ROTARIANS AGAINST MALARIA

LONG LASTING INSECTICIDAL NET DISTRIBUTION REPORT

WESTERN PROVINCE
Middle Fly District

Carried Out In Conjunction With The Provincial Government And Church Health Services Of Western Province

With Support From The Global Fund

8th July to 9th October 2022

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Executive Summary

Western Province is predominantly a low lying coastal province on the northern coast of mainland Papua New Guinea (PNG). Most of the province (99%) lies in areas below 1200 metres in altitude where malaria is considered endemic and most of the population (90%) actually live in areas below 400m where malaria is at its worst in terms of transmission. Middle Fly where the Long Lasting Insecticidal Net (LLIN) distribution took place is mainly made up of swamps apart from a very small area in the north of the district where a few villages are located in a mountainous area. There are virtually no roads in the districts apart from one or two logging roads so most of the district is only accessible by road or air.

The family level survey and distribution of Long-Lasting Insecticidal Nets (LLINs) was carried out in Middle Fly between 8th July and 9th October 2022. The distribution took a long time to reach all areas due to huge difficulties moving nets around the district, particularly along the Fly River.

Table One shows the estimated population to be covered by the program together with the actual population found along with the number of LLINs distributed by district. In total, 60,943 LLINs were distributed to a population of 119,639 people. This resulted in distribution of 50.9 nets for every 100 people in the district.

TABLE ONE – Population And Nets Distributed

District	Population from 2000 Census	Population Of Targeted Areas In 2019	Total Estimated Population 2022	Population Surveyed 2022	House Holds Surveyed 2022	Nets Issued 2022	Nets Distributed Per 100 People
Middle Fly	55,853	112,945	124,500	119,639	19,568	60,943	50.9

A further 792 LLINs were donated to health centres as nets were surplus to requirement, were no longer in bales and in most cases could not be easily returned to a central location. These nets would be distributed to pregnant mothers and for use over hospital beds where needed.

The overall operational cost of the programme was 268,745.74 Kina (Approximately US$ 74,652) resulting in a cost of about 4.41 Kina or US$1.22 per net delivered. This was about 7% over the anticipated budget with savings in human resources costs and large overspends in aircraft charters and fuel.

Overall, the distribution went well in Western Province with excellent collaboration from provincial and district health authorities which resulted in all targeted communities being eventually reached and all household receiving nets.

Feedback from partners and communities suggest they were happy with the methodology used as the process appeared transparent to all concerned. However, as always, there were a few families who complained that they did not receive enough nets but for the most part it is believed that this was a result of families not fully understanding the allocation system used.

Global Fund donated 50% of the LLINs used in the Middle Fly program together with RAM salary costs, with the balance of LLINs and all operational costs being supported by PNG Sustainable Development Program (PNG SDP. The nets distributed in Middle Fly were a mixture of Yahe which came from China and Magnet nets which came from India. For Magnets, this is only the second time this type of net has been used in Papua New Guina and RAM hopes that these are better quality LLINs than those distributed in the last few years.

The history of LLIN distribution in PNG and Western Province is discussed in Appendix One and the malaria situation and stratification of malaria in Western Province are discussed in Appendix Two and Appendix Three. Historically it can be said that LLINs have had a tremendous impact on malaria in Papua New Guinea but recent distributions in lower lying provinces have not resulted in decreased malaria but malaria appears to have been practically eliminated from the highlands of PNG. We hope that these nets are sufficient to keep malaria at bay in all these areas of Middle Fly for another three years.

Fig.1 – Microplanning Meetings At Mougulu (Left) And Balimo (Right)

Background

Rotarians Against Malaria (RAM) is a nationally based organisation which was formed in 1997 by the Port Moresby Rotary Club in recognition of the tremendous burden that malaria imposes on the people of PNG.

RAM has an organizational mandate to work in malaria control and the distribution of LLINs in Papua New Guinea and has been working for many years with the National Department of Health (NDOH) and other partners including multilateral and bilateral agencies such as UNICEF and WHO (World Health Organisation), NGOs and church groups. (See Appendix One for full history of LLIN Distribution)

Since 2010, RAM has been coordinating the distribution of nets to all districts and provinces on a three-year recurrent cycle. This effectively means that RAM visits every targeted village in PNG every three years. RAM has been funded by the Global Fund since 2009 and from 2017 to 2020 also from Against Malaria Foundation (AMF) which supplied PNG with the majority of its nets in 2017 and from 2018 onwards to all areas below 1600m only where most of the malaria transmission can be found. During the period 2017 to 2020, the Global Fund resources were therefore mainly used to fund the LLIN distribution costs and other relevant administration costs. However, in 2020, PNG was lucky to receive a donation of net from the Chinese Government and these were used for all areas between 1600-2000m of altitude.

It should also be noted that since 2015, the National Malaria Control Program no longer distributes nets in areas above 2000m as these are now considered too cold for malaria transmission to occur. The situation has changed in 2021. AMF no longer is a donor to PNG and all costs have now reverted to Global Fund. With this change, RAM will have difficulties covering areas from 1600-2000m but we are very fortunate in that the Global Fund allowed saving from 2020 to be used to procure nets for 2021 for this altitude. At present, the funding situation for LLIN distribution to altitudes of 1600-2000 has not proved possible for 2022 and

2023 and it appears at this moment that all LLIN distributions in the future in PNG will be limited to 1600m only.

Generally, LLINs have been distributed to household level throughout the country but when shortage of funds occurred, different strategies of distribution have been used as mentioned above.

PNG can be roughly divided into five epidemiological zones.

a) Areas which lie above 2000m in altitude which no longer receive LLINs as malaria transmission is not considered likely at these altitudes.
b) Low lying areas of the country up to 1200m which have stable malaria endemicity and often have poor access to health continue to have household distributions.
c) Areas from 1200 to 1600m which are generally considered to be of low transmission potential but traditionally have had occasional malaria epidemics due to poor immunity and changing weather conditions. LLIN distribution continue in these settings.
d) Highlands regions between 1600 to 2000m in altitude such as Mount Hagen which have low malaria endemicity and generally easy access to health services. These are low priority areas and when funding is not available are left out. However, to date, these areas have been covered. From 2015 to 2016, these areas received nets for Under Five children only, and since 2017, to date, RAM has managed to find alternative sources to cover these areas. For example, in 2020, nets for these areas have been sourced from the Chinese Government and in other areas from the Global Fund. Fortunately, there was sufficient funds to cover these areas in 2021. Sadly, from 2022 there are no funds to cover these areas.
e) In urban and peri-urban areas such as Port Moresby which are low lying areas with easy access to health, nets will not be distributed during funding constraints. Nets to these areas will be supplied through the private sector. Similarly, due to funding constraints in 2015, Lae City had Under Five Campaign LLINs only.

Fig.2 – Microplanning Meetings In Kamusi (Left) And Lake Murray (Right)

As a result of this stratification and when funds had been reduced such as at the end of 2014, areas above 2000m no longer received nets and areas from 1600 to 2000m only received under five campaigns in 2015 and 2016. However, fortunately, due to the LLIN donation from the Against Malaria Foundation (AMF) in 2017, all areas received household distribution of nets except areas above 2000m, and some urban areas such as NCD, Goroka, Mount Hagen and Mendi. After 2018, AMF only donated nets to areas below 1600m but the country has been lucky to find funding to fill this gap of between (1600-2000m) in 2019, 2020 and for 2021 through donations from the Global Fund (2018-2021) and the Chinese Government (2020).

However, funding for areas between 1600-2000 metres has now stopped as the Global Fund allocations are not presently enough to cover these areas above 1600m.

One of the conditions of the AMF donation is that RAM would strengthen the way in which surveys are carried out. These new innovative processes are described in the Methodology Section. These methodologies are now being carried out since the beginning of 2017. The major change to the survey methodology suggested by AMF is that previously a village meeting was called after a survey was carried out where names of family members were read out to ensure that all households had been surveyed. Instead of this process, a summary of every village surveyed is posted for 24 hours in a public place so that villages can ensure that all their family members have been included in the survey. As a further verification process, members of RAM and local health staff team carry out random house surveys of 6% of households in every village to ensure that the survey process has been carried out correctly.

For household LLIN distributions, regardless of where they are carried out, they must include a survey and a distribution phase though implementation methods may considerably vary depending on specific circumstances. RAM's approach has been to concentrate on programme quality thus RAM develop methodologies that ensure that all recipients in an area actually receive nets and that this can be reported accurately.

The other major change to the original PNG programme of 2004 to 2009 carried out by the NDOH is that nets are allocated to families on a needs basis rather than simply the number of people in the family. Data analysis of National Capital District (NCD) data has shown that this gives a ratio of nets needed to be about 47 for every 100 people. In the previous LLINs distribution of Round-3 in 2006 to 2010, nets were allocated at a rate of one net to every 2.5 people. With the programme only receiving 80% of LLIN needs, and most provinces distributing for example two nets to families of three, in practically every province, nets ran out before the end of the distribution. The RAM programme makes all attempts to assure that this distribution anomaly does not happen by collecting all population information at the beginning of the program and then allocate the nets based on family needs. This strategy is practiced to ensure that all families receive nets throughout any given province. The only scenario where survey and net distribution may be done simultaneously is in very remote locations where it is not practically possible to return a second time to a location. This is particularly the case in remote villages which can only be reached by boat or very long treks and it is costly and impractical to return to the villages for a second time.

Fig.3 Microplanning In (Left) And Training Of Village Volunteers (Right) At Emeti Health Centre

In terms of coordination, RAM officers are allocated to specific LLGs or health centres where they coordinate the programme together with local health staff. In this capacity, RAM officers act as facilitators in terms of technical guidance to district health teams in each LLG as well as acting as financial officers and assuring quality control of activities taking place.

Schedule

Referring to Table Two, it can be seen that the main distribution in Middle Fly started at the beginning of July in Balimo and surrounding areas. The program moved to the Nomad, Obo and Lake Murray areas in late August and early September and only reached Tapila and Waliama areas towards the end of September due to difficulties getting nets to this area.

TABLE TWO
General Timetable Of Activities In Middle Fly District

	Survey		Distribution	
District	Start	Finish	Start	Finish
Middle Fly	08.07.22	01.10.22	11.07.22	09.10.22

Methodology

Prior to planning and implementation, a master list of all villages of Middle Fly was drawn up using data from the 2000 Census and the last RAM survey of 2019 in Middel Fly District. Villages in the list were organised by LLG and Ward. In this master list, the estimated population for 2020 for each village was estimated and recorded in two ways. Firstly, the population of each village is estimated using population figures from the 2000 Census and the estimated annual growth rate for Western Province and then secondly, by taking the population surveyed in 2017 and 2018 and applying the annual growth rate to each village. In addition to this, based on altitude maps, all villages in highlands provinces are categorised and colour coded by altitude zones of below 1200m, 1200 to 1600 metres, 1600 to 2000 metres and lastly those villages above 2000 metres. Only those villages below 1600 metres will receive nets.

In all areas, Health Centres form the hub from which distribution takes place to the respective villages in each health centre's catchment area. Therefore, with the planning data at hand, RAM staff work together with the Provincial Health Office to allocate every village to its nearest health centre (government or Church Based) and outlines how each village is reached from each health centre. From this it is possible to create a budget, estimate how many nets are needed to be sent to each health centre and work out any other logistic considerations such as use of airplanes or boats to deliver nets to some remote areas.

Once all logistical needs are calculated and nets delivered to the province or district, a RAM team will travel to the province. Once they are in the province, RAM officers are allocated to work with each health centre which becomes the centre of operations for that area.

With the arrival of RAM officers, each health facility identifies health staff members or non-health community volunteers to be involved with the programme. If local health staff are selected, then they are referred to as District Health Team (DHT) but if a non-health staff is selected then they are termed as a Team Leader. Both DHTs and Team Leaders are responsible for the survey and distribution of nets. Each DHT and Team Leader works only in the area in which the health facility is based.

Before any activities take place, RAM officers are expected to work with health staff and other team leaders to make detailed plans (micro-planning) of their activities for training, survey, verification and distribution of nets. This process involves making maps of the area, deciding how many teams are needed, and then making detailed work plans for each of the team members. This process also involves verifying that no villages have been left out of the census list and that the whole area is covered.

Also prior to field activities in any given LLG or health centre, a social awareness campaign was carried out in all villages informing villagers of the upcoming survey and distribution. This was also used as an opportunity for RAM officers to become familiar with each area. During this process, key malaria messages were also discussed with villagers such as the need to use LLINs every night.

During the social awareness campaign, a daylong training meeting is normally held at each health facility for all DHT members in that area who jointly carry out the micro-planning exercise. These training and micro-planning sessions as well as all other activities associated with the programme are coordinated by RAM project officers together with health counterparts at provincial and district levels. RAM officers also have the responsibility to ensure the LLINs operation is kept in line with the original budget.

Survey

The survey was carried out in the following way.

1) When arriving at a village and before starting the census process, a meeting was held with village elders explaining the process.
2) If village elders have an up to date list of all village occupants, the team would use this list to compile a census but still visit every household to confirm this information.
3) Where a village is small, e.g., less than 30 families, team members may carry out the census by themselves.

Fig.4 – Training Village Survey Volunteers In Mougulu (Left) And Kamusi (Right)

4) Where villages are large, village volunteers were identified with the assistance of the village chiefs, elders, health staff and councillors. One volunteer was chosen for each group of about 50 families with volunteers chosen by natural divisions in the village e.g., clans where one volunteer would make a list of only one clan. These volunteers were trained to carry out the survey by actually surveying houses with the team leaders supervising and assessing the recording. Once the team leader was confident that the volunteers knew the survey methodology, they were left to continue with the household survey with survey teams returning within an agreed period to verify the work of the survey volunteers, collect survey books and also to pay the survey volunteer, provided that the work was carried out correctly. The training of volunteers may occur in groups or individually depending on access to the village and its proximity to other villages.
5) For each household surveyed, all family members who normally reside at the household for a minimum of nine months were recorded by Name, Age, Sex and Relationship to head of household. All names and other information were recorded in the survey book with one survey form being used for each household.

6) After surveying a household, a white copy of the census form was given to the head of household or most senior person present in the household.
7) Where a whole household was absent, information was taken from the neighbours and the white survey form left with them.
8) In all cases, after the census/list was finished, all the information about the households and number of household members is entered into a summary sheet. This list is then hung in a public place where all villages can verify that the right number of family members for each household has been recorded and that all families have been included in the survey. After the list has been in a public place for 24 hours, then the volunteer requests for the RAM officer and or DHT to visit the village.
9) RAM officers and DHTs must visit three households randomly from each survey book (6%) and verify that the survey has been carried out correctly. Only when this has been done, then the volunteer can be paid.
10) If a village was surveyed by more than one volunteer, then volunteers were asked to work together so that lists can be hung together and the village volunteers can be verified at the same time. This process also ensures that households do not appear on more than one list. After this process, both the volunteers and the village elders sign a form to verify that this was done.
11) All village volunteers received a standard payment of 20 kina a day. Experience has shown that volunteers can usually only survey about 25 households a day, so for the most part, they would receive up to two days' allowance to complete a survey book (50 households).
12) All volunteers were also given a small training manual. Contained in this training manual are key health education messages about malaria which volunteers are expected to discuss with households. This perhaps is the only project in PNG that is able to reach down to potentially every household in the country.

Fig.5 – Household Survey Volunteer Training In Waliama (Left) and Balimo (Right)

To aid with the survey, the master plan with names of all census units in all the wards in the district had been printed out and given to all the DHTs and team leaders. This document also provides the projected population per census unit as well as other information which might be useful to the area concerned.

After collecting survey data from each village, the information is immediately compared with the data on the master sheet. Where the surveyed population is very different from the projected population, the project staff make enquiries into the reasons for these discrepancies.

Following the survey, all data was entered into a computer where possible or entered into a master sheet of the area concerned. For each village, nets were allocated to each family on a needs basis and this is also entered into the computer or master sheet. This process ensured that all villages received nets and that there would be no shortfalls.

The needs basis in PNG is based on the assumption that children under the age of six sleep with their parents, after which boys and girls are grouped separately from their parents. Nets are also allocated based on the number of children in the house, their ages, and whether there are other dependents living in the households such as grandparents. A full description of the allocation system can be obtained from RAM officers but suffice to say a family of four could receive between one to four nets depending on the sex and age of family members.

Nets are allocated to each LLG based on assumed populations of each LLG and it was important prior to the distribution to ensure that when allocations had been carried out to families and villages that there were enough nets available to cover each and every family.

Distribution

There was no official launch for the LLINs distribution in Western Province. However, prior to distribution there was a social awareness phase where the project teams informed communities about the arrival of the distribution teams, especially those accessible by road.

The LLINs were then distributed to teams depending on the needs of each village. The LLINs were then distributed by village or wards depending on whether villages were close together. In this latter case, a central location was identified in the ward and then distribution of nets was carried out. In terms of distribution sites, villages were organised in different ways to make the flow of nets easy and effective. However, the actual organisation depended on each team and the structure of the various groups receiving nets.

All net packaging was opened at distribution site with a district code printed on each net e.g., WP22 meaning Western Province 2022. This code is added to identify nets to assist in future monitoring exercises as well as discouraging householders from selling the nets on the open market.

Some examples of the process used to control the crowd includes;

- Arranging the people according to the serial numbers in the survey books e.g., 72001 - 72050 and then calling the names and the serial numbers.
- Call the names of the owners of the households, collect the white copy and give the nets.
- Wait for everyone to come to the distribution site, collect all the white copies and sort the copies with the pink copies. Call the names on the white copies and give the nets.

Some of the following control methods were used.

- Everyone who presented with a white copy was given LLINs at the distribution site with LLINs only given to the owner of the house or a member of the house whose name is written on the back of the survey form.
- Those people who lost the white receipts were left to the end of each distribution, with nets only being issued if the name of the person collecting the nets was found on the back of the pink copies.
- For those families who were absent at the time of distribution, their names were written in a form – MOSQUITO NETS HELD IN TRUST BY VILLAGE CHIEFS FORM and the nets allocated to missing families were given to chiefs or any person entrusted by the community with the forms for these families to collect their LLINs later.
- Householders are now being asked to make a thumb print as proof of delivery of nets to a household. The Global Fund had formally asked that householders should sign for delivery of nets. This was considered problematic as many householders are illiterate and even where householders can write, this process takes a long time in what is often a very chaotic and charged environment where speed is of the essence.

It should also be noted that surveys and distributions took place at more or less the same time in some remote places of Western Province. This is particularly true for mountainous villages or villages at the end of rivers which might take several hours or days to reach. In these instances, estimations based on the 2000 Census data and local knowledge used to pre-allocate nets. Teams were then dispatched to these areas with nets. On arrival in these remote places, surveys took place and were immediately followed by a distribution based on the survey results.

Other details

In the case of Middle Fly, all LLINs were ultimately delivered to Port Moresby by ship in two different shipments from the Global Fund and PNG Sustainable Development Program (SDP). Two types of nets were delivered known as Magnet and Yahe. Magnet is a polyethylene net while the Yahe is polyester but both are light blue in colour. All nets arriving in Port Moresby were custom cleared by Express Freight Management and then stored primarily in the premises of GFS transport yard in Baruni which is just outside of Port Moresby. After this, two containers were moved to Balimo and two containers to Kiunga. Those sent to Kiunga were for air transport into northern Middle Fly and for transport down the Fly River to Obo, Lake Murray and Waliama. It should be noted, that primarily, it had been planned to send nets directly to Waliama, Obo and Lake Murray from Port Moresby but the barge which was to do this broke down and the nets had to be sent to Kiunga first which delayed the overall operations of the program considerably.

Results

Table Three shows the LLIN distribution data by district and Table Four by Local Level Government (LLG). These table give the actual population surveyed together with the number of LLINs distributed by district. In total, 60,943 LLINs were distributed to a population of 119,639 people in Middle Fly. This resulted in distribution of 50.9 nets for every 100 people in the district.

TABLE THREE
Nets Distributed At District Level In Western Province

District	Population from 2000 Census	Population Of Targeted Areas In 2019	Total Estimated Population 2022	Population Surveyed 2022	House Holds Surveyed 2022	Nets Issued 2022	Growth Rate Against 2019 Survey	Nets Distributed Per 100 People
Middle Fly	55,853	112,945	124,500	119,639	19,568	60,943	1.94	50.9

TABLE FOUR
Nets Distributed At LLG Level In Western Province

LLG	**District**	Population from 2000 Census	Population Of Targeted Areas In 2019	Total Estimated Population 2022	Population Surveyed 2022	House Holds Surveyed 2022	Nets Issued 2022	Growth Rate Against 2019 Survey	Nets Distributed Per 100 People
Balimo Urban	Middle Fly	3,143	7,389	8,145	8,268	1,238	4,179	3.82	50.5
Gogodala Rural	Middle Fly	24,183	48,109	53,031	52,024	7,855	26,848	2.64	51.6
Bamu Rural	Middle Fly	8,169	21,515	23,716	21,784	3,636	10,730	0.42	49.3
Lake Murray	Middle Fly	9,796	17,182	18,940	17,501	2,968	9,045	0.62	51.7
Nomad Rural	Middle Fly	10,562	18,750	20,668	20,062	3,871	10,141	2.28	50.5
Totals		**55,853**	**112,945**	**124,500**	**119,639**	**19,568**	**60,943**	**1.94**	**50.9**

Referring to Table Three and Table Four, it can be seen that the overall population growth rate is only 1.94% which is quite low by PNG standards. However, analysis at an LLG level in Table Four shows that Balimo, the only real urban centre in the district has grown at a much higher rate suggesting that there is a drift of people from more rural areas into urban areas.

Table Five shows that 792 nets were left over at the end of the program and were donated to health centres. In general, these nets were left where the nets were loose and no longer in bales or the nets were very few or the nets could be difficult to return to a central location. In general, these nets would be used for hospital beds or for antenatal mothers.

TABLE FIVE
Nets Donated To Health Facilities

District	LLG	HC	Donated
Middle Fly	Gogodala Rural	Awaba HC	36
		Waliama	334
	Bamu Rural	Kamusi HC	16
		Emeti HC	11
		Torobina AP	31
	Lake Murray	Lake Murray HC	59
		Obo HC	96
	Nomad Rural	Mogulu HC	181
		Nomad HC	28
TOTAL			**792**

With reference to Table Six, it can be seen that the overall operational cost of the programme was 268,745.74 Kina (Approximately US$ 74,652) resulting in a cost of about 4.41 Kina or US$1.22 per net delivered. This was about 7% over the anticipated budget with savings in human resources costs and large overspends in aircraft charters and fuel. The increased fuel cost is probably due to the extended period of time in the district and a number of extra journeys that were done up and down the Fly River between Lake Murray, Obo and Kiunga.

TABLE SIX
Cost Of Programme In Western Province (All Costs in Kina)

Expense Types	Budget	Actual	Variances	% Variances
Human Resources	K111,049.91	K62,100.00	48,949.91	55.9
Fuel Cost	K27,120.00	K57,078.51	-29,958.5	-110.5
Car Hire Cost	K25,200.00	K21,469.00	3,731.00	85.2
Boat Hire Cost	K76,200.00	K70,610.00	5,590.00	92.7
Aircraft Hire Cost	K33,500.00	K51,272.73	-17,772.73	-53.1
Stationeries/Supplies	K3,000.00	K2,848.81	151.19	95.0
5% Contingency	K13,803.50	K3,366.69	10,436.81	24.4
Total Costs	K289,873.40	K268,745.74	21,127.66	92.7

Referring to Table Seven, this shows the cell phone coverage for Middle Fly District is reasonably good while radio coverage is very poor. This suggests that getting health information into villages remains challenging.

TABLE SEVEN
Cell and Radio Coverage In Western Province

District	Villages	House Holds Surveyed	Digicel	Bmobile	Houses with Radios	Villages With Radio Networks
Midddle Fly	302	19,568	201	0	823	55

Fig.6 – Survey Verification In Kamui (Left) And Lake Murray (Right)

Conclusions

Overall, it can be said that the LLIN distribution in Middle Fly Province was generally a huge success both in terms of results and great collaboration between staff from RAM, provincial and district health authorities, and the Evangelical Church of PNG (ECPNG) Church Health Services who have a large presence in Middle Fly. Through this collaboration, the data suggests that all villages were reached and practically all families in those villages received nets despite any local challenges.

There were some challenges which include:

- Getting timely air services to Middle Fly, firstly with Tropic Air to reach Balimo and secondly within Middle Fly with Mission Aviation Fellowship (MAF) which delayed operations. Much of this was related to the elections where aircraft companies gave priority to politicians.
- Getting nets delivered to locations along the Fly River. Despite promises of one carrier to do this from Port Moresby, in the end RAM has to send all nets for Obo, Lake Murray and Tapila (Waliama) to Kiunga where fortunately the management of MV Kuku were very kind and gave some us priority to get our nets to the required locations.
- Issues with access due to weather and other issues. Continuous heavy rainfall made roads around Balimo very difficult to pass through which delayed local distributions around Balimo for a week.Distribution disrupted due to Election campaigns thus prolonging it for more days than initially planned.
- Elections not only disrupted operations in other locations such as Kamusi as locals did not want to attend distributions as other events were taking place at the same time.

- RAM management forgot initially to inform the Provincial Health Office (PHA) in Daru about when the RAM team would arrive in Middle Fly. RAM has apologised to the PHA for the grievous oversite.

Other than this, as with other provinces in the country where RAM has operated in over the last ten years, the methodologies used this time, including survey verification processes appeared practical and were openly welcomed by both villagers and implementers, particularly the practice of hanging up the list of names in the middle of the village following a survey. This allowed communities to feel that they were part of a transparent process. This is not to say that perhaps some extra people managed to slip into the books, but in general, it was felt that the system was fair and included practically everyone concerned. The use of the master lists also ensured that all villages were reached and accounted for.

The review of the data prior to the distribution was also important. This ensured that all villages and families received the correct numbers of nets. The 2000 Census Lists were very important to ensure that survey teams reached all villages: without the complete list of villages, it would be very difficult to make a detailed report.

The greatest complaint still received from communities was the number of nets they received. Even though the team explained the logic of how the allocation of nets is calculated, some families still expect one net per person, others expect it to be based on a fixed allocation based on the number of people in the family, and yet others thought they would be given nets based on the number of nets they stated they already had. This highlights that a better system of explaining the allocation system still needs to be developed. In general, unlike some previous districts covered by RAM and DHTs of Middle Fly Disrict assisted in the allocation of the nets which meant they were in a better position to explain the distribution system on the ground. Nevertheless, despite all the difficulties involved, it would appear that the vast majority of community members accepted the outcome and there were no real problems or complaints encountered.

Acknowledgements

On behalf of the Rotarians Against Malaria household distribution team who worked in Middle Fly district, we would like to sincerely acknowledge and thank the Western Province Health Authority and the District Health Staff of Middle Fly District for the excellent help and cooperation during the Long Lasting Insecticide Nets (LLINs) distribution programme.

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(Provincial Disease Control Officer).

For the district staff, we would like to sincerely thank all those who tirelessly took part in the programme, and in particular we would like to mention the following people who were instrumental in providing the local expertise and advice from planning to implementation of the programme in the district namely:

Middle Fly District

Name	Occupation	Institution
Mr. Juniar Giniha	District Disease Control Officer	Balimo Health Centre
Mr. Gorowa Wakina	Admin Officer	Balimo Health Centre
Mr. Bugu Adari	Community Health Worker	Sisiame Aid Post
Mr. Markus Mamola	Community Health Centre	Mapado Health Centre

Mr. Yarks Manale	Community Health Worker	Wauwa Falls Health Centre
Mr. Gideon Luise	Officer in Charge	Mogulu Health Centre
Mr. Fauwana Mailabu	Community Health Worker	Mogulu Health Centre
Mrs. Gideon Luise	Community Health Worker	Mogulu Health Centre
Mr. Robert Gamai	Community Health Worker	Emeti Health Centre
Mr. Timothy Wokin	Community Health Worker	Debepari Health Centre
Mrs. Maureen Damela	Officer in Charge	Awaba Health Centre
Mrs. Dudiyato Kane	Community Health Worker	Awaba Health Centre
Mrs. Kelayato Dalu	Community Health Worker	Awaba Health Centre
Dr. Willie Dela Rosa	Medical Officer in Charge	Kamusi Health Centre
Mr. Stanley Duabela	Community Health Worker	Kamusi Health Centre
Mrs. Koporo Aua	Community Health Worker	Kamusi Health Centre
Mr. Kipsy Daeniya	Nursing Officer	Lake Murray Health Centre
Mr. Bruce	Officer in Charge	Waliama Health Centre
Mr. Maido Makai	Community Health Worker	Waliama Health Centre
Mr. Billy	Community Health Worker	Waliama Health Centre
Mr. Tulo Yima	Officer in Charge	Nomad Health Centre
Mrs. Priscilla Jerry	Community Health Worker	Nomad Health Centre
Mr. Ruben Epesi	Community Health Worker	Nomad Health Worker

RAM would like to specially acknowledge the support received from established and local service providers for logistical support namely; Rossana Investment company for shipping three containers from Port Moresby GFS yard to Balimo for Balimo Urban and Bamu Rural Operations and Consort Shipping for delivering two containers from GFS yard to Kiunga for Obu, Lake Murray and Tapilla Operations. RAM would also like to thank Warren Dutton and Redentor Caggauauan of Progress Limited (MV Kuku) for very helpful assistance in further delivery of nets and fuel drums from Kiunga to Obu, Lake Murray and Tapila.

RAM also thanks all the local hire car and boat owners for providing their service for this operation. We would not have reached many communities without the dedication of the drivers and the boat operators. RAM also extends its gratitude to MAF Aviation who provided us aircraft support to reach remote areas in Nomad Rural and Tropic Air Aviation for remote areas in Balimo and Bamu Rural. RAM would like to also thank Puma Energy for supplying bulk fuel for the operation.

RAM also thanks Evangelical Church of PNG Health Services health facilities and lastly to all the Government run facilities for allowing their staff to work with the RAM team.

RAM would also like to extend our acknowledgement and appreciation to all the hard working volunteers and other local community leaders for ensuring all homes were surveyed and assisted in distributing all the nets. RAM thanks you all very much for your hard work, support and local expertise in making the overall program a success.

Last but not least, we would like to thank the two donors who funded this program, firstly the Global Fund who supports malaria programs throughout PNG and in the case of Middle Fly provided 50% of the LLINs and the salaries of our RAM staff, and also to PNG Sustainable Development Program who provided all the other costs of this program. For both donors, we are very thankful.

Appendix One – History Of LLIN Distribution In PNG

The use of Insecticide Treated Nets (ITNs) started in PNG in 1985 when the PNG Institute of Medical Research (IMR) conducted one of the first trials demonstrating the health impact of treating mosquito nets with insecticide. The study, done near Western, showed a reduction of *P. falciparum* incidence and prevalence in children below five years of age sleeping under permethrin-treated nets. The protective effect of insecticide-treated nets (ITNs) was also confirmed in many other trials around the world. As a consequence of such findings, the national malaria control program in PNG started emphasizing the use of ITNs in 1989. However, no regular or large-scale distribution of ITNs was carried out at this time.

In the following years, coverage with mosquito nets and other control interventions remained patchy and low in many parts of PNG. It was during this period that Rotarians Against Malaria (RAM) was created from the Port Moresby Rotary Club in 1997. Using a donation of 150,000 treated nets given to them from the National Department of Health (originally from AusAid), RAM successfully ran a revolving fund of nets in which nets were sold at a price which allowed the proceeds to buy more nets. RAM did this successfully for many years distributing about 45,000 treated nets a year from 2000 to 2004.

Prior to 2004, most treated nets had to be re-treated every six months or a year which requires a lot of work and organisation. In early 2004 everything changed with the introduction of Long-Lasting Insecticidal Nets (LLINs) which would last for 20 heavy duty washes and effectively no longer required to be treated repeated. This change in nets also coincided with the introduction of the Global Fund into PNG known as the Global Fund Round 3.

From 2005 to 2009 the malaria programme in PNG received and delivered about 2.3 million nets throughout the country at a rate of one net for every 2.5 people. The delivery of nets to village level was under the provincial health authorities and reached most parts of the country with Rotarians Against Malaria (RAM) being responsible in delivering the containers of nets to the provinces from Port Moresby and Lae where the nets arrived from overseas.

While the programme was very successful in some areas it was not so successful in others. Problems included slow release of funds from central to provincial level, some provinces not following technical guidelines given resulting in some areas not been covered, and technical and financial reporting leaving a lot to be desired in many of the provinces. When further funds became available in what is known as the Global Fund Round Eight, it was decided that Rotarians Against Malaria (RAM) would take over the coordination of the LLIN programme.

This change has resulted in RAM being responsible for the overall coordination of the LLIN distribution of LLINs in the country particularly in the areas of quantification, procurement, reporting and delivery to provincial and district level. However, the actual delivery of nets to village level is a collaboration between RAM, provincial health authorities and district health and health centre staff.

Fig.1 shows the distribution of nets to districts and provinces from 2006 to 2009 while Fig.2 shows the distribution of nets from 2010 to 2014 and Fig.3 shows the distribution from 2015 to 2017 which includes under five distributions in 2016 and 2017. Under Five distributions had been carried out in areas above 1600m and in Port Moresby and Lae City due to lack of funds. This situation changed when support from Against Malaria Foundation was received.

Up until December 2020, a total of 13.0 million LLINs had been distributed to household level under the coordination of RAM. Therefore, with the 2.5 million nets distributed from 2006 to 2009, this means that about 15.5 million nets have been delivered to household level in PNG since 2006. This is more than one net per every person in PNG. RAM has also distributed

about another 1.5 million nets to health centres for distribution to pregnant women and for prisons and boarding schools.

It should also be noted that alongside developments related to treated mosquito nets, the first cases of chloroquine-resistant malaria were reported in 1976. This progressed rapidly to widespread resistance of *P. falciparum,* and to a slightly lesser extent *P.vivax*, to chloroquine, amodiaquine and sulphadoxine-pyrimethamine (SP). In studies conducted between 2003 and 2005, even combination regimens of these drugs faced up to 29% resistance of *P. falciparum*[2]. This situation together with Global Fund Round 8 *also* saw the introduction of artemether lumefantrine branded as Malawan and IPT (Intermittent Preventative Treatment) for antenatal women using Fansidar (Pyrimethamine Dapsone).

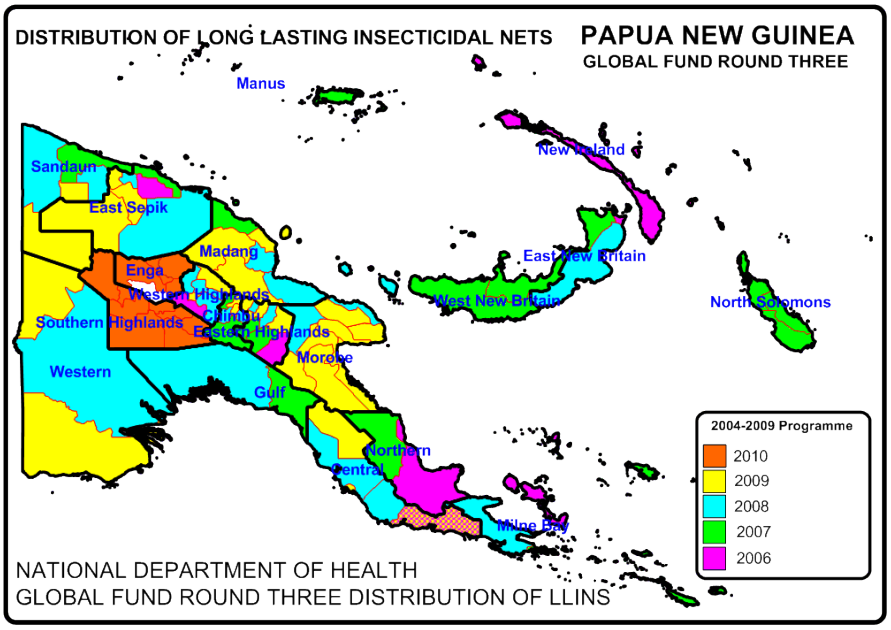


Fig. 1 Distribution Of Nets Under National Department Of Health From 2006 To 2010

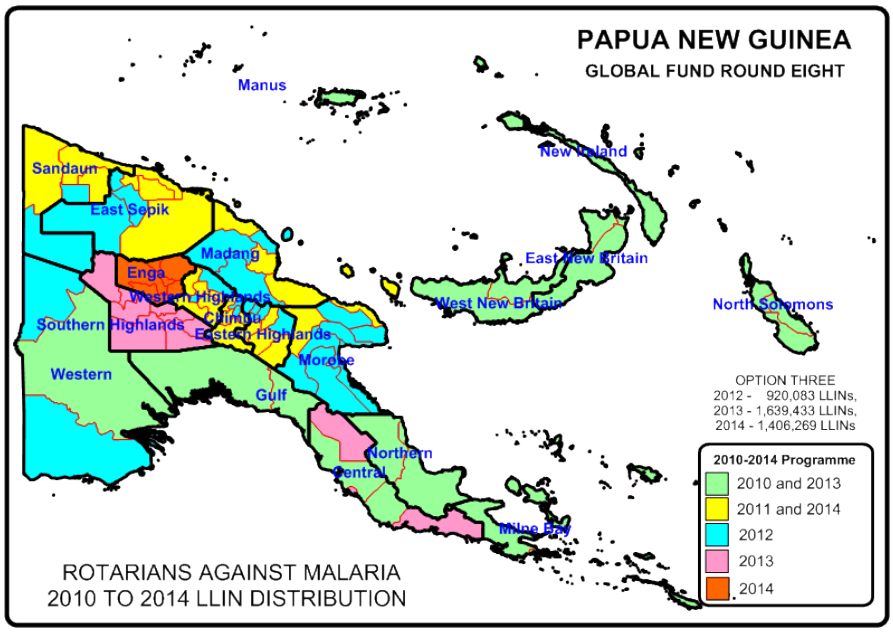


Fig.2 Distribution of LLIN Programme 2010 to 2014

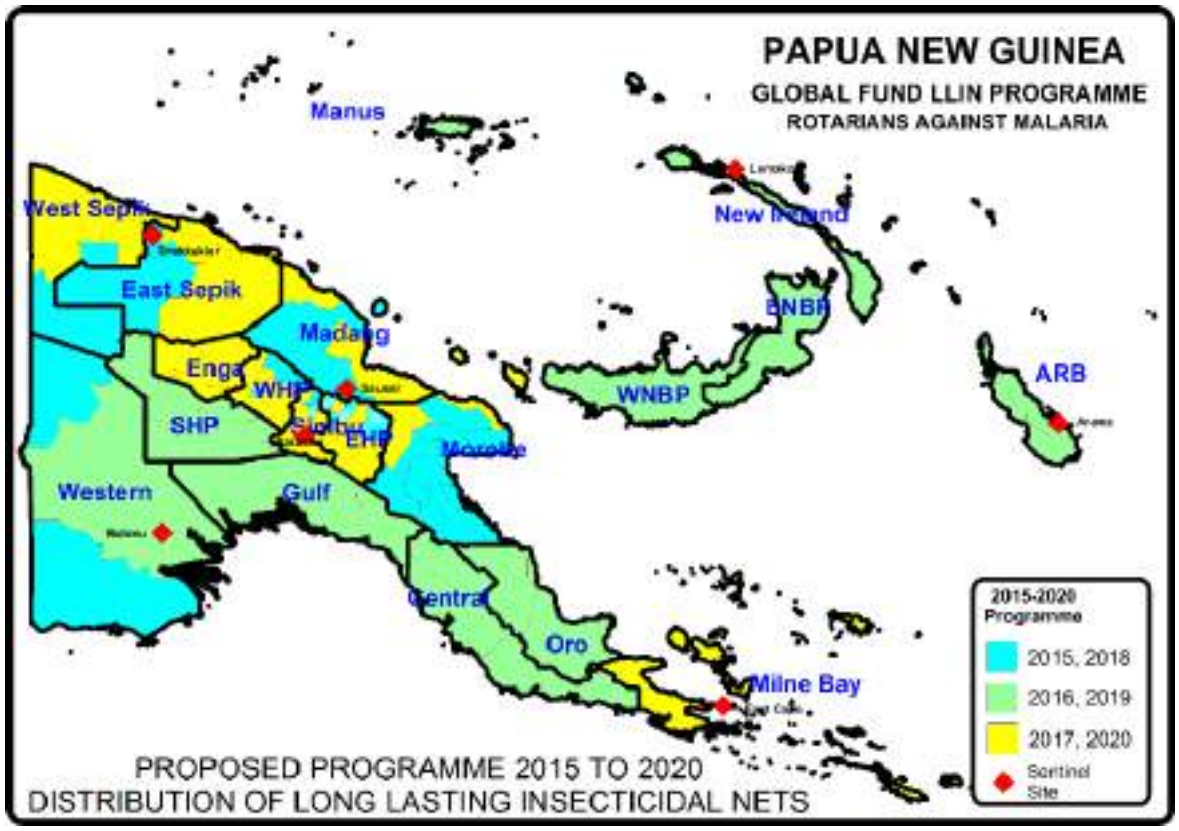


Fig.3 LLIN Distribution Programme 2015 to 2020

TABLE ONE - LLINs Delivered In PNG Under Coordination Of RAM From 2010

Period	Dates	Districts	Provinces	Nets Delivered	Type Of Net Delivered
Phase One (2010-2011)	Nov 09 - Oct 11	50 Districts	18 Provinces	1,890,448	Permanet 2
Year 3 (2012)	Nov 11 - Sep 12	27 Districts	10 Provinces	832,671	Permanet 2
Year 4 (2013)	Oct 12 - Sep 13	28 Districts	12 Provinces	1,210,391	Permanet 2
Year 5 (2014)	Oct 13 - Sep 14	23 Districts	11 Provinces	1,374,791	Permanet 2
Year 5 (2014) No Cost Extension	Oct 14 - Dec 14	Okapa, Lufa, Madang, Angoram, Maprik, Yangoru Saussi, Wewak, Aitape Lumi, Nuku and Vanimo Green	EHP, Madang, East Sepik and Sandaun	454,806	Permanet 2
Year 6 (2015)	Jan - Dec 2015	29 Districts	11 Provinces	932,822	Permanet 2
Year 7 (2016)	Jan - Dec 2016	27 Districts	13 Provinces	805,597	Permanet 2
Year 8 (2017)	Jan - Dec 2017	36 Districts	13 Provinces	1,543,947	Permanet 2
Year 9 (2018)	Jan - Dec 2018	27 Districts	11 Provinces	1,211,922	Permanet 2
Year 10 (2019)	Jan - Dec 2019	26 Districts	12 Provinces	1,266,525	Permanet 2
Year 11 (2020)	Jan - Dec 2020	28 Districts	13 Provinces	1,495,368	Safenet, Interceptor, Yorkool and Royal Sentry
Year 11 (2021)	Jan - Dec 2021	30 Districts	9 Provinces	1,301,456	Yahe
	Jan- Mar 2022	North and South Fly, Telefomin, Kairuku	Western, Sandaun, Central	164,212	Magnet, Yahe
	Apr - Jun 2022	Rigo, Kairuku Hiri, Goilala, Koroba Kopiago, Komo Magarima, Nipa, Kagua Erave, Ialibu Pangia, Kerema	Southern Highlands, Hela, Central, Gulf	242,948	Magnet, Yorkool
New Funding Model (2015-2021)				8,964,797	
Round Eight (2010 - 2014)				5,763,107	
Overall Total Phase One and Phase Two And NFM				14,727,904	

Appendix Two – Malaria In Western Province Compared With Other Provinces

Fig.1 shows the decrease of malaria from 2007 to 2015 in all provinces, Fig. 2 shows the actual malaria incidence in 2020 compared with other provinces and Fig.3 shows annual malaria trends from 2017 to 2021. In Western Province, it can be seen from Fig.1 that malaria decreased from 2007 to 2015 by 73% which is a similar reduction to Gulf Province. In Fig.2, in 2020 it can also be seen that in Western Province the malaria incidence is 125 per 1000 which is only higher than NCD, Central and AROB Provinces. Fig. 3 and Fig.4 show the malaria incidence by year with Fig.4 showing malaria incidence compared with net distributions in all three districts of Western Province. It can be noted that in general, LLIN distributions before 2014 and in 2017, resulted in significant decreases in malaria but in general, distributions that occurred after 2014 for the most part have resulted in increased malaria or decreases of a very short duration. This is believed to be because of changes to the LLINs PNG received after 2013 which resulted in the nets no longer working as they did in the past. It can only be hoped that the nets distributed in 2022 have a better impact than those of recent years.

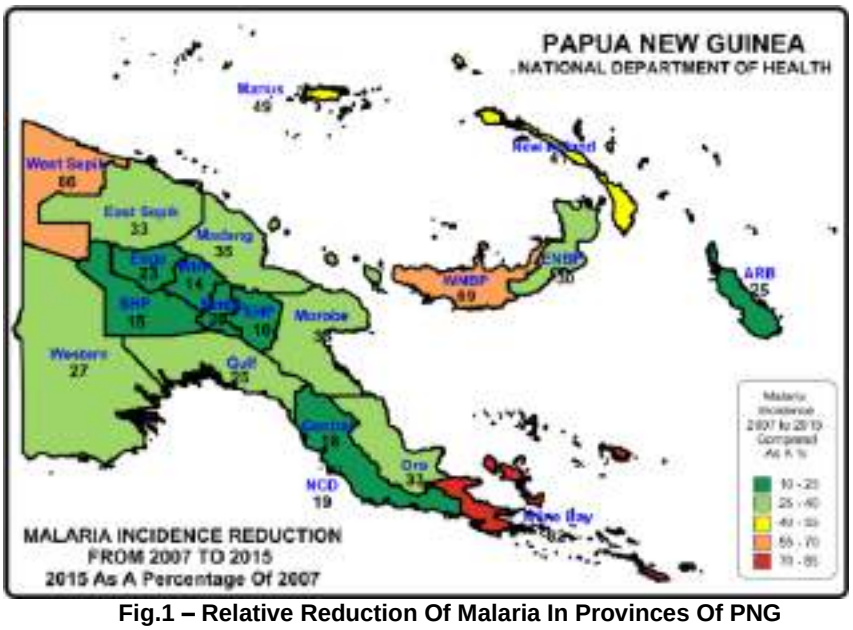


Fig.1 – Relative Reduction Of Malaria In Provinces Of PNG

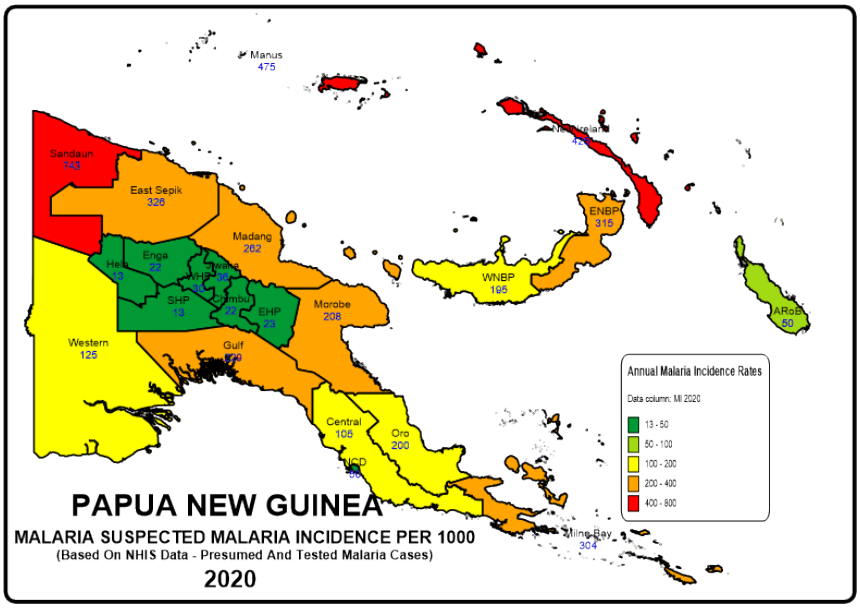


Fig.2 – Reported Malaria Incidence In 2020

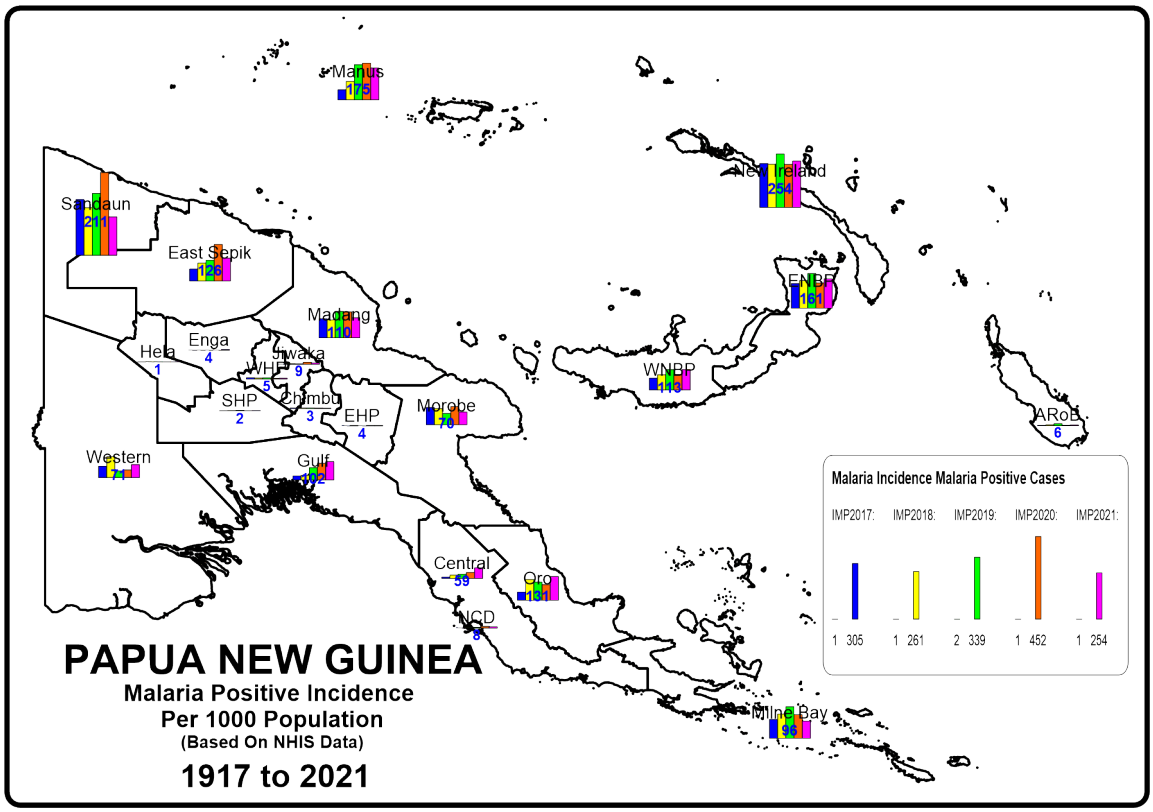


Fig. 3 - Reported Malaria Incidence In PNG From 2016 To 2020

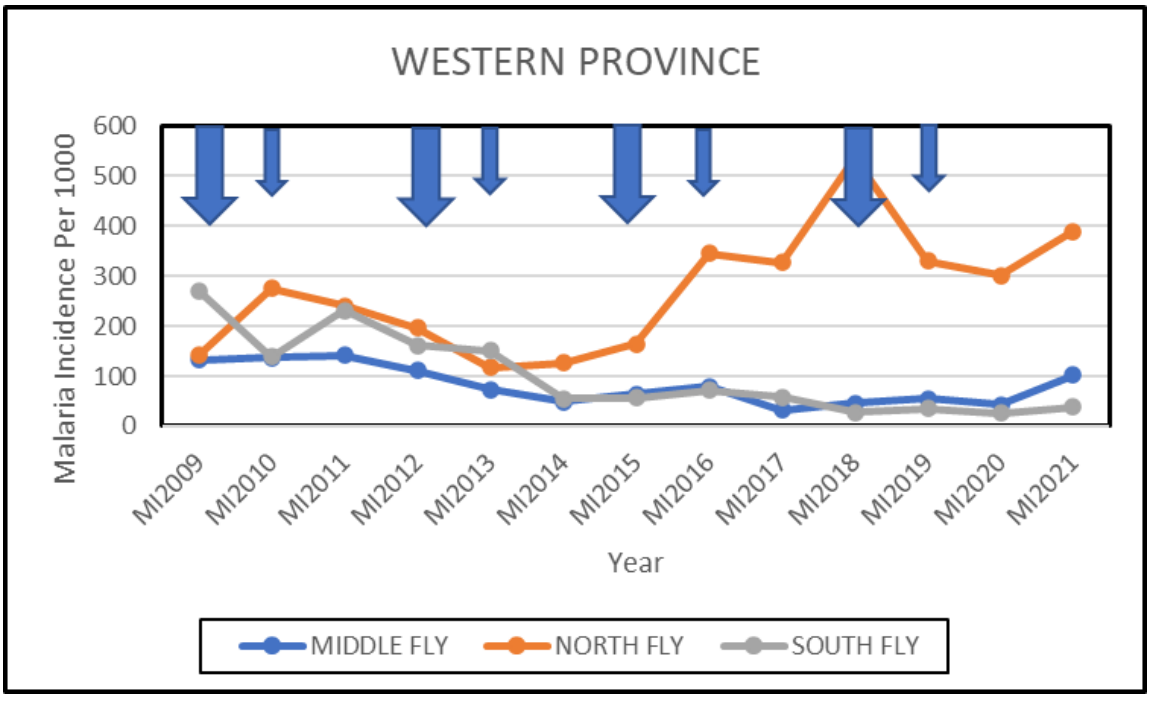


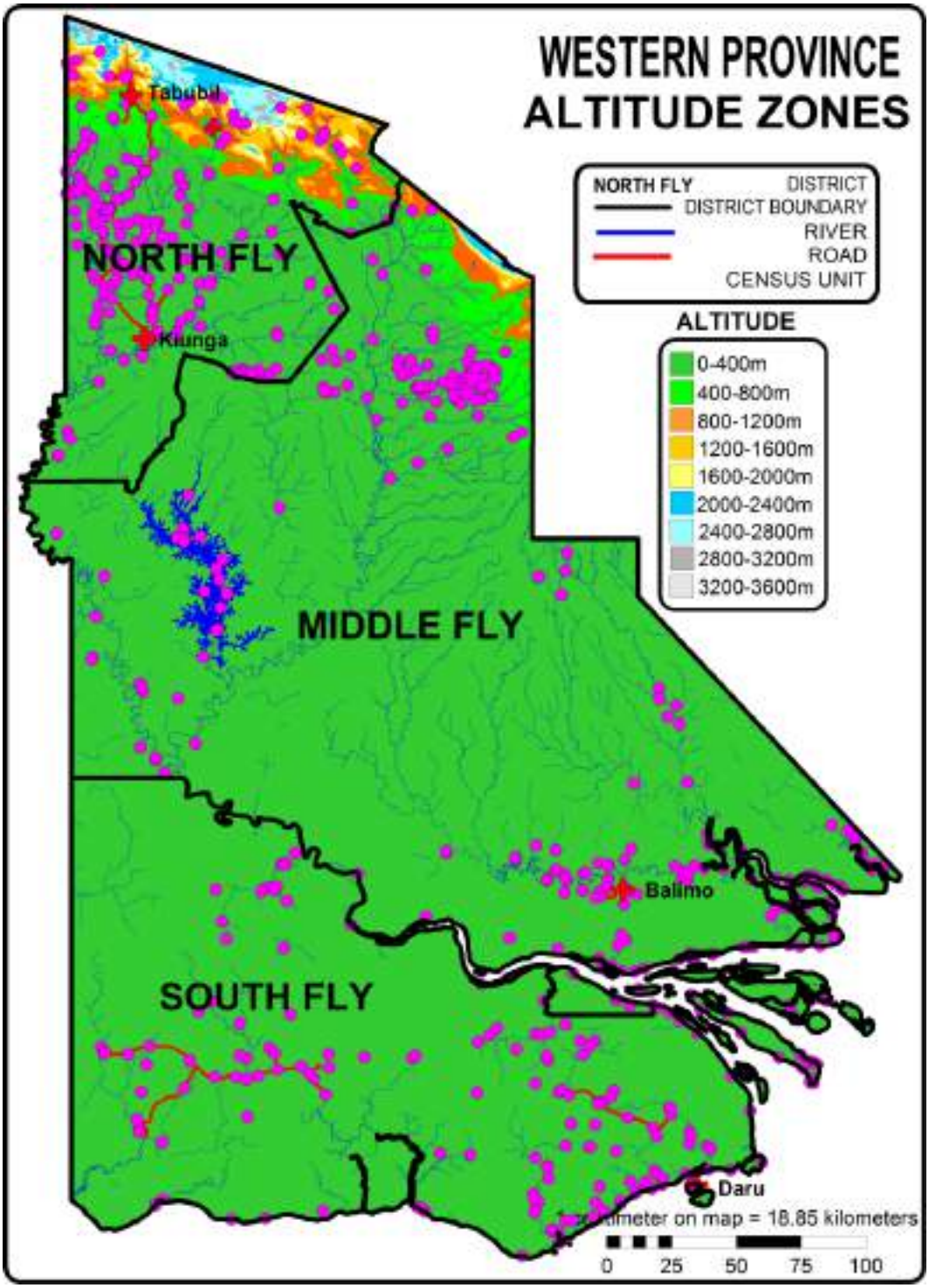
Fig. 4 – Malaria Incidence Versus Distribution Of Nets

Larger arrows represents LLIN distributions done in South Fly and North Fly in 2009, 2012, 2015 and 2018 while small arrows represent distributions in Middle Fly in 2010 and 2013, 2016 and 2019

Appendix Three - Malaria By Altitude

Western Province is predominantly a low lying coastal province on the northern coast of mainland Papua New Guinea (PNG). Most of the province (99.0%) lies in areas below 1200 metres in altitude where malaria is considered endemic and most of population (90%) actually live in areas below 400m where malaria is at its worst in terms of transmission. Middle Fly where the Long Lasting Insecticidal Net (LLIN) distribution took place is mainly made up of swamps apart from a very small area in the north of the district where a few villages are located in a mountainous area.

Fig. 1 Altitude Zones In Western Province



Appendix Four – Other Photographs


LLIN Distributions Kamusi (Left) And Lake Murray (Right)


Distributions In Torobina (Left) And Emeti (Right)


Distributions of LLIN in Waliama (Left) And Balimo (Right)


Distributions in Debepari (Left) And Mapodo (Right)

OTHER PICTURES

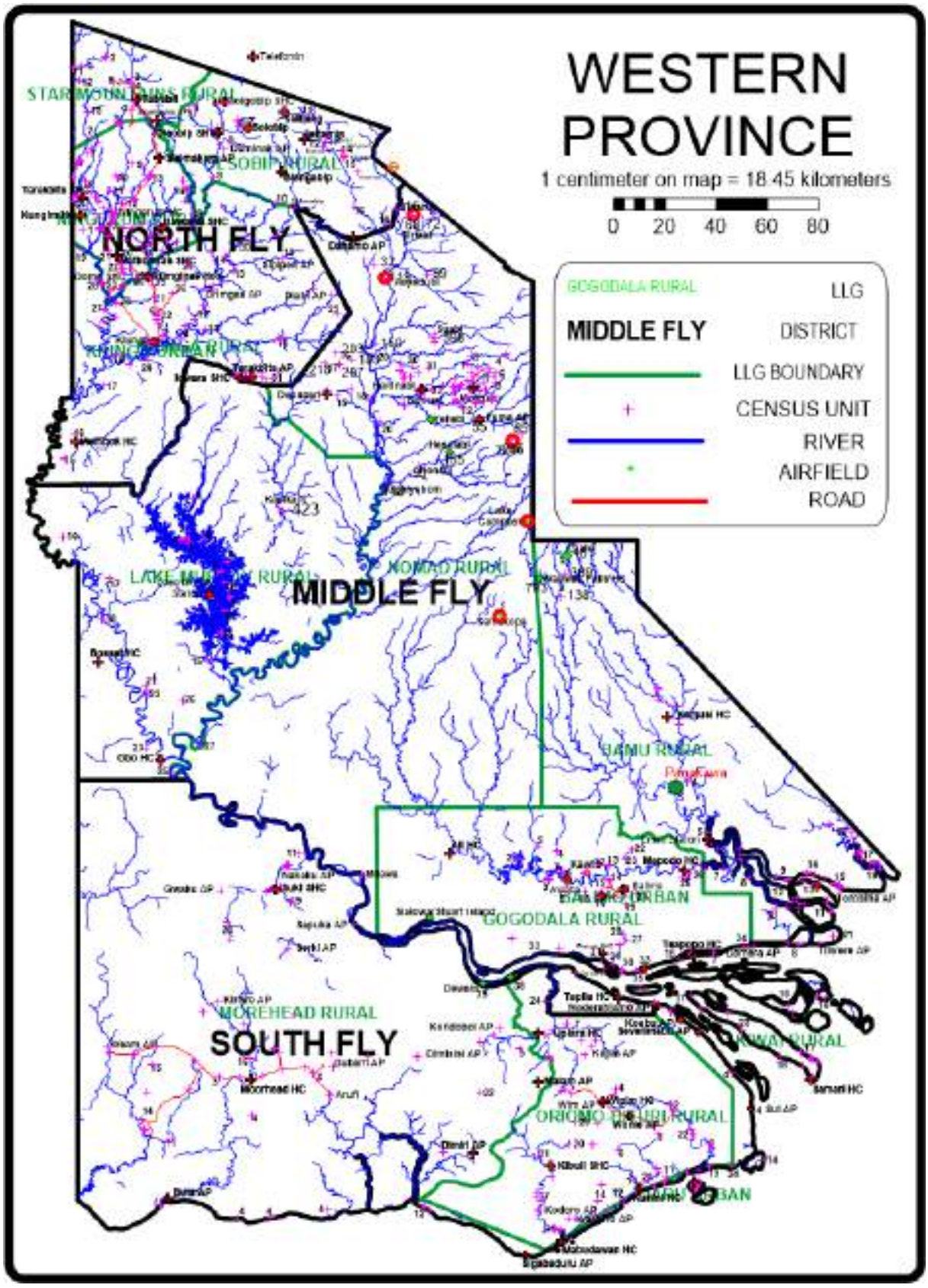
Air Transport In Mougulu (Left) And Transport By Boat (Right) In Lake Murray

Boat Transport (Left) And Storage Of Nets (Right) At Emeti

MV Kuku That Took Nets To Obo, Lake Murray and Tapila (Left) And Unloading At Tapila (Right)

Happy Customers In Mapoda (Left) And Emeti (Right)

Appendix Five - Map Of Western Province Showing Census Points Of 2000 Census



ANNEX ONE

WESTERN PROVINCE
POPULATION 2022
LLIN DISTRIBUTION SUMMARY SHEET

LLG	WARD	VILLAGE	Estimated 2022 Population Based On 2000 Census	Estimated 2022 Population Based On 2019 Survey	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Networks	Comments
Middle Fly District			**124,500**	**124,500**		**119,639**	**19,568**	**60,943**		**302**	**201**	**0**	**823**	**55**	
Balimo Urban			**7,006**	**8,145**		**8,268**	**1,238**	**4,179**		**12**	**12**	**0**	**0**	**0**	
1	**Balimo Urban**		**7,006**	**0**											
		Balimo 01	1,333	0	Balimo HC										Road
		Balimo 02	1,578	0	Balimo HC										Road
		Balimo 03	1,427	0	Balimo HC										Road
		Balimo 04	586	0	Balimo HC										Road
		Balimo Village	1,670	0	Balimo HC										Road
		Balimo Village	412	0	Balimo HC										Road
	Balimo 01/Owa			**3,275**		**3,478**	**497**	**1,748**		**5**	**5**	**0**	**0**		
		Newton		443	Balimo HC	390	58	195	09.08.22	1	1	0	0		Road
		Wasaea		1,052	Balimo HC	1,332	194	674	05.08.22	1	1	0	0		Road
		Salaea		229	Balimo HC	229	40	122	05.08.22	1	1	0	0		Road
		Aiwasaba/Biula		535	Balimo HC	585	85	291	05.08.22	1	1	0	0		Road
		Owa village(Balimo village)		1,016	Balimo HC	942	120	466	05.08.22	1	1	0	0		Road
	Balimo 02/Page			**2,273**		**2,256**	**373**	**1,162**		**3**	**3**	**0**	**0**		
		UK		999	Balimo HC	1,002	141	509	06.08.22	1	1	0	0		Road
		Botewa/Iyaka		528	Balimo HC	513	93	264	06.08.22	1	1	0	0		Road
		Middle town 01		746	Balimo HC	741	139	389	06.08.22	1	1	0	0		Road
	Balimo 03/Igida			**1,015**		**946**	**139**	**493**		**2**	**2**	**0**	**0**		
		Middle town 02		353	Balimo HC	236	32	121	09.08.22	1	1	0	0		Road
		KC point/Rubber point		662	Balimo HC	710	107	372	09.08.22	1	1	0	0		Road
	Balimo 04/Bayase			**1,582**		**1,588**	**229**	**776**		**2**	**2**	**0**	**0**		
		Blue point		460	Balimo HC	466	65	237	09.08.22	1	1	0	0		Road
		Eno		1,122	Balimo HC	1,122	164	539	09.08.22	1	1	0	0		Road
Gogodala Rural			**53,905**	**53,031**		**52,024**	**7,855**	**26,848**		**85**	**57**	**0**	**68**	**20**	
1	**Ali**		**2,523**	**2,315**		**2,035**	**348**	**1,213**		**4**	**4**	**0**	**0**		
		Kaibako		423	Awaba HC	392	68	227	27.07.22	1	1	0		FM,AM	Boat
		Bogola		388	Awaba HC	350	60	191	27.07.22	1	1	0		FM,AM	Boat
		Ali	1,514	693	Awaba HC	601	107	398	27.07.22	1	1	0		FM,AM	Boat
		Kinawa	1,010	810	Awaba HC	692	113	397	27.07.22	1	1	0		FM,AM	Boat
2	**Makapa**		**2,784**	**2,869**		**3,016**	**434**	**1,440**		**3**	**3**	**0**	**0**		
		Makapa	1,924	1,818	Awaba HC	1,935	240	924	24.07.22	1	1	0		FM,AM	Boat
		Mumuni	860	908	Awaba HC	879	159	416	24.07.22	1	1	0		FM,AM	Boat
		Ulia/Kabili (New)		143	Awaba HC	202	35	100	24.07.22	1	1	0		FM,AM	Boat
3	**Isago**		**1,875**	**1,746**		**1,775**	**252**	**865**		**3**	**2**	**0**	**0**		
		Isago No. 1	1,155	1,048	Awaba HC	1,065	153	526	22.07.22	1	1	0		FM, AM	Boat
		Isago No.2	631	648	Awaba HC	710	99	339	22.07.22	1	1	0		FM.AM	Boat
		Isago Community School	89	50	Awaba HC					1					Included Under Isago 2
4	**Pikiwa**		**1,195**	**1,528**		**1,659**	**221**	**814**		**2**	**2**	**0**	**0**		
		Pikiwa	1,195	1,350	Awaba HC	1,159	161	572	21.07.22	1	1	0		FM,AM	Boat
		Paputa		177	Awaba HC	500	60	242	21.07.22	1	1	0		FM,AM	Boat
5	**Wasapeya**		**341**	**572**		**576**	**100**	**284**		**1**	**1**	**0**	**0**		
		Wasapeya	341	572	Awaba HC	576	100	284	21.07.22	1	1	0		FM,AM	Boat
6	**Pisi**		**2,075**	**1,403**		**1,637**	**184**	**708**		**2**	**1**	**0**	**0**		
		Pisi	2,017	1,350	Awaba HC	1,637	184	708	21.07.22	1	1	0		FM,AM	Boat
		Pisi Community School	58	53	Awaba HC					1					Included Under Pisi
7	**Semabo**		**544**	**711**		**868**	**150**	**437**		**1**	**1**	**0**	**0**		
		Semabo	544	711	Awaba HC	868	150	437	21.07.22	1	1	0		FM,AM	Boat
8	**Awaba**		**2,242**	**2,024**		**1,813**	**243**	**941**		**4**	**3**	**0**	**0**		
		Awaba Mission	1,647	1,758	Awaba HC	1,613	212	837	19.07.22	1	1	0		FM,AM	Boat
		Awaba High School	388	148	Awaba HC	142	22	75	19.07.22	1	1	0		FM,AM	Boat
		Awaba Community School	178	65	Awaba HC	58	9	29	19.07.22	1	1	0		FM,AM	Boat
		Awaba Health Centre	29	53	Awaba HC					1					Included Under Awaba Mission
9	**Dadi**		**1,485**	**1,206**		**1,130**	**165**	**543**		**1**	**1**	**0**	**0**		
		Dadi	1,485	1,206	Awaba HC	1,130	165	543	20.07.22	1	1	0		FM,AM	Boat
10	**Aketa**		**1,246**	**1,199**		**1,212**	**202**	**570**		**1**	**1**	**0**	**0**		
		Aketa	1,246	1,199	Awaba HC	1,212	202	570	20.07.22	1	1	0		FM,AM	Boat
11	**Kawito**		**111**	**229**		**286**	**46**	**149**		**1**	**1**	**0**	**0**		
		Kawito Mission	111	229	Awaba HC	286	46	149	20.07.22	1	1	0		FM,AM	Boat
12	**Kotale**		**1,710**	**1,569**		**1,686**	**248**	**830**		**1**	**1**	**0**	**0**		
		Kotale	1,710	1,569	Balimo HC2	1,686	248	830	29.07.22	1	1	0	0		Boat
13	**Kewa**		**1,391**	**1,797**		**1,172**	**173**	**591**		**2**	**1**	**0**	**0**		
		Kewa	1,333	1,797	Balimo HC2	1,172	173	591	29.07.22	1	1	0	0		Boat
		Degetege Community School	58	0	Balimo HC2					1					Included Under Kewa
14	**Tai**		**684**	**714**		**809**	**134**	**402**		**2**	**2**	**0**	**0**		
		Tai	395	557	Balimo HC2	506	84	251	30.07.22	1	1	0	0		Boat
		Oseke	290	158	Balimo HC2	303	50	151	30.07.22	1	1	0	0		Boat
15	**Dogono**		**1,471**	**1,165**		**1,092**	**205**	**555**		**1**	**1**	**0**	**0**		
		Dogono	1,471	1,165	Balimo HC2	1,092	205	555	30.07.22	1	1	0	0		Boat
16	**Adiba**		**3,029**	**2,477**		**2,475**	**428**	**1,246**		**5**	**5**	**0**	**0**		
		Ago	655	452	Balimo HC2	417	91	216	30.07.22	1	1	0	0		Boat
		Alibi	762	554	Balimo HC2	495	74	241	30.07.22	1	1	0	0		Boat

LLG	WARD	VILLAGE	Estimated 2022 Population Based On 2000 Census	Estimated 2022 Population Based On 2019 Survey	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Networks	Comments
		Lubi	207	532	Balimo HC2	592	100	299	30.07.22	1	1	0	0		Boat
		Sanabase	1,404	671	Balimo HC2	705	119	354	30.07.22	1	1	0	0		Boat
		Solela		267	Balimo HC2	266	44	136	30.07.22	1	1	0	0		Boat
17	**Yau**		**1,110**	**839**		**755**	**134**	**381**		**1**	**1**	**0**	**0**		
		Yau	1,110	839	Balimo HC2	755	134	381	31.07.22	1	1	0	0		Boat
18	**Ike**		**1,132**	**873**		**866**	**118**	**438**		**1**	**1**	**0**	**0**		
		Ike	1,132	873	Balimo HC2	866	118	438	30.07.22	1	1	0	0		Boat
19	**Kini**		**856**	**817**		**881**	**126**	**447**		**1**	**1**	**0**	**0**		
		Kini	856	817	Balimo HC2	881	126	447	02.08.22	1	1	0	0		Boat
20	**Waligi**		**1,400**	**1,500**		**1,500**	**249**	**741**		**2**	**1**	**0**	**0**		
		Waligi	1,373	1,446	Balimo HC2	1,500	249	741	02.08.22	1	1	0	0		Boat
		Mase Community School	27	54	Balimo HC2					1					Included Under Waligi
21	**Kimana**		**2,521**	**2,329**		**2,435**	**379**	**1,201**		**2**	**2**	**0**	**0**		
		Kimana	2,465	2,036	Balimo HC2	2,073	329	1,029	03.08.22	1	1	0	0		Boat
		Gutula Community School	56	293	Balimo HC2	362	50	172	03.08.22	1	1	0	0		Boat
22	**Bamustu**		**1,235**	**905**		**914**	**118**	**438**		**1**	**1**	**0**	**0**		
		Bamustu	1,235	905	Balimo HC2	914	118	438	01.08.22	1	1	0	0		Boat
23	**Uladu**		**1,308**	**980**		**1,067**	**173**	**520**		**1**	**1**	**0**	**0**		
		Uladu	1,253	946	Balimo HC2	1,067	173	520	01.08.22	1	1	0	0		Boat
		Uladu Community School	56	34	Balimo HC2					1					Included Under Uladu
24	**Ugu**		**2,176**	**1,802**		**1,983**	**309**	**1,002**		**6**	**6**	**0**	**59**		
		Ugu (Kala)	1,005	379	Mapodo HC	382	49	214	01.08.22	1	1	0	14		Boat
		Kala No. 1		446	Mapodo HC	447	64	221	08.08.22	1	1	0	0		Boat
		Kala No. 2		0	Mapodo HC										No longer Existing
		Kebane	912	287	Mapodo HC	405	60	195	04.08.22	1	1	0	0		Boat
		Madila		433	Mapodo HC	490	85	246	04.08.22	1	1	0	0		Boat
		Mapodo Mission	259	108	Mapodo HC	80	22	40	05.08.22	1	1	0	40		Boat
		Lapawa		149	Mapodo HC	179	29	86	01.08.22	1	1	0	5		Boat
25	**Kenewa**		**916**	**907**		**809**	**112**	**399**		**2**	**1**	**0**	**0**		
		Kenewa	863	644	Mapodo HC	809	112	399	03.08.22	1	1	0	0		Boat
		Kenewa Community School	53	263	Mapodo HC					1					Included Under Kenewa
26	**Waya**		**1,081**	**1,105**		**1,093**	**205**	**542**		**2**	**2**	**0**	**9**		
		Waya	470	405	Mapodo HC	417	90	209	02.08.22	1	1	0	0		Boat
		Saiwase	611	700	Mapodo HC	676	115	333	02.08.22	1	1	0	9		Boat
27	**Kubu**		**666**	**524**		**465**	**80**	**254**		**2**	**1**	**0**	**0**		
		Kubu	622	486	Waliama	465	80	254	27.09.22	1	1	0	0		Boat
		Pedeya Community School	45	37	Waliama					1					Included Under Pedeya
28	**Duaba**		**506**	**550**		**550**	**88**	**303**		**1**	**1**	**0**	**0**		
		Duaba	506	550	Waliama	550	88	303	27.09.22	1	1	0	0		Boat
29	**Kondobu**		**419**	**597**		**472**	**59**	**277**		**1**	**0**	**0**	**0**		
		Kondobu	419	597	Waliama	472	59	277	27.09.22	1	0	0	0		Boat
30	**Pagona**		**1,690**	**1,813**		**1,633**	**225**	**898**		**3**	**0**	**0**	**0**		
		Pagona	544	541	Waliama	385	63	211	27.09.22	1	0	0	0		Boat
		Pedeya	736	800	Waliama	739	86	396	27.09.22	1	0	0	0		Boat
		Gaima Settlement	410	472	Waliama	509	76	291	30.09.22	1	0	0	0		Boat
31	**Dede**		**1,574**	**1,754**		**1,553**	**208**	**784**		**1**	**0**	**0**	**0**		
		Dede	1,574	1,754	Waliama	1,553	208	784	04.10.22	1	0	0	0		Boat
32	**Sialowa**		**1,057**	**1,159**		**1,117**	**192**	**638**		**4**	**0**	**0**	**0**		
		Sialowa	840	859	Waliama	824	152	479	01.10.22	1	0	0	0		Boat
		Baidowa	91	300	Waliama	293	40	159	02.10.22	1	0	0	0		Boat
		Sialowa Community School	22	0	Waliama					1					Included Under Sialowa
		Sialowa Sawmill	103	0	Waliama					1					Included Under Sialowa
33	**Kawiapo**		**1,424**	**2,294**		**2,213**	**323**	**1,202**		**2**	**1**	**0**	**0**		
		Kawiapo	1,424	1,541	Waliama	1,571	225	887	01.10.22	1	1	0	0		Boat
		Waliama	0	753	Waliama	642	98	315	06.10.22	1	0	0	0		Boat
34	**Urio**		**1,973**	**1,978**		**2,161**	**271**	**1,067**		**3**	**0**	**0**	**0**		
		Urio	889	624	Waliama	763	88	394	02.10.22	1	0	0	0		Boat
		Kenedibi	1,083	854	Waliama	882	112	392	02.10.22	1	0	0	0		Boat
		Salau	0	499	Waliama	516	71	281	02.10.22	1	0	0	0		Boat
35	**Aduru**		**825**	**632**		**600**	**89**	**388**		**2**	**0**	**0**	**0**		
		Aduru	825	281	Waliama	269	44	151	28.09.22	1	0	0	0		Boat
		Kirtuara	0	351	Waliama	331	45	237	03.10.22	1	0	0	0		Boat
36	**Baramura**		**1,422**	**1,409**		**1,317**	**196**	**734**		**3**	**0**	**0**	**0**		
		Baramura	548	518	Waliama	528	76	274	06.10.22	1	0	0	0		Boat
		Tirio 2	0	233	Waliama	238	34	139	30.09.22	1	0	0	0		Boat
		Madiri	874	658	Waliama	551	86	321	30.09.22	1	0	0	0		Boat
37	**Tapila**		**930**	**1,689**		**1,769**	**294**	**973**		**5**	**5**	**0**	**0**		
		Mutam	450	430	Waliama	319	49	170	08.10.22	1	1	0	0		Boat
		Tapila Station	479	549	Waliama	464	76	258	08.10.22	1	1	0	0		Boat
		NEW Logging camp 1		439	Waliama	161	23	80	09.10.22	1	1	0	0		Boat
		NEW Logging camp2		132	Waliama	516	89	295	01.10.22	1	1	0	0		Boat
		NEW Logging camp3		139	Waliama	309	57	170	09.10.22	1	1	0	0		Boat
38	**Lewada**		**1,881**	**1,916**		**1,467**	**213**	**938**		**3**	**2**	**0**	**0**		
		Lewada	921	668	Waliama	612	94	362	03.10.22	1	1	0	0		Boat
		Lewada Community School	25	0	Waliama					1	1	0	0		included in Lewada
		Suame	936	1,041	Waliama	855	119	576	02.10.22	1	0	0	0		Boat
		Negota		207	Waliama										Covered under South Fly
39	**Dewala**		**1,097**	**1,136**		**1,163**	**161**	**695**		**1**	**0**	**0**	**0**		
		Dewala	1,097	1,136	Waliama	1,163	161	695	03.10.22	1	0	0	0		Boat

LLG	WARD	VILLAGE	Estimated 2022 Population Based On 2000 Census	Estimated 2022 Population Based On 2019 Survey	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Networks	Comments
Bamu Rural			**18,209**	**23,716**		**21,784**	**3,636**	**10,730**		**79**	**48**	**0**	**0**	**0**	
1	**Samakopa**		**2,127**	**1,566**		**1,833**	**258**	**802**		**5**	**0**	**0**	**0**		
		Kurule		NEW	Wauwa Falls H	202	31	97	22.07.22	1	0	0	0		
		Kasigi (Wauwa Falls)	1,277	394	Wauwa Falls H	346	50	163	22.07.22	1	0	0	0		Air/road
		Samakopa	626	614	Samakopa	563	88	238	23.07.22	1	0	0	0		Air/Trek
		Kalamo		352	Samakopa	327	39	152	22.07.22	1	0	0	0		Air/road
		Uridie	223	207	Wauwa Falls H	395	50	152	23.07.22	1	0	0	0		Air/road
2	**Kawalasi**		**74**	**440**		**371**	**59**	**186**		**1**	**0**	**0**	**0**		
		Kawalasi	74	440	Guavi	371	59	186	17.07.22	1					Air/road
3	**Kamusi**		**3,943**	**4,538**		**4,307**	**681**	**2,234**		**15**	**11**	**0**	**0**		
		Wareho	1,041	317	Kamusi HC	285	37	149	11.07.22	1	1	0	0		Road
		Kamusi Logging Camp	1,694	245	Kamusi HC	217	35	112	20.07.22	1	1	0	0		Road
		Kamusi Community School	138	128	Kamusi HC	95	23	49	12.07.22	1	1	0	0		Road
		Saugo	78	218	Kamusi HC					1					Included Under Block 3 Base
		Pacific Woods	261	127	Kamusi HC					1					Included Under Block 3 Base
		Kesobi Block 2	341	391	Kamusi HC					1					Included Under Block 3 Base
		Block 3 Base Camp	390	66	Kamusi HC	546	116	282	16.07.22	1	1	0	0		Road
		Kamusi Com School/ Double	Corner	0	Kamusi HC					1					Included Under Saroma
		Saroma		0	Kamusi HC	589	63	306	21.07.22	1	1	0	0		Road
		Camp 56km		740	Kamusi HC	577	113	300	17.07.22	1	1	0	0		Road
		Sraits Marine Compound		198	Kamusi HC	158	25	82	18.07.22	1	1	0	0		Road
		Oriomo Compound		628	Kamusi HC	584	83	303	21.07.22	1	1	0	0		Road
		Country Side Camp		1,055	Kamusi HC	935	139	485	19.07.22	1	1	0	0		Road
		Kubeai 9 kilo		186	Kamusi HC	134	23	69	21.07.22	1	1	0	0		Road
		Block 3 A & East		238	Kamusi HC	187	24	97	18.07.22	1	1	0	0		Road/Boat
3a	**Sessereme**			**6,048**		**4,149**	**664**	**2,048**		**11**	**2**	**0**	**0**		
		Panakawa		2,195	Emeti HC	451	85	226	16.07.22	1	1	0	0		Boat
		Diwame		289	Emeti HC	386	70	194	16.07.22	1	1	0	0		Boat
		Pariame		425	Emeti HC					1					Included Under Sogae
		Sogae		179	Emeti HC	455	50	218	16.07.22	1	0	0	0		Boat
		Diape		362	Emeti HC	203	21	102	14.07.22	1	0	0	0		Boat
		Sessereme-8km/55km camp		169	Emeti HC	380	50	190	15.07.22	1	0	0	0		Boat
		Sessereme-6 Kilo/45 Kilo camp		540	Emeti HC	481	98	234	15.07.22	1	0	0	0		Boat
		Sessereme-Jiger		287	Emeti HC	241	42	116	15.07.22	1	0	0	0		Boat
		Sessereme-R/Dump camp		0	Emeti HC	411	58	197	15.07.22	1	0	0	0		Boat
		Sessereme-Jiger		981	Emeti HC	431	71	216	15.07.22	1	0	0	0		Boat
		Sessereme-R/Dump camp		623	Emeti HC	710	119	355	15.07.22	1	0	0	0		Boat
4	**Bibisa**		**339**	**338**		**309**	**71**	**155**		**1**	**0**	**0**	**0**		
		Bibisa	339	338	Emeti HC	309	71	155	13.07.22	1	0	0	0		Boat
5	**Gagoro**		**279**	**310**		**444**	**79**	**222**		**2**	**2**	**0**	**0**		
		Matakaia Gagoro	279	202	Emeti HC	276	50	138	17.07.22	1	1	0	0		Boat
		Gagoro		108	Emeti HC	168	29	84	17.07.22	1	1	0	0		Boat
6	**Iowa**		**2,015**	**1,754**		**1,853**	**356**	**928**		**6**	**5**	**0**	**0**		
		Iowa	533	362	Emeti HC	394	79	197	20.07.22	1	1	0	0		Boat
		Iowa 2		212	Emeti HC	272	49	136	20.07.22	1	1	0	0		Boat
		Iowa Mission Station	103	0	Emeti HC					1					Included Under Iowa
		Kuria	488	378	Emeti HC	348	86	175	20.07.22	1	1	0	0		Boat
		Kuria 2		291	Emeti HC	286	50	143	20.07.22	1	1	0	0		Boat
		Emeti Station	892	511	Emeti HC	553	92	277	20.07.22	1	1	0	0		Boat
7	**Garu**		**1,152**	**1,001**		**1,054**	**176**	**517**		**3**	**3**	**0**	**0**		
		Aragi	323	219	Emeti HC	272	47	131	18.07.22	1	1	0	0		Boat
		Arikinape	239	196	Emeti HC	217	29	112	18.07.22	1	1	0	0		Boat
		Garu	591	585	Emeti HC	565	100	274	18.07.22	1	1	0	0		Boat
8	**Miruwa**		**869**	**937**		**894**	**155**	**442**		**2**	**2**	**0**	**0**		
		Bimaramio	383	425	Emeti HC	332	55	167	20.07.22	1	1	0	0		Boat
		Miruwo	486	511	Emeti HC	562	100	275	20.07.22	1	1	0	0		Boat
9	**Wakau/Sogere**		**615**	**536**		**461**	**86**	**231**		**2**	**2**	**0**	**0**		
		Sogere	506	381	Torobina AP	328	64	164	06.08.22	1	1	0	0		Boat
		Wakau	109	154	Torobina AP	133	22	67	06.08.22	1	1	0	0		Boat
10	**Asaramio**		**847**	**840**		**692**	**130**	**332**		**3**	**0**	**0**	**0**		
		Amagowa	317	300	Torobina AP	244	44	117	06.08.22	1	0	0	0		Boat
		Asaramio - Tapapi	317	278	Torobina AP	253	50	121	06.08.22	1	0	0	0		Boat
		Etere	214	262	Torobina AP	195	36	94	06.08.22	1	0	0	0		Boat
11	**Bina**		**1,197**	**1,001**		**1,039**	**135**	**499**		**4**	**3**	**0**	**0**		
		Bina No.1	89	233	Torobina AP	341	43	164	07.08.22	1	1	0	0		Boat
		Bina No.2	609	407	Torobina AP	341	50	164	06.08.22	1	1	0	0		Boat
		Oropai	357	0	Torobina AP	357	42	171	08.08.22	1	1	0	0		Boat
		Wario	143	362	Torobina AP					1					Included Under Oropai
12	**Sisiame**		**522**	**562**		**534**	**94**	**266**		**2**	**2**	**0**	**0**		
		Sisiame No.1	325	321	Torobina AP	278	47	138	06.08.22	1	1	0	0		Boat
		Sisiame No.2	196	241	Torobina AP	256	47	128	06.08.22	1	1	0	0		Boat
13	**Torobina**		**1,054**	**709**		**751**	**131**	**360**		**3**	**2**	**0**	**0**		
		Aniadai	377	277	Torobina AP	294	50	141	06.08.22	1	1	0	0		Boat
		Torobina	664	432	Torobina AP	457	81	219	06.08.22	1	1	0	0		Boat
		Torobina Community School	13	0	Torobina AP					1					Included Under Torobina
14	**Bamio**		**1,110**	**1,035**		**1,182**	**188**	**572**		**3**	**3**	**0**	**0**		
		Bamio	426	348	Torobina AP	339	56	163	06.08.22	1	1	0	0		Boat
		Bunigi	455	405	Torobina AP	546	84	266	06.08.22	1	1	0	0		Boat

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		Upati	230	282	Torobina AP	297	48	143	06.08.22	1	1	0	0		Boat
15	**Pirupiru**		**724**	**730**		**702**	**131**	**341**		**4**	**4**	**0**	**0**		
		Darawi	65	0	Torobina AP	30	9	20	07.08.22	1	1	0	0		Boat
		Pirupiru No.1	383	290	Torobina AP	288	50	138	07.08.22	1	1	0	0		Boat
		Pirupiru No.2	185	356	Torobina AP	322	58	153	07.08.22	1	1	0	0		Boat
		Sibara	91	84	Torobina AP	62	14	30	07.08.22	1	1	0	0		Boat
16	**Ukusi**		**412**	**384**		**477**	**112**	**233**		**4**	**2**	**0**	**0**		
		Airua	33	172	Torobina AP	50	11	24	07.08.22	1	0	0	0		Boat
		Binouri	120	0	Torobina AP	66	16	32	07.08.22	1	0	0	0		Boat
		Koperamio	107	212	Torobina AP	169	42	81	21.07.22	1	1	0	0		Boat
		Ukusi	152	0	Torobina AP	192	43	96	21.07.22	1	1	0	0		Boat
17	**Nemeti**		**582**	**670**		**471**	**84**	**233**		**5**	**5**	**0**	**0**		
		Gimerime	134	162	Torobina AP	75	15	38	07.08.22	1	1	0	0		Boat
		Maisave	149	212	Torobina AP	100	19	48	07.08.22	1	1	0	0		Boat
		Nemeti	118	100	Torobina AP	120	27	60	07.08.22	1	1	0	0		Boat
		Mapoia	123	196	Torobina AP	100	10	50	07.08.22	1	1	0	0		Boat
		Magiwe	58	0	Torobina AP	76	13	37	07.08.22	1	1	0	0		Boat
18	**Ibuo**		**348**	**317**		**261**	**46**	**129**		**3**	**0**	**0**	**0**		
		Gumai	116	193	Torobina AP	76	11	37	07.08.22	1	0	0	0		Boat
		Giwaritore	74	0	Torobina AP	41	7	20	07.08.22	1	0	0	0		Boat
		Ibuo	158	125	Torobina AP	144	28	72	07.08.22	1	0	0	0		Boat
Lake Murray Rural			**21,836**	**18,940**		**17,501**	**2,968**	**9,045**		**46**	**38**	**0**	**348**	**0**	
1	**Upovia**		**455**	**402**		**346**	**62**	**175**		**1**	**1**	**0**	**0**		
		Upovia	455	402	Lake Murray HC	346	62	175	02.09.22	1	1	0	0		Boat
2	**Buseki**		**417**	**119**		**34**	**13**	**21**		**1**	**1**	**0**	**8**		
		Buseki	417	119	Lake Murray HC	34	13	21	03.09.22	1	1	0	8		Boat
3	**Boimbalavu**		**506**	**440**		**345**	**54**	**171**		**1**	**1**	**0**	**0**		
		Boimbalavu	506	440	Lake Murray HC	345	54	171	01.09.22	1	1	0	0		Boat
4	**Nago**		**794**	**485**		**372**	**97**	**190**		**3**	**0**	**0**	**0**		
		Nago	435	140	Lake Murray HC					1					Included Under Maka
		Aewa	359	345	Lake Murray HC	294	75	150	04.09.22	1	0	0	0		Boat
		Kokas		0	Lake Murray HC	78	22	40	04.09.22	1	0	0	0		Boat
5	**Maka**		**301**	**369**		**389**	**63**	**203**		**3**	**2**	**0**	**15**		
		Maka	263	91	Lake Murray HC	140	23	70	02.09.22	1	1	0	5		Boat
		Maka Community School	38	0	Lake Murray HC					1					Included Under Maka
		Vanila Camp		278	Lake Murray HC	249	40	133	01.09.22	1	1	0	10		Boat
6	**Magipopo**		**383**	**433**		**384**	**72**	**191**		**1**	**1**	**0**	**0**		
		Magipopo	383	433	Lake Murray HC	384	72	191	31.08.22	1	1	0	0		Boat
7	**Usukof No.1**		**1,112**	**532**		**398**	**100**	**210**		**2**	**2**	**0**	**0**		
		Usukof No.1	542	302	Lake Murray HC	179	50	93	31.08.22	1	1	0	0		Boat
		Usikof Community School	571	230	Lake Murray HC	219	50	117	31.08.22	1	1	0	0		Boat
8	**Usukof No.2**		**98**	**432**		**420**	**98**	**211**		**2**	**2**	**0**	**0**		
		Giakorete	98	99	Lake Murray HC	201	48	101	31.08.22	1	1	0	0		Boat
		Usukof No.2		333	Lake Murray HC	219	50	110	31.08.22	1	1	0	0		Boat
9	**Kapikam**		**682**	**874**		**790**	**142**	**387**		**1**	**0**	**0**	**0**		
		Kapikam	682	874	Lake Murray HC	790	142	387	01.09.22	1	0	0	0		Boat
10	**Dimu**		**651**	**513**		**458**	**73**	**221**		**2**	**2**	**0**	**12**		
		Dimu	470	319	Lake Murray HC	309	43	149	29.08.22	1	1	0	0		Boat
		Ogia	181	194	Lake Murray HC	149	30	72	31.08.22	1	1	0	12		Boat
11	**Pangoa**		**435**	**399**		**441**	**62**	**228**		**2**	**2**	**0**	**10**		
		Pangoa Island	214	192	Lake Murray HC	232	33	120	29.08.22	1	1	0	0		Boat
		Pangoa ECP Mission	221	207	Lake Murray HC	209	29	108	29.08.22	1	1	0	10		Boat
12	**Tagum**		**513**	**168**		**83**	**15**	**41**		**1**	**1**	**0**	**0**		
		Tagum	513	168	Lake Murray HC	83	15	41	31.08.22	1	1	0	0		Boat
13	**Miwa No.1**		**852**	**830**		**795**	**125**	**408**		**2**	**2**	**0**	**41**		
		Miwa No.1	836	496	Lake Murray HC	662	100	338	30.08.22	1	1	0	36		Boat
		Miwa Community School	16	334	Lake Murray HC	133	25	70	30.08.22	1	1	0	5		Boat
14	**Miwa No.2**		**789**	**632**		**475**	**85**	**244**		**1**	**1**	**0**	**51**		
		Miwa No.2	789	632	Lake Murray HC	475	85	244	30.08.22	1	1	0	51		Boat
15	**Kusikina**		**1,168**	**869**		**831**	**150**	**424**		**1**	**1**	**0**	**13**		
		Ksuikina - Gigabo	1,168	869	Lake Murray HC	831	150	424	30.08.22	1	1	0	13		Boat
16	**Kuem**		**785**	**800**		**776**	**116**	**384**		**1**	**1**	**0**	**0**		
		Kuem	785	800	Obo HC	776	116	384	27.08.22	1	1	0	0		6 hours by Boat
17	**Mipan**		**909**	**419**		**181**	**23**	**98**		**1**	**1**	**0**	**0**		
		Mipan	909	419	Obo HC	181	23	98	28.08.22	1	1	0	0		4 hours by Boat
18	**Manda**		**1,003**	**920**		**967**	**149**	**531**		**1**	**1**	**0**	**0**		
		Manda	1,003	920	Obo HC	967	149	531	28.08.22	1	1	0	0		4 hours by boatBoat
19	**Bosset No,1**		**571**	**676**		**605**	**84**	**350**		**1**	**1**	**0**	**0**		
		Bosset No,1 Village	571	676	Obo HC	605	84	350	29.08.22	1	1	0	0		3 hours by Boat
20	**Bosset No.2**		**1,589**	**810**		**863**	**115**	**460**		**1**	**1**	**0**	**0**		
		Bosset No.2 Village	1,589	810	Obo HC	863	115	460	29.08.22	1	1	0	0		2 hours by Boat
21	**Wangawanga No.1**		**448**	**1,004**		**1,197**	**192**	**605**		**1**	**1**	**0**	**0**		
		Wangawanga No.1	448	1,004	Obo HC	1,197	192	605	29.08.22	1	1	0	0		2 hours by Boat
22	**Wangawanga No.2**		**1,068**	**721**		**557**	**88**	**347**		**1**	**1**	**0**	**0**		
		Wangawanga No.2	1,068	721	Obo HC	557	88	347	29.08.22	1	1	0	0		2 hours by Boat
23	**Komovai**		**452**	**371**		**388**	**73**	**207**		**1**	**1**	**0**	**0**		
		Komovai	452	371	Obo HC	388	73	207	30.08.22	1	1	0	0		40 minutes by Boat
24	**Kaviananga No.1**		**1,939**	**1,658**		**1,190**	**209**	**624**		**1**	**1**	**0**	**0**		
		Kaviananga No.1	1,939	1,658	Obo HC	1,190	209	624	31.08.22	1	1	0	0		10-20 minute by Boat

LLG	WARD	VILLAGE	Estimated 2022 Population Based On 2000 Census	Estimated 2022 Population Based On 2019 Survey	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Networks	Comments
25	**Kaviananga No.2**		**1,068**	**1,129**		**1,323**	**238**	**660**		**2**	**2**	**0**	**0**		
		Kaviananga No.2 Village	1,032	1,011	Obo HC	1,216	217	609	31.08.22	1	1	0	0		10 minutes by Boat
		Owa Village	36	118	Obo HC	107	21	51	31.08.22	1	1	0	0		2 hours by Boat
26	**Boikmave**		**736**	**692**		**639**	**106**	**350**		**1**	**1**	**0**	**0**		
		Boikumava	736	692	Obo HC	639	106	350	30.08.22	1	1	0	0		1 hour by Boat
27	**Levame**		**263**	**397**		**425**	**74**	**188**		**1**	**1**	**0**	**0**		
		Levame	263	397	Obo HC	425	74	188	31.08.22	1	1	0	0		1 hour by Boat
28	**Lake Murray Station**		**1,850**	**1,845**		**1,829**	**290**	**916**		**9**	**6**	**0**	**198**		
		Lake Murray Station	531	428	Lake Murray HC	305	45	146	29.08.22	1	1	0	42		Boat
		Health Centre	31	0	Lake Murray HC					1					Included under Baramundi Corner
		DPI Extension	36	0	Lake Murray HC					1					Included under Banana Corner
		Banana Corner	232	177	Lake Murray HC	343	53	177	29.08.22	1	1	0	39		Boat
		Baramundi Corner	62	319	Lake Murray HC	301	47	160	29.08.22	1	1	0	30		Boat
		Wildlife Corner	69	74	Lake Murray HC					1					Included under Banana Corner
		Kubut Village	889	289	Lake Murray HC	308	49	153	29.08.22	1	1	0	29		Boat
		Paga Hill and Botagum		378	Lake Murray HC	398	63	192	29.08.22	1	1	0	55		Boat
		Botagum		181	Lake Murray HC	174	33	88	03.09.22	1	1	0	3		Boat
Nomad Rural			**23,543**	**20,668**		**20,062**	**3,871**	**10,141**		**80**	**46**	**0**	**407**	**35**	
1	**Igimi**		**936**	**704**		**676**	**148**	**362**		**3**	**2**	**0**	**1**		
		Igimi	452	283	Mogulu HC	239	59	132	13.09.22	1	1	0	0	Radio Biam	Trek
		Sagemi	288	267	Mogulu HC	237	46	127	13.09.22	1	1	0	0	Radio Biam	Trek
		Idinamabi	196	154	Mogulu HC	200	43	103	13.09.22	1	0	0	1	Radio Biam	Trek
2	**Mougulu**		**1,115**	**800**		**659**	**132**	**337**		**2**	**2**	**0**	**7**		
		Obeimi	132	129	Mogulu HC	99	23	52	13.09.22	1	1	0	6	Radio Biam	Trek
		Mougulu Mission	983	671	Mogulu HC	560	109	285	13.09.22	1	1	0	1	Radio Biam	Trek
3	**Kofabi**		**1,077**	**1,186**		**1,206**	**210**	**607**		**5**	**4**	**0**	**22**		
		Gesuama	181	0	Mogulu HC	155	27	76	15.09.22	1	0	0	1	Radio Biam	Trek
		Salebi	218	425	Mogulu HC	340	57	173	15.09.22	1	1	0	4	Radio Biam	Trek
		Tigasubi	178	0	Mogulu HC	274	50	139	18.09.22	1	1	0	1	Radio Biam	Trek
		Kofabi	499	496	Mogulu HC	319	59	157	17.09.22	1	1	0	10	Radio Biam	Trek
		Tagasiabi		265	Mogulu HC	118	17	62	17.09.22	1	1	0	6	Radio Biam	Trek
4	**Adumari**		**687**	**608**		**584**	**116**	**295**		**2**	**2**	**0**	**2**		
		Adumari	348	323	Mogulu HC	316	66	159	14.09.22	1	1	0	0	Radio Biam	Trek
		Nairus	339	285	Mogulu HC	268	50	136	13.09.22	1	1	0	2	Radio Biam	Trek
5	**Ugubi**		**464**	**489**		**471**	**86**	**233**		**1**	**0**	**0**	**1**		
		Ugubi	464	489	Mogulu HC	471	86	233	17.09.22	1	0	0	1	Radio Biam	Trek
6	**Sefalobi**		**773**	**548**		**504**	**88**	**252**		**2**	**1**	**0**	**0**		
		Kono 2	212	139	Mogulu HC	141	30	67	17.09.22	1	0	0	0	Radio Biam	Trek
		Sefalobi	562	409	Mogulu HC	363	58	185	17.09.22	1	1	0	0	Radio Biam	Trek
7	**Igibia**		**769**	**653**		**624**	**153**	**330**		**3**	**3**	**0**	**14**		
		Igibia	452	323	Mogulu HC	300	78	161	14.09.22	1	1	0	11	Radio Biam	Trek
		Subi	132	136	Mogulu HC	143	40	77	13.09.22	1	1	0	0	Radio Biam	Trek
		Gaimisi	185	194	Mogulu HC	181	35	92	17.09.22	1	1	0	3	Radio Biam	Trek
8	**Sedado**		**490**	**352**		**330**	**58**	**166**		**1**	**1**	**0**	**0**		
		Sedado	490	352	Mogulu HC	330	58	166	17.09.22	1	1	0	0	Radio Biam	Trek
9	**Ugulubabi**		**401**	**401**		**351**	**57**	**171**		**1**	**1**	**0**	**0**		
		Ugulubabi	401	401	Mogulu HC	351	57	171	17.09.22	1	1	0	0	Radio Biam	Trek
10	**Sadubi**		**1,032**	**1,236**		**1,108**	**221**	**578**		**3**	**0**	**0**	**0**		
		Abado	727	585	Mogulu HC	546	113	288	13.09.22	1	0	0	0		Trek
		Sadubi	305	314	Mogulu HC	254	49	131	13.09.22	1	0	0	0		Trek
		Omabi		336	Mogulu HC	308	59	159	15.09.22	1	0	0	0		Trek
11	**Fuma**		**1,335**	**1,119**		**1,032**	**206**	**536**		**5**	**0**	**0**	**13**		
		Gogoyebi	749	334	Mogulu HC	344	67	182	13.09.22	1	0	0	5	Radio Biam	Trek
		Baniso	140	258	Mogulu HC	223	50	107	21.09.22	1	0	0	2	Radio Biam	Trek
		Tulisi	354	134	Mogulu HC	75	21	44	21.09.22	1	0	0	1	Radio Biam	Trek
		Bosco		99	Mogulu HC	131	18	66	18.09.22	1	0	0	0	Radio Biam	Trek
		Fuma Station	91	293	Mogulu HC	259	50	137	19.09.22	1	0	0	5	Radio Biam	Airfield Here
12	**Hafemi**		**421**	**730**		**673**	**136**	**341**		**3**	**2**	**0**	**0**		
		Hafemi	232	213	Mogulu HC	223	50	118	14.09.22	1	1	0	0	Radio Biam	Trek
		Soya	189	287	Mogulu HC	219	37	108	17.09.22	1	0	0	0	Radio Biam	Trek
		Omei		230	Mogulu HC	231	49	115	14.09.22	1	1	0	0	Radio Biam	Trek
13	**Yulabi**		**555**	**446**		**600**	**148**	**311**		**4**	**1**	**0**	**3**		
		Alowobi	147	103	Nomad HC	196	50	106	06.09.22	1	0	0	0		Trek - 5hrs
		Yulabi	279	206	Nomad HC	171	35	89	12.09.22	1	0	0	0		Trek - 4hrs
		Gwagubi	51	78	Nomad HC	155	47	76	12.09.22	1	0	0	0		Trek - 5hrs
		Magatem	78	60	Nomad HC	78	16	40	06.09.22	1	1	0	3		Trek - 5hrs
14	**Suabi**		**655**	**971**		**1,016**	**202**	**473**		**3**	**0**	**0**	**103**		
		Suabi	254	303	Nomad HC	305	65	141	08.09.22	1	0	0	58		Trek - 7Hrs
		Olwabi	176	319	Nomad HC	401	76	190	08.09.22	1	0	0	45		Trek - 8Hrs
		Timaguibi	225	349	Nomad HC	310	61	142	08.09.22	1	0	0	0		Trek - 8Hrs
15	**Beredina**		**1,110**	**905**		**939**	**175**	**459**		**2**	**2**	**0**	**0**		
		Beredina	412	299	Debepari HC	591	112	292	02.09.22	1	1	0	0		30 mins Trek
		Kapikam Corner	698	606	Debepari HC	348	63	167	02.09.22	1	1	0	0		HC Vicinity (5mins)
16	**Pipila**		**635**	**616**		**586**	**106**	**282**		**2**	**2**	**0**	**0**		
		Pipila	334	325	Debepari HC	312	56	147	04.09.22	1	1	0	0		1 Day Trek
		Tegena	301	291	Debepari HC	274	50	135	03.09.22	1	1	0	0		1 Day Trek
17	**Wakela**		**700**	**680**		**663**	**128**	**336**		**2**	**2**	**0**	**0**		
		Wakela	341	390	Debepari HC	379	73	193	04.09.22	1	1	0	0		1 Day Trek

LLG	WARD	VILLAGE	Estimated 2022 Population Based On 2000 Census	Estimated 2022 Population Based On 2019 Survey	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Networks	Comments
		Yomola	359	290	Debepari HC	284	55	143	03.09.22	1	1	0	0		1/2 Day Trek
18	**Egebila**		**640**	**398**		**510**	**83**	**244**		**2**	**2**	**0**	**0**		
		Egebila	370	240	Debepari HC	304	53	145	02.09.22	1	1	0	0		1 Day Trek
		Desina	270	158	Debepari HC	206	30	99	02.09.22	1	1	0	0		2 hrs Trek
19	**Honabi**		**410**	**583**		**576**	**93**	**294**		**2**	**0**	**0**	**9**		
		Honabi	154	185	Nomad HC	192	40	96	04.09.22	1	0	0	1		Boat - 1 day
		Hesalibi	256	398	Nomad HC	384	53	198	03.09.22	1	0	0	8		Boat - 1 day
20	**Udugombi**		**372**	**367**		**398**	**56**	**201**		**2**	**0**	**0**	**7**		
		Ugaiyobom	178	202	Nomad HC	190	29	94	02.09.22	1	0	0	4		Boat - 5hrs
		Udugombi	194	165	Nomad HC	208	27	107	01.09.22	1	0	0	3		Boat - 4hrs
21	**Kukudobi**		**765**	**890**		**958**	**153**	**467**		**3**	**1**	**0**	**25**		
		Yehebi	308	349	Nomad HC	365	68	181	06.09.22	1	0	0	12		Trek - 3hrs
		Gasume	270	364	Nomad HC	270	48	135	05.09.22	1	1	0	6		Trek - 35 Minutes
		Kukudobi	187	176	Nomad HC	323	37	151	04.09.22	1	0	0	7		Trek - 3hrs
22	**Sirigubi**		**444**	**472**		**461**	**92**	**229**		**3**	**2**	**0**	**29**		
		Unamobi	118	164	Nomad HC	124	25	63	05.09.22	1	0	0	0		Trek - 3hrs
		Sirugubi	247	217	Nomad HC	163	35	83	05.09.22	1	1	0	17		Trek - 1hr
		Deferomosum	78	90	Nomad HC	174	32	83	05.09.22	1	1	0	12		Trek - 5hrs
23	**Mabomanibi**		**695**	**535**		**462**	**112**	**240**		**1**	**1**	**0**	**6**		
		Mabomanibi	695	535	Mogulu HC	462	112	240	13.09.22	1	1	0	6	Radio Biam	Trek
24	**Wasubi**		**441**	**762**		**653**	**113**	**329**		**4**	**4**	**0**	**0**		
		Wasubi	154	58	Mogulu HC	60	10	34	14.09.22	1	1	0	0	Radio Biam	Trek
		Awobi	288	238	Mogulu HC	214	37	109	13.09.22	1	1	0	0	Radio Biam	Trek
		Aiebi		136	Mogulu HC	63	14	34	14.09.22	1	1	0	0	Radio Biam	Trek
		Hanomisiyabi		330	Mogulu HC	316	52	152	14.09.22	1	1	0	0	Radio Biam	Trek
25	**Bubusmabi**		**802**	**822**		**636**	**139**	**342**		**2**	**2**	**0**	**0**		
		Tigasubu	279	262	Mogulu HC										Same as Tigasubi in wd 3
		Bubusmabi	178	301	Mogulu HC	344	89	182	13.09.22	1	1	0	0	Radio Biam	Trek
		Yanobobi	346	259	Mogulu HC	292	50	160	20.09.22	1	1	0	0	Radio Biam	Trek
26	**Aeyedubi**		**785**	**0**											
		Komokato	196	0	Dahomo AP										Covered from North Fly
		Aseyedubi	441	0	Dahomo AP										Covered from North Fly
		Seseyebi	147	0	Dahomo AP										Covered from North Fly
27	**Tinahai**		**310**	**0**											
		Tinahae	192	0	Dahomo AP										Covered from North Fly
		Umuibi	118	0	Dahomo AP										Covered from North Fly
28	**Sinabi**		**165**	**0**											
		Sisinabi	53	0	Dahomo AP										Covered from North Fly
		Tobi	111	0	Dahomo AP										Covered from North Fly
29	**Wanbi**		**564**	**592**		**495**	**109**	**246**		**3**	**0**	**0**	**0**		
		Wodiobi	125	186	Nomad HC	167	30	84	05.09.22	1	0	0	0		Trek
		Wanbi	247	176	Nomad HC	155	43	75	07.09.22	1	0	0			Trek
		Tibiyabi	192	229	Nomad HC	173	36	87	03.09.22	1	0	0	0		Trek
30	**Kwobi**		**557**	**466**		**482**	**92**	**241**		**3**	**1**	**0**	**19**		
		Kwobi	557	195	Nomad HC	184	36	91	05.09.22	1	0	0	13		Trek
		Wonabi		117	Nomad HC	130	22	65	05.09.22	1	0	0	5		Trek
		Kusobi		154	Nomad HC	168	34	85	05.09.22	1	1	0	1		Trek
31	**Testabi**		**486**	**435**		**436**	**77**	**216**		**2**	**0**	**0**	**12**		
		Giwobi	94	110	Nomad HC	139	27	71	05.09.22	1	0	0			Trek
		Testabi	392	325	Nomad HC	297	50	145	07.09.22	1	0	0	12		Trek
32	**Kuda**		**559**	**408**		**401**	**87**	**214**		**1**	**1**	**0**	**0**		
		Kuda	559	408	Debepari HC	401	87	214	02.09.22	1	1	0	0		HC Vicinity (10 mins)
33	**Debepari**		**484**	**338**		**316**	**61**	**165**		**1**	**1**	**0**	**0**		
		Debepari Station	484	338	Debepari HC	316	61	165	02.09.22	1	1	0	0		Station
34	**Sokabi**		**553**	**301**		**340**	**65**	**177**		**2**	**2**	**0**	**57**		
		Sokabi	221	146	Nomad HC	189	27	97	05.09.22	1	1	0	26		Trek
		Samo Corner	332	155	Nomad HC	151	38	80	05.09.22	1	1	0	31		Trek
35	**Honinabi**		**528**	**448**		**461**	**80**	**228**		**2**	**1**	**0**	**30**		
		Sodiobi	372	287	Nomad HC	260	45	126	05.09.22	1	1	0	9		Trek
		Honinabi	156	161	Nomad HC	201	35	102	06.09.22	1	0	0	21		Trek
36	**Nomad Station**		**827**	**407**		**455**	**89**	**239**		**3**	**3**	**0**	**47**		
		Nomad Station	308	184	Nomad HC	208	31	108	05.09.22	1	1	0	28		Trek
		Biami Corner	339	85	Nomad HC	96	27	52	05.09.22	1	1	0	0		Trek
		Kubo Corner	181	138	Nomad HC	151	31	79	05.09.22	1	1	0	19		Trek