Thirteen Report on the Implementation of the UAP

2021/07

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Telecommunications,
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Executive Summary

This Universal Access Policy (UAP) report is the thirteenth (13th) Report, that provides an update on the implementation of the UAP to our Stakeholders and the general public. This Report highlights the progress activities that have been made in respect to the UAP implementation from July 2021 to date.

I am happy to let you know that despite the covid-19 pandemic situation, the undertaking of the UAP implementation continues to progress. A number of activities have occurred since the last UAP report. Following the 2nd undertaking agreement with Digicel, Vodafone and Wantok in June 2021, TRBR has proceeded with the 3rd undertaking agreement in July 2022. The undertaking agreements bind the Operators commitment on their obligation to the UAP implementation. To date, more than 50% of the underserved and unserved areas identified in their agreement have been completed.

Apart from the areas committed to the Operators, a total of 20 underserved and unserved areas are yet to be addressed. TRBR has taken a light touch approach with the Operators, in which, the Operators do have the benefit of deciding which areas they have agreed to rollout their network to. TRBR's decision on the light touch approach was in consideration with the burden taken by the Operators in sustaining the unprofitable UAP sites. The sustainability of the UAP sites in the long term is a concern, therefore, TRBR in collaboration with the Office of the Government Chief Information Officer (OGCIO), are looking at an alternative solution, in which infrastructure sharing is a potential solution. This solution is planned to be trialed on Akhamb Island in South Malekula.

Telecommunications technology continues to evolve, with the high cost of the traditional towers, Operators are focusing on technologies that are cost effective, particularly for the last mile areas, these are areas where population is below the minimum requirement for a traditional tower and economic activity is very low. The Operators are now using VSAT technology as a solution for addressing connectivity in the last mile areas, this technology provides broadband internet connectivity and gets its connections directly from the satellite. In Vanuatu Kacific Broadband Limited is the sole licensed wholesale provider of Satellite Broadband connectivity.

TRBR continues to remain confident and is committed to achieving the Government's UAP objectives by working collaboratively and cooperatively with the Operators, stakeholders, and other relevant parties, and will continue to keep the Government fully informed of all developments.

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1.0 Introduction

The UAP Report provides update on the progress of the UAP Implementation. Since the last report, TRBR has undertaken a number of activities towards achieving the UAP objectives.

The objective of the UAP is that 98% of the total population should have access to telecommunications services by 1st of January 2024, these telecommunications services include:

- Voice;
- Narrowband data services, including text messaging;
- Broadband Internet services that shall enable a download speed of at least 2Mbps and upload speed of at least 1 Mbps.

Furthermore, it provides that the telecommunication services identified above shall be available in schools, health facilities and public offices.

Key progress to date include:

- Implementation of the UAP 2nd Undertaking Agreement
- Signing of the UAP's 3rd Undertaking Agreement between TRBR and Operators;
- Payment of Subsidy to Vodafone and Digicel
- Community Telecommunications Grant;
- Continuous support to CLICC and TFS Sites; and
- ICT and Internet facilities for Torba Schools and their surrounding communities.

Following the experience from the initial implementation of the UAP, both Digicel and Vodafone have had difficulties in sustaining the operations of the unprofitable tower sites. Thus, the Regulator has considered supplementing the capital cost for the UAP Sites committed in the 2nd Undertaking Agreement with Vodafone and Digicel, with a grant subsidy.

In August 2021, TRBR made subsidy payment to Vodafone for 17 towers and VSAT equipment set up in the 14 areas committed to Vodafone, and for 4 towers set up at 4 locations by Digicel. Wantok was not provided with any subsidy, as their commitment was based on their obligation in their license, in which they have yet to rollout their network to at least 75% of the population, both in the urban and rural areas.

2.0 UAP Telecommunications Service Undertakings

TRBR remains committed to its UAP obligations. TRBR has engaged the Operators commitment to the UAP, through the signing of the UAP undertaking agreement. The undertaking agreement requires the Operators to roll out their mobile network to the underserved and unserved areas. Vodafone, Digicel and Wantok are currently the main player of the UAP. While Vodafone is steadily committed to its obligations, Digicel is behind its schedules due to logistics issues, an impact of covid-19 pandemic. Wantok on the other hand is yet to commence its rollout.

A total of 61 underserved and unserved areas were identified across the country. 22 areas were addressed in the 2nd undertaking agreement with the operators, followed by 12 in the 3rd undertaking agreement. 7 areas were addressed through the projects under the UAP Other programs. 20 areas are yet to be addressed. The list of the remaining areas is attached as Appendix 1 to this report.

Progress on the UAP undertaking is further presented in the sub sections below.

2.1 UAP IMPLEMENTATION OBLIGATION

TThe Underserved and Unserved areas identified across the Islands in the country were phased out into periodical undertakings, based on the Operators financial capabilities and their obligation on UAP levy. Following on from the initial implementation of the UAP, in July 2021, TRBR entered into a second Undertaking Agreement with Digicel, Vodafone and Wantok and in that agreement, Vodafone is obliged to rollout its network to 17 areas, with Digicel 5 areas and Wantok 4 areas.

Following on from the 2nd undertaking agreement, TRBR had the 3rd Agreement with Digicel and Vodafone in July 2022. With that agreement, Digicel again took up 5 areas and Vodafone with 7 areas. Wantok were not able to participate in the 3rd Undertaking Agreement.

The updates on the Operators commitment in the Undertaking Agreement are further discussed below

Signing of the UAP 3rd Undertaking Agreement with Vodafone and Digicel – From left to right: the Deputy CIO, CEO Digicel, Regulator and CEO Vodafone

2.1.1 VODAFONE UAP ROLLOUT

Based on the 2nd and 3rd UAP Undertaking Agreement, Vodafone is committed to a total of 21 underserved and unserved areas. The areas are identified in the table below with their implementation status.

#	Area	Implement Status	#	Area	Implement Status
1	• Malo-South West Areas • Malekula North West A (Potovro, Wowo, Tanmial)	Completed	12	• Tanna-White Sands Area	Completed
2	• Malekula South (Akham, Farun, Malfakal)	In progress	13	• Futuna (Matangi, Mission Bay, Lasoa)-VSAT	Completed
3	• Paama (Tavie, Tavie Airport)-VSAT	Completed	14	• Aneityum (Port Patrick) - VSAT	In progress
4	• EPI-South	In progress	15	• Malekula-North West A	In progress
5	• Mataso-VSAT	Completed	16	• Malekula-North West B	In progress
6	• Efate-South East (Eton, Pangpang 1&2, Ekipe bush	In progress	17	• Ambrym-South West	In progress
7	• Efate-North East (Epau, Forari)	In progress	18	• Santo-North West (Valpei, Petani, Molboe)	In progress
8	• Efate-North West (Tamate & Mangaliliu)	Completed	19	• Santo (Sara, Kole, Tokar)	In progress
9	• Nguna (Utanglang)-VSAT	Completed	20	• Pentecost-East	In progress
10	• Tanna-East	Completed	21	• Aniwa	In progress
11	• Tanna-South	Completed			

UAP Tower at South of Malo – 35 meter tower. Launching of tower attended by former caretaker Prime Minister (second from left) and Member of Parliament for Malo (center)

2.1.2 DIGICEL UAP ROLLOUT

Digicel commitment on the UAP implementation has been behind schedule, particularly with their commitment in the UAP 2nd Undertaking Agreement. The slow progress was due to the delay caused by the manufacturer of the equipment and the shipment of the equipment to Vanuatu. It has taken about six months for the equipment to arrive in the Country. Digicel commence rolling out their network in quarter 1 of 2022. Digicel is committed to a total of 9 areas.

Digicel's 9 areas are listed below with updates on their implementation status:

#	Area	Implement Status	#	Area	Implement Status
1	• Malo-North East	Completed	12	• Santo-South	In progress
2	• Santo-BigBay North (Pesena Area)	Completed	13	• Malekula-North West	In progress
3	• Epi-North East • Paama-South	In progress	14	• Emao (Mapua and Marow)	In progress
4	• Tanna-North West	Completed	15	• Efate-Teuma Dark Bush	In progress
5	• Santo-Palon/Turtle Bay Area	In progress			

2.1.3 WANTOK UAP ROLLOUT

Wantok have yet to commence with the rollout of their network. Wantok was provided a license to operate mobile services in March of 2021. The mobile coverage requirement as stipulated in Wantok's license, is that at least 25% of the population of Vanuatu should have access to Wantok mobile services by July of 2022 and then, followed by 35% in January 2024. This obligation is in line with the UAP requirements, in which case, the Wantok management has agreed that Wantok be part of the UAP implementation.

With Wantok being new in the mobile market, their significant focus was putting in place a reliable and secured network, in which then, their UAP obligations is expected to follow after that. However, with the covid-19 restrictions, it has been very challenging for Wantok, particularly with the logistics. Furthermore, recently Wantok has been going through a change of ownership, in which case has added to the delay, as focus have been sidetracked.

Following these setbacks, TRBR has asked Wantok to provide a revised plan on its commitment to UAP rollout and a business plan that will guarantee its license obligations. Wantok submission will determine its viability in the mobile market and its obligations to UAP implementation.

The table below provides the areas committed to Wantok

#	Area	Implement Status
1	• North Pentecost (Abwatuntora)	Work yet to Commence
2	• Efate-Teuma Dark Bush	Work yet to Commence
3	• Maewo-West	Work yet to Commence
4	• Santo-BigBay Inland	Work yet to Commence

2.2 UAP SUBSIDY

Following the experience from the initial implementation of the UAP, both Digicel and Vodafone have had difficulties in sustaining the operations of the unprofitable tower sites. Thus, the Regulator has considered supplementing the capital cost for the UAP Sites committed in the 2nd Undertaking Agreement with Vodafone and Digicel, with a grant subsidy.

In August 2021, TRBR made subsidy payment to Vodafone for 17 towers and VSAT equipment set up in the 14 areas committed to Vodafone, and for 4 towers set up at 4 locations by Digicel. Wantok was not provided with any subsidy, as their commitment was based on their obligation in their license, in which they have yet to rollout their network to at least 75% of the population, both in the urban and rural areas.

2.3 EXTENSION ON THE UAP POLICY TIMEFRAME

The UAP Policy implementation timeframe have now been extended for the 2nd time. With the COVID-19 pandemic situation, progress on the UAP implementation has seen quite a delay, especially with a significant number of underserved and unserved areas that needed to be addressed. The Policy was first extended on the 19th of October 2019, with a timeframe that ended on the 01st of January 2022. The actual implementation within that timeframe has started on the 1st of July 2021, this was just six months into the ending date of the implementation timeframe. In the first six months of 2021, TRBR conducted a Quality-of-Service benchmark and coverage audit, to identify the underserved and unserved areas, and then came the covid-19 hit wave in March of 2021, in which significant focus has been shifted towards addressing and adapting to the COVID-19 situation.

The covid-19 situation has caused significant delay on all progress activities pertaining to achieving the UAP implementation timeframe. The closure of borders, the disturbance in the procurement of the equipment, the delay in the supply of the equipment by the manufacturer, are some of the challenges incurred by covid-19. With these setbacks, the Policy implementation timeframe was then extended for the second time by the COM decision 117 of 2022, and the closure date is now shifted to the 01st of January 2024. With the closure date drawing closer, TRBR is confident that it will achieve the UAP objectives of 98% population coverage within that timeframe. However, the coverage area is dynamic and always changing due to population increase, population movement and new settlements. Thus, this presents an ever expanding challenge to the industry and the objectives of the UAP. Other challenges are the steady supply of electrical power to keep towers running, land issues and logistics.

3.0 UAP Other Programs

Projects initiated under the UAP other programs were particularly to supplement the implementation of the Policy. The projects under the UAP other programs, supported schools, health facilities and the general communities with access to internet and ICT services.

The UAP other programs initiatives are presented below.

3.1 COMMUNITY TELECOMMUNICATIONS GRANT

The Community Telecommunications Grant (CTG) continues to benefit schools, health centers and the general community, with projects focusing on accessibility and service, particularly in the poorly served or unserved areas. The grant particularly looks at projects with small scope, and mainly focus on satellite connectivity, ICT services and provision of power. An amount of three million (3,000,000) vatu is allocated for the grant, therefore, usually it covers two applicants annually, but can go up to three applicants depending on the project cost.

In 2021, TRBR received a total of thirteen applications, unfortunately, with the limited amount allocated towards the grant, only two applicants were considered and that includes Umej School on Aneitym Island and Tangovawia School on Pele Island. In 2022, a total of six applicants were received and again only another two applicants were selected out of the six applicants. The schools include Melken School, located inland of South Malekula and Hatbol community, in the central part of Malekula. The 3 schools and 1 community were selected based on their remoteness and isolation, and are within dark spot area, in which case, one had to walk a distance to access telecommunications services.

The projects awarded to the schools and community include the following:
- VSAT Equipment
- Wifi equipment (voucher system)
- Internet Cost – up to 3 months
- Solar system
- Laptops
- Printer
- Internal cabling/network

Completion of these projects has taken time, due to the covid-19 community transmission in quarter 1 and 2 early this year and lack of shipping services to Tafea outer Islands.

VSAT Equipment at Umej School, Aneityum

3.2 CONTINUOUS SUPPORT TO CLICC AND TFS SITES

Eight Schools out of the sixteen schools under the School Connectivity Program supported by the Government of Australia, through the Governance of Growth Programme in 2016 and 2017, were fortunate to get additional support in 2020 and 2021. These eight schools were facing difficulties in maintaining the operations of their computer lab and internet facility. These eight schools include:

- Venie Mataipevu School – Inland of South Santo
- Saint Ann School – Potolry, East Santo
- Torgil Rural Training Centre – East Ambae
- Sulua School – Maewo
- Orap College – East Malekula
- Walarano College – East Malekula
- Lambubu School – Central Malekula
- Eles School – Nguna Island, North Efate

The project implementation in these eight schools were conducted in two phases. The first phase involved a stock take of the actual issues. TRBR engaged two local ICT contractors to visit the schools and identify the cause of the issues. A report was developed and provided to the TRBR on the issues identified, with recommendations in addressing the issues. The second phase of the project was addressing the issues on site.

The table below provides the upgrade in each of the eight schools:

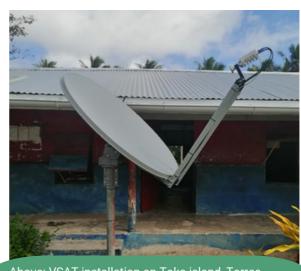| #	Schools	Work done
1	Venie Mataipevu	Satellite dish providing internet was upgraded to KA Band, providing stable and reliable connectivity Wifi equipment was installed, providing connectivity at a range of 300 meters A voucher system was established, where internet tickets are sold, a similar system to mobile refill cards. The funds collected from the tickets are used to sustain the monthly cost of the internet 3 x sets of computers were added Cablings were well tagged
2	Saint Ann School	Satellite dish providing internet was upgraded to KA Band, providing stable and reliable connectivity Wifi equipment was installed, providing connectivity at a range of 300 meters A voucher system was established, where internet tickets are sold, a similar system to mobile refill cards. The funds collected from the tickets are used to sustain the monthly cost of the internet 3 x sets of computers were added Cablings were well tagged
3	Torgil Rural Training Centre	Wifi equipment was installed, providing connectivity at a range of 300 meters A voucher system was established, where internet tickets are sold, a similar system to mobile refill cards. The funds collected from the tickets are used to sustain the monthly cost of the internet
4	Sulua School	Satellite dish providing internet was upgraded to KA Band, providing stable and reliable connectivity Wifi equipment is installed, providing connectivity at a range of 300 meters A voucher system was established, where internet tickets are sold, a similar system to mobile refill cards. The funds collected from the tickets are used to sustain the monthly cost of the internet 3 x sets of computers were added Cablings were well tagged
5	Orap Collage	Wifi equipment was installed, providing connectivity at a range of 300 meters A voucher system was established, where internet tickets are sold, a similar system to mobile refill cards. The funds collected from the tickets are used to sustain the monthly cost of the internet
6	Walarano College	Satellite dish providing internet was upgraded to KA Band, providing stable and reliable connectivity Wifi equipment was installed, providing connectivity at a range of 300 meters A voucher system was established, where internet tickets are sold, a similar system to mobile refill cards. The funds collected from the tickets are used to sustain the monthly cost of the internet
7	Lambubu School	Satellite dish providing internet was upgraded to KA Band, providing stable and reliable connectivity Wifi equipment was installed, providing connectivity at a range of 300 meters A voucher system was established, where internet tickets are sold, a similar system to mobile refill cards. The funds collected from the tickets are used to sustain the monthly cost of the internet 3 x sets of computers were added Cablings were well tagged
8	Eles School	Satellite dish providing internet was upgraded to KA Band, providing stable and reliable connectivity Wifi equipment was installed, providing connectivity at a range of 300 meters A voucher system was established, where internet tickets are sold, a similar system to mobile refill cards. The funds collected from the tickets are used to sustain the monthly cost of the internet 3 x sets of computers were added Cablings were well tagged

Above: Venie Mataipevu School Internet and ICT facility,
Left: equipment transportation to school by horse

3.3 INTERNET FACILITY AND COMMUNITY WIFI FOR TORBA SCHOOLS

Progress on the installation of solar system and internet facility in eleven schools in the Torba province are almost to their completion. The eleven schools were located in the underserved and unserved areas of seven Islands in the Torba province, and serves as a communications hub for its surrounding communities. The internet facility includes VSAT dish (satellite Broadband equipment), a wifi equipment that provides extension of internet coverage, and a phone line that enabled a user to call a Digicel number or a Vodafone number at a cost of 15vt per minute.

Above: VSAT installation on Toka island, Torres

island	School	Status
Toga	Bakavegug Primary School	Completed
Ureparapara	Sheilil Primary School	Completed
Motalava	Telvet Primary School	Completed
	Tehlei Primary School	In progress
Mota	Pasalele School	In progress
Gaua	Sarantar School	In progress
	Santa Maria Primary School	Completed
	Silver Memoria Primary School	Completed
Merelava	Nergar School	Completed
	Vaes Primary School	In progress
Vanua Lava	Baldwin Londsdale Memorial School	Completed

Installed Community WIFI & Phone system

4.0   Reporting

This is the 13th report to the Minister on the implementation of the projects associated with the 2013 UAP. However, it is the 3rd report issued, after the extension of the UAP implementation period to the 1st of January 2024 as per COM decision 117 of 2022.

TRBR will issue a Public Report to its stakeholders for their awareness and knowledge on the progress of the UAP implementation.

5.0   Next Steps

Within the next reporting period, TRBR will focus on the following.

1. Process payment of subsidy to the Operators, based on the 3rd Undertaking Agreement;
2. Monitor the implementation of the UAP rollout commitments;
3. Address the remaining 20 underserved and unserved areas;
4. Monitor the implementation of 2021 Community Telecommunications Grant Projects;
5. Coordinate the implementation of 2022 Community Telecommunications Grant Projects;
6. Progress monitoring on the installation of internet and ICT facilities to the remaining 4 Schools in Torba Province; and
7. Progress Monitoring of the VSAT sites supported by TRBR.

6.0   Conclusion

The UAP implementation updates provided in this 13th UAP report confirmed progress on the Government UAP undertaking to date. The COVID-19 pandemic maybe a setback on the UAP implementation progress, but with the Operators efforts, we are confident to achieving the UAP objectives within the timeframe of 01st January 2024.

I would like to sincerely thank the Operators for their commitment to the UAP rollout, and the Internet Service Providers for their contributing efforts in extending the telecommunications services, and enabling the choice of services to the citizens of the country. Furthermore, thank you sincerely to the Government of Australia, through the Governance for Growth Program (GGP) and the Department of Energy (DoE), for their support towards projects like the UAP Others program. It is through these collaborated efforts that the UAP continues to progress towards meeting its objectives.

Brian Winji MOLITAVITI
Telecommunications, Broadcasting and Radiocommunications Regulator

APPENDIX 1: UAP Remaining Underserve and Unserved Areas

#	Island	Areas	Villages	Coordinates	
				Longitude	Latitude
1	Santo	Santo - West Coast	. Petawata	166.6125	-15.0121
			. Sulesai	166.6176	-15.0626
			. Wunavae	166.627373	-15.08229
			. Tasmate	166.638261	-15.158339
			. Elia	166.073534	-15.267481
			. Kerepua	166.6652	-15.3016
2		Santo - South	. Uteipo	166.8414	-15.5553
			· Lowirave	166.8402	-15.5444
			· Pakatom	166.8439	-15.5608
			· Matai Pevu	166.842655	-15.57743
			· Nalailani	166.844532	-15.587909
3	Ambae	Ambae - North	. Lovuti Alao	167.790979	-15.343215
			. Vuikalato	167.799685	-15.339429
			. Loloaru	167.806634	-15.32475
			. Nahire	167.810713	-15.324857
			. Walurigi	167.81746	-15.317865
			. Lowitava	167.893407	-15.291518
			. Lolopuepue	167.865061	-15.305524
4		Ambae - East	. Navonda	167.90599	-15.306571
			. Lovatmalava	167.956204	-15.320087
			. Lovunvili	167.938348	-15.331454
			. Lovunikatambolo	167.941226	-15.350259
5		Ambae - South	. Lolosiwoi	167.824598	-15.472458
			. Lolovelevusi	167.82673	-15.469254
			. Natakaro	167.836218	-15.470127
			. Lolovele	167.841128	-15.467235
			. Lolovotali	167.855867	-15.461901
			. Lovunibanga	167.892434	-15.429063
6		Ambae - West	. Navitora	167.740386	-15.369714
			. Ambore Area Administrator Office	167.742183	-15.36845
			. Londua Secondary School	167.744364	-15.365439
			Loone	167.7617	-15.361831
			Saranangwae	167.765503	-15.364269

#	Island	Areas	Villages	Coordinates	
				Longitude	Latitude
7	Maewo	Maewo -North	. Naune Village & Airport	168.066986	-15.015458
8		Maewo - East	. Naviso	168.144309	-15.12288
			. Tangwalulu	168.145076	-15.120135
9	Pentecost	South Pentecost	Ranputor	168.188025	-15.973356
			Point Cross	168.230721	-16.006679
			Harop	168.222622	-16.000099
			Wanur	168.197855	-15.9952
			Londar	168.209404	-16.001449
10		West Pentecost	. Bulnak	168.133266	-15.716218
			. Lebujubu	168.133217	-15.709939
			. Lebujudem	168.128562	-15.704358
			. Vanbwanamel	167.799685	-15.339429
			. Vahwo	168.122696	-15.692303
			. Larewerep	168.121457	-15.690011
			. Sadah	168.120028	-15.687753
11	Malekula	Central Malekula	. Potindir	167.476055	-16.150677
			. Lingarakh	167.468745	-16.178167
			. Hatbol	167.467411	16.181806
			. Bushman's Bay	167.499031	-16.163121
			. Louni	167.515969	-16.17894
			. Tavaliaut	167.530102	-16.191002
12		South West-Malekula	. Tisvel	167.3992	-16.271613
			. Dixon Reef	167.377682	-16.346569
			. Lambulwo	167.433551	-16.418229
			. Mahafo	167.434714	-16.444538
			. Venamboas	167.463572	-16.472293
			. Womul	167.234773	-15.973596
13		North West Malekula (Inland)	. Galilee	167.277311	-15.966033
			. Betirbul	167.292807	-15.968192
			. Yolam	167.27587	-15.932583
			. Betvat	167.241713	-15.961494
			. Boto	167.272463	-15.974121
			. Boto 2	167.278128	-15.972884

#	Island	Areas	Villages	Coordinates	
				Longitude	Latitude
14	Ambrym	South West Ambrym	Sisivi	167.984007	-16.305096
			sanesup	168.011681	-16.325304
			Bweleh	168.015107	-16.323188
			Lonmei	168.037274	-16.327323
			Port Vato	168.039971	-16.333719
			lalinda	168.055747	-16.340086
			maranata	168.126472	-16.368509
15	Paama	Paama Inland	Tevali	168.227603	-16.472757
			Tevaliout	168.235835	-16.480988
			Tavulai	168.473618	-16.473618
		Paama South West	. Vutekai Area (Tahal Neta & Tahal Nessa)	168.216124	16.504117
			. Oailep	168.225986	-16.504853
			. Ingal	168.229179	-16.508993
			. Vaoleli	168.217904	-16.491128
17	Sheperd Islands	North East Emae	. Makatea	168.425944	-17.055957
			. Tongamea	168.415634	-17.064441
			. Reisu	168.410617	-17.038533
18		Tongoa	. Burao	168.566572	-16.87439
			. Kurumambe	168.559931	-16.869948
19	Erromango	South Erromango	· Bongil coastal area	169.060686	-18.900014
			. Umpon Mompu 1 (South River)	169.175022	-18.93923
			. Umpon Mompu 2 (Antioc)	169.231328	-18.966366
			. Ponumbia 1	169.101314	-18.918165
			. Ponumbia 2	169.11349	-18.926416
			. Yawisaghuwi	169.234654	-18.969295
			. Umpon Yelongi	169.086034	-18.914702
20		North Erromango	. Potausipsip	169.156587°	-18.664097
			. Punusei	169.137905	-18.63578
			. Punalvat	169.086649	-18.634462
			. Punamlah	169.046748	-18.632004
			. Wargi	169.024849	-18.647283
			. Rauvis	169.004415	-18.669662