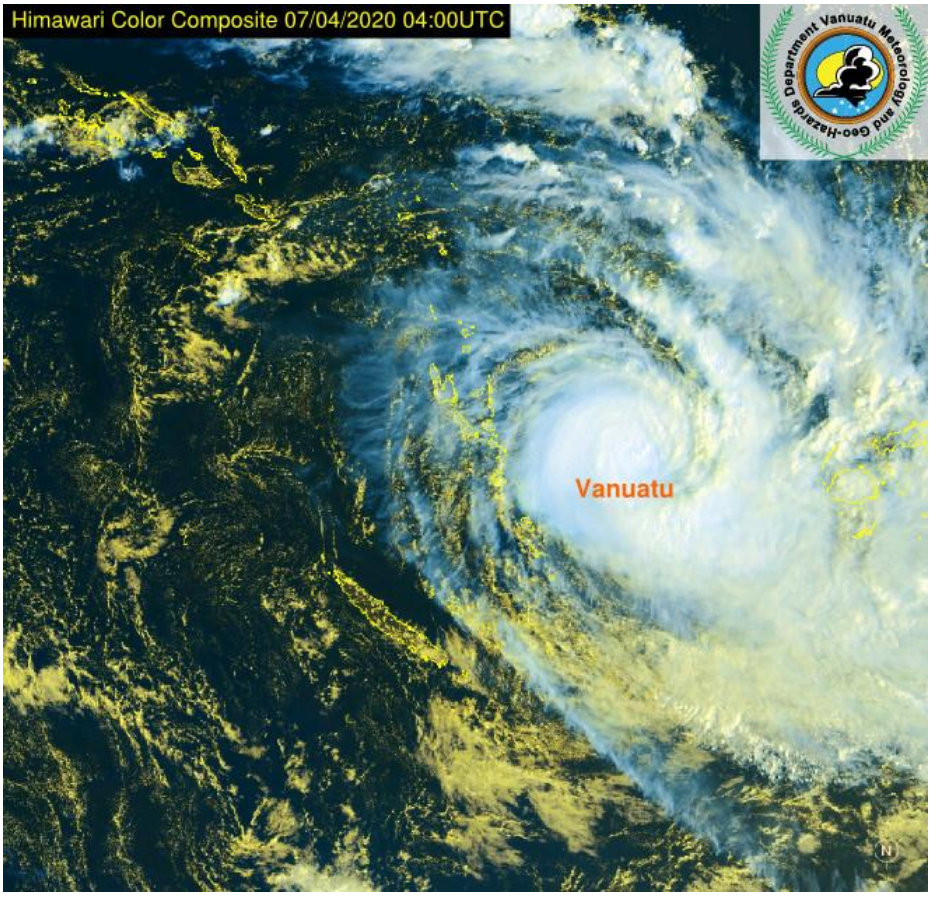
Tropical Cyclone Harold
Health Sector Response Plan

Version 3 (10 April 2020)



NOTE: This plan will be adjusted as the situation evolves & based on outcomes of assessments.

Contents

INTRODUCTION

BACKGROUND

The hot or wet season in Vanuatu between November and April is also known as the tropical cyclone season. The archipelago of Vanuatu consists of small islands grouped together stretching in a north to south distribution which are thus are affected to some extent by many of the cyclones that pass through the south Pacific. Vanuatu and its marginal seas is a common route to some 20 to 30 cyclones per decade, with 3 to 5 causing severe damage. Annually, the area of Vanuatu (land and sea) receives about 2-3 cyclones in a cyclone season, with the greatest frequency in January and February.

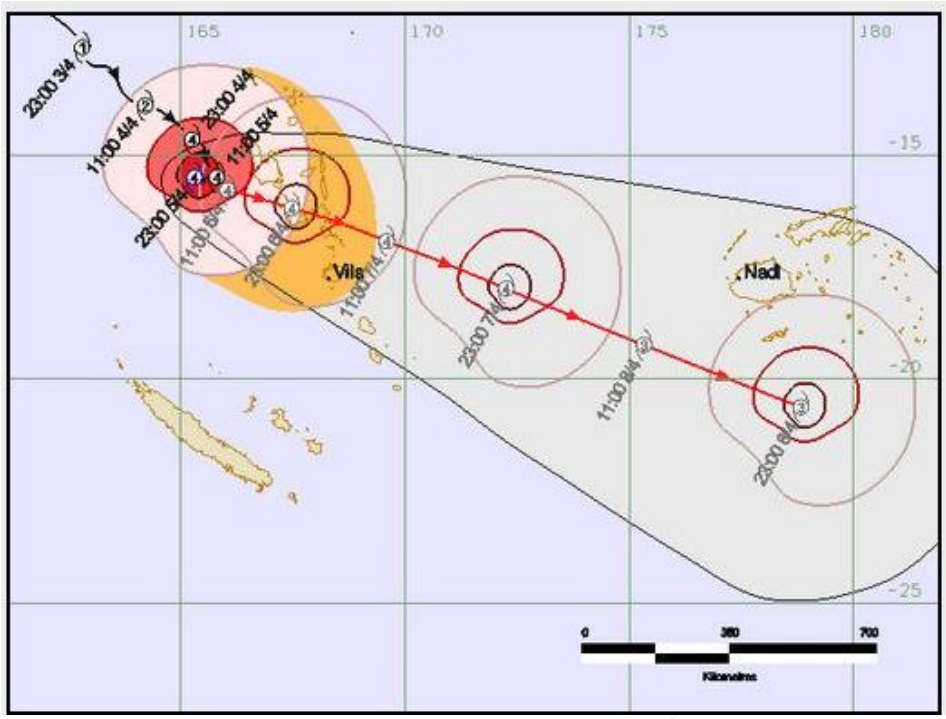
Cyclones are very erratic in their movement and therefore are often complex and difficult to predict. Tropical cyclones affecting the islands of Vanuatu can result in heavy rainfall, flash flooding, flooding of low lying areas, coastal flooding, riverine flooding, storm surge, land slide, very rough seas, and strong to damaging winds inland. These events can cause a great deal of damage to property and life.

From 02 April 2020, a tropical low developed over Solomon Islands and intensified to a Category 3 cyclone. It travelled south-easterly and entered Vanuatu waters where it continued to develop off the west coast of Sanma province from 03 – 04 April and intensified to a Category 5 cyclone. Severe Tropical Cyclone Harold made landfall in Vanuatu on 06 – 07 April 2020 and caused widespread and severe damage as it travelled east south-east with the eye passing across Sanma, Penama and Malampa provinces. Hurricane force winds of 215KM/HR (115Knots), gusting to 235KM/HR (125Knots) were experienced over parts of Sanma, Penama and Malampa provinces. This was accompanied by heavy rainfalls and flash flooding over low lying areas and areas close to river banks including coastal flooding over parts. Very rough to phenomenal seas with heavy to phenomenal swells were experienced over northern and central open and coastal waters today. Red alerts were issued for five of the six provinces of Vanuatu (Torba, Penama, Sanma, Malampa and Shefa).

CURRENT HEALTH SITUATION

At this early stage, there is limited information available on the full impact of Tropical Cyclone Harold in Vanuatu due to interrupted communications. The population in affected areas is currently estimated at 112,000 persons. Immediate impacts on the health of the population in affected areas are likely to be injuries, death and other trauma sustained during the cyclone. Impact on health services is likely to be primarily due to infrastructural damage (including to health facilities), destruction of gardens, and contamination of water sources. In the mid to long-term, further impacts to health are probable including increases in communicable diseases and noncommunicable diseases, as well as negative impacts on reproductive, maternal, and child health in particular for women, children, elderly and people with a disability. Further information is needed.

Figure 1. Forecast Track map of Tropical Cyclone Harold – 12.02 am on 06 April 2020



RESPONSE PLAN

OVERVIEW

The initial version of this plan was developed on 07 April 2020. It will be adjusted as further information becomes available through initial and ongoing assessments, and as the health situation evolves.

Aim: The main aim of this response plan is to protect the health and well-being of the population of Vanuatu following Tropical Cyclone Harold.

Key Objectives: The specific objectives of the Plan are to:

1. Activate the Incident Management System (IMS) and the National and Provincial Health Emergency Operations Centers (EOCs)
2. Initiate health facilities and communities impact and needs assessment
3. Initiate priority response activities. These should aim to:
    a. Provide life-saving services and essential medical support
    b. Maintain minimum standards for provision and access to health services
    c. Minimise the risk of communicable disease outbreaks
    d. Minimise risk of non-communicable disease related illnesses, including nutrition and psycho-social issues
4. Produce regular Situation Reports

Further details on the key actions are provided below.

OBJECTIVES AND KEY INTERVENTIONS/ACTIVITIES

*Objective 1. Activate **IMT/EOC***

Due to the concurrent ongoing COVID-19 global pandemic, the National Health Emergency Operations Center (NHEOC) had already been activated on 16 March 2020. Provincial and hospital EOCs were activated by the Coordinator of the NHEOC on 24 March 2020. Restructuring of the NHEOC was undertaken on 07 April 2020 to address the needs for TC Harold response. This included the addition of coordination mechanisms for Emergency Medical Teams, Provincial Support and for public health prevention measures. Some restructuring of Provincial EOCs is also anticipated.

A two-week State of Emergency was already in place from 26 March 2020, for the purpose of strengthening COVID-19 prevention and containment measures (see www.covid19.gov.vu). Therefore, the National Disaster Management Office Emergency Operations Center and the cluster system was already activated with special powers in existence as set out in the Disaster Risk Management Act No. 23 of 2019 and the first inter-cluster meeting was held on 06 April 2020. (Note that to date, there have been no confirmed cases of COVID-19 in Vanuatu).

Objective 2. Initiate health facilities and communities impact and needs assessment

A health facilities and communities impact and needs assessment is urgently needed in order to direct priority activities and refine the action plan. A preliminary desktop analysis has been used to identify those health facilities most likely to have experienced immediate damage or destruction due to TC Harold (Appendix 1). These will be prioritised during the initial assessment.

The health facility assessment will be conducted as much as possible in a joint approach with other sectors, and through established clusters. The existing Health facility assessment form will be used for this purpose. The Health needs assessment will also be conducted through a joint approach as much as possible, and will include evacuation centers. In particular, it will aim at identifying people living with disabilities and people with chronic diseases requiring uninterrupted treatment (such as for non-communicable diseases, tuberculosis and HIV/AIDS) and pregnant women. Consideration will also be given to those diseases that are currently low prevalence but are associated with a high risk of re-emergence due to poor hygiene and/or limited access to clean water (eg. Yaws).

The risk assessment for health should cover the following key components:

Immediate impacts (assessed in first week)

- Injuries or deaths resulting from the cyclone (fallen objects, fractures, drownings, etc)
- Limited availability/accessibility of routine health services, including due to damaged health facilities and restricted medical supplies and consumables such as for acute and chronic diseases
- Lack of access to clean water
- Lack of access to proper sanitation facilities
- Lack of access to food supplies
- Trauma resulting from cyclone impact

Progressive impacts (assessed in subsequent weeks)

- Increased risk of vector-borne diseases (eg. malaria and dengue), especially in Santo and Malekula
- Increased risk of water-borne diseases (eg. diarrhoea)
- Increased risk of skin infections including those of relatively low prevalence (eg. yaws, trachoma, soil-transmitted helminths, and scabies)
- Increased risk of respiratory diseases (eg influenza-like illness, pneumonia, COVID-19)
- Increased risk of interruption of RMNCAH services
- Increased risk of interruption of treatment for chronic diseases (eg. non-communicable diseases, tuberculosis, HIV)
- Increased risk of malnutrition (ie. due not only to shortage of food but also heavy worm infection due to poor hygiene, especially in children)
- Increased risk of vaccine-preventable diseases if immunization services are interrupted
- Increase risk of gender-based violence
- Trauma resulting from cyclone impact or progressive impacts

Objective 3. Initiate priority response activities

The following are considered the priority response activities and the key components to be considered.

Objectives	Interventions / Activities
1. Provide life-saving services and essential medical support	• Based on health facility assessments, deploy mobile teams/VANMAT for life-saving services and essential medical support. • Ensure referral of severe/urgent cases, especially for surgical needs and high risk pregnancies.
2. Maintain minimum standards for provision and access to health services	• If health facility is damaged or non-functional, deploy joint health teams (public health, clinicians, logistics) for provision of health services (general consultation, EPI, RMNCAH/maternal and child health). • Ensure the capacity of health workers to provide a health response to the survivors of gender-based violence Deploy mobile teams/VANMAT in evacuation centers for basic services. • Rapid repairs of health facilities partially or fully damaged, re-equipping and re-supplying to cater for essential services. • Ensure/repair/provide WASH and power supply in health facility
3. Minimise the risk of communicable disease outbreaks	• Communication on health risk and prevention methods. • Activate enhanced surveillance system and sentinel sites in affected areas to detect early potential outbreaks, especially diarrhoeas, ILI/ARI, dengue, malaria and NTD diseases (eg. yaws, scabies and STH).

	• Ensure availability of RDTs for malaria, dengue and yaws in affected areas.
	• Prevention:
	  ○ Community awareness on main health risks (water-borne, vector-borne, respiratory and neglected tropical diseases) in coordination with WASH cluster
	  ○ Ensure proper coverage of bed nets in malaria areas, in households and evacuation centers
	  ○ Vector control interventions, including residual spraying and larval source management in/around households and evacuation centers
	  ○ WASH interventions in health facilities
	  ○ Deworming treatment for all target groups and yaws testing on suspected sores
	  ○ Maintain routine immunization and RMNCAH coverage of services.
	  ○ Ensure power supply for cold chain

4. Minimise risk of NCD related illnesses including nutrition and psychosocial issues	• Identify people with chronic conditions in evacuations centers and ensure continuity of treatment (NCDs, TB, HIV) • Set-up nutrition monitoring (MUAC) for under-5s • Ensure management of cases of acute malnutrition at VCH and NPH • PSSS assessment and provision of services as needed especially in evacuation centers

Objective 4. Produce Situation Reports

Provincial

Provincial Health Emergency Operation Centers will provide brief reports using a standardized template. These will include a brief overview of the current health situation, ongoing activities and priority planned activities as well as funding, gaps and constrains.

Reports will be provided to the National Health Emergency Operations Center weekly.

National

The National Health Emergency Operation Center will compile information from the Provincial HEOCs as provided on a weekly basis, and will include a brief overview in national Situation Reports. These national updates will include an update on the current health situation, ongoing activities and priority planned activities as well as funding, gaps and constrains in the health response for TC Harold.

Reports will be circulated to the National Disaster Management Office, other Government departments, and development partners.

APPENDIX

Appendix 1. Initial Health Facility Assessment

To facilitate the TC Harold Response, an initial desktop Health Facility Assessment has been conducted. Information on wind speeds experienced during TC Harold from the Tropical Strom Risk team at the University College London were overlayed with the existing health facility data. This was used to assign a preliminary categorization as follows:

- Health Facilities that experienced 1-minute of sustained wind speeds of > 251 km/h
- Health Facilities that experienced wind speeds (Peak Gust) of 209 - 251 km/h
- Health Facilities that experienced wind speeds (Peak Gust) of 154 - 177 km/h
- Health Facilities that experienced wind speeds (Peak Gust) of 119 - 153 km/h
- Health Facilities that experienced wind speeds (Peak Gust) of 63 – 118 km/h

The map and tables below show the outcome of the assessments.

Figure 1 presents the TC Harold Pathway and potentially affected health facilities on a national level.

Table A1 lists all hospitals, health centers, clinics and dispensaries in areas known to have been affected by TC Harold. Facilities are ranked according to the estimated wind speed they have experienced, and therefore the expected damage.

Table A2 lists all aid posts in areas known to have been affected by TC Harold.

Figure 2-6 present maps of the islands that have been most affected by TC Harold: Santo and Malo; Pentecost; Ambrym; Malekula; and, Ambae.

Please note that this assessment is subject to update based on arising data and analyses.

Figure 1: TC Harold Pathway and potentially affected health facilities

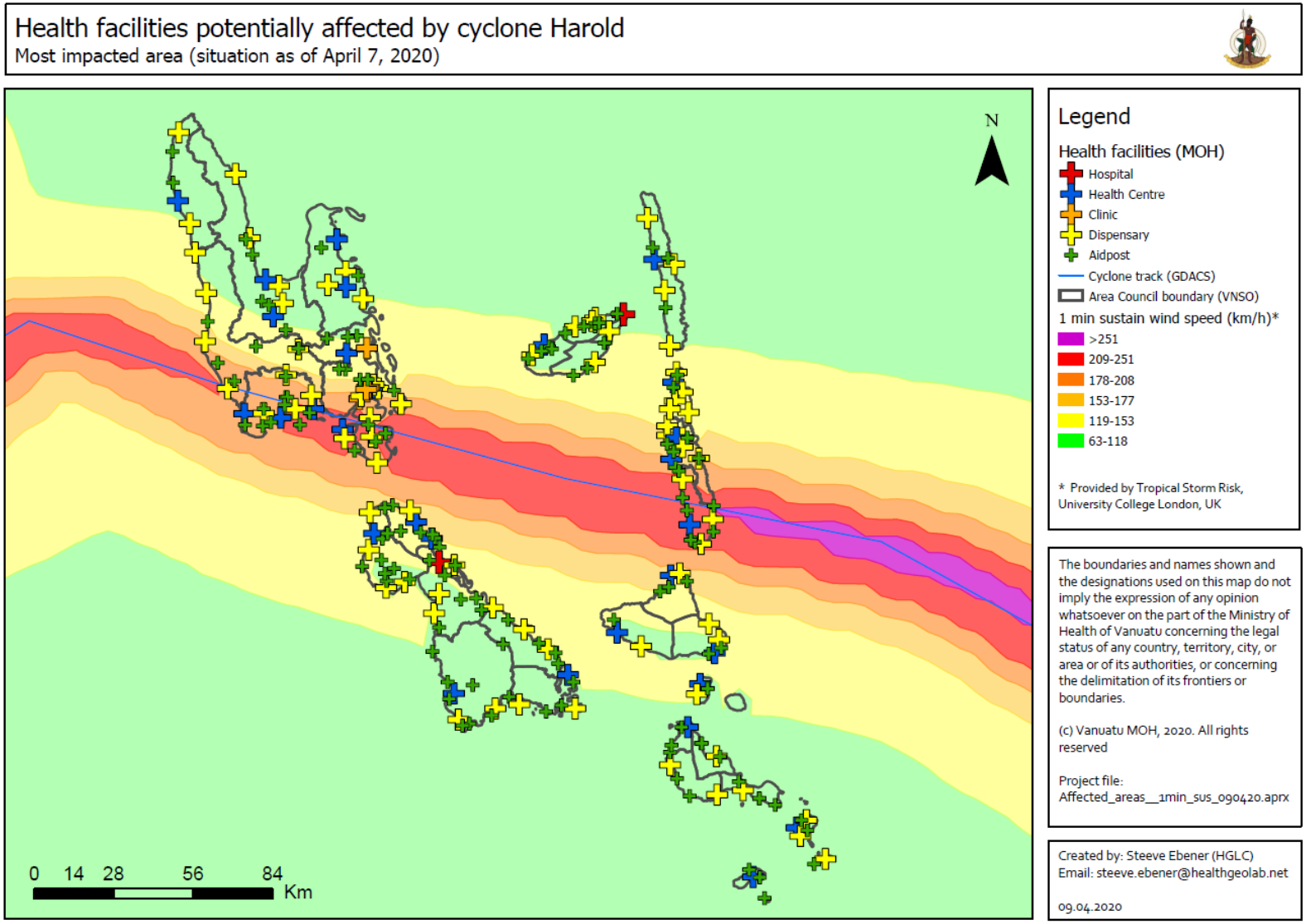


Table A1: Potentially affected hospitals, health centers, clinics and dispensaries by Province, Island, Health Zone, NDMO Category and Tropical Storm Risk Category.

ID	Name	Type	Province	Island	Health Zone	Area Council	1 min. sustained wind speed (km/h)	NDMO Category	Tropical Storm Risk Category
2760	Aore	Dispensary	Sanma	Aore	SAN02	Canal - Fanafo	198.8	Category Five	178-208
2841	Baie Barrier	Dispensary	Penama	Pentecost	PEN10	South Pentecost	198.6	Category Five	178-208
2872	Pangi	Health Centre	Penama	Pentecost	PEN10	South Pentecost	196.3	Category Four	178-208
2873	Ranmawat	Dispensary	Penama	Pentecost	PEN09	South Pentecost	189.9	Category Four	178-208
2744	Avunatari	Health Centre	Sanma	Malo	SAN02	West Malo	188.3	Category Four	178-208
2784	Vaturei (Iarailand)	Dispensary	Sanma	Santo	SAN04	South Santo	182.8	Category Four	178-208
2742	Tasmalum	Health Centre	Sanma	Santo	SAN04	South Santo	180.2	Category Four	178-208
2764	Vulesepe	Health Centre	Sanma	Santo	SAN04	South Santo	179.3	Category Four	178-208
2749	Lamalvatu	Clinic	Sanma	Santo	SAN01	Luganville	179	Category Four	178-208
2778	Rustron	Dispensary	Sanma	Malo	SAN02	East Malo	178	Category Four	154-177
2766	Tasiriki	Health Centre	Sanma	Santo	SAN05	South Santo	175.7	Category Four	154-177
2774	Wailapa (Isu)	Dispensary	Sanma	Santo	SAN04	South Santo	175.3	Category Four	154-177
2745	Banaviti	Dispensary	Sanma	Malo	SAN02	West Malo	172.2	Category Four	154-177
2843	Melsisi	Health Centre	Penama	Pentecost	PEN09	Central Pentecost 2	169	Category Four	154-177
2767	Sulemauri	Dispensary	Sanma	Santo	SAN05	West Santo	168.3	Category Four	154-177
2790	Kokonae	Dispensary	Sanma	Santo	SAN04	South Santo	166.1	Category Four	154-177
2771	Atariboe	Dispensary	Sanma	Malo	SAN02	East Malo	163	Category Four	154-177
2765	Capricon	Dispensary	Sanma	Santo	SAN01	Luganville	159.6	Category Four	154-177
2871	Point Cross	Dispensary	Penama	Pentecost	PEN10	South Pentecost	159.5	Category Four	154-177
2773	Tataikala	Dispensary	Sanma	Santo	SAN04	South Santo	154.8	Category Three	154-177
2783	Tutuba	Dispensary	Sanma	Santo	SAN01	Canal - Fanafo	154.5	Category Three	154-177
2776	Wusi (Ioseph Mape)	Dispensary	Sanma	Santo	SAN05	West Santo	149.8	Category Three	119-153

ID	Name	Type	Province	Island	Health Zone	Area Council	1 min. sustained wind speed (km/h)	NDMO Category	Tropical Storm Risk Category
2875	Tsingbwege	Dispensary	Penama	Pentecost	PEN09	Central Pentecost 2	147.4	Category Three	119-153
2797	Neil Thomas Ministries (NTM)	Clinic	Sanma	Santo	SAN01	Luganville	146.1	Category Three	119-153
2796	Family Health (VFHA)	Clinic	Sanma	Santo	SAN01	Luganville	141.8	Category Three	119-153
2770	Sarakata	Dispensary	Sanma	Santo	SAN01	Luganville	141.8	Category Three	119-153
2746	Maternal Child Health Clinic (MCH)	Clinic	Sanma	Santo	SAN01	Luganville	140.7	Category Three	119-153
2180	Northern Provincial Hospital	Hospital	Sanma	Santo	SAN01	Luganville	140.7	Category Three	119-153
2793	Youth Centre (NCYC)	Clinic	Sanma	Santo	SAN01	Luganville	140.7	Category Three	119-153
2750	Medical Santo (=	Health Centre	Sanma	Santo	SAN01	Luganville	139.9	Category Three	119-153
2748	Tiroas	Dispensary	Sanma	Santo	SAN01	Luganville	138.4	Category Three	119-153
2869	Namaram	Dispensary	Penama	Pentecost	PEN08	Central Pentecost 1	137.4	Category Three	119-153
2879	Enkul	Dispensary	Penama	Pentecost	PEN08	Central Pentecost 2	137	Category Three	119-153
2942	Nebul	Health Centre	Malampa	Ambrym	MAL10	North Ambrym	136.2	Category Three	119-153
2792	Sapi (Nabulvaravara)	Dispensary	Sanma	Santo	SAN01	Luganville	135.8	Category Three	119-153
2970	Atchin	Health Centre	Malampa	Malekula	MAL08	North East Malekula	132.3	Category Three	119-153
2876	Ledungsivi	Health Centre	Penama	Pentecost	PEN08	Central Pentecost 1	129.1	Category Three	119-153
2845	Lesasa	Dispensary	Penama	Pentecost	PEN08	Central Pentecost 1	128.4	Category Three	119-153
2863	Bwatnapni	Dispensary	Penama	Pentecost	PEN08	Central Pentecost 1	128.3	Category Three	119-153
2971	Wallarano	Health Centre	Malampa	Malekula	MAL08	North East Malekula	127.3	Category Three	119-153
2974	Olal	Dispensary	Malampa	Ambrym	MAL10	North Ambrym	123.4	Category Three	119-153
2972	Vao	Dispensary	Malampa	Vao	MAL08	North East Malekula	122.1	Category Three	119-153
2230	Norsup	Hospital	Malampa	Malekula	MAL01	Central Malekula	120.1	Category Three	119-153

ID	Name	Type	Province	Island	Health Zone	Area Council	1 min. sustained wind speed (km/h)	NDMO Category	Tropical Storm Risk Category
2780	Selei	Dispensary	Sanma	Santo	SAN03	West Santo	119.7	Category Three	119-153
2969	Tontar	Dispensary	Malampa	Malekula	MAL07	North West Malekula	114.1	Category Three	63-118
2772	Fanafo	Health Centre	Sanma	Santo	SAN03	Canal - Fanafo	113.8	Category Three	63-118

Table A2: Potentially affected aid posts by Province, Island, Health Zone, NDMO Category and Tropical Storm Risk Category.

ID	Name	Type	Province	Island	Health Zone	Area Council	1 min. sustained wind speed (km/h)	NDMO Category	Tropical Storm Risk Category
6426	Ransrek	Aidpost	Penama	Pentecost	PEN09	South Pentecost	210.7	209-251	Category Five
6429	St Henri	Aidpost	Penama	Pentecost	PEN10	South Pentecost	210.2	209-251	Category Five
6430	St Ioseph	Aidpost	Penama	Pentecost	PEN10	South Pentecost	208.2	209-251	Category Five
6349	Tangoa	Aidpost	Sanma	Tangoa	SAN04	South Santo	188.6	178-208	Category Four
6428	Ranwas	Aidpost	Penama	Pentecost	PEN10	South Pentecost	186.7	178-208	Category Four
6303	Nandiutu	Aidpost	Sanma	Malo	SAN02	East Malo	184.4	178-208	Category Four
6305	Tabunveresake	Aidpost	Sanma	Malo	SAN02	East Malo	183.6	178-208	Category Four
6300	Araki (Tanopeta)	Aidpost	Sanma	Araki	SAN04	South Santo	181.4	178-208	Category Four
6323	Malotao	Aidpost	Sanma	Santo	SAN04	South Santo	178.5	178-208	Category Four
6312	Butmas	Aidpost	Sanma	Santo	SAN03	South Santo	178	154-177	Category Four
6304	Sao	Aidpost	Sanma	Malo	SAN02	East Malo	177.2	154-177	Category Four
6432	Wanur	Aidpost	Penama	Pentecost	PEN10	South Pentecost	174.6	154-177	Category Four
6335	St Daniel	Aidpost	Sanma	Santo	SAN04	South Santo	174.3	154-177	Category Four
6427	Ranwadi	Aidpost	Penama	Pentecost	PEN09	South Pentecost	173.8	154-177	Category Four
6317	Iungle Mountain	Aidpost	Sanma	Santo	SAN05	West Santo	172.5	154-177	Category Four
6343	Valpei	Aidpost	Sanma	Santo	SAN05	West Santo	171.9	154-177	Category Four
6423	Neilebati	Aidpost	Penama	Pentecost	PEN09	South Pentecost	167.5	154-177	Category Four
6311	Buama	Aidpost	Sanma	Santo	SAN04	South Santo	167.5	154-177	Category Four
6302	Aworani	Aidpost	Sanma	Malo	SAN02	West Malo	166.6	154-177	Category Four
6422	Narua	Aidpost	Penama	Pentecost	PEN08	Central Pentecost 2	164	154-177	Category Four
6314	Ipaiato	Aidpost	Sanma	Santo	SAN04	South Santo	163.8	154-177	Category Four
6421	Lontar	Aidpost	Penama	Pentecost	PEN10	South Pentecost	161.7	154-177	Category Four
6313	Foreginal	Aidpost	Sanma	Santo	SAN04	South Santo	161.4	154-177	Category Four
6339	Vavasnaur (Tanovusvus)	Aidpost	Sanma	Santo	SAN04	South Santo	160	154-177	Category Four
6345	Vatnaur (Lovenu)	Aidpost	Sanma	Santo	SAN05	South Santo	155.9	154-177	Category Three

ID	Name	Type	Province	Island	Health Zone	Area Council	1 min. sustained wind speed (km/h)	NDMO Category	Tropical Storm Risk Category
6340	Teproma	Aidpost	Sanma	Santo	SAN01	South East Santo	153.2	119-153	Category Three
6424	Onlaba	Aidpost	Penama	Pentecost	PEN09	Central Pentecost 2	147.4	119-153	Category Three
6418	Hubikuh	Aidpost	Penama	Pentecost	PEN09	Central Pentecost 2	141.9	119-153	Category Three
6420	Lewamemeh	Aidpost	Penama	Pentecost	PEN08	Central Pentecost 2	141.9	119-153	Category Three
6511	Botovro	Aidpost	Malampa	Malekula	MAL07	North East Malekula	138.9	119-153	Category Three
6419	Ila	Aidpost	Penama	Pentecost	PEN08	Central Pentecost 2	136.8	119-153	Category Three
6322	Luluvatu Memorial	Aidpost	Sanma	Santo	SAN01	Canal - Fanafo	136.2	119-153	Category Three
6334	Solway	Aidpost	Sanma	Santo	SAN01	Canal - Fanafo	134.2	119-153	Category Three
6548	Walla	Aidpost	Malampa	Wala	MAL08	North East Malekula	128.6	119-153	Category Three
6330	Palon	Aidpost	Sanma	Santo	SAN03	Canal - Fanafo	128.4	119-153	Category Three
6351	Nakurakum	Aidpost	Sanma	Santo	SAN08	West Santo	127.9	119-153	Category Three
6431	Tanbok	Aidpost	Penama	Pentecost	PEN08	Central Pentecost 1	127.3	119-153	Category Three
6326	Nambauk	Aidpost	Sanma	Santo	SAN01	Canal - Fanafo	126.5	119-153	Category Three
6318	Kerepua	Aidpost	Sanma	Santo	SAN05	West Santo	125.9	119-153	Category Three
6409	Red Cliff	Aidpost	Penama	Ambae	PEN04	South Ambae	120.9	119-153	Category Three
6506	Willit	Aidpost	Malampa	Ambrym	MAL09	North Ambrym	120.2	119-153	Category Three
6538	Travol	Aidpost	Malampa	Malekula	MAL07	North East Malekula	119.9	119-153	Category Three
6344	Vunameleus (Vatelulu)	Aidpost	Sanma	Santo	SAN08	West Santo	119.7	119-153	Category Three
6500	Fire Mountain	Aidpost	Malampa	Ambrym	MAL09	North Ambrym	114.9	63-118	Category Three
6501	Lolibulo	Aidpost	Malampa	Ambrym	MAL10	North Ambrym	114.9	63-118	Category Three

Figure 2: Santo and outer islands

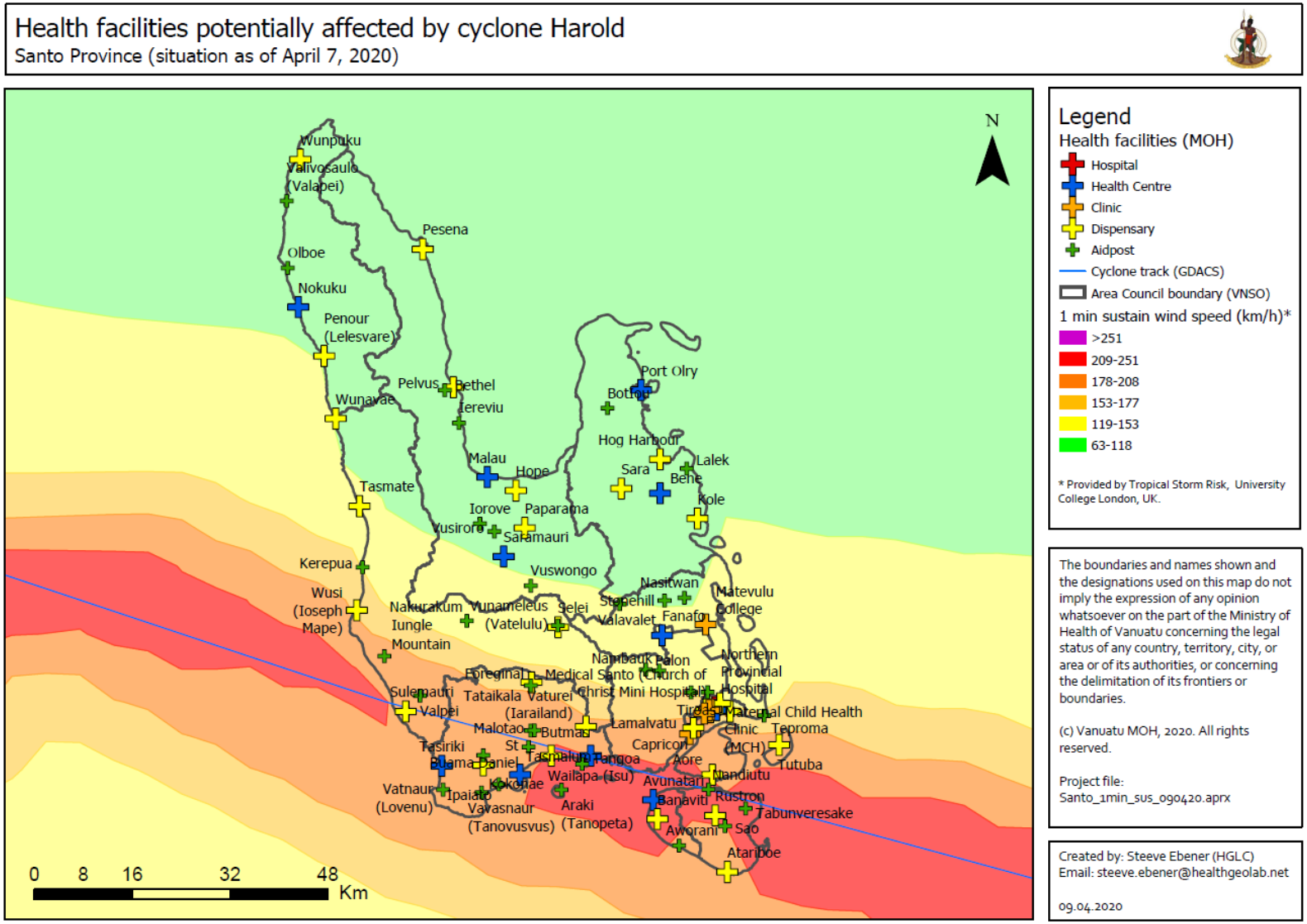


Figure 3: Pentecost Island

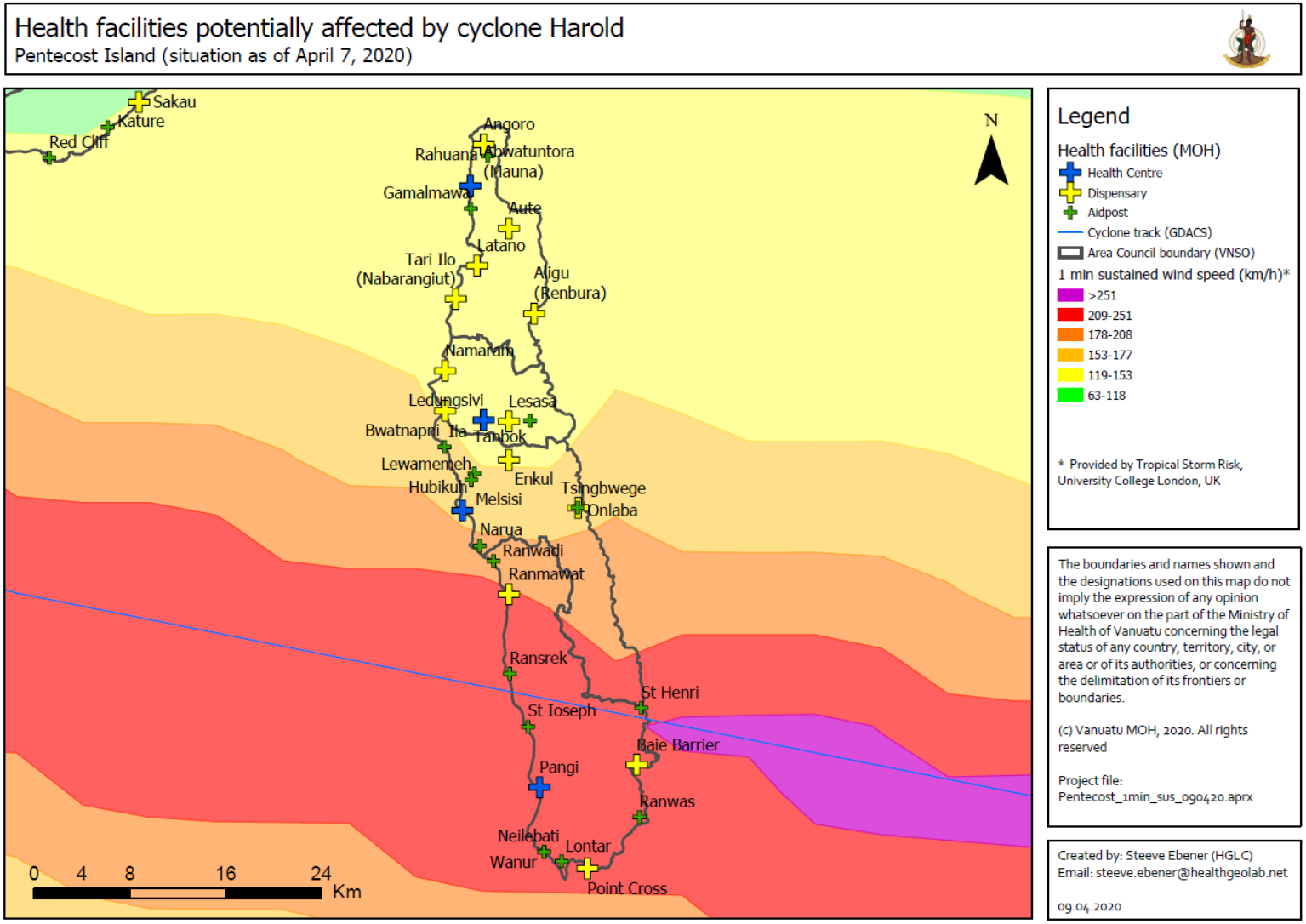


Figure 4: Ambae Island

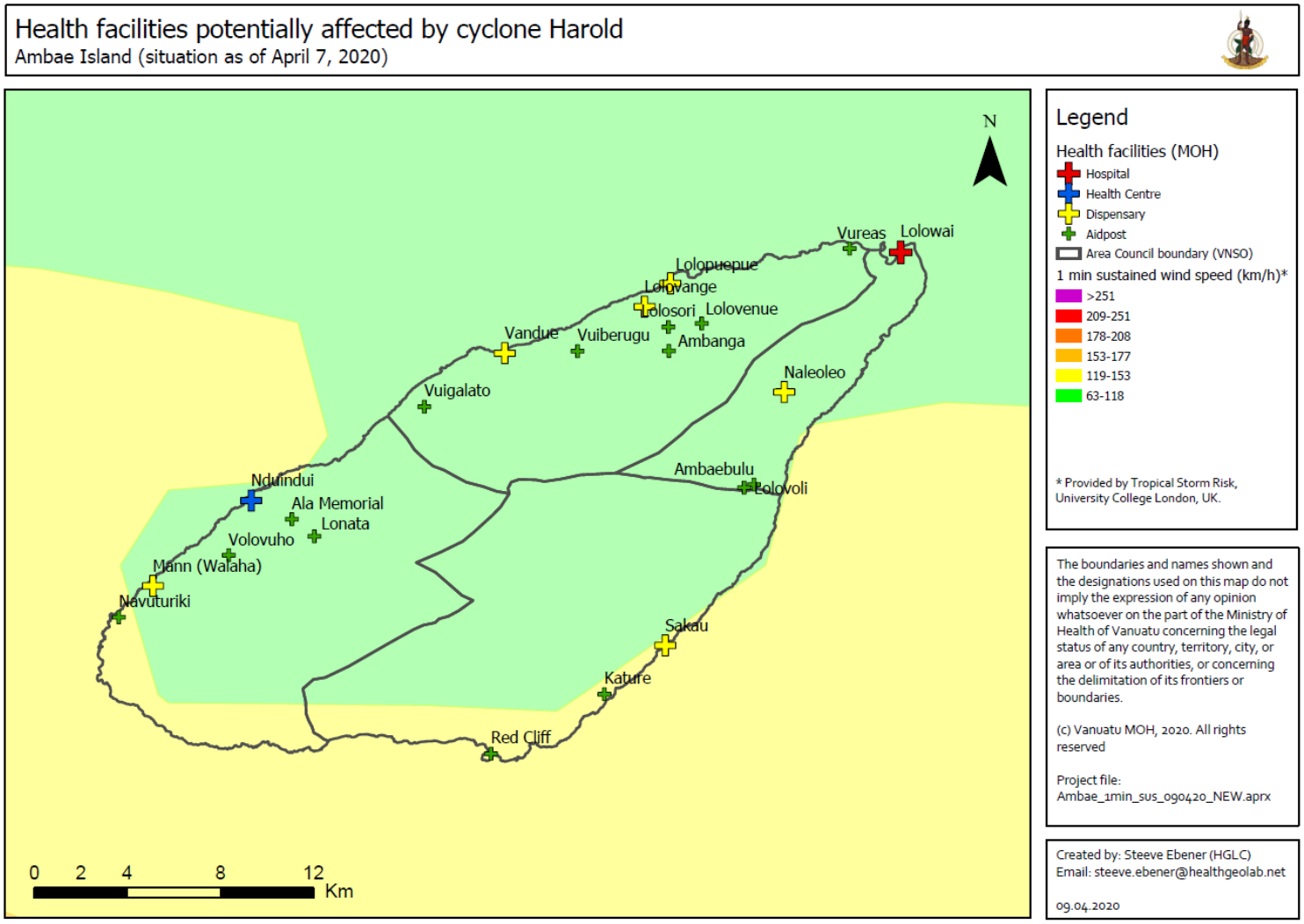


Figure 5: Malekula Island

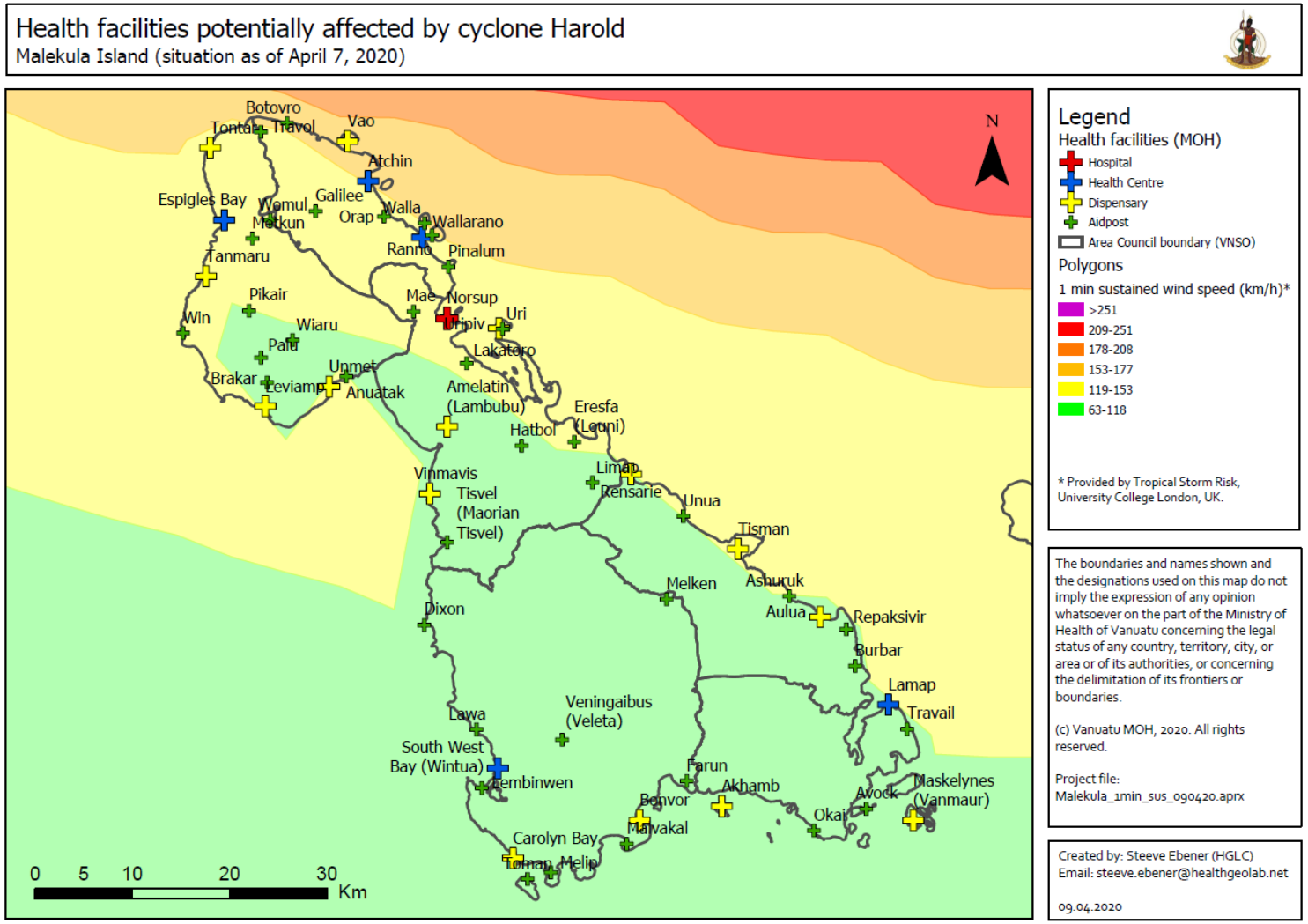


Figure 6: Ambrym Island