

ROTARIANS AGAINST MALARIA



LONG LASTING INSECTICIDAL NET DISTRIBUTION REPORT

WESTERN HIGHLANDS PROVINCE Mount Hagen Rural and Dei District

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

With Support From The Global Fund, Against Malaria Foundation and Chinese
Government

3rd March to 30th April 2021



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Executive Summary

Western Highlands Province is a highlands province on the mainland of Papua New Guinea (PNG). Only about 2.5% of the population live in stable malaria areas while the rest live above 1200m where 38% live in potentially epidemic areas, while the rest live in areas above 1600m which have practically no or little risk to malaria. Apart from the stable malaria areas, malaria is now virtually absent in the areas of over 1200m, but due to a history of malaria outbreaks in the past, it is considered necessary to cover at least all the population who live in the epidemic areas of the highlands to avoid possible outbreaks in the future. However, due to easy access to health care in urban areas, urban areas in towns such as Mount Hagen Urban no longer receive nets.

The family level survey and distribution of Long-Lasting Insecticidal Nets (LLINs) was carried out in Western Highlands Province in the districts of Mount Hagen (Mount Hagen Rural) and Dei Districts between 3rd March and 20th April 2021. Fortunately for the program, practically all the villages in Mount Hagen are accessible by road while there were a few villages in Tigi and Rulna Health Centre catchment areas that can only be reached by trekking.

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, 103,756 LLINs were distributed to a population of 209,150 people. This resulted in distribution of 49.6 nets for every 100 people in the province.

TABLE ONE – Population And Nets Distributed

District	Population from 2000 Census	Population Of Targeted Areas In 2017/2018	Total Estimated Population 2021	Population Surveyed 2021	House Holds Surveyed 2021	Nets Issued 2021	Nets Distributed Per 100 People
Mt Hagen	86,951	112,984	123,700	114,974	23,414	57,179	49.7
Dei	49,767	83,229	84,867	94,176	19,436	46,577	49.5
Totals	136,718	196,213	208,567	209,150	42,850	103,756	49.6

A further 242 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 367,987.97 Kina (Approximately US\$105,539) resulting in a cost of about 3.55 Kina or US\$1.01 per net delivered. This was about 8.0% over the anticipated budget. The main overspend was in car hire and human resources.

Overall, the distribution went well in Western Highlands Province with excellent collaboration from provincial health authorities which resulted in all targeted communities being reached and all household receiving nets. It was also great news that the program managed to cover Dei District this year after not being covered in 2020 as planned.

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 supplied and donated all the nets for Mount Hagen and all the distribution costs for the province. However, for Dei District, the areas below 1600m, the LLINs were supplied

by Against Malaria Foundation (AMF) and those above 1600m by Chinese Government and the Global Fund. The nets distributed in Dei District are the same as those last year, namely Safenet (from AMF), Interceptor (Global Fund) and Yorkool (Chinese Government) while those in Mount Hagen District are different from those in the past and are known as Yahe LLINs and we hope that these are better quality LLINs than those distributed in the last few years.

The history of LLIN distribution in PNG and Western Highlands Province is discussed in Appendix One and the malaria situation and stratification of malaria in Western Highlands 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 we hope they are sufficient to keep malaria at bay in these areas for another three years.



Fig.1 – Initial Meeting With PHA (Left) And Microplanning With PHA Staff (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 village in PNG every three years. RAM has been funded by the Global Fund since 2009 and since 2017 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 has been 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 situation for this altitude of 1600-2000 remains tenuous for 2022 and 2023.

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 sources from the Chinese Government and in other areas from the Global Fund. Fortunately, there was sufficient funds to cover these areas in 2021.
- 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 – Initial Microplanning With Health Staff At Balg (Left) And Kagamuga (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 are now receiving 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 and the Chinese Government. However, funding for areas between 1600-2000 metres now remains tentative after 2021 as AMF no longer supplies nets to PNG and funds from the Global Fund are not presently enough.

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 – Survey Volunteer Training In Kagamuga (Left) And Mun (Right)

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 distribution in Western Highlands started on the 3rd March and ended 31st April. Due to the difficulties last year, it was decided to start with Dei District first and then start Mount Hagen when the balance of the team had arrived from East Sepik where the team had last been working.

TABLE TWO
General Timetable Of Activities In Western Highlands Province

District	Survey		Distribution	
	Start	Finish	Start	Finish
Mt Hagen	19.03.21	24.04.21	30.03.21	31.04.21
Dei	03.03.21	01.04.21	04.03.21	31.04.21

Methodology

Prior to planning and implementation, a master list of all villages of Western Highlands Province was drawn up using data from the 2000 Census and the last RAM survey of 2017 in Dei district and 2018 for Mount Hagen. 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 Highlands Province and then secondly, by taking the population surveyed in 2017 and 2018 and applying the annual growth rate to each village.

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 Household List Hung Up In Tentenga (Left) And Verification Of Lists In Kagamuga (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 – Verification Of Household Surveys In Togoba

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 Highlands 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., WHP21 meaning Western Highlands Province 2021. 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 Highlands Province. This is particularly true for mountainous villages or small islands 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 Western Highlands Province, all LLINs were ultimately delivered to Lae by ship from China. These were a new type of nets known as Yahe. All these nets are light blue in colour. All nets arriving in Lae were first stored in the Mapai Transport yard before being sent by road to Mount Hagen. For nets for Dei District however, these have been in storage in Mount Hagen since last year after failing to enter in Dei District. From Mount Hagen, the nets were distributed to health centres via vehicles.

Results

Table Three shows the estimated population and actual population found in Western Highlands by Province along with the number of LLINs distributed in each district. In total, 103,756 LLINs were distributed to a population of 209,150 people. This resulted in distribution of 49.6 nets for every 100 people in the province.

TABLE THREE
Nets Distributed At District Level In Western Highlands Province

District	Population from 2000 Census	Population Of Targeted Areas In 2017/2018	Total Estimated Population 2021	Population Surveyed 2021	House Holds Surveyed 2021	Nets Issued 2021	Growth Rate Against 2017/2018 Survey	Nets Distributed Per 100 People
Mt Hagen	86,951	112,984	123,700	114,974	23,414	57,179	0.58	49.7
Dei	49,767	83,229	84,867	94,176	19,436	46,577	3.14	49.5
Totals	136,718	196,213	208,567	209,150	42,850	103,756	2.15	49.6

Referring to Table Three, it can be seen that the overall population growth rate in Western Highlands is on average is generally quite low compared with other parts of the country but it is not clear why Mount Hagen Rural is so low, but perhaps with Covid19, many people have moved into Mount Hagen Urban whose population is not reflected in Table One.

Table Four shows that 242 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 FOUR
Nets Donated To Health Facilities

District	LLG	HC	Donated
Dei	Dei	Kotna HC	30
		Nunga HC	212
TOTAL			242

Based on Table Five, it can be seen that the overall operational cost of the programme was 367,987.97 Kina (Approximately US\$103,756) resulting in a cost of about 3.55 Kina or US\$1.01 per net delivered. This was about 8.0% over the anticipated budget. The main overspend was in car hire and human resources.

Table Six shows the cell and radio coverage in Western Highlands Province. Overall, the cell coverage is excellent, and for B Mobile, this is probably one of their best coverages in PNG. However, it is surprising then that radio coverage in Dei district is surprisingly low. This makes messaging of health information very difficult particularly in the remoter parts of Dei District which can only be reached by trekking.

TABLE FIVE

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

Expense Types	Budget	Actual	Variances	% Variance
Human Resources	K88,035.33	K109,236.44	-21,201.11	-24.1
Fuel Cost	K29,988.00	K19,752.00	10,236.00	65.9
Car Hire Cost	K201,600.00	K225,740.00	-24,140.00	-12.0
Stationeries/Supplies	K6,000.00	K9,234.18	-3,234.18	-53.9
5% Contingency	K14,871.17	K4,025.35	10,845.82	27.1
Total	K340,494.50	K367,987.97	-27,493.47	-8.1

TABLE SIX

Cell and Radio Coverage In Western Highlands Province

District	Villages	House Holds Surveyed	Digicel	Bmobile	Houses with Radios	Villages With Radio Networks
Mt Hagen	296	23,414	296	251	8,069	296
Dei	279	19,436	269	208	6,433	32
Total	575	42,850	565	459	14,502	328

Conclusions

Overall, it can be said that the LLIN distribution in Western Highlands 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 Catholic, Lutheran, Faith Mission and Seven Day Adventist Church Health Services who have a presence in the province. Through this collaboration, the data suggests that all villages and practically all families in those villages received nets despite any local challenges.

The big success was the program managed to cover Dei District after a year of internal fighting in the district. Challenges however included are delay of three weeks of starting the distribution program after two of the RAM team were discovered to be Covid 19 positive and the whole team was then put into quarantine for two weeks.

The other major problem was that the distribution team failed to cover about four villages in Ward 8 in Mt Hagen Rural. These were not done as the volunteers were refused survey in these villages due to political differences amongst the leaders. The villages are Koglamp, Kontila, Bomrui and Raglaimp.

The other sad news, was despite warnings to volunteers, some volunteers were reported to still be selling their services to the community. This was a very bad problem in 2020, but fortunately seemed more isolated incidents of this in 2021.

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.



Fig.6 – Distribution Of Nets In Tigi (Left) And Nunga (Right)

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 Western Highlands Province 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 Mt Hagen and Dei districts, we would like to sincerely acknowledge and thank the Western Highlands Province Health Authority and the District Health Staff of the two districts for the excellent help and cooperation during the Long Lasting Insecticide Nets (LLINs) distribution programme.

In particular, we would like to thank at provincial level Mr David Vorst (former Chief Executive Officer (CEO)) and Dr Jane Holden (new CEO) and their team with special thanks to Dr Dannex Kupamu (Deputy Director Health Promotion and Prevention), (Fredah Pyanyo (Deputy Director Disease Control) and Mr Nelson Manasseh (Provincial Malaria Supervisor).

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 two districts namely:

Mt Hagen District

Name	Occupation	Institution
Ms. Maria Talpa	District Health Officer	Mt Hagen District
Mr. Malcolm Yuants	Nursing Officer	Togoba Health Centre
Sr. Susan Simon	Sister in Charge	Bagl Health Centre
Mr. Issac Par	Officer in Charge	Tipuka Sub Health Centre
Mr. Sennis Heruno	Community Health Worker	Ogelbeng Aid Post
Mr. Anis Mata	Officer in Charge	Tentenga Health Centre
Mr. David Karipu	Officer in Charge	Rebiamul Health Centre

Dei District

Name	Occupation	Institution
Mr. John Bauna	Community Health Worker	Kotna Health Centre
Mr. Thomas Donult	Officer in Charge	Mitiku Health Centre
Mr. Titus Muka	Community Health Worker	Mitiku Health Centre
Mr. Francis Want	Community Health Worker	Tigi Health Centre
Mr. Stanley Noro	Officer in Charge	Tigi Health Centre
Mr. Rex Poiya	Officer in Charge	Nunga Health Centre

RAM would like to specially acknowledge the support received from established and local service providers for logistical support namely; Mapai for transporting four containers from Lae to Western Highlands and for having them stationed in their yard for the whole duration of the operation.

RAM also thanks Airport hire car, Pishon hire car, Fly Hire car, Manawa hire car and all the local hire car owners for providing their service for this operation. We would not have reached many communities without the dedication of the drivers. RAM would like to also thank Micheal Pano Service Station for supplying bulk fuel for the operation.

RAM also thanks all the church run health facilities coordinated under Catholic Church, Seventh Day Adventist Church, Lutheran Church, Faith Mission Church and lastly to all the Government run facilities for allowing their staff to work with the RAM team.

Last but not the least, RAM would 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.

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 Highlands, 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).

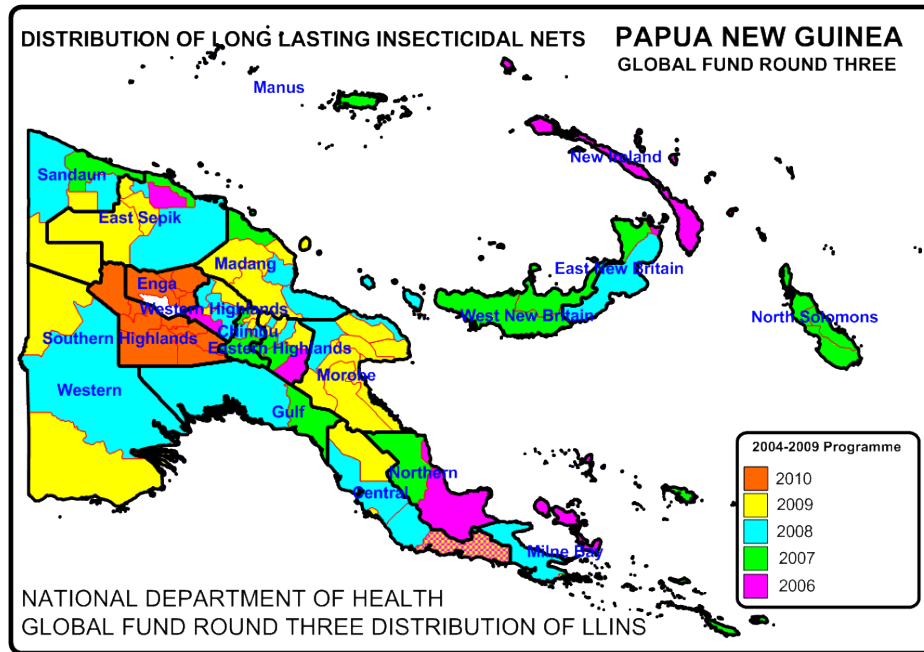


Fig. 1 Distribution Of Nets Under National Department Of Health From 2006 To 2010

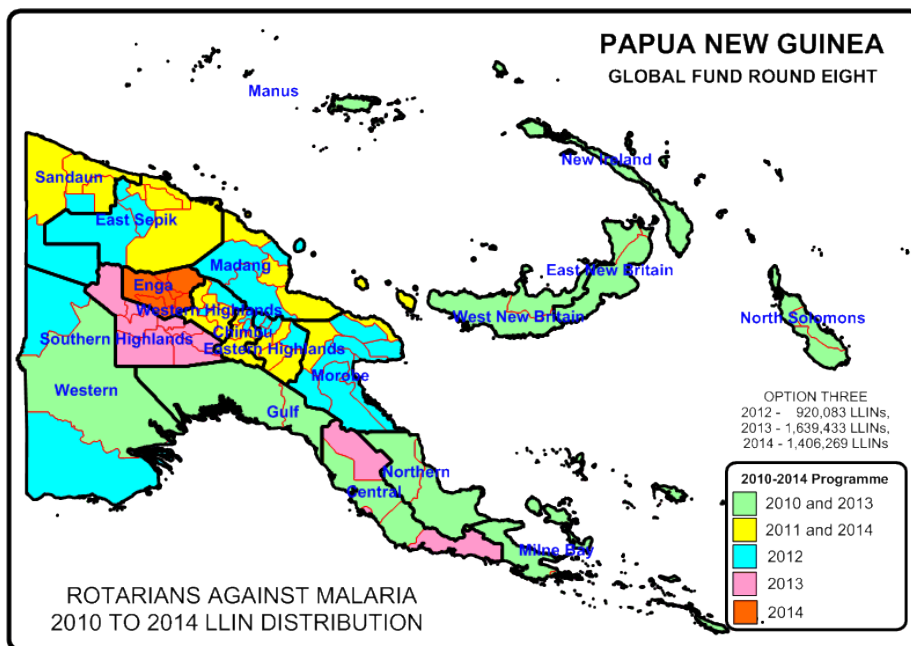


Fig.2 Distribution of LLIN Programme 2010 to 2014

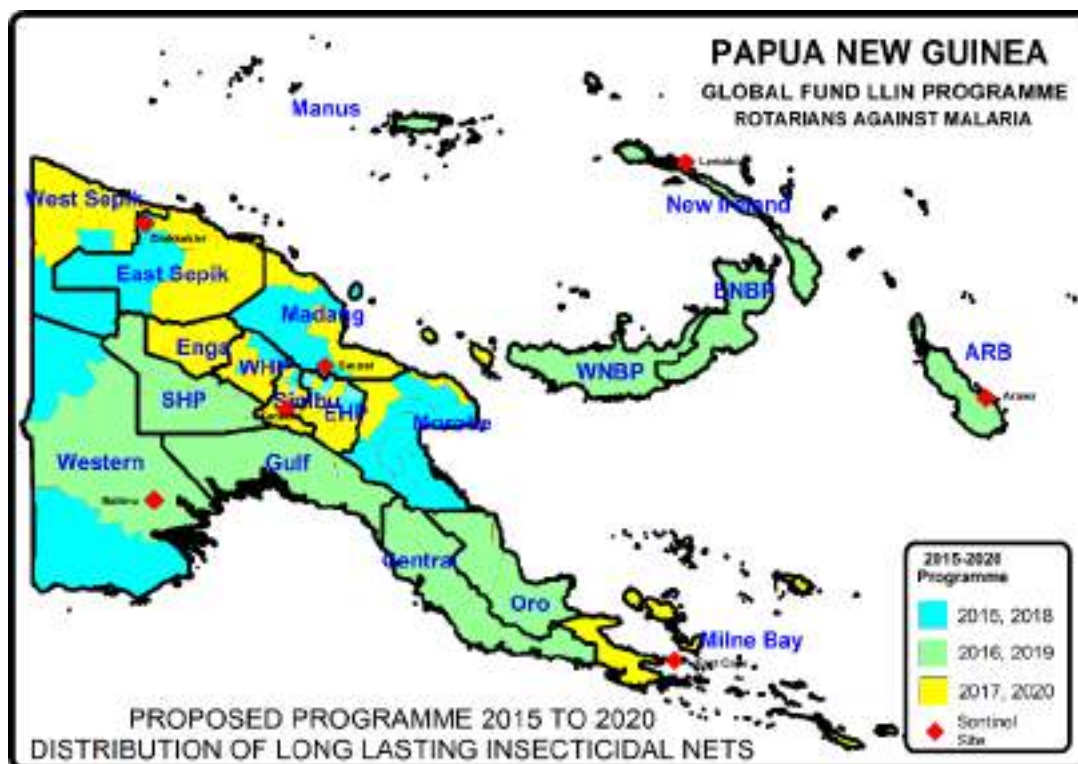


Fig.3 LLIN Distribution Programme 2015 to 2020

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

Period	Dates	Districts	Provinces	Nets Delivered
Phase One (2010-2011)	Nov 09 - Oct 11	50 Districts	18 Provinces	1,890,448
Year 3 (2012)	Nov 11 - Sep 12	27 Districts	10 Provinces	832,671
Year 4 (2013)	Oct 12 - Sep 13	28 Districts	12 Provinces	1,210,391
Year 5 (2014)	Oct 13 - Sep 14	23 Districts	11 Provinces	1,374,791
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
Year 6 (2015)	Jan - Dec 2015	29 Districts	11 Provinces	932,822
Year 7 (2016)	Jan - Dec 2016	27 Districts	13 Provinces	805,597
Year 8 (2017)	Jan - Dec 2017	36 Districts	13 Provinces	1,543,947
Year 9 (2018)	Jan - Dec 2018	27 Districts	11 Provinces	1,211,922
Year 10 (2019)	Jan - Dec 2019	26 Districts	12 Provinces	1,266,525
	Jan - Mar 2020	Pomio, Rabaul, Kokopo, Samurai Murua, Kiriwina Goodenough, Ess'ala, Alotau, Wabag	East New Britain, Milne Bay, Enga	299,265
	Apr - Jun 2020	Mul Bayer, Tambul Nebliyer, North Waghi, Anglimp South Waghi	Enga, Western Highlands, Jiwaka	356,892
	Jul - Sep 2020	Chuave, Kerowagi, Karamui Nomane, Goroka, Henganofi, Lufa, Obura Wonenara, Okapa, Markham	Chimbu, EHP and Morobe	410,982
	Oct - Dec 2020	Bogia, Madang, Rai Coast, Vanimo Green, Aitape and Wewak	Madang, East Sepik and Sandau	428,229
New Funding Model (2015-2020)				7,256,181
Round Eight (2010 - 2014)				5,763,107
Overall Total Phase One and Phase Two And NFM				13,019,288

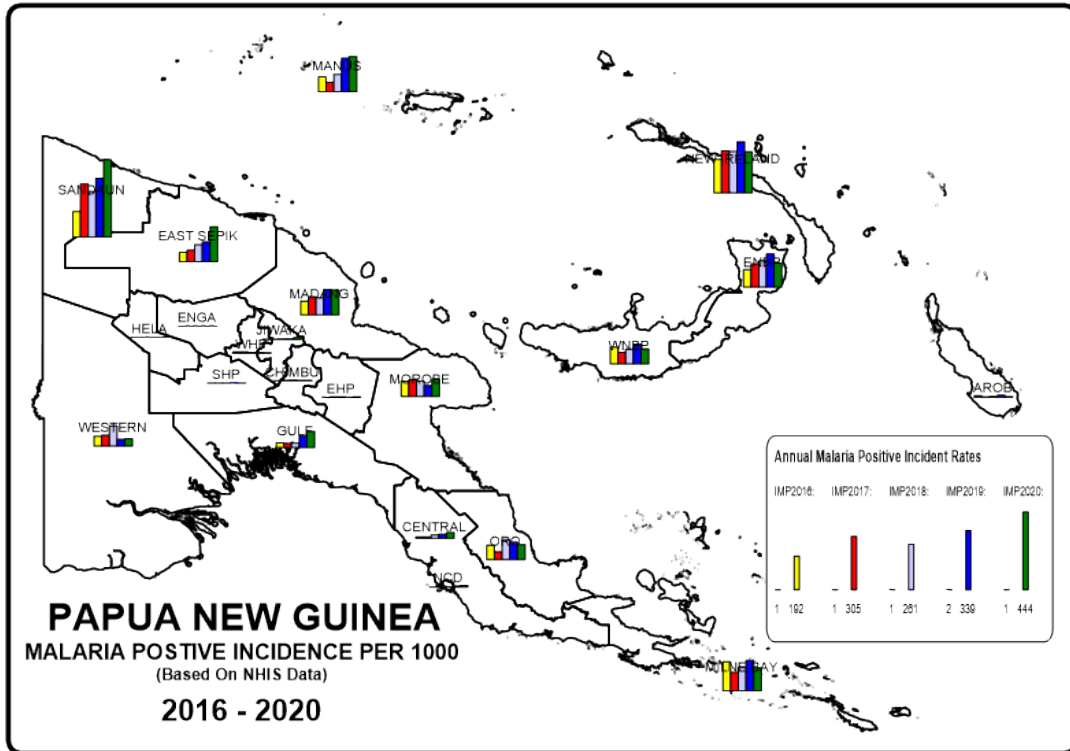


Fig. 3 - Reported Malaria Incidence In PNG From 2016 To 2020

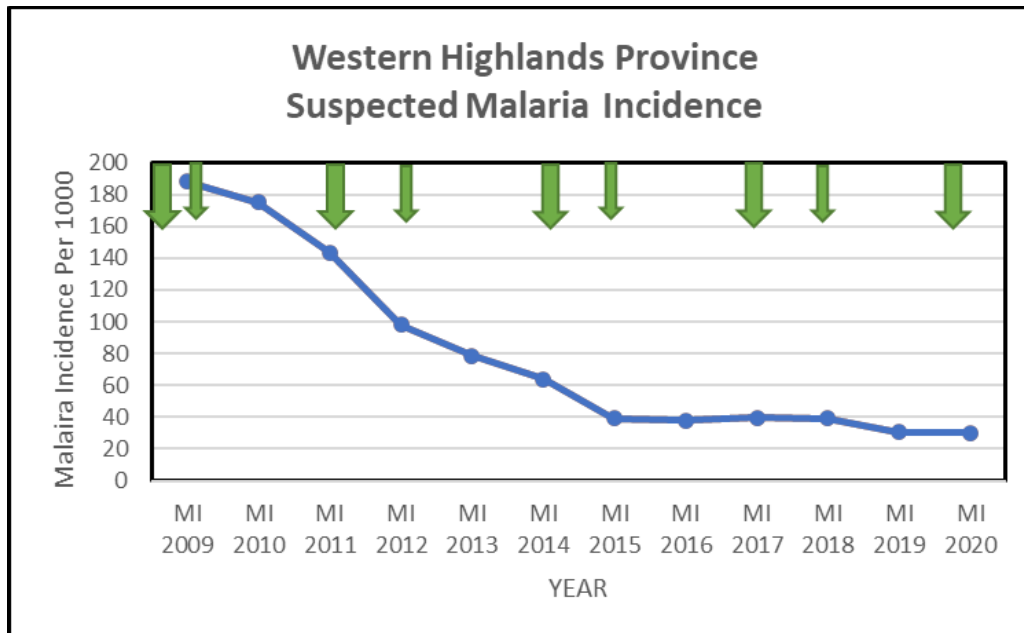


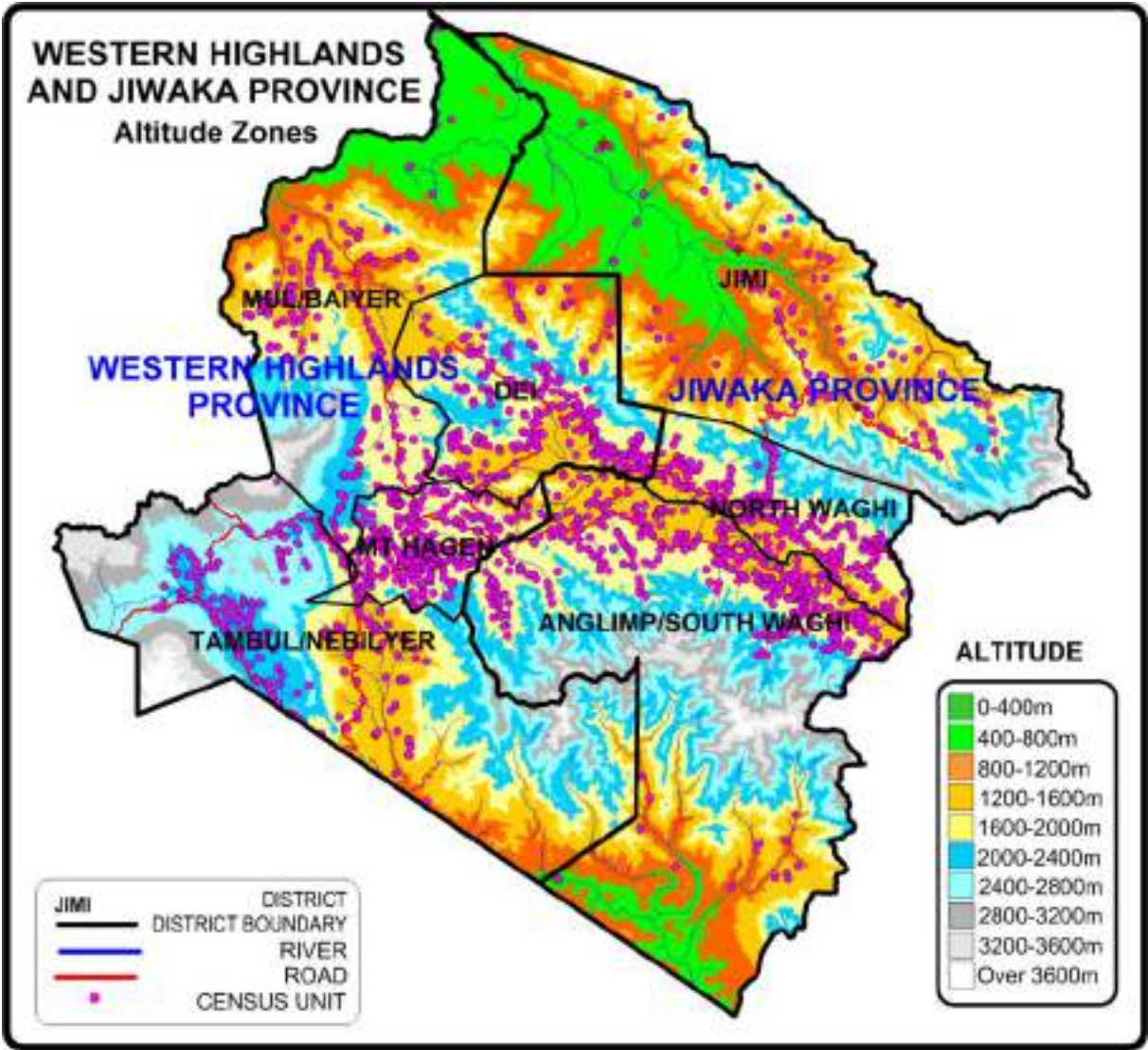
Fig. 4 – Malaria Incidence Versus Distribution Of Nets

(Large green arrows represent LLIN distributions done Mul Bayer, Dei, Tambul Nebiliyer 2011, 2014 and 2017 and 2020, while the small green arrows represent LLIN distributions done in Mount Hagen in 2009 (PHA), 2012, 2015 and 2018.

Appendix Three - Malaria By Altitude

Western Highlands Province is a highlands province on the mainland of Papua New Guinea (PNG). Only about 2.5% of the population live in stable malaria areas while the rest live above 1200m where 38% live in potentially epidemic areas, while the rest live in areas above 1600m which have practically or no or little risk to malaria. Apart from the stable malaria areas, malaria is now virtually absent in the areas of over 1200 m, but due to a history of malaria outbreaks in the past, it is considered necessary to cover at least all the population who live in the epidemic areas of the highlands to avoid possible outbreaks in the future. However, due to easy access to health care in urban areas, urban areas in towns such as Mount Hagen Urban no longer receive nets. Malaria cases in Western Highlands are mostly from the North West of the province in Mul Bayer where altitudes go below 800m which are areas of endemic malaria.

Fig. 1 Altitude Zones In Western Highlands Province



Appendix Four – Other Photographs



Distributions In Kagamuga (Left) And Tentenga (Right)



Distributions In Tigi (Left) And Mun (Right)



Off Loading Vehicles With Nets In Kotna (Left) And Loading Vehicles In Mapai In Mount Hagen (Right)

OTHER PICTURES



Happy Customers In Tentenga (Left) And Togoba (Right)

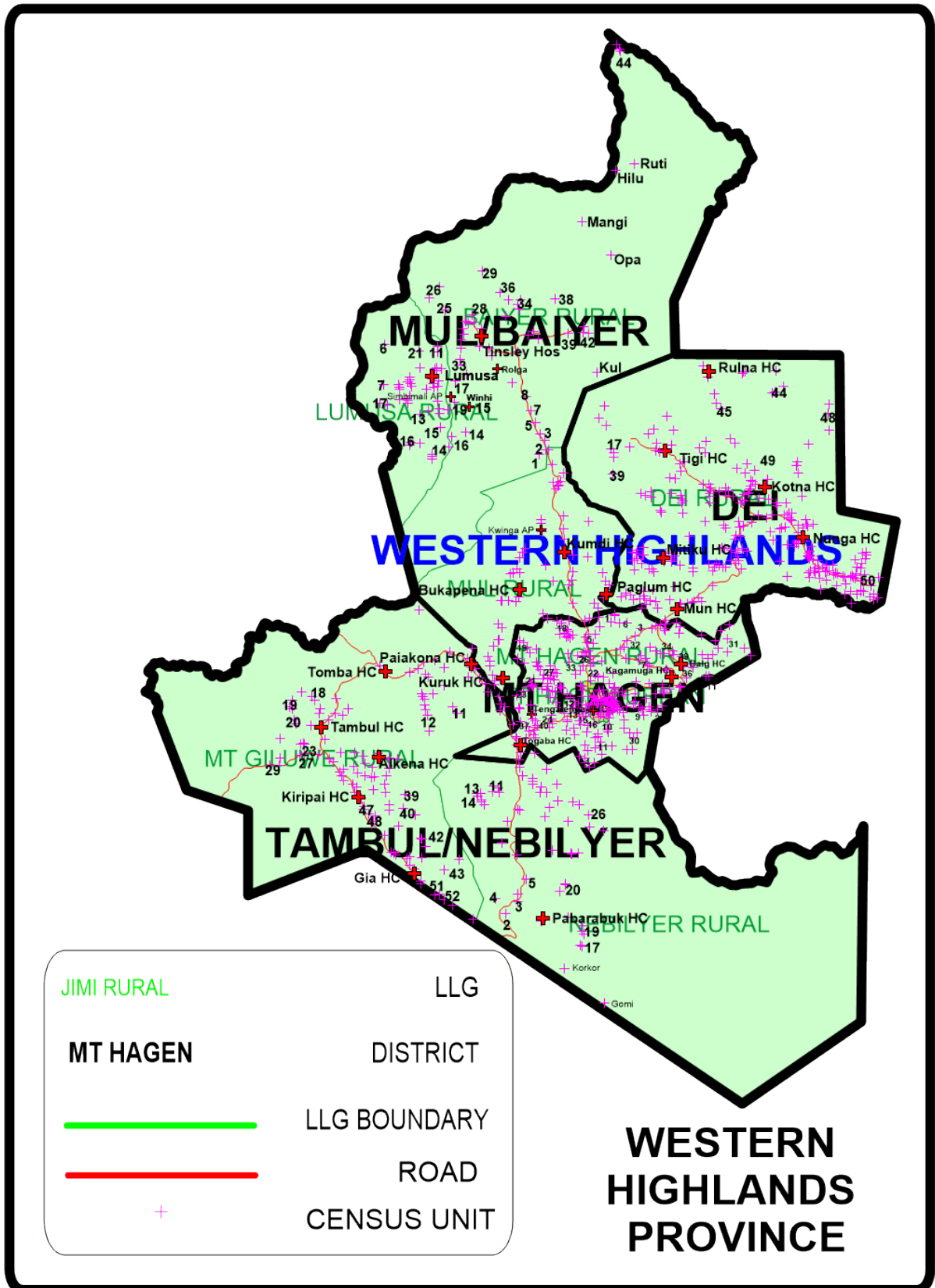


Happy Customers In Nunga (Left) And Tigi (Right)



Happy Customers In Tigi (Left) And Mun (Right)

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



ANNEX ONE

WESTERN HIGHLANDS PROVINCE
MOUNT HAGEN DISTRICT POPULATION 2021
LLIN DISTRIBUTION SUMMARY SHEET

	Above 2000m
	1600-2000m
	1200-1600m
	800-1200m

LLG	WARD	VILLAGE	Estimated 2018 Population Based On 2000 Census	Estimated 2021 Population Based On 2018	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Emobile	Houses With Radios	Radio Networks	Comment
MOUNT HAGEN DISTRICT			182,074	182,074		114,974	23,414	57,179		296	296	251	8,069	296	
MT HAGEN RURAL			123,700	123,700		114,974	23,414	57,179		296	296	251	8,069	296	
1	Kumunga		3,375	3,261		3,460	818	1,785		9	9	8	317		
		Kumunga	443	541	Kagamuge HC	594	177	320	31.03.21	1	1	1	39	FM	Road
		Panga	500	522	Kagamuge HC	566	150	289	31.03.21	1	1	1	15	FM	Road
		Gor	374	103	Kagamuge HC	152	29	77	31.03.21	1	1	1	29	FM	Road
		Yupa	370	273	Kagamuge HC	360	87	236	31.03.21	1	1	1	60	FM	Road
		Kupet	318	239	Kagamuge HC	248	44	130	31.03.21	1	1	1	23	FM	Road
		Kumbilika	443	474	Kagamuge HC	581	111	288	31.03.21	1	1	1	95	FM	Road
		Kekla/Gelka	176	373	Kagamuge HC	280	42	110	04.04.21	1	1	1	0	FM	Road
		Kumunga 2	502	449	Kagamuge HC	459	129	226	31.03.21	1	1	0	45	FM	Road
		Kumbaimb	249	286	Kagamuge HC	220	49	109	31.03.21	1	1	1	11	FM	Road
2	Kiliga		2,696	2,906		2,643	541	1,236		8	8	8	52		
		Kiliga	351	350	PHO	364	78	181	02.04.21	1	1	1	1	91.5FM	Road
		Kalina	272	303	PHO	214	50	98	02.04.21	1	1	1	5	91.5FM	Road
		Kiapela	525	456	PHO	387	81	175	03.04.21	1	1	1	21	91.5FM	Road
		Kirkamp	264	441	PHO	474	92	227	05.04.21	1	1	1	13	91.5FM	Road
		Manda	460	603	PHO	417	91	191	02.04.21	1	1	1	3	91.5FM	Road
		Koma	657	540	PHO	435	84	196	02.04.21	1	1	1	1	91.5FM	Road
		Mambela	167	213	PHO	106	27	51	02.04.21	1	1	1	3	91.5FM	Road
		Glaga		NEW	PHO	246	38	117	09.04.21	1	1	1	5	91.5FM	Road
3	Kelua 2		4,511	5,636		5,202	1,033	2,539		14	14	5	444		
		Kelua	546	1,033	Kagamuge HC	653	155	340	04.04.21	1	1	1	17	FM	Road
		Epp	94	0	Kagamuge HC										Non Existant
		Ambra	295	193	Balg HC	146	38	73	06.04.21	1	1	0	22	NBC	Road
		Baniwan	180	71	Balg HC	247	50	118	08.04.21	1	1	0	48	NBC	Road
		Gena	422	293	Balg HC	295	65	150	07.04.21	1	1	0	60	NBC	Road
		Bagalaga	59	245	Balg HC	101	23	50	08.04.21	1	1	0	19	NBC	Road
		Kumka	379	364	Kagamuge HC	273	54	132	04.04.21	1	1	0	9	FM	Road
		Pore	362	775	Balg HC	351	93	179	07.04.21	1	1	0	57	NBC	Road
		Kuta	272	240	Balg HC	224	50	112	07.04.21	1	1	0	32	NBC	Road
		Kumul	293	298	Balg HC	260	60	128	07.04.21	1	1	0	55	NBC	Road
		Kuntilapeng	305	574	Kagamuge HC	638	108	321	04.04.21	1	1	1		FM	Road
		Kutiplga	458	610	Kagamuge HC	594	100	282	04.04.21	1	1	1	12	FM	Road
		Puntibugl	537	675	Kagamuge HC	795	119	367	02.04.21	1	1	1	40	FM	Road
		Bani	309	266	Balg HC	521	100	236	08.04.21	1	1	0	61	NBC	Road
		Tiki Memorial Primary			Kagamuge HC	104	18	51	01.04.21	1	1	1	12	FM	Road
4	Kuguma		2,108	2,588		2,186	455	1,130		7	7	7	0		
		Kuguma	416	306	Rebeamul UC	256	73	137	04.04.21	1	1	1		FM	trek
		Wanipgama	84	170	Rebeamul UC	120	29	61	04.04.21	1	1	1		FM	trek
		Olwanga/Kugua	240	114	Rebeamul UC	147	44	78	04.04.21	1	1	1		FM	trek
		Kilma	659	710	Rebeamul UC	474	100	239	04.04.21	1	1	1		FM	trek
		Kilga	320	674	Rebeamul UC	291	59	153	04.04.21	1	1	1		FM	trek
		Kantil/Perga	389	613	Rebeamul UC	631	100	323	04.04.21	1	1	1		FM	trek
		Perga		NEW	Rebeamul UC	267	50	139	04.04.21	1	1	1		FM	trek
5	Kelua 1		1,192	1,770		1,858	403	934		4	4	4	171		
		Kelua 1	550	851	Kagamuge HC	851	204	416	01.04.21	1	1	1	41	FM	Road
		Yamunduga	510	640	Kagamuge HC	745	150	391	01.04.21	1	1	1	125	FM	Road
		Kelua Community School	132	279	Kagamuge HC	191	34	93	04.04.21	1	1	1	0	FM	Road
		Gipi		NEW	Kagamuge HC	71	15	34	02.04.21	1	1	1	5	FM	Road
6	Kik		2,060	2,509		2,668	554	1,301		6	6	6	178		
		Kik	224	462	PHO	623	128	308	30.03.21	1	1	1	73	91.5FM	Road
		Apgam	353	614	PHO	796	164	386	30.03.21	1	1	1	4	91.5FM	Road
		Maip 2	721	828	PHO	856	177	410	30.03.21	1	1	1	31	91.5FM	Road
		Kombrom 1	240	177	Balg HC	103	25	52	07.04.21	1	1	1	16	NBC	Road
		Kombrom 2	215	154	Balg HC	92	20	45	07.04.21	1	1	1	15	NBC	Road
		Kombrom 3	309	273	Balg HC	198	40	100	07.04.21	1	1	1	39	NBC	Road
7	Tega		7,604	10,381		11,674	2,134	5,599		11	11	11	1,519		
		Tega 1	914	922	Kagamuge HC	985	182	464	06.04.21	1	1	1	230	FM	Road
		Tega 2	669	641	Kagamuge HC	820	150	386	06.04.21	1	1	1	125	FM	Road
		Pultimb 1	684	968	Kagamuge HC	950	193	459	05.04.21	1	1	1	144	FM	Road
		Pultimb 2	803	758	Kagamuge HC	1,067	200	524	05.04.21	1	1	1	191	FM	Road
		Dobel	1,506	2,855	Kagamuge HC	2,501	505	1,193	07.04.21	1	1	1	518	FM	Road
		Waghi	571	386	Kagamuge HC	612	116	334	05.04.21	1	1	1	67	FM	Road
		Kubakena	692	909	Kagamuge HC	1,528	279	743	06.04.21	1	1	1		FM	Road
		Goldline Lodge	245	711	Kagamuge HC	787	144	377	06.04.21	1	1	1	144	FM	Road
		Gourmua	510	415	Kagamuge HC	490	100	238	07.04.21	1	1	1	100	FM	Road
		Makatamb 1	504	1,015	Kagamuge HC	839	137	393	05.04.21	1	1	1		FM	Road
		Makatamb 2	506	799	Kagamuge HC	1,095	128	488	05.04.21	1	1	1		FM	Road
8	Koglamp		5,042	5,168		2,883	460	1,298		2	2	2	154		
		Koglamp		531	PHO										Refused Survey due to Political differences
		Kontila	644	575	PHO										Refused Survey due to Political differences
		Bomrui & Luth. Church	1,165	1,182	PHO										Refused Survey due to Political differences
		Poimind	770	932	PHO	1,900	300	845	04.04.21	1	1	1	78	91.5 FM	Road
		Kimininga	1,039	688	PHO	983	160	453	04.04.21	1	1	1	76	91.5 FM	Road

LLG	WARD	VILLAGE	Estimated 2018 Population Based On 2000 Census	Estimated 2021 Population Based On 2018	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Networks	Comment
		Raglaimp	1,424	1,259	PHO										Refused Survey due to Political differences
9	Tiling		4,302	4,345		4,930	940	2,395		12	12	12	433		
		Tiling	353	302	PHO	487	94	225	01.04.21	1	1	1	48	91.5FM	Road
		Kurumi	640	515	PHO	656	69	300	02.04.21	1	1	1	16	91.5FM	Road
		Pou	638	452	PHO	604	145	289	02.04.21	1	1	1	60	91.5FM	Road
		Moparui	517	414	PHO	288	54	134	05.04.21	1	1	1	30	91.5FM	Road
		Kuga	431	445	PHO	329	100	179	02.04.21	1	1	1	73	91.5FM	Road
		Kuri	372	341	PHO	580	105	304	01.04.21	1	1	1	104	91.5FM	Road
		Wagapil	552	380	PHO	479	100	231	01.04.21	1	1	1	28	91.5FM	Road
		Kala	433	645	PHO	717	116	351	01.04.21	1	1	1	5	91.5FM	Road
		Kamuk	266	292	PHO	212	50	100	02.04.21	1	1	1	23	91.5FM	Road
		Roma		302	PHO	259	50	128	05.04.21	1	1	1	40	91.5FM	Road
		Kolkingi	100	258	PHO	35	7	18	02.04.21	1	1	1	1	91.5FM	Road
		Mount Kuta		0	Rebeamul UC										Non Existant
		Kepri		NEW	PHO	284	50	136	02.04.21	1	1	1	5	91.5FM	Road
10	Kingaldui 1		1,380	1,876		2,245	401	1,133		6	6	6	0		
		Bila	138	231	Rebeamul UC	270	44	130	03.04.21	1	1	1		FM	Road
		Jalua	178	220	Rebeamul UC	221	35	109	03.04.21	1	1	1		FM	Road
		Konba	326	298	Rebeamul UC	195	21	102	07.04.21	1	1	1		FM	Road
		Kugmumb	581	355	Rebeamul UC	567	127	291	07.04.21	1	1	1		FM	Road
		Kunmong	157	150	Rebeamul UC	166	37	85	07.04.21	1	1	1		FM	Road
		Rabiamul Station		623	Rebeamul UC	826	137	416	07.04.21	1	1	1		FM	Road
11	Korobuk		2,219	2,954		2,314	470	1,198		9	9	8	0		
		Korobuk	203	271	Rebeamul UC	235	47	123	01.04.21	1	1	1		FM	Road
		Kilipinga	228	363	Rebeamul UC	480	89	239	01.04.21	1	1	1		FM	Road
		Kuta	284	343	Rebeamul UC	276	63	145	01.04.21	1	1			FM	Road
		Pou	341	390	Rebeamul UC	210	49	108	01.04.21	1	1	1		FM	Road
		Gamba/Kortpang	278	283	Rebeamul UC	75	14	36	01.04.21	1	1	1		FM	Road
		Gatik (Kurkum)	109	458	Rebeamul UC	65	11	27	01.04.21	1	1	1		FM	Road
		Kia	261	353	Rebeamul UC	339	59	173	01.04.21	1	1	1		FM	Road
		Pipirpeng	515	493	Rebeamul UC	526	114	263	01.04.21	1	1	1		FM	Road
				NEW	Rebeamul UC	108	24	84	01.04.21	1	1	1		FM	
12	Biaprui		3,304	3,461		3,593	774	1,914		15	14	14	0		
		Biaprui	410	394	Rebeamul UC	447	100	233	10.04.21	1	1	1		FM	Road
		Ban	458	279	Rebeamul UC	139	14	80	09.04.21	1	1	1		FM	Road
		Gelka	50	44	Rebeamul UC	168	42	90	10.04.21	1	1	1		FM	Road
		Nokwarui	190	231	Rebeamul UC	150	40	83	10.04.21	1	1	1		FM	Road
		Tipnul	56	263	Rebeamul UC	249	50	126	10.04.21	1	1	1		FM	Road
		Kelowagi	171	272	Rebeamul UC	111	28	62	16.04.21	1	1	1		FM	Road
		Waipeng	52	28	Rebeamul UC	272	50	137	11.04.21	1	1	1		FM	Road
		Minjip	535	526	Rebeamul UC	479	99	256	10.04.21	1	1	1		FM	Road
		Kala	347	252	Rebeamul UC	188	50	105	14.04.21	1	1	1		FM	Road
		Numnump	153	228	Rebeamul UC	150	29	80	09.04.21	1	1	1		FM	Road
		Andakapela	393	276	Rebeamul UC	660	149	351	09.04.21	1	1	1		FM	Road
		Kimpilpalga	389	162	Rebeamul UC	161	25	88	09.04.21	1	1	1		FM	Road
		Ouri	102	246	Rebeamul UC					1					Included Under Numnump
		Kala 2		259	Rebeamul UC	183	48	101	14.04.21	1	1	1		FM	Road
		Aglgpeng		NEW	Rebeamul UC	236	50	122	11.04.21	1	1	1		FM	
13	Keltiga		2,499	2,536		2,852	541	1,442		8	8	8	0		
		Keltiga	303	322	Rebeamul UC	492	86	249	10.04.21	1	1	1		FM	Road
		Datinga 1	383	275	Rebeamul UC	185	34	91	11.04.21	1	1	1		FM	Road
		Datinga 2		NEW	Rebeamul UC	243	50	115	12.04.21	1	1	1		FM	Road
		Kintipenta	270	530	Rebeamul UC	452	93	219	10.04.21	1	1	1		FM	Road
		Kakrui	368	231	Rebeamul UC	126	22	66	10.04.21	1	1	1		FM	Road
		Kilant	374	486	Rebeamul UC	411	78	216	10.04.21	1	1	1		FM	Road
		Bul	450	305	Rebeamul UC	448	88	236	10.04.21	1	1	1		FM	Road
		Kelowagi 2	351	387	Rebeamul UC	495	90	250	10.04.21	1	1	1		FM	Road
14	Gabina		2,275	2,044		2,050	424	1,058		4	3	3	0		
		Gabina	722	722	Rebeamul UC	918	175	478	10.04.21	1	1	1		FM	Road
		Kimininga	389	751	Rebeamul UC	663	150	336	08.04.21	1	1	1		FM	Road
		Koldom	475	276	Kagamuge HC										Same Vill in Wd 26
		Kumuipana	688	295	Kagamuge HC					1					Included Under Koibuga
		Koiabuga		NEW	Rebeamul UC	469	99	244	13.04.21	1	1	1		FM	Road
15	Palimb 2		4,269	3,430		4,285	777	2,142		10	10	10	0		
		Wanmul	466	294	Rebeamul UC	555	95	286	12.04.21	1	1	1		FM	Road
		Gumas	333	512	Rebeamul UC	507	81	247	11.04.21	1	1	1		FM	Road
		Pereka	370	508	Rebeamul UC	356	68	180	10.04.21	1	1	1		FM	Road
		Pulgbulg	778	272	Rebeamul UC	561	100	273	11.04.21	1	1	1		FM	Road
		Rump	234	272	Rebeamul UC	246	50	125	11.04.21	1	1	1		FM	Road
		Kralmul	182	192	Rebeamul UC	109	20	55	11.04.21	1	1	1		FM	Road
		Kogma	314	299	Rebeamul UC	307	50	148	11.04.21	1	1	1		FM	Road
		Kamunga 1	531	550	Rebeamul UC	497	100	248	11.04.21	1	1	1		FM	Road
		Kamunga 2			Rebeamul UC	207	41	105	11.04.21	1	1	1		FM	Road
		Ketilumb	1,062	530	Rebeamul UC	940	172	475	11.04.21	1	1	1		FM	Road
16	Palimb 1		4,126	3,925		3,576	650	1,827		8	8	8	0		
		Palimp 1	805	643	Rebeamul UC	569	84	289	10.04.21	1	1	1		FM	Road
		Timbilmul	353	125	Rebeamul UC	127	24	55	12.04.21	1	1	1		FM	Road
		Welia	613	717	Rebeamul UC	441	85	235	07.04.21	1	1	1		FM	Road
		Wipmul/Palimrui	1,290	1,460	Rebeamul UC	703	125	351	07.04.21	1	1	1		FM	Road
		Kulgmamp	376	394	Rebeamul UC	538	109	280	08.04.21	1	1	1		FM	Road
		Kupulga	452	350	Rebeamul UC	365	72	181	07.04.21	1	1	1		FM	Road
		Palimrui		NEW	Rebeamul UC	646	113	334	07.04.21	1	1	1		FM	Road
		Kuning	238	237	Rebeamul UC	187	38	102	09.04.21	1	1	1		FM	Road
17	Koge 1		1,797	2,440		2,336	556	1,172		10	10	10	122		

LLG	WARD	VILLAGE	Estimated 2018 Population Based On 2000 Census	Estimated 2021 Population Based On 2018	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Networks	Comment
		Koge 1	312	416	Kagamuge HC	387	94	196	30.03.21	1	1	1	30	FM	Road
		Puldung	209	232	Kagamuge HC	282	67	139	30.03.21	1	1	1	1	FM	Road
		Panga	224	169	Kagamuge HC	320	83	167	30.03.21	1	1	1	13	FM	Road
		Moparong	224	165	Kagamuge HC	148	34	71	30.03.21	1	1	1	5	FM	Road
		Raltinga	184	103	Kagamuge HC	117	26	57	30.03.21	1	1	1	3	FM	Road
		Kurung	188	375	Kagamuge HC	245	65	123	30.03.21	1	1	1	22	FM	Road
		Pugump	109	185	Kagamuge HC	149	40	82	30.03.21	1	1	1	13	FM	Road
		Maip	100	486	Kagamuge HC	169	34	84	30.03.21	1	1	1	6	FM	Road
		Pugumb Tea	130	151	Kagamuge HC	81	13	35	30.03.21	1	1	1	2	FM	Road
		Koge Peng	117	158	Kagamuge HC	438	100	218	30.03.21	1	1	1	27	FM	Road
18	Koge 2		2,118	2,593		2,344	466	1,086		9	9	9	0		
		Koge 2	159	202	PHO	160	35	80	31.03.21	1	1	1		91.5FM	Road
		Maik	230	234	PHO	350	49	160	31.03.21	1	1	1		91.5FM	Road
		Yeimulg	527	592	PHO	565	121	264	31.03.21	1	1	1		91.5FM	Road
		Amil 1	236	273	PHO	172	43	82	31.03.21	1	1	1		91.5FM	Road
		Kurutip	178	211	PHO	184	40	79	31.03.21	1	1	1		91.5FM	Road
		Amil 2	174	233	PHO	153	35	72	31.03.21	1	1	1		91.5FM	Road
		Kupulum	276	201	PHO	355	49	159	31.03.21	1	1	1		91.5FM	Road
		Romp	102	176	PHO	182	44	89	31.03.21	1	1	1		91.5FM	Road
		Mak	236	471	PHO	223	50	101	31.03.21	1	1	1		91.5FM	Road
19	Minimp		2,679	2,825		2,444	582	1,196		12	12	12	72		
		Minimp	318	412	Tentenga HC	318	74	154	30.03.21	1	1	1	1	93.1 FM	Road
		Kunim	107	79	Tentenga HC	75	16	36	30.03.21	1	1	1	6	95.9 FM	Road
		Wanim	245	107	Tentenga HC	89	23	43	30.03.21	1	1	1	4	95.9 FM	Road
		Kumbalmul	211	197	Tentenga HC	209	50	102	30.03.21	1	1	1	7	93.1 FM	Road
		Malai	213	504	Tentenga HC	330	85	164	30.03.21	1	1	1	5	93.1 FM	Road
		Kontkona	337	283	Tentenga HC	300	90	149	30.03.21	1	1	1	15	93.1 FM	Road
		Gatna	136	143	Tentenga HC	193	42	95	30.03.21	1	1	1	11	93.1 FM	Road
		Tekmul	186	132	Tentenga HC	182	38	88	30.03.21	1	1	1	15	93.1 FM	Road
		Mala	268	461	Tentenga HC	350	77	169	30.03.21	1	1	1	6	95.9 FM	Road
		Tala	207	134	Tentenga HC	131	25	65	30.03.21	1	1	1	0	95.9 FM	Road
		Pulparui	364	219	Tentenga HC	119	29	58	30.03.21	1	1	1	2	93.1 FM	Road
		Wakanam	86	154	Tentenga HC	148	33	73	30.03.21	1	1	1	0	93.1 FM	Road
20	Ogelbeng		401	1,026		763	159	359		2	2	2	0		
		Ogelbeng C/sch & V/Centre	107	497	PHO	351	59	167	30.03.21	1	1	1		91.5FM	Road
		Ogelbeng Luth. Seminary	293	529	PHO	412	100	192	30.03.21	1	1	1		91.5FM	Road
21	Anga		2,365	2,699		1,597	417	794		5	5	5	4		
		Anga (Mandau)	249	351	Tentenga HC	295	73	142	04.04.21	1	1	1	0	93.1 FM	Road
		Bagl	665	722	Balg HC										Come Under Nebiliyer
		Kelua	349	427	Kagamuge HC	289	82	156	02.04.21	1	1	1		FM	Road
		Kaim	86	293	Balg HC										Come Under Nebiliyer
		Minbulga	253	313	Tentenga HC	287	77	144	04.04.21	1	1	1	4	95.9 FM	Road
		Kerepel	351	267	Tentenga HC	386	100	187	04.04.21	1	1	1	0	93.1 FM	Road
		Goigata	412	327	Tentenga HC	340	85	165	04.04.21	1	1	1	0	95.9 FM	Road
22	Pulgimp		1,075	1,837		1,987	409	948		6	6	6	169		
		Pulgimp	117	148	PHO	438	70	214	02.04.21	1	1	1	30	91.5FM	Road
		Keiokti	201	440	PHO	277	63	132	31.03.21	1	1	1	18	91.5FM	Road
		Keipilkakona	264	337	PHO	246	50	123	31.03.21	1	1	1	30	91.5FM	Road
		Wiangrui	176	304	PHO	410	100	193	31.03.21	1	1	1	23	91.5FM	Road
		Kentai	128	433	PHO	368	76	174	31.03.21	1	1	1	49	91.5FM	Road
		Monga	188	176	PHO	248	50	112	31.03.21	1	1	1	19	91.5FM	Road
23	Mulga		2,694	3,101		2,556	593	1,274		10	10	10	25		
		Mulga	519	384	Tentenga HC	340	92	169	31.03.21	1	1	1	0	93.1 FM	Road
		Kokop	324	266	Tentenga HC	180	49	91	31.03.21	1	1	1	3	93.1 FM	Road
		Kiltga	245	251	Tentenga HC	215	58	104	31.03.21	1	1	1	1	95.9 FM	Road
		Katpeng	368	466	Tentenga HC	295	72	149	31.03.21	1	1	1	2	95.9 FM	Road
		Owatung	128	118	Tentenga HC	208	50	109	31.03.21	1	1	1	2	95.9 FM	Road
		Tengtenga	903	1,053	Tentenga HC	673	168	335	01.04.21	1	1	1	14	93.1 FM	Road
		Kupelga	48	132	Tentenga HC	66	12	31	05.04.21	1	1	1	2	93.1 FM	Road
		Pupral	59	321	Tentenga HC	132	25	64	05.04.21	1	1	1	0	93.1 FM	Road
		Walmug		NEW	Tentenga HC	311	33	155	24.04.21	1	1	1	0	93.1 FM	Road
		Kamang	100	110	Tentenga HC	136	34	67	31.03.21	1	1	1	1	93.1 FM	Road
24	Ketiga		3,491	2,939		2,574	532	1,268		10	10	10	155		
		Ketiga	567	599	Tentenga HC	462	83	229	05.04.21	1	1	1	66	93.1 FM	Road
		Elgpeng	446	368	Tentenga HC	285	53	137	05.04.21	1	1	1	5	93.1 FM	Road
		Bumula	126	116	Tentenga HC	100	30	50	05.04.21	1	1	1	7	93.1 FM	Road
		Kupulga	278	95	Tentenga HC	144	38	70	05.04.21	1	1	1	5	95.9 FM	Road
		Kupulga/Nengm			Tentenga HC	84	25	42	05.04.21	1	1	1	1	95.9 FM	Road
		Kilg	515	390	Tentenga HC	177	45	88	01.04.21	1	1	1	7	95.9 FM	Road
		Mundkimp	337	380	Tentenga HC	275	56	133	05.04.21	1	1	1	26	93.1 FM	Road
		Moikep	525	439	Tentenga HC	466	83	234	05.04.21	1	1	1	0	93.1 FM	Road
		Waipeng	475	422	Tentenga HC	423	95	210	05.04.21	1	1	1	29	93.1 FM	Road
		Ketiga Primary School	220	130	Tentenga HC	158	24	75	01.04.21	1	1	1	9	95.9 FM	Road
25	Pungaminga		2,049	1,628		1,679	380	829		5	5	5	310		
		Pungaminga	563	303	Togoba HC	377	92	189	30.03.21	1	1	1	85	93.1 FM	Road
		Kunpeng	558	520	Togoba HC	467	97	228	31.03.21	1	1	1	81	93.1 FM	Road
		Kemeng	650	391	Togoba HC	359	96	177	30.03.21	1	1	1	67	93.1 FM	Road
		Temeng	117	191	Togoba HC	226	50	111	30.03.21	1	1	1	34	93.1 FM	Road
		Waninga Peng	161	223	Togoba HC	250	45	124	31.03.21	1	1	1	43	93.1 FM	Road
26	Kogmul		2,842	3,414		3,530	689	1,769		9	9	9	335		
		Kogmul	452	504	PHO	502	125	265	03.04.21	1	1	1	86	91.5FM	Road
		Palamanda	255	196	PHO	209	49	99	30.03.21	1	1	1	9	91.5FM	Road
		Kelua	230	151	PHO	303	48	128	30.03.21	1	1	1	32	91.5FM	Road
		Puglump	450	498	PHO	624	112	338	02.04.21	1	1	1	73	91.5FM	Road
		Kentildi	353	679	PHO	370	73	186	02.04.21	1	1	1	20	91.5FM	Road

LLG	WARD	VILLAGE	Estimated 2018 Population Based On 2000 Census	Estimated 2021 Population Based On 2018	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Networks	Comment
		Wanka	330	552	PHO	686	135	348	01.04.21	1	1	1	73	91.5FM	Road
		Timur	326	269	PHO	308	50	150	01.04.21	1	1	1	19	91.5FM	Road
		Koldom	165	293	PHO	240	47	121	01.04.21	1	1	1	17	91.5FM	Road
		Pondpond	282	273	PHO	288	50	134	30.03.21	1	1	1	6	91.5FM	Road
27	Pits		1,292	1,890		1,555	347	743		11	10	10	109		
		Pits	220	219	Tentenga HC	219	50	106	02.04.21	1	1	1	14	93.1 FM	Road
		Kundumunga	79	135	Tentenga HC	134	26	64	02.04.21	1	1	1	1	93.1 FM	Road
		Pami	293	239	Tentenga HC	284	63	132	03.04.21	1	1	1	15	95.9 FM	Road
		Olakit	100	119	Tentenga HC	91	25	49	02.04.21	1	1	1	18	93.1 FM	Road
		Kuntika Timila	240	97	Tentenga HC	253	48	128	02.04.21	1	1	1	23	93.1 FM	Road
		Pupural	126	304	Tentenga HC	210	50	96	02.04.21	1	1	1	0	93.1 FM	Road
		Pungum	36	250	Tentenga HC	62	16	29	02.04.21	1	1	1	0	93.1 FM	Road
		Koma	25	92	Tentenga HC	90	23	43	02.04.21	1	1	1	17	93.1 FM	Road
		Kuntke	40	280	Tentenga HC										Non Existant
		Terel	19	82	Tentenga HC					1					Included Under Pami
		Olatu	44	73	Tentenga HC	115	25	54	02.04.21	1	1	1	19	95.9 FM	Road
		Kaiyoite		NEW	Tentenga HC	97	21	42	02.04.21	1	1	1	2	93.1 FM	Road
		Olgagimpana	69	0	Tentenga HC										Non Existant
28	Togoba No.1		4,222	3,746		1,897	428	973		5	5	5	335		
		Togoba 1	404	577	Togoba HC	758	177	392	02.04.21	1	1	1	151	93.1 FM	Road
		Epulga	774	1,445	Togoba HC	154	38	78	30.03.21	1	1	1	28	93.1 FM	Road
		Walimul	443	508	Togoba HC	478	96	247	02.04.21	1	1	1	86	93.1 FM	Road
		Kend	544	346	Togoba HC	160	34	77	02.04.21	1	1	1	19	93.1 FM	Road
		Waninga	742	0	Togoba HC										Non Existant
		Ulga	362	315	Togoba HC										Non Existant
		Pauga	952	555	Togoba HC	347	83	179	02.04.21	1	1	1	51	93.1 FM	Road
29	Kagamuga		2,137	3,427		2,609	602	1,383		3	3	0	407		
		Ganga	636	338	Balg HC	448	115	223	05.04.21	1	1	0	83	NBC	Road
		Jikaora	634	518	Balg HC	279	72	148	05.04.21	1	1	0	57	NBC	Road
		Bagl	866	2,571	Balg HC	1,882	415	1,012	05.04.21	1	1	0	267	NBC	Road
30	Kingaldui 2		2,566	2,723		2,555	522	1,395		7	7	7	0		
		Kingaldui 2	684	288	Rebeamul UC	223	39	112	04.04.21	1	1	1		93.1 FM	Road
		Wangil	61	213	Rebeamul UC	146	24	71	03.04.21	1	1	1		93.1 FM	Road
		Rondon	379	263	Rebeamul UC	180	46	138	03.04.21	1	1	1		93.1 FM	Road
		Kuia	462	240	Rebeamul UC	509	87	289	03.04.21	1	1	1		93.1 FM	Road
		Kilghi	404	363	Rebeamul UC	552	132	289	04.04.21	1	1	1		93.1 FM	Road
		Rogia	554	368	Rebeamul UC	519	94	271	03.04.21	1	1	1		93.1 FM	Road
		Kontpang	21	447	Rebeamul UC										Same Vill in Wd 11
		Golgpona		540	Rebeamul UC	426	100	225	04.04.21	1	1	1		93.1 FM	Road
31	Baisu		7,872	6,738		6,480	1,222	3,198		13	13	0	782		
		Baisu Gate	502	463	Balg HC	265	56	128	01.04.21	1	1	0	47	NBC	Road
		Raglamp	556	1,007	Balg HC	856	192	434	01.04.21	1	1	0	170	NBC	Road
		Kopla	667	0	Balg HC	399	85	214	01.04.21	1	1	0	56	NBC	Road
		Ipp	1,098	1,014	Balg HC	609	132	292	01.04.21	1	1	0	89	NBC	Road
		Kipgil	437	155	Balg HC	254	50	130	01.04.21	1	1	0	43	NBC	Road
		Ombin	303	783	Balg HC	156	26	74	08.04.21	1	1	0	16	NBC	Road
		Kalteng	722	0	Balg HC	241	19	115	01.04.21	1	1	0	20	NBC	Road
		Rugi	596	916	Balg HC	1,053	220	518	05.04.21	1	1	0	3	NBC	Road
		Nambi	489	707	Balg HC	464	67	223	08.04.21	1	1	0	39	NBC	Road
		Tibi	194	466	Balg HC	642	100	302	31.03.21	1	1	0	79	NBC	Road
		Main Ambra	159	492	Balg HC	264	78	137	02.04.21	1	1	0	59	NBC	Road
		Tapenda Pint	368	175	Balg HC	609	100	312	01.04.21	1	1	0	76	NBC	Road
		Baisu Cis	1,782	559	Balg HC	668	97	319	02.04.21	1	1	0	85	NBC	Road
32	Wimbuka		2,871	3,602		3,016	667	1,519		10	9	8	307		
		Wimbuka (Kelua 2)	414	337	Kagamuge HC	232	50	112	02.04.21	1	1	1	11	FM	Road
		Jimi	303	378	Kagamuge HC	532	100	256	04.04.21	1	1	1	25	FM	Road
		Waiaoronga	261	468	Kagamuge HC	423	100	219	02.04.21	1	1	1	30	FM	Road
		Kotengora	385	334	Kagamuge HC	162	50	85	02.04.21	1	1	0	22	FM	Road
		Kuntiporonga	232	195	Kagamuge HC	696	190	351	02.04.21	1	1	1	2	FM	Road
		Kutipulnga (Tentaldi)	201	199	Kagamuge HC										Covred under PHO ward 26
		Raltinga	353	224	Kagamuge HC	342	40	166	02.04.21	1	1	1	166	FM	Road
		Kintalrong	372	589	Kagamuge HC					1					Included Under Kotengora
		Langa		494	Kagamuge HC										Covered under Bagl HC
		Ambra	351	385	Kagamuge HC	464	100	250	02.04.21	1	1	1	26	FM	Road
		Wimbuka (Forestry Sigarap Market)		NEW	Kagamuge HC	100	24	49	01.04.21	1	1	1	20	FM	Road
		Wimbuka Primary School		NEW	Kagamuge HC	65	13	31	04.04.21	1	1	1	5	FM	Road
33	Kilam		2,288	3,461		3,238	637	1,506		8	8	8	174		
		Kilam	577	786	PHO	569	91	259	01.04.21	1	1	1	11	91.5FM	Road
		Kerua	50	187	PHO	170	30	76	30.03.21	1	1	1	4	91.5FM	Road
		Romp	121	346	PHO	416	80	191	30.03.21	1	1	1	24	91.5FM	Road
		Kudumngakumul	218	413	PHO	380	81	175	01.04.21	1	1	1	22	91.5FM	Road
		Willibapeng	148	196	PHO	332	75	162	01.04.21	1	1	1	33	91.5FM	Road
		Willibapor	172	202	PHO	281	50	136	01.04.21	1	1	1	46	91.5FM	Road
		Tipuka	353	378	PHO	321	74	152	01.04.21	1	1	1	30	91.5FM	Road
		Kelta	650	953	PHO	769	156	355	01.04.21	1	1	1	4	91.5FM	Road
34	Kenta		2,091	4,878		3,870	776	2,006		12	12	1	431		
		Kenta	251	558	Balg HC	260	59	144	05.04.21	1	1	0	50	NBC	Road
		Patikona	172	246	Balg HC	311	77	166	05.04.21	1	1	0	59	NBC	Road
		Gula	69	56	Balg HC	86	18	45	05.04.21	1	1	0	13	NBC	Road
		Mapa	130	204	Balg HC	222	50	118	05.04.21	1	1	0	42	NBC	Road
		Ambra	148	867	Balg HC	488	101	245	05.04.21	1	1	0	30	NBC	Road
		Pemrui	284	545	Balg HC	601	78	297	06.04.21	1	1	1	4	NBC	Road
		Kuk	356	674	Balg HC	759	149	383	05.04.21	1	1	0	95	NBC	Road
		Kuk/Resource		527	Balg HC	529	100	273	05.04.21	1	1	0	53	NBC	Road
		Kongop	220	260	Balg HC	216	43	114	05.04.21	1	1	0	13	NBC	Road

LLG	WARD	VILLAGE	Estimated 2018 Population Based On 2000 Census	Estimated 2021 Population Based On 2018	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Networks	Comment
		Kulgmuka	136	163	Balg HC	210	50	109	05.04.21	1	1	0	42	NBC	Road
		Rou	125	282	Balg HC	129	34	76	05.04.21	1	1	0	17	NBC	Road
		Ambra Plnt	199	496	Balg HC	59	17	36	05.04.21	1	1	0	13	NBC	Road
35	Koibuga		2,054	0		0	0	0		0	0	0	0		
		Koibuga	1,050	0	Balg HC										Come Under Nebillyer
		Pungmamp	360	0	Balg HC										Come Under Nebillyer
		Pilga	326	0	Balg HC										Come Under Nebillyer
		Wakia	318	0	Balg HC										Come Under Nebillyer
36	Kagamuga Rural		3,175	3,189		3,558	804	1,821		6	6	0	492		
		Kagamuga Rural	786	0	Balg HC	730	150	363	04.04.21	1	1	0	108	NBC	Road
		Kogla	807	822	Balg HC	623	156	330	02.04.21	1	1	0	130	NBC	Road
		Dakana	494	626	Balg HC	770	150	377	02.04.21	1	1	0	45	NBC	Road
		Yei	272	634	Balg HC	394	112	204	04.04.21	1	1	0	61	NBC	Road
		Mup	485	1,107	Balg HC	809	186	432	05.04.21	1	1	0	110	NBC	Road
		Lantiora	332	0	Balg HC	232	50	115	02.04.21	1	1	0	38	NBC	Road
37	Kulg		2,393	3,059		2,215	508	1,108		6	6	6	231		
		Kulg	592	690	Tentenga HC	589	148	313	01.04.21	1	1	1	46	93.1 FM	Road
		Koltom	460	582	Tentenga HC	418	96	193	31.04.21	1	1	1	11	95.9 FM	Road
		Koibuga	240	266	Tentenga HC	243	57	120	31.04.21	1	1	1	6	95.9 FM	Road
		Omugmug	694	528	Togoba HC	409	92	199	31.03.21	1	1	1	78	93.1 FM	Road
		Daka	408	518	Togoba HC	355	74	186	31.03.21	1	1	1	50	93.1 FM	Road
		Abtuly		475	Togoba HC	201	41	97	01.04.21	1	1	1	40	93.1 FM	Road
38	Waniga		1,610	1,710		1,550	305	792		4	4	4	272		
		Waniga	360	945	Togoba HC	1,081	223	567	01.04.21	1	1	1	193	93.1 FM	Road
		Togoba Station	870	296	Togoba HC	98	23	48	31.03.21	1	1	1	21	93.1 FM	Road
		Togoba High School	73	295	Togoba HC	209	41	99	31.03.21	1	1	1	41	93.1 FM	Road
		Togoba Health Centre	307	174	Togoba HC	162	18	78	31.03.21	1	1	1	17	93.1 FM	Road
39	Kuguramp		2,194	0											
		Kuguramp	738	0	Togoba HC										Non Existant
		Korobul	358	0	Togoba HC										Non Existant
		Ruguwa	1,098	0	Togoba HC										Non Existant
40	Toboga 2		1,968	1,988		2,202	438	1,109		0	4	4	69		
		Ulga	391	0	Tentenga HC										Non Existant
		Olgepona	406	787	Tentenga HC	876	121	416	01.04.21		1	1	3	93.5 FM	Road
		Kitpeng	510	582	Tentenga HC	295	77	145	01.04.21		1	1	19	93.1 FM	Road
		Kintika/Pauka		NEW	Tentenga HC	322	90	171	01.04.21		1	1	7	93.1 FM	Road
		Kuntika	661	618	Tentenga HC	709	150	377	05.04.21		1	1	40	93.5 FM	Road
				0											
Mt Hagen Urban			53,420	0											
1	Kagamuga Urban		678	0											
		Forestry - Show Ground	335	0	PHO										Road
		Monfi Kuta - Coffee Factory	343	0	PHO										Road
		Monfi Kuta - Coffee Factory		0	PHO										Road
2	Mt.Hagen Town		52,742	0											
		Airport - Bus Stop	956	0	PHO										Road
		Airport - Terminal	569	0	PHO										Road
		Hati	1,188	0	PHO										Road
		Kandep/Simbu Sett	1,932	0	PHO										Road
		New Town	332	0	PHO										Road
		New Town	473	0	PHO										Road
		New Town	500	0	PHO										Road
		New Town	567	0	PHO										Road
		New Town	462	0	PHO										Road
		New Town Anglican	261	0	PHO										Road
		"I" School - Cemetary	425	0	PHO										Road
		Hagen Kofi	222	0	PHO										Road
		"I" School - Bakery	512	0	PHO										Road
		Wara - Kum L/C	1,271	0	PHO										Road
		Kerebug	318	0	PHO										Road
		Wara - Kum Cemetary	629	0	PHO										Road
		New Town	469	0	PHO										Road
		Wara - Kum	926	0	PHO										Road
		Kimininga-kagamuga H/Way	117	0	PHO										Road
		Warakum - Resident	665	0	PHO										Road
		Warakum - Industrial & S'men	767	0	PHO										Road
		Warakum - Police Dog Unit	809	0	PHO										Road
		Hospital Area	2,110	0	PHO										Road
		Newtown - Commercial	343	0	PHO										Road
		Kerebug Residential Area	197	0	PHO										Road
		Newtown - Commercial	1,165	0	PHO										Road
		Market Area	387	0	PHO										Road
		Tarangau Police Res.	523	0	PHO										Road
		Kum/Tarangau Road	425	0	PHO										Road
		Tarangau	663	0	PHO										Road
		Tarangau	399	0	PHO										Road
		Tarangau	655	0	PHO										Road
		Rebiamul	282	0	PHO										Road
		Kimininga Police Res.	1,709	0	PHO										Road
		Kerebug Residential Area	427	0	PHO										Road
		Holy Trinity T.c.	809	0	PHO										Road
		Kerebug-Hagen Tech	535	0	PHO										Road
		Kimininga	263	0	PHO										Road
		Kagamuga- Kimininga Road	487	0	PHO										Road
		Sda Hq Kimininga	870	0	PHO										Road
		Pangia/Pindu S'ment	2,378	0	PHO										Road

LLG	WARD	VILLAGE	Estimated 2018 Population Based On 2000 Census	Estimated 2021 Population Based On 2018	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Networks	Comment
		Enga/Simbu S'ment	790	0	PHO										Road
		Warakum S'ment/goroka/Tari	740	0	PHO										Road
		Council Camp S'ment	3,612	0	PHO										Road
		Elizabeth Park S'ment	864	0	PHO										Road
		Hagen Kofi	910	0	PHO										Road
		Rebiemul S'ment	1,060	0	PHO										Road
		Hagen Park - Tari S'ment	805	0	PHO										Road
		Pangia/Enga/ Simbu S'ment	1,562	0	PHO										Road
		Tarangau - Enga/Goroka	791	0	PHO										Road
		Kala/Enga S'ment	676	0	PHO										Road
		Kala Creek S'ment	1,048	0	PHO										Road
		Kala Creek S'ment	312	0	PHO										Road
		Bata & Rai Coast Compound	738	0	PHO										Road
		T-S'ment	841	0	PHO										Road
		Warakum Road - Hc/Lc	439	0	PHO										Road
		Kum Road - Ninji Drive S'ment	565	0	PHO										Road
		Warakum S'ment/tari/Goroka	456	0	PHO										Road
		Warakum L/CArea	617	0	PHO										Road
		Warakum Gumine S'ment	738	0	PHO										Road
		Tarangai/enga/Tambul S'ment	389	0	PHO										Road
		Tarangai/goroka/Gumine S'me	506	0	PHO										Road
		Tarangau S'ment	801	0	PHO										Road
		Kimininga - S'ment	1,146	0	PHO										Road
		Kala Creek S'ment	991	0	PHO										Road
		St Paul Kala Creek S'ment	732	0	PHO										Road
		Kala Creek S'ment	157	0	PHO										Road
		Cemetary S'ment	1,460	0	PHO										Road
		Banana Block		0	PHO										Road

ANNEX TWO

**WESTERN HIGHLANDS PROVINCE
DEI DISTRICT POPULATION 2020
LLIN PLANNING SUMMARY SHEET**

	1600-2000m
	1200-1600m
	800-1200m

LLG	WARD	VILLAGE	Estimated 2020 Data Based On 2017 Data	Health Centre	Population Surveyed	House Holds Surveyed	Nets Issued	Date Of Distribution	Villages	Digicel	Bmobile	Houses With Radios	Radio Network	Comments
DEI			84,867		#REF!	19,436	46,577		279	269	208	6,433	32	
DEI RURAL			84,867		#REF!	19,436	46,577		279	269	208	6,433	32	
1	Muglamp.1		2,845		2,964	606	1,554		10	10	10	21		
		Muglamp.1	509	Mun HC	219	50	121	02.04.21	1	1	1	3	FM Radio	Road
		Mikitimp	334	Mun HC	562	115	288	01.04.21	1	1	1	4	FM Radio	Road
		Kombalg	753	Mun HC	581	135	323	02.04.21	1	1	1	0	FM Radio	Road
		Mununga	0	Mun HC	87	20	45	02.04.21	1	1	1	3	FM Radio	Road
		Kaiyaka/Murpup	445	Mun HC	549	116	279	01.04.21	1	1	1	3	FM Radio	Road
		Watapana	196	Mun HC	178	29	95	01.04.21	1	1	1	0	FM Radio	Road
		Yagan	256	Mun HC	225	39	113	02.04.21	1	1	1	8	FM Radio	Road
		Krim	0	Mun HC	115	21	60	02.04.21	1	1	1	0	FM Radio	Road
		Muglamp Station	122	Mun HC	343	60	175	02.04.21	1	1	1	0	FM Radio	Road
		Bagalaga Ptn	231	Mun HC	105	21	55	07.04.21	1	1	1	0	FM Radio	Road
2	Muglamp.2		906		957	223	486		3	3	3	30		
		Muglamp 2 (Nemasu)	178	Mun HC	429	97	215	02.04.21	1	1	1	8	FM Radio	Road
		Koimunga	329	Mun HC	332	81	171	02.04.21	1	1	1	17	FM Radio	Road
		Puldung	150	Mun HC	196	45	100	02.04.21	1	1	1	5	FM Radio	Road
		Warapump	249	Mun HC										Abandoned due to Tribal Fights
3	Mun		1,685		806	151	404		3	3	3	48		
		Mun	555	Mun HC										Abandoned due to Tribal Fights
		Ambra	387	Mun HC	580	100	287	07.04.21	1	1	1	45	FM Radio	Road
		Mun C/Mission	201	Mun HC										Abandoned due to Tribal Fights
		Ambra Plantation	284	Mun HC	59	9	30	06.04.21	1	1	1	0	FM Radio	Road
		Swamp	258	Mun HC	167	42	87	06.04.21	1	1	1	3	FM Radio	Road
4	Gumanch.1		3,132		3,039	670	1,600		8	7	7	98		
		Gumanch.1	278	Mun HC	488	93	248	05.04.21	1	1	1	0	FM Radio	Road
		Morarong	257	Mun HC	339	44	172	05.04.21	1	1	1	0	FM Radio	Road
		Kulumi	352	Mun HC	390	100	213	05.04.21	1	1	1	53	FM Radio	Road
		Mogli	517	Mun HC	458	97	239	05.04.21	1	1	1	4	FM Radio	Road
		Patel	584	Mun HC	326	87	185	05.04.21	1	1	1	0	FM Radio	Road
		Komaorang	199	Mun HC	339	77	170	05.04.21	1	1	1	20	FM Radio	Road
		Gumanch Ptn	641	Mun HC					1					Included Under Gumanch1
		Raimp	305	Mun HC	699	172	373	05.04.21	1	1	1	21	FM Radio	Road
5	Gumanch.2		1,952		1,943	457	1,017		4	3	3	57		
		Gumanch.2	0	Mun HC					1					Included Under Gumanch1
		Aiplas	419	Mun HC	428	120	229	05.04.21	1	1	1	16	FM Radio	Road
		Ogapoli	762	Mun HC	591	137	310	05.04.21	1	1	1	10	FM Radio	Road
		Moitern Settlement	771	Mun HC	924	200	478	05.04.21	1	1	1	31	FM Radio	Road
6	Kuk 1		3,919		4,603	874	2,365		6	6	6	48		
		Kuk.1	1,256	Mun HC	1,590	298	827	06.04.21	1	1	1	0	FM Radio	Road
		Kuk Tea	896	Mun HC	852	128	439	06.04.21	1	1	1	34	FM Radio	Road
		Kuning	436	Mun HC	441	98	226	31.03.21	1	1	1	0	FM Radio	Road
		Kuk Research	523	Mun HC	744	150	393	06.04.21	1	1	1	14	FM Radio	Road
		Palge	412	Mun HC	582	100	285	06.04.21	1	1	1	0	FM Radio	Road
		Tipi Block	396	Mun HC	394	100	195	07.04.21	1	1	1	0	FM Radio	Road
7	Mopi		715		800	162	398		3	3	0	128		
		Mopi	164	Tigi HC	255	53	127	01.04.21	1	1	0	34		Road
		Tiki	378	Tigi HC	364	73	179	01.04.21	1	1	0	70		Road
		Golke	173	Tigi HC	181	36	92	01.04.21	1	1	0	24		Road
8	Keta		2,119		1,879	411	946		5	5	5	146		
		Keta	570	Mitiku HC	327	81	169	30.03.21	1	1	1	14		Road
		Eng	0	Mitiku HC										Non Existant
		Nuip	0	Mitiku HC										Non Existant
		Umbunga	0	Mitiku HC										Non Existant
		Paregl	252	Mitiku HC	282	70	143	30.03.21	1	1	1	6		Road
		Unna	274	Mitiku HC	390	79	196	30.03.21	1	1	1	55		Road
		Parap	0	Mitiku HC										Non Existant
		Kori	427	Mitiku HC	436	91	216	30.03.21	1	1	1	61		Road
		Pintngora	0	Mitiku HC										Non Existant
		Keta Community School	594	Mitiku HC	444	90	222	30.03.21	1	1	1	10		Road
9	Karaldong		2,833		3,669	674	1,838		5	5	5	212		
		Karaldong	1,164	Mitiku HC	1,318	241	665	31.03.21	1	1	1	73		Road
		Andaorang	0	Mitiku HC										Non Existant
		Gaglinga	0	Mitiku HC										Non Existant
		Mama	0	Mitiku HC										Non Existant
		Pulgum	0	Mitiku HC										Non Existant
		Kumbunga	592	Mitiku HC	1,176	233	582	31.03.21	1	1	1	46		Road
		Koinga	0	Mitiku HC										Non Existant
		Waiyaki	225	Mitiku HC	173	37	85	31.03.21	1	1	1	29		Road
		Pugmat	419	Mitiku HC	489	100	247	31.03.21	1	1	1	35		Road
		Puglpana	434	Mitiku HC	513	63	259	31.03.21	1	1	1	29		Road
10	Moka		1,804		1,630	332	810		5	5	5	45		
		Moka	550	Mitiku HC	295	83	149	05.04.21	1	1	1	16		Road
		Ulgna	320	Mitiku HC	496	100	244	05.04.21	1	1	1	7		Road
		Moka Kuu	447	Mitiku HC	325	62	163	05.04.21	1	1	1	7		Road
		Moka Swamp	234	Mitiku HC	344	50	170	05.04.21	1	1	1	7		Road

		Roupena	254	Mitiku HC	170	37	84	05.04.21	1	1	1	8		Road
11	Peng		968		1,090	220	531		3	3	3	33		
		Peng 1	751	Mitiku HC	722	149	346	07.04.21	1	1	1	11		Road
		Peng 2	217	Mitiku HC	212	39	105	07.04.21	1	1	1	8		Road
		Minjim	0	Mitiku HC										Non Existant
		Engal Community School	0	Mitiku HC	156	32	80	07.04.21	1	1	1	14		Road
12	Rauna		1,009		2,154	392	1,048		5	5	5	77		
		Rauna	441	Mitiku HC	527	130	268	08.04.21	1	1	1	76		Road
		Rauna		Kotna HC	583	100	280	03.04.21	1	1	1	0		Road
		Tikimp	0	Kotna HC	288	50	138	03.04.21	1	1	1	0		Road
		Kunemp	0	Kotna HC	365	50	175	03.04.21	1	1	1	0		Road/Trek
		Rui Plantation	567	Kotna HC	391	62	187	03.04.21	1	1	1	1		Road
13	Kamund		2,263		1,445	323	693		4	4	4	0		
		Kamund	576	Kotna HC	431	98	207	08.04.21	1	1	1	0		Road/Trek
		Katapa	779	Kotna HC	499	84	239	03.04.21	1	1	1	0		Road
		Moiemp Settlement	313	Kotna HC	105	21	50	03.04.21	1	1	1	0		Road
		Kurup Tipp	596	Kotna HC	410	120	197	03.04.21	1	1	1	0		Road
14	Kenembomuka		2,294		2,184	377	1,048		4	4	4	2		
		Kenembomuka	621	Kotna HC	811	132	390	04.03.21	1	1	1	0		Road
		Meti	539	Kotna HC	655	100	314	04.03.21	1	1	1	0		Road
		Waikyaki	887	Kotna HC	583	116	280	04.03.21	1	1	1	1		Road
		Walik	247	Kotna HC	135	29	64	04.03.21	1	1	1	1		Road
15	Kents		1,183		1,263	286	606		7	7	7	0		
		Kents	125	Kotna HC	100	22	48	05.04.21	1	1	1	0		Road
		Kakit	153	Kotna HC	256	65	123	05.04.21	1	1	1	0		Road/Trek
		Kema	254	Kotna HC	185	45	89	08.04.21	1	1	1	0		Road/Trek
		Rumprump	199	Kotna HC	213	49	102	05.04.21	1	1	1	0		Road/Trek
		Kununga	87	Kotna HC	115	24	55	05.04.21	1	1	1	0		Road/Trek
		Oliki	168	Kotna HC	158	32	76	05.04.21	1	1	1	0		Road/Trek
		Ondkamp	198	Kotna HC	236	49	113	05.04.21	1	1	1	0		Road/Trek
16	Mala		2,628		3,872	771	1,875		11	11	8	482		
		Mala No.1	240	Nunga HC	304	50	143	17.04.21	1	1	0	36		Road
		Yan	248	Nunga HC	381	62	189	17.04.21	1	1	1	50		Road
		Gentorang	485	Nunga HC	648	110	312	17.04.21	1	1	1	109		Road
		Wanjiporang	0	Nunga HC	202	41	91	17.04.21	1	1	1	33		Road
		Mama	635	Nunga HC	394	106	196	17.04.21	1	1	1	55		Road
		Ralapa	316	Nunga HC	320	63	164	17.04.21	1	1	1	0		Road
		Paiorang	450	Nunga HC	476	99	232	17.04.21	1	1	0	96		Road
		Ketpa	0	Nunga HC	393	76	188	17.04.21	1	1	0	48		Road
		Lgupan	0	Nunga HC	193	41	91	17.04.21	1	1	1	26		Road
		Kram	0	Nunga HC	437	100	207	17.04.21	1	1	1	0		Road
		Mala Bible Sch & Community Sch	254	Nunga HC	124	23	62	17.04.21	1	1	1	29		Road
17	Kinabuga.1		2,970		3,017	653	1,485		6	6	0	532		
		Kinabuga	946	Tigi HC	1,163	257	574	04.04.21	1	1	0	206		Road
		Komakai	1,211	Tigi HC	649	131	318	02.04.21	1	1	0	95		Road
		Ronimb	469	Tigi HC	359	99	177	01.04.21	1	1	0	96		Trakking
		Dopaim	156	Tigi HC	228	44	110	31.04.21	1	1	0	44		Trakking
		Alonga	130	Tigi HC	212	47	106	04.04.21	1	1	0	36		Trakking
		Kinabuga Community School	58	Tigi HC	406	75	200	04.04.21	1	1	0	55		Road
18	Bitam		1,009		1,097	221	527		6	6	6	1		
		Bitam	215	Kotna HC	207	42	99	07.04.21	1	1	1	0		Road
		Kitapana	251	Kotna HC	165	30	79	05.04.21	1	1	1	0		Road
		Matorang	38	Kotna HC	149	25	72	05.04.21	1	1	1	0		Road
		Apdam	126	Kotna HC	205	40	98	07.04.21	1	1	1	0		Road
		Raldamp	201	Kotna HC	174	37	84	07.04.21	1	1	1	0		Road
		Bitam Pltn	177	Kotna HC	197	47	95	07.04.21	1	1	1	1		Road
19	Timbi		1,563		1,248	280	615		4	4	2	202		
		Timbi	911	Nunga HC	437	109	221	16.04.21	1	1	1	87		Road
		Mala Rapeng	213	Nunga HC	426	86	207	16.04.21	1	1	0	43		Road
		Wararorang	262	Nunga HC	224	50	112	16.04.21	1	1	1	35		Road
		Nunga High sch and HC	176	Nunga HC	161	35	75	16.04.21	1	1	0	37		Road
20	Depaiorang		1,646		2,026	394	1,006		3	3	3	127		
		Rapi	864	Mitiku HC	1,412	260	705	05.04.21	1	1	1	105		Road
		Depaiorang	502	Mitiku HC	355	84	177	05.04.21	1	1	1	22		Road
		Botip	280	Kotna HC	259	50	124	05.04.21	1	1	1	0		Road
21	Ambunga		1,506		1,507	314	724		4	4	4	1		
		Ambunga	490	Kotna HC	656	147	314	04.03.21	1	1	1	0		Road
		Gat	447	Kotna HC	430	82	207	04.03.21	1	1	1	0		Road
		Tenkona	146	Kotna HC	249	50	120	04.03.21	1	1	1	1		Road
		Kuruporang	303	Kotna HC										Abandoned
		Waiyaki	120	Kotna HC	172	35	83	04.03.21	1	1	1	0		Road
22	Kutinga		3,924		4,174	884	2,060		13	12	10	570		
		Kutinga	352	Nunga HC	465	100	227	15.04.21	1	1	1	8		Road
		Newcamp	412	Nunga HC	456	100	223	15.04.21	1	1	1	72		Road
		Kilipiorang	0	Nunga HC	184	35	92	15.04.21	1	1	1	27		Road
		Kotong	409	Nunga HC	238	55	112	15.04.21	1	1	1	44		Road
		Rukupil	337	Nunga HC	418	90	203	15.04.21	1	1	1	56		Road
		Gumanch	321	Nunga HC	547	100	270	15.04.21	1	1	1	85		Road
		Gingal	394	Nunga HC					1					Included Under Kutinga
		Mur	335	Nunga HC	322	60	164	15.04.21	1	1	0	34		Road
		Boldmul	374	Nunga HC	437	83	227	15.04.21	1	1	0	44		Road
		Jim	370	Nunga HC	337	99	164	15.04.21	1	1	1	66		Road
		Kumbanga	263	Nunga HC	272	50	129	15.04.21	1	1	1	50		Road
		Kupengai	0	Nunga HC	263	50	128	15.04.21	1	1	1	48		Road
		Ruti Pltn	356	Nunga HC	235	62	121	15.04.21	1	1	1	36		Road
23	Ruti		2,621		3,123	854	1,517		8	8	5	388		

	Ruti	591	Nunga HC	750	242	370	15.04.21	1	1	1	89		Road
	Mama	292	Nunga HC	339	88	167	15.04.21	1	1	1	78		Road
	Nokume	278	Nunga HC	262	79	131	15.04.21	1	1	0	30		Road
	Kuteglan	649	Nunga HC	641	138	301	15.04.21	1	1	0	0		Road
	Kurunga	515	Nunga HC	602	150	290	15.04.21	1	1	1	97		Road
	Kuman C/Project	297	Nunga HC	324	89	158	15.04.21	1	1	1	68		Road
	Ruti Coffee Project	0	Nunga HC	161	50	77	15.04.21	1	1	0	16		Road
	John Coffee Project	0	Nunga HC	44	18	23	15.04.21	1	1	1	10		Road
24	Kora	900		946	183	465		3	3	3	185		
	Kora Akil	484	Nunga HC	373	83	184	15.04.21	1	1	1	96		Road
	Kaimanga	223	Nunga HC	251	50	124	15.04.21	1	1	1	48		Road
	Kalga	193	Nunga HC	322	50	157	15.04.21	1	1	1	41		Road
25	Penda	1,816		3,094	604	1,519		10	10	9	183		
	Oldor	NEW	Nunga HC	240	50	117	15.04.21	1	1	1	5		From Wd 31
	Penda	247	Nunga HC	511	91	254	15.04.21	1	1	1	46		Road
	Gawai	612	Nunga HC	565	97	285	15.04.21	1	1	1	60		Road
	Kutunga	0	Nunga HC	252	45	121	15.04.21	1	1	1	25		Road
	Kults	0	Nunga HC	293	48	140	15.04.21	1	1	1	19		Road
	Gawai Block	399	Nunga HC	482	100	237	15.04.21	1	1	1	4		Road
	Kaglmiti	288	Nunga HC	298	66	143	15.04.21	1	1	1	17		Road
	Koma	270	Nunga HC	221	50	105	15.04.21	1	1	1			Road
	Penda Community School	0	Nunga HC	59	13	29	15.04.21	1	1	1	0		Road
	Piku Project	0	Nunga HC	173	44	88	15.04.21	1	1	0	7		Road
26	Kondapina.1	2,701		3,231	659	1,574		6	6	3	437		
	Waghi	765	Nunga HC	915	198	451	11.04.21	1	1	1	86		Road
	Kaikai	365	Nunga HC	584	100	285	11.04.21	1	1	1	75		Road
	Korakona	389	Nunga HC	524	100	247	11.04.21	1	1	1	93		Road
	Kondapina.1	759	Nunga HC	515	147	258	11.04.21	1	1	0	88		Road
	Kondapina Community School	0	Nunga HC	80	14	40	11.04.21	1	1	0	14		Road
	Gogonige	423	Nunga HC	613	100	293	11.04.21	1	1	0	81		Road
27	Kondapina.2	2,277		3,152	546	1,540		5	5	4	246		
	Kaupena	314	Nunga HC	375	64	187	12.04.21	1	1	1	62		Road
	Kora	271	Nunga HC	480	70	232	12.04.21	1	1	1	63		Road
	Kondopina.2	561	Nunga HC	641	112	317	12.04.21	1	1	0	68		Road
	Koban	593	Nunga HC	738	150	359	12.04.21	1	1	1	50		Road
	Kandep Block	539	Nunga HC	918	150	445	12.04.21	1	1	1	3		Road
28	Kindal	1,596		1,345	276	645		4	4	4	4		
	Kindal	543	Kotna HC	497	92	238	05.04.21	1	1	1	1		Road
	Korkur	250	Kotna HC	244	50	117	05.04.21	1	1	1	1		Road
	Bila	231	Kotna HC	363	87	174	05.04.21	1	1	1	1		Road
	Kindal Bible School	573	Kotna HC	241	47	116	05.04.21	1	1	1	1		Road
29	Palgi	429		1,080	263	518		7	7	7	0		
	Palgi	211	Kotna HC	260	73	125	01.04.21	1	1	1	0		Road
	Piti	0	Kotna HC	200	50	96	01.04.21	1	1	1	0		Road
	Krapena	99	Kotna HC	100	23	48	01.04.21	1	1	1	0		Road
	Maim	119	Kotna HC	230	50	110	01.04.21	1	1	1	0		Road
	Ruglupup	0	Kotna HC	113	26	54	01.04.21	1	1	1	0		Road
	Koimbglg	0	Kotna HC	69	18	33	01.04.21	1	1	1	0		Road
	Mambugl	0	Kotna HC	108	23	52	01.04.21	1	1	1	0		Road
30	Komapana	507		714	128	357		2	2	2	8		
	Komapana	305	Mitiku HC	460	78	229	01.04.21	1	1	1	5		Road
	Rut	202	Mitiku HC	254	50	128	01.04.21	1	1	1	3		Road
	Pimb	0	Mitiku HC										Non Existant
	Walbo	0	Mitiku HC										Non Existant
31	Kinjibi.1	1,756		2,029	497	1,005		7	7	5	368		
	Kinjibi.1	404	Nunga HC	322	61	157	14.04.21	1	1	1	59		Road
	Kaupana	234	Nunga HC	248	72	125	14.04.21	1	1	1	71		Road
	Rumnum	232	Nunga HC	273	48	135	14.04.21	1	1	1	42		Road
	Guinmul	266	Nunga HC	133	35	68	14.04.21	1	1	0	21		Road
	Kingimp	315	Nunga HC	486	150	243	14.04.21	1	1	1	67		Road
	Maki	306	Nunga HC	411	81	199	14.04.21	1	1	0	65		Road
	Rouant	0	Nunga HC	156	50	78	14.04.21	1	1	1	43		Road
32	Kinjibi.2	1,501		2,148	409	1,034		7	7	7	240		
	Kinjibi.2	453	Nunga HC	395	100	182	14.04.21	1	1	1	77		Road
	Bongul	296	Nunga HC	159	50	79	14.04.21	1	1	1	28		Road
	Kitip	245	Nunga HC	205	59	102	14.04.21	1	1	1	32		Road
	Panz	270	Nunga HC	254	50	120	14.04.21	1	1	1	44		Road
	Pukurumb	237	Nunga HC	402	50	197	14.04.21	1	1	1	16		Road
	Pinga	0	Nunga HC	185	50	87	14.04.21	1	1	1	9		Road
	Kinjibi Pltn.	0	Nunga HC	548	50	267	14.04.21	1	1	1	34		Road
33	Nunga 1	876		689	158	330		4	4	4	0		
	Mukapenga	397	Kotna HC	128	29	61	05.04.21	1	1	1	0		Road
	Kotdong	158	Kotna HC	260	50	125	05.04.21	1	1	1	0		Road
	Mararong	157	Kotna HC	138	29	66	05.04.21	1	1	1	0		Road
	Puelenty	164	Kotna HC	163	50	78	05.04.21	1	1	1	0		Road
	Rulina	0	Kotna HC										Non Existant here
34	Nunga.2	1,473		2,627	536	1,286		9	9	6	172		
	Nunga.2	249	Kotna HC	227	50	109	01.04.21	1	1	1	0		Road
	Munumb	0	Kotna HC	353	71	169	01.04.21	1	1	1	0		Road
	Kul	792	Tigi HC	579	89	282	31.03.21	1	1	0	74		Road
	Mukapeng	203	Kotna HC	154	35	74	05.04.21	1	1	1	0		Road
	Ketip/Kenal	228	Kotna HC	181	40	87	01.04.21	1	1	1	0		Road
	Bulg	0	Kotna HC	143	30	69	01.04.21	1	1	1	0		Road
	Kuning Ramba	0	Tigi HC	759	178	385	31.03.21	1	1	0	83		Road
	Akmul	0	Tigi HC	206	37	99	31.03.21	1	1	0	15		Road
	Kul Peng	0	Kotna HC										Abandoned

		Kontapanga	0	Kotna HC	25	6	12	01.04.21	1	1	1	0		Road
35		Kelem.1	847		1,190	218	571		2	2	2	0		
		Kelem.1	551	Kotna HC	497	100	238	05.04.21	1	1	1	0		Road
		Kelem.2	296	Kotna HC	693	118	333	05.04.21	1	1	1	0		Road
36		Keremunga	1,618		1,920	451	971		9	9	3	326		
		Keremunga	415	Nunga HC	333	81	166	16.04.21	1	1	0	56		Road
		Ann Kuu	203	Nunga HC	138	34	70	16.04.21	1	1	0	24		Road
		Nepi	0	Nunga HC	170	38	84	16.04.21	1	1	1	24		Road
		Andapanga	175	Nunga HC	218	48	110	16.04.21	1	1	1	30		Road
		Walumi	212	Nunga HC	118	50	69	16.04.21	1	1	0	49		Road
		Paku Project	179	Nunga HC	270	50	130	16.04.21	1	1	0	36		Road
		Perry Project	0	Nunga HC	153	50	83	16.04.21	1	1	0	40		Road
		Bulda Project	0	Nunga HC	102	21	56	16.04.21	1	1	0	14		Road
		Kram	434	Nunga HC	418	79	203	16.04.21	1	1	1	53		Road
37		Romanga	918		929	225	459		5	4	4	136		
		Romanga	207	Nunga HC	297	75	144	16.04.21	1	1	1	54		Road
		Numopang	0	Nunga HC					1					Included Under Romanga
		Cagl	295	Nunga HC	264	50	130	16.04.21	1	1	1	29		Road
		Kugli	185	Nunga HC	188	50	94	16.04.21	1	1	1	22		Road
		Pitpit	232	Nunga HC	180	50	91	16.04.21	1	1	1	31		Road
38		Tigi.2	2,275		#REF!	249	617		4	3	0	107		
		Pugl	677	Tigi HC	#REF!	95	244	02.04.21	1	1	0	1		Road
		Rulna	128	Rulna HC										Same as Wd 45
		Raimanga	403	Rulna HC					1					Covered Under Tigi
		Koropugl	236	Tigi HC	218	54	112	01.04.21	1	1	0	38		Road
		Kindeng	0	Tigi HC										Non Existant
		Raimanga	672	Tigi HC	529	100	261	02.04.21	1	1	0	68		Road
		Koropugl	158	Tigi HC										Same as Koropugl
39		Kinabuga.2	677		0	0	0		0	0	0	0		
		Eplas	0	Kotna HC										Abandoned
		Gera	0	Kotna HC										Abandoned
		Kap	677	Mun HC										Abandoned
40		Keiya	1,825		1,624	343	779		6	6	6	2		
		Keiya	233	Kotna HC	214	50	103	07.04.21	1	1	1	1		Road
		Kotna	300	Kotna HC	445	84	214	09.04.21	1	1	1	1		Road
		Kanamp	258	Kotna HC	230	38	110	02.04.21	1	1	1	0		Road
		Las Kamiamp	241	Kotna HC	130	29	62	02.04.21	1	1	1	0		Road
		Lasroli	0	Kotna HC										Abandoned
		Botil	0	Kotna HC										Abandoned
		Peyapana	0	Kotna HC										Abandoned
		Kimbuki	577	Kotna HC	385	92	184	07.04.21	1	1	1	0		Road
		Kougla	215	Kotna HC	220	50	106	02.04.21	1	1	1	0		Road
41		Kenembo	186		626	118	295		2	2	1	49		
		Kenembo Community School	186	Kotna HC	332	50	145	04.04.21	1	1	1	1		Road
		Kenembo		Tigi HC	294	68	150	03.04.21	1	1	0	48		Road
42		Bengal	1,256		1,441	282	691		5	5	5	0		
		Bengal	296	Kotna HC	263	50	126	05.04.21	1	1	1	0		Road
		Poki	204	Kotna HC	215	41	103	05.04.21	1	1	1	0		Road
		Kental	268	Kotna HC	356	96	171	05.04.21	1	1	1	0		Road
		Kram	290	Kotna HC	304	50	146	05.04.21	1	1	1	0		Road/Trek
		Pilgpi	198	Kotna HC	303	45	145	05.04.21	1	1	1	0		Road
43		Kambuki	2,331		2,650	536	1,272		7	7	7	0		
		Kambuki	266	Kotna HC	690	100	331	07.04.21	1	1	1	0		Road
		Kopakena	389	Kotna HC	399	98	191	07.04.21	1	1	1	0		Road
		Kumkuiya	158	Kotna HC	185	46	89	07.04.21	1	1	1	0		Road
		Mamgogl	284	Kotna HC	259	50	124	08.04.21	1	1	1	0		Road
		Penga 1	356	Kotna HC	168	32	81	08.04.21	1	1	1	0		Road
		Walga	597	Kotna HC	598	135	287	07.04.21	1	1	1	0		Road
		Penga.2	281	Kotna HC	351	75	169	09.04.21	1	1	1	0		Road
44		Kurunga	788		708	134	339		4	4	0	0		
		Kurunga	310	Rulna HC	149	27	72	03.04.21	1	1	0	0		1 Day Trek
		Onga	196	Rulna HC	133	16	64	03.04.21	1	1	0	0		1 Day Trek
		Kotna	0	Rulna HC	240	50	114	03.04.21	1	1	0	0		1 Day Trek
		Pungam	282	Rulna HC	186	41	89	03.04.21	1	1	0	0		1 Day Trek
45		Rank	1,683		1,644	273	790		5	5	2	0		
		Rank	622	Rulna HC	734	92	352	03.04.21	1	1	0			4 Hrs trek
		Ambra	0	Kotna HC										Abandoned
		Rimnti	316	Rulna HC	339	50	163	03.04.21	1	1	0	0		6 Hrs trek
		Eann	236	Kotna HC	241	45	116	04.04.21	1	1	1	0		Road
		Bakil	286	Kotna HC	158	36	76	04.04.21	1	1	1	0		Road
		Rulna	223	Rulna HC	172	50	83	03.04.21	1	1	0	0		6 Hrs trek
46		Tigi.1	1,167		1,181	240	592		3	3	0	38		
		Waiyaripa	714	Tigi HC	489	97	250	01.04.21	1	1	0	30		Road
		Umunga	224	Tigi HC	452	93	224	01.04.21	1	1	0	8		Road
		Kraim	229	Tigi HC	240	50	118	31.03.21	1	1	0	0		Trakking
47		Rulna	940		1,204	222	580		6	6	0	0		
		Rulna	314	Rulna HC	288	59	139	03.04.21	1	1	0	0		1 Day Trek
		Matimp/Molga	58	Rulna HC	219	42	105	03.04.21	1	1	0	0		1 Day Trek
		Nende	0	Rulna HC										Abandoned
		Rum	165	Rulna HC	172	27	83	03.04.21	1	1	0	0		1 Day Trek
		Kuti	172	Rulna HC	258	50	124	03.04.21	1	1	0	0		1 Day Trek
		Pagl	232	Rulna HC	145	26	70	03.04.21	1	1	0	0		1 Day Trek
		Ekik	0	Rulna HC	122	18	59	03.04.21	1	1	0	0		1 Day Trek
		Onga	0	Rulna HC										Abandoned
48		Menjim.1	1,105		1,797	398	908		9	4	0	177		
		Blagka	NEW	Nunga HC	221	45	103	31.03.21	1	1	0	22		Road/Trek

	Mau	NEW	Nunga HC	213	50	104	31.03.21	1	0	0	26		Road/5 hrs trek
	Kuruporang	NEW	Nunga HC	301	58	151	30.03.21	1	0	0	32		Road
	Tsympump	NEW	Nunga HC	316	74	161	31.03.21	1	0	0	22		Road/6 Hrs trek
	Waiyka	250	Nunga HC	162	32	81	30.03.21	1	0	0	10		Road
	Membi	244	Nunga HC	153	31	81	30.03.21	1	0	0	6		Road
	Tekiorang	219	Nunga HC	129	32	66	30.03.21	1	1	0	18		Road
	Bein	152	Nunga HC	87	26	54	30.03.21	1	1	0	17		Road
	Kenents	240	Nunga HC	215	50	107	30.03.21	1	1	0	24		Road
49	Kentikena	1,319		1,641	313	788		7	7	7	3		
	Kentikena	352	Kotna HC	373	80	179	09.04.21	1	1	1	0		Road
	Maka	257	Kotna HC	200	34	96	07.04.21	1	1	1	0		Road
	Kekemo	91	Kotna HC	152	33	73	07.04.21	1	1	1	0		Road
	Raidangku	165	Kotna HC	168	42	81	07.04.21	1	1	1	0		Road
	Kotna Community School	60	Kotna HC	246	50	118	05.04.21	1	1	1	1		Road
	Kotna H/C	179	Kotna HC	206	32	99	07.04.21	1	1	1	1		Road
	Kitip High School	215	Kotna HC	296	42	142	07.04.21	1	1	1	1		Road
50	Rombang	2,606		3,045	646	1,499		11	11	9	504		
	Rombang	264	Nunga HC	224	50	111	13.04.21	1	1	1	43		Road
	Pinga	534	Nunga HC	502	131	257	13.04.21	1	1	1	92		Road
	Kora	527	Nunga HC	596	150	284	13.04.21	1	1	1	111		Road
	Randa	287	Nunga HC	288	50	140	13.04.21	1	1	0	46		Road
	Gal	217	Nunga HC	116	27	61	13.04.21	1	1	1	23		Road
	Aun	224	Nunga HC	225	40	109	13.04.21	1	1	1	38		Road
	Sembolga	252	Nunga HC	75	10	38	13.04.21	1	1	1	10		Road
	Kondipina	0	Nunga HC	242	37	118	13.04.21	1	1	1	35		Road
	Kopen	NEW	Nunga HC	262	50	129	13.04.21	1	1	0	17		Road
	Gena Block	0	Nunga HC	222	34	106	13.04.21	1	1	1	33		Road
	Wansait Block	299	Nunga HC	293	67	146	13.04.21	1	1	1	56		Road