

8.3.5 Gross Expenses

Forecasts of the above mentioned construction costs, working capital and operations costs for this project only are presented in Table 8-3-6. Those including additional telephone installation costs in case additional telephones are installed are presented in Table 8-3-7.

Table 8-3-6 Forecast Expenses by Year
(Project Installations Only)

(Unit: Thousand Kina)

YEAR	CASH OUTFLOW			
	CONSTRUCTION COST	WORKING CAPITAL	OPERATION COST	TOTAL COST
1990	1,965.0			1,965.0
1991	1,965.0	8.9		1,973.9
1992	0.0	34.4	17.4	51.8
1993	2,543.0	0.0	17.7	2,560.7
1994	5,800.5	88.8	18.1	5,907.4
1995	6,159.5	80.3	49.2	6,289.0
1996	5,287.0	79.2	68.9	5,435.1
1997	2,385.0	99.5	108.7	2,593.2
1998		0.0	123.9	123.9
1999		0.0	126.4	126.4
2000		0.0	128.9	128.9
2001		0.0	131.5	131.5
2002		0.0	134.1	134.1
2003		0.0	136.8	136.8
2004		0.0	139.5	139.5
2005		-391.0	142.3	-248.7
TOTAL	26,105.0	0.0	1,343.4	27,448.4

Table 8-3-7 Forecast Expenses by Year
(Project and Additional Installations)

(Unit: Thousand Kina)

YEAR	CASH OUTFLOW				
	CONSTRUCTION COST	ADDITIONAL INSTALLATION COST	WORKING CAPITAL	OPERATION COST	TOTAL COST
1990	1,965.0				1,965.0
1991	1,965.0		8.9		1,973.9
1992	0.0		43.2	17.4	60.6
1993	2,543.0		43.2	17.7	2,603.9
1994	5,800.5		132.0	18.1	5,950.6
1995	6,159.5	54.9	223.8	51.1	6,489.3
1996	5,287.0		302.5	70.9	5,660.4
1997	2,385.0		402.0	111.0	2,898.0
1998		106.4	420.2	131.8	658.4
1999		205.9	462.4	144.7	813.0
2000		127.0	487.5	154.0	768.5
2001		120.1	511.7	163.3	795.1
2002		130.4	538.0	173.5	841.9
2003		250.5	589.4	190.5	1,030.4
2004		154.4	619.9	202.8	977.1
2005		144.1	-4,784.9	215.0	-4,425.8
TOTAL	26,105.0	1,293.7	0.0	1,661.8	29,060.5

8.4 Financial Analysis

8.4.1 Financial Internal Rate of Return

Table 8-4-1 shows the cash flow generated on the basis of estimated revenues and expenses. Calculations on the basis of this cash flow table indicate that the FIRR on the total investment remains at -0.62%. The main reason why the FIRR is so low is the large amount of construction investment required because of the following factors:

- (1) This project is to install telephones in villages without telephones in PNG, and the objective villages are scattered all over the country.
- (2) The number of telephones to be installed in each objective village is small, averaging only two sets per village.
- (3) Because of the severe geographical conditions, there are many areas that do not have a road network. For the purposes of this project, therefore, helicopters will be required for the transport of technical personnel, equipment and materials.
- (4) As commercial power sources are not available in each objective village, in many cases it will be necessary to depend on solar energy to supply power to the telecommunications equipment.

Furthermore, the FIRR mentioned above does not include revenues from additional telephones to be installed by PTC with its own capital after this project is completed, nor any increase in revenues from the growth in traffic. These are examined in the Sensitivity Analysis section that follows.

Table 8-4-1 Cash Flow Table
(Project Installations Only)

Unit: Thousand Kina

YEAR	CASH INFLOW		CALL CHARGES	TOTAL REVENUE	CASH OUTFLOW			BALANCE
	INSTALLATION FEES	BASIC FEES			CONSTRUCTION COST	WORKING CAPITAL	OPERATION COST	
1990					1,965.0			-1,965.0
1991	10.5	2.8	42.4	55.7	1,965.0	8.9		-1,918.2
1992		17.9	254.1	272.0	0.0	34.4	17.4	220.2
1993		*	254.1	*	2,543.0	0.0	17.7	-2,288.7
1994	24.5	63.0	742.7	830.2	5,800.5	88.8	18.1	-5,077.2
1995	25.2	112.1	1,197.9	1,335.2	6,159.5	80.3	49.2	-4,953.8
1996	26.1	161.5	1,645.6	1,833.2	5,287.0	79.2	68.9	-3,601.9
1997	25.5	211.2	2,222.3	2,459.0	2,385.0	99.5	108.7	-134.2
1998		211.2	2,222.3	2,433.5		0.0	123.9	2,309.6
1999		211.2	2,222.3	2,433.5		0.0	126.4	2,307.1
2000		211.2	2,222.3	2,433.5		0.0	128.9	2,304.6
2001		211.2	2,222.3	2,433.5		0.0	131.5	2,302.0
2002		211.2	2,222.3	2,433.5		0.0	134.1	2,299.4
2003		211.2	2,222.3	2,433.5		0.0	136.8	2,296.7
2004		211.2	2,222.3	2,433.5		0.0	139.5	2,294.0
2005		211.2	2,222.3	2,433.5		-391.0	142.3	2,682.2
TOTAL	111.8	2,276.0	24,137.5	26,525.3	26,105.0	0.0	1,343.4	-923.1

Basic Case FIRR= -0.62%

Note 1: This table does not include revenues from additional telephone to be installed after the completion of this project, nor any increase of revenues from the growth in traffic.

Note 2: * No new installation in 1993

8.4.2 Sensitivity Analysis

(1) Additional Telephone Installation

Table 8-4-2 shows the projected cash flow in case additional telephones are installed in response to demand increases after this project is completed. In this case, the FIRR turned to a positive figure of +2.65% as the revenues from such additional telephones exceed the additional telephone installation costs.

(2) Traffic Growth

In the past, the annual traffic growth rate registered about 7% on a nationwide average. However, no data are available on traffic growth in rural areas, thus making any such estimates difficult to construct.

For reasons of convenience, therefore, FIRR figures are calculated for traffic growth at annual rates of 2%, 5% and 7%. The increase in single charges is made on the assumption that the growth in call charges is proportional to the growth in traffic. The results are presented in Table 8-4-3.

(3) Salvage Value Factor in FIRR Calculation

When the salvage value at the last year of the project life is calculated as a minus cost, the FIRR stands at +2.70%.

(4) Change in Construction Costs

The change in FIRR when construction costs vary in a range of $\pm 5\%$ or $\pm 10\%$ was examined. The results are shown in Table 8-4-4. According to this, the FIRR shifts to a positive figure when construction costs decrease by 5% or more.

Table 8-4-2 Cash Flow Table
(Project and Additional Installations)

Unit: Thousand Kina

YEAR	CASH INFLOW		TOTAL REVENUE	CONSTRUCTION COST	ADDITIONAL CONST. COST	CASH OUTFLOW		TOTAL COST	BALANCE
	INSTALLATION FEES	BASIC FEES				CALL CHARGES	WORKING CAPITAL		
1990			55.7	1,965.0				1,965.0	-1,965.0
1991	10.5	2.8	272.0	1,965.0		8.9		1,973.9	-1,918.2
1992		17.9	272.0	0.0		43.2	17.4	60.6	211.4
1993		17.9	*	2,543.0		43.2	17.7	2,603.9	-2,331.9
1994	24.5	63.0	830.2	5,800.5		132.0	18.1	5,950.6	-5,120.4
1995	27.6	121.5	1,407.3	6,159.5	54.9	223.8	51.1	6,489.3	-5,082.0
1996	26.1	170.8	1,902.8	5,287.0		302.5	70.9	5,860.4	-3,757.6
1997	25.5	220.5	2,528.6	2,385.0		402.0	111.0	2,898.0	-369.4
1998	4.7	238.7	2,642.8		106.4	420.2	131.8	658.4	1,984.4
1999	9.0	273.8	2,908.3		205.9	462.4	144.7	813.0	2,095.3
2000	5.6	295.4	3,066.0		127.0	487.5	154.0	768.5	2,297.5
2001	5.3	315.9	3,218.1		120.1	511.7	163.3	795.1	2,423.0
2002	5.7	338.1	3,383.9		130.4	538.0	173.5	841.9	2,542.0
2003	11.0	380.8	3,707.0		250.5	589.4	190.5	1,030.4	2,676.6
2004	6.8	407.2	3,898.8		154.4	619.9	202.8	977.1	2,921.7
2005	6.3	431.7	4,081.1		144.1	-4,784.9	215.0	-4,425.8	8,506.9
TOTAL	168.6	3,296.0	34,174.6	26,105.0	1,293.7	0.0	1,661.8	29,060.5	5,114.1

FIRR= 2.65%

Note : * No new installation in 1993

Table 8-4-3 Changes in FIRR Reflecting Increased Traffic

Traffic Increase	FIRR
2%	+ 2.34%
5%	+ 6.79%
7%	+ 9.76%

Table 8-4-4 Changes in FIRR Reflecting Construction Cost Variation

Construction Cost Variation	FIRR
-10%	+1.22%
- 5%	+0.27%
+ 5%	-1.44%
+10%	-2.22%

8.5 Evaluation by Financial Indexes

8.5.1 Financial Indexes for this Project

Rates of Return on Investment and Asset Turnover are calculated to verify the profitability and financial efficiency of this project. Fixed assets in this analysis, however, include only facilities or equipment constructed or installed under this project; costs of buildings and land are not included.

(1) Rate of Return on Investment

As used in this analysis, the Rate of Return on Investment means the ratio of profit to fixed assets, as expressed by the following formula:

$$\text{Return on Investment} = \frac{\text{Profit before Interest Expense + Taxes}}{\text{Book Value of Fixed Assets}}$$

Further, it is assumed that the facilities and equipment to be constructed or installed under this project will be depreciated on a straight-line, flat-rate basis over a 15-year life in accordance with PTC financial practices.

The ratio of Return on Investment to the book value of fixed assets each year is presented in Table 8-5-1.

Table 8-5-1 Return on Investment Each Year (Project)

(Unit: Thousand Kina)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Revenues		56	272	272	830	1338	1833	2459	2434	2434	2434	2434	2434	2434	2434	2434
Expenses (Cash)		9	52	18	107	130	148	208	124	126	129	132	134	137	140	-249
Depreciation		236	236	236	541	932	1280	1566	1566	1566	1566	1566	1566	1566	1566	1566
Profit (PBIT)		-189	-16	18	182	276	405	684	743	741	738	736	733	730	728	1117
Approx. Book Value		3301	3065	2830	6866	11798	15741	18468	16902	15335	13769	12203	10636	9070	7504	-
Return on Investment		-5.7%	-0.5%	0.7%	2.7%	2.3%	2.6%	3.7%	4.4%	4.8%	5.4%	6.0%	6.9%	8.1%	9.7%	-

Note: As calculated, non-depreciated value will still remain in 2005, the last year of the project's life. This is because usable life will still remain in facilities and equipment to be installed during and after Phase II. For convenience in calculations, this remaining value is treated as zero as it is equivalent to the costs of removing equipment that has passed its usable life.

(2) Asset Turnover

As used in this analysis, the Rate of Asset Turnover means the ratio of total revenue to fixed assets, as expressed by the following formula:

$$\text{Turnover Ratio} = \frac{\text{Total Revenue}}{\text{Book Value of Fixed Assets}}$$

The Asset Turnover Ratio for each year is presented in Table 8-5-2.

Table 8-5-2 Asset Turnover Ratio (Project)

(Unit: Thousand Klna)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Revenues		56	272	272	830	1338	1833	2459	2434	2434	2434	2434	2434	2434	2434	2434
Approx. Book Value	0	3301	3065	2830	6866	11798	15741	18468	16902	15335	13769	12203	10636	9070	7504	5937
Asset Turnover Ratio	0	1.7%	8.9%	9.6%	12.1%	11.3%	11.6%	13.3%	14.4%	15.9%	17.7%	19.9%	22.9%	26.8%	32.4%	-

8.5.2 Government Revenue Increase

PTC currently pays corporate tax and dividends to the PNG government. Under the Five-Year Development Plan, 35% of PTC's profits after interest expenses are fixed as corporate tax. The dividend amount is set at 50% of the previous year's profits after tax.

These tax and dividend payments will start if this project turns into the black, thus making it possible to expect a revenue increase by the government. The amount of such government tax revenues and dividends from this project are therefore calculated.

In Table 8-4-1, 35% of the profits represent the amount of corporate tax for each year in which the project generates a surplus.

With respect to dividends, in the event a surplus is generated in the previous year, 50% of said profits after tax are considered the dividend amount for the current year.

The amounts of taxes and dividends to be paid in accordance with the above calculation methods are shown in Table 8-5-3.

Table 8-5-3 Corporate Tax and Dividends Each Year

(Unit: Thousand Kina)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Profit before Tax without Project	13756	12132	12573	14458	18707													
Profit before Tax with Project	13756	12132	12573	14269	18691													
Balance	0	0	0	-189	-16	18	182	276	405	684	743	741	738	736	733	730	728	-
Tax without Project	4815	4246	4401	5060	6547													
Tax with Project	4815	4246	4401	4994	6542													
Tax Payment	0	0	0	-66	-5	6	64	97	142	240	260	259	258	257	257	256	255	-
Dividends without Project	3686	4471	3943	4086	4699													
Dividends with Project	3686	4471	3943	4086	4637													
Dividends Payment	0	0	0	0	-61	-5	6	59	90	132	222	242	241	240	239	238	237	237
Payment Balance	0	0	0	-66	-67	1	70	156	232	371	483	501	499	497	496	494	492	237

8.5.3 Transition of Financial Indexes for this Project

The transition of financial indexes calculated by the methods above is presented in Table 8-5-4.

Table 8-5-4 Financial Indexes Each Year

(Unit: Thousand Kina)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Return on Investment	-	-5.7%	-0.5%	0.7%	2.7%	2.3%	2.6%	3.7%	4.4%	4.8%	5.4%	6.0%	6.9%	8.1%	9.7%	-
Asset Turnover Ratio	0.0%	1.7%	8.9%	9.6%	12.1%	11.3%	11.6%	13.3%	14.4%	15.9%	17.7%	19.9%	22.9%	26.8%	32.4%	-
Corporate Tax	0	-66	-5	6	64	97	142	240	260	259	258	257	257	256	255	-
Dividends	0	0	-61	-5	6	59	90	132	222	242	241	240	239	238	237	237

Although the Profit Ratio during the construction period from 1991 to 1997 is at a low level, this ratio is to be improved after 1998 when the investment in construction terminates.

With respect to the Asset Turnover Ratio, revenues from assets in 1991 remains at a low level as the accrued depreciation still remains small and the number of telephones installed is still limited. After that, however, the Asset Turnover Ratio shows steady growth for each year.

With respect to corporate tax, a payment of about 260,000 kina annually will be possible from the year after construction is completed.

Dividend payments of approximately 240,000 kina annually will be possible after 1999. These sums are expected to contribute to the increase of government financial revenues.

8.5.4 Influence on PTC Financial Conditions

In terms of PTC's Five-Year Development Plan (1988-1992), overall income and expenses, the two financial indexes mentioned above, and payments to the government are estimated in Table 8-5-5.

Table 8-5-5 Financial Indexes and Payments in
Five-Year Development Plan

(Unit: Thousand Kina)

	1988	1989	1990	1991	1992
ROI (Telecom.)	13.5%	14.4%	16.8%	20.0%	22.7%
ROI, Telecom and Postal	11.5%	10.0%	10.2%	11.5%	13.5%
Asset Turnover Ratio	53.5%	49.7%	48.5%	48.8%	51.9%
Corporate Tax	4815	4246	4401	5060	6547
Dividends	3686	4471	3943	4086	4699

Changes in PTC's financial condition in case this project is added to these projections are presented in Table 8-5-6.

As the Five-Year Development Plan represents financial goals up to 1992, this analysis is made for the influence on the PTC financial situation up to 1992 in consideration of projection reliability.

Table 8-5-6 Changes in PTC Financial Condition Due to Project
(Up to 1992)

(Unit: Thousand Kina)

	1990			1991			1992		
	Without Project	Project	With Project	Without Project	Project	With Project	Without Project	Project	With Project
Revenues	104,621	-	104,621	112,393	56	112,449	122,354	272	122,626
Expenses (Incl. Depreciation)	86,231	245	86,476	90,827	245	91,072	96,607	288	96,895
Profit before Interest & Tax	18,390	-245	18,145	21,566	-189	21,377	25,747	-16	25,731
Fixed Assets	179,609	0	179,609	187,526	3,301	190,827	190,598	3,065	193,663
ROI (Telecom.)	16.8%	-	-	20.0%	-5.7%	-	22.7%	-0.5%	-
ROI (Telecom. & Postal)	10.2%	-	10.2%	11.5%	-	11.2%	13.5%	-	13.3%
Government Revenues	8,344		8,344	9,146		9,080	11,246		11,180
Corporate Tax	4,401	0	4,401	5,060	-66	4,994	6,547	-5	6,542
Dividends	3,943	0	3,943	4,086	0	4,086	4,699	-61	4,638

The period from 1990 to 1992 is the construction term for this project and full-fledged operation of total facilities will not be started during that time. Therefore, the Return on Investment is at a low level: -5.7% in 1991; -0.5% in 1992.

This means that, although an asset increase will be brought about by the construction of this project, profits generated by such assets construction will be low during this period.

But even during 1991 and 1992, when a low Return of Investment for this project is expected, PTC's total Return on Investment drops by only 0.2% - 0.3% as indicated in Table 8-5-6. This is considered due to the still low book value of assets at the time as the facilities are only partially completed. The book value of assets installed under this project will increase after the full completion of facilities (during and after 1998). At that time, however, the facilities are in full operation and the Return on Investment for this project will improve. As a result, no sharp decrease in PTC's total Return on Investment is expected to occur.

8.6 Economic Analysis

Effects of telephone introduction also include benefits, which are hard to measure. When it becomes necessary to make urgent contact outside villages without telephones, for example, there is no other means, but going on foot to the destination in spite of complicated geographical conditions. With the introduction of telephones, however, it becomes possible to make immediate contact with other villages and towns. This is especially important in case of disaster reporting or requests for emergency medical services.

Even at present, roads connecting villages do not exist in rural areas. Moreover, from the past, there have been very few opportunities of exchange with other communities due to strong personal and barter relationships only within the same village or surrounding areas.

Recently, however, with the progress of commercial activities in urban areas, the shift of population to urban areas is gradually starting to be seen. As labor forces are required in copper mines and coffee, cocoa and other plantations, the shift of population to key places of these industries is also seen. If a telephone can serve as a means of contact between workers in such places and peoples living in their home villages, the effectiveness of the telephone introduction is quite high for them. Also, securing a means of contact will activate personal exchange with other communities, which will subsequently promote physical distribution. Since telephones introduced in villages thus contribute to exchanges among communities, it is also expected to contribute to reform the double-structured economy — monetary economy and non-monetary economy — in the future.

CHAPTER 9
CONCLUSION

CHAPTER 9. CONCLUSION

9.1 Conclusion

In PNG, 87% of the population (about 2.6 million people) reside in rural areas. It is said that the number of villages in such rural areas exceeds 10,000. It is not unusual that several days are required to go to the neighboring town on foot because of severe geographical conditions and undeveloped road systems. In addition, the majority of these villages has no means of communications, and it is not too much to say that they are actually semi-isolated. Even though some larger villages are equipped with short wave (HF) circuits, users are not necessarily satisfied with them because of their one way communication, unstable quality and relatively many restrictions imposed on communications time.

It would be quite significant from the standpoints of improving the people's livelihood and welfare and developing industry and the economy if a highly-reliable means of communications as determined in this project is introduced to villages in the rural areas in PNG. Take agriculture for example. Useful information about fertilizers, seeds, agricultural machines, etc., will become available, making it possible to expect an increased harvest. In addition, since information on market prices is immediately available, adjustments can be made accordingly for production and arrangement of transportation, which in turn will contribute to an increase in revenues. Furthermore, the introduction of telephones will permit the efficient provision of various social services, such as administration, medical treatment and education. In other words, the development and expansion of a telecommunications network in rural areas will help modernize agriculture, improve the marketing system and advance the people's welfare, thus making it possible to expect improved productivity, increased income and increased employment opportunities and efficient usage of skilled manpower. Consequently, it will contribute to narrowing the differences between urban and rural areas and to the stabilization of society.

Under the present situation, however, it is very difficult to quantitatively evaluate these social and economic benefits other than by the revenues from telephone service. Accordingly, we would suggest that an

assessment period be provided after the completion of Phase I (covering three provinces - Morobe, Western and New Ireland) to obtain basic materials to quantitatively evaluate the social and economic benefits. During this assessment period, in addition to the direct effects of introducing telephones, the social and economic changes due to the introduction of telephones to villages without them should be studied in detail. It is desirable to reflect the study results in Phase II and subsequent phases for nationwide development of the rural telecommunications project. Therefore, the three provinces targeted in Phase I will have a significance in this regard as model areas.

As stated above, the rural telecommunication development plan established through this feasibility study has important implications not only for PTC but also for the nation as well. We therefore hope for prompt implementation of this project according to the schedule suggested in this report.

Although the objective villages of this rural telecommunications project at present are as described in this report, this does not end the rural telecommunications project of the entire PNG. Rather, it would be ideal if the eventual aim is to use this as a start and to eliminate the lack of telephones in all villages. As previously mentioned, these efforts will certainly bring various social and economic benefits, help narrow the differences between urban and rural areas, and consequently, contribute to the development of the entire nation of PNG.

ANNEX 1

LISTS OF THE OBJECTIVE VILLAGES

Lists of The Objective Villages

Province	Name	Village No. Name	Population		Number of Sub.		
			Village	Surr. Area	Pay	Pri.	Total
Western	1	Wipim	142	511	1	1	2
	2	Ningerum	85	800	1	2	3
	3	Runginae	354	839	1	1	2
	4	Matkomrae	102	1,019	1	0	1
	5	Atkamba	36	686	1	0	1
	6	Kungim	522	660	1	1	2
	7	Mogulu	168	1,617	1	0	1
	8	Suabi	177	351	1	0	1
	9	Debepare	60	569	1	0	1
Sub Total		9 villages	1,646	7,052	9	5	14
Morobe	1	Pindiu	416	1,187	1	2	3
	2	Pindiu H.C	140	800	1	0	1
	3	Mindik	608	1,523	1	1	2
	4	Lengbate	656	1,474	1	0	1
	5	Bukaua	204	1,673	1	1	2
	6	Silimana	338	738	1	0	1
	7	Zenguru	410	410	1	0	1
	8	Kaiapit	718	1,814	1	1	2
	9	Watarais	574	996	2	0	2
	10	Umi	321	963	1	1	2
	11	Chivasing	971	1,942	2	3	5
	12	Bandong	314	1,485	1	1	2
	13	Boana	203	3,376	2	3	5
	14	Salamaua	15	3,716	1	1	2
	15	Baini	141	1,063	1	0	1
	16	Yaiwahawa	292	1,017	1	1	2
	17	Wandumi	209	1,035	1	0	1
Sub Total		17 villages	6,530	25,212	20	15	35
New Ireland	1	Mangop	563	1,123	2	2	4
	2	Madina	141	834	1	1	2
	3	Mangai	217	1,020	1	1	2
	4	Lakulamau	87	642	1	1	2
	5	Lemakot	264	688	1	2	3
	6	Taskul	86	1,047	1	0	1
	7	Hilalon	179	677	2	0	2
	8	Lipek	208	576	1	1	2
	9	Hipagat	115	1,582	2	0	2
	10	Huris	158	158	0	2	2
	11	Kabanut	321	1,070	1	0	1
	12	Kait	124	335	1	0	1
	13	Tagipal	144	144	1	0	1
	14	Kabahn	145	1,200	1	0	1
Sub Total		14 villages	2,752	11,096	16	10	26

Province Name	No.	Village Name	Population		Number of Sub.		
			Village	Surr. Area	Pay	Pri.	Total
West Sepik	1	Paup	524	573	1	1	2
	2	Ulau 1	505	923	1	0	1
	3	Yakumul	507	971	1	1	2
	4	Ali Island	693	705	1	1	2
	5	Hambasamba	594	4,243	1	1	2
	6	Akosamei 1	705	910	1	1	2
	7	Klaple 1	655	1,541	1	1	2
	8	Wilwil	772	772	1	1	2
	9	Vanimo	837	853	1	1	2
	10	Waromu	600	893	1	1	2
Sub Total		10 villages	6,392	12,384	10	9	19
East Sepik	1	Biwat	541	2,688	1	1	2
	2	Changrima	573	1,979	1	1	2
	3	Maramba	832	2,119	1	1	2
	4	Kambaramba	1,836	1,836	1	1	2
	5	Kambot	711	748	1	1	2
	6	Wom	859	2,315	1	0	1
	7	Kaminimbet	811	2,009	1	1	2
	8	Tambanum	968	1,485	1	1	2
	9	Sagisik	564	5,194	1	1	2
	10	Kalabui	642	4,826	1	1	2
	11	Jambitange	541	3,637	1	0	1
	12	Kaugiak	755	3,637	1	0	1
	13	Wombisa	600	3,250	1	1	2
	14	Kanganaman	775	3,067	1	1	2
	15	Korogo	853	3,067	1	0	1
	16	Avatip	878	1,760	1	1	2
	17	Tongwinjame	646	822	1	1	2
	18	Walis	762	762	1	1	2
	19	Woginara 2	828	2,211	1	2	3
	20	Passam	657	1,948	1	1	2
	21	Ambukanja	502	6,415	1	0	1
	22	Kumbuhon	600	1,870	1	1	2
	23	Kaboibus	564	4,161	1	1	2
Sub Total		23 villages	17,298	61,806	23	19	42
Madang	1	Nobanob	524	1,338	1	1	2
	2	Riwo	884	1,517	1	1	2
	3	Siar	666	1,380	1	1	2
	4	Kranket	841	841	1	0	1
	5	Boroman	664	1,097	1	1	2
	6	Did	603	1,745	1	0	1
	7	Kevasop	519	842	1	0	1
	8	Kuduk	536	1,426	1	0	1
	9	Kumoria 1&2	776	1,400	1	1	2
	10	Kurum	550	712	1	1	2
	11	Marup 1	698	1,512	1	0	1
	12	Marup 2	592	626	1	1	2
	13	Malala	760	1,348	1	1	2
Sub Total		13 villages	8,613	15,784	13	8	21

Province Name	No.	Village Name	Population		Number of Sub.		
			Village	Surr. Area	Pay	Pri.	Total
Southern Highlands	1	Andowari	625	631	1	1	2
	2	Hangapo	835	835	1	1	2
	3	Hewate	902	969	1	0	1
	4	Itapu	646	646	1	0	1
	5	Kela	951	951	1	0	1
	6	Kugu	794	802	1	0	1
	7	Munima	902	917	1	1	2
	8	Paijaka	700	730	1	1	2
	9	Hambuari	885	898	1	1	2
	10	Kupari	1,141	1,171	1	1	2
	11	Piribu	1,154	1,154	1	1	2
	12	Iagome	901	1,358	1	0	1
	13	Tauri	957	1,291	1	0	1
	14	Tigibi	1,961	3,098	1	1	2
	15	Idauwi	821	1,566	1	1	2
	16	Det	1,265	1,313	1	1	2
	17	Kongu	631	631	1	1	2
	18	Kum	701	707	1	0	1
	19	Mato	557	561	1	0	1
	20	Udjabia	876	876	1	1	2
	21	Enjua	749	1,321	1	0	1
	22	Semin	1,067	1,915	1	1	2
	23	Uba	682	1,729	1	0	1
	24	Almanda	542	789	1	0	1
	25	Boilia	768	773	1	1	2
	26	Egenda	818	1,178	1	1	2
	27	Herep	628	628	1	0	1
	28	Injip	847	1,692	1	0	1
	29	Onidol	669	973	1	1	2
	30	Pulim	592	592	1	0	1
	31	Soii	538	1,359	1	1	2
	32	Suma	554	803	1	1	2
	33	Ombal	706	710	1	1	2
	34	Sebiba	692	692	1	1	2
	35	Songura	563	1,054	1	1	2
	36	Birap	1,334	1,340	1	1	2
	37	Lumbi	536	536	1	2	3
	38	Tutam	654	656	1	1	2
	39	ita	750	753	1	1	2
	40	Takuanda	528	1,235	1	0	1
	41	Batri	756	760	1	0	1
	42	Karanda	542	577	1	1	2
	43	Marorogo	745	1,114	1	1	2
	44	Apenda	908	922	1	1	2
	45	Kauwo	1,034	1,188	1	1	2
	46	Maia	522	1,275	1	0	1
	47	Maupini	503	964	1	0	1
	48	Noiya	838	840	1	1	2
	49	Takuru	685	711	1	1	2
	50	Walapape	852	2,193	1	1	2
	51	Kireni	556	560	1	1	2
	52	Muli	614	1,153	1	1	2

Province Name	No.	Village Name	Population		Number of Sub.		Total
			Village	Surr. Area	Pay	Pri.	
Southern Highlands	53	Munkumapo	580	580	1	0	1
	54	Ponowi	715	715	1	1	2
	55	Kendal	931	943	1	1	2
	56	Kisenapoi	1,018	1,752	1	1	2
	57	Nacope	1,432	2,020	1	1	2
	58	Orei	635	644	1	2	3
	59	Pakulge	943	1,269	1	0	1
Sub Total		59 villages	47,231	62,013	59	41	100
Enga	1	Aiyak	1,486	6,536	1	1	2
	2	Yagenda	1,823	3,008	1	1	2
	3	Mungarep	603	2,446	1	1	2
	4	Pandami	526	526	1	1	2
	5	Tibini	787	787	1	1	2
	6	Kepilam	807	2,008	1	1	2
	7	Porgeras	1,175	1,977	1	1	2
	8	Pulukus	1,125	2,881	1	1	2
	9	Yango	983	1,981	1	1	2
	10	Kaipare	930	3,484	1	1	2
	11	Pipingus	848	1,547	1	1	2
	12	Torenam	1,072	1,072	1	1	2
	13	Iuripaka	708	1,405	1	2	3
	14	Kalimanga	1,458	2,155	1	1	2
	15	Kambia	1,439	2,236	1	1	2
	16	Kokas	664	1,361	1	1	2
	17	Lagalap	1,482	2,179	1	1	2
	18	Murip	1,259	1,956	1	1	2
	19	Pumbur	1,157	1,854	1	1	2
	20	Sawi	959	1,656	1	1	2
	21	Supi	1,031	1,728	1	1	2
	22	Wert	1,182	1,879	1	1	2
	23	Andakoi	1,247	1,247	1	1	2
	24	Bioko	615	615	1	1	2
	25	Imapiak	608	608	1	2	3
	26	Kinduli	598	598	1	1	2
	27	Poregale	957	4,032	1	2	3
	28	Aipanda	1,337	1,337	1	2	3
	29	Biaka	918	1,230	1	2	3
	30	Sari	1,542	3,416	1	1	2
	31	Supas	1,045	3,171	1	1	2
	32	Birip	1,528	1,578	1	2	3
	33	Irelya	1,653	3,249	1	1	2
	34	Yalis	971	1,330	1	1	2
	35	Mukurumanda	1,318	1,318	1	2	3
	36	Paus	1,131	1,131	1	1	2
	37	Pina	805	805	1	1	2
	38	Pompabus	1,001	1,001	1	2	3
	39	Wapenamanda	760	760	1	0	1
	40	Yaramanda	1,361	1,361	1	1	2
	41	Raiagam	978	1,989	1	1	2
Sub Total		41 villages	43,877	77,438	41	48	89

Province Name	No.	Village Name	Population		Number of Sub.		
			Village	Surr. Area	Pay	Pri.	Total
Western Highlands	1	Baisu	1,047	1,047	1	1	2
	2	Kongra	971	3,127	1	1	2
	3	Ambuga	688	2,204	1	1	2
	4	Buk 1	1,035	1,035	1	1	2
	5	Kenembo	598	2,198	1	1	2
	6	Kinjibi	502	2,916	1	1	2
	7	Kotna 2	611	1,348	1	1	2
	8	Nunga 1	807	1,799	1	1	2
	9	Palgi	682	992	1	1	2
	10	Gumant	2,133	2,133	1	1	2
	11	Aviamp 1	1,867	2,086	1	1	2
	12	Aviamp 2	950	2,021	1	1	2
	13	Kugmal	934	934	1	1	2
	14	Kurumul 1&2	1,942	2,527	1	1	2
	15	Kimil	1,192	1,202	1	1	2
	16	Milep 1	578	3,050	1	1	2
	17	Nondugle	1,102	3,214	1	2	3
	18	Numbakora	828	1,734	1	2	3
	19	Talu	1,964	3,218	1	2	3
	20	Bunumwo	818	1,217	1	1	2
	21	Fatima	606	606	1	1	2
	22	Koban Pltn	558	993	1	1	2
	23	Kaip	1,449	1,449	1	1	2
	24	Kiliga 1	1,762	1,762	1	1	2
	25	Wurep 1&2	2,010	2,010	1	1	2
	26	Warawau	685	685	1	0	1
	27	Koibuga 1	571	1,758	1	1	2
	28	Koibuga 2	545	958	1	2	3
	29	Kelua 1	849	1,063	1	2	3
	30	Kelua 2	1,600	1,600	1	1	2
	31	Keltiga	1,781	6,224	1	1	2
	32	Ketiga	1,070	2,882	1	1	2
	33	Kik	1,420	2,141	1	1	2
	34	Koge	1,183	2,296	1	1	2
	35	Koglamp	1,387	1,777	1	1	2
	36	Minimp	960	1,484	1	1	2
	37	Ogelbeng	955	955	1	1	2
	38	Alimp	952	1,075	1	2	3
	39	Malda	1,038	1,223	1	2	3
	40	Olk	738	1,800	1	1	2
	41	Papakola	592	592	1	2	3
	42	Tega 2	951	951	1	1	2
	43	Balk 2	686	1,689	1	1	2
	44	Bukapena	542	1,647	1	1	2
	45	Kwip 2	562	2,613	1	2	3
	46	Rugu(Rugil)	653	1,971	1	1	2
	47	Wurep 2	877	2,994	1	2	3
	48	Tigi 1	535	1,096	1	1	2
	49	Paiagona 1&2	1,369	1,957	1	2	3
	50	Kailge	740	740	1	1	2
	51	Yumpiga	695	695	1	1	2
Sub Total		51 villages	51,570	91,688	51	61	112

Province Name	No.	Village Name	Population		Number of Sub.		Total
			Village	Surr. Area	Pay	Pri.	
Chimbu	1	Pari RH	1,006	1,006	1	1	2
	2	Yungie	1,008	1,014	1	2	3
	3	Mintima	1,465	1,474	1	1	2
	4	Wandi	1,151	1,151	1	1	2
	5	Kel	1,103	1,103	1	1	2
	6	Munuma	974	974	1	1	2
	7	Gaima	1,473	1,473	1	1	2
	8	Genabona	1,510	1,823	1	1	2
	9	Sipagul	1,390	1,390	1	1	2
	10	Mogl	1,722	1,722	1	1	2
	11	Gurema	1,189	1,189	1	1	2
	12	Niglum	2,638	2,638	1	1	2
	13	Ninemul	1,540	1,540	1	1	2
	14	Kwima	996	996	1	1	2
	15	Kup	890	992	1	1	2
	16	Wara Nomans	626	626	1	0	1
	17	Bi	638	638	1	1	2
	18	Moromambuno	1,033	1,059	1	1	2
	19	Gagugl	1,738	1,638	1	1	2
	20	Awage	1,896	1,896	1	1	2
	21	Moroma	837	837	1	1	2
	22	Kendine	2,800	2,800	1	1	2
	23	Kaglma	1,627	1,738	1	0	1
	24	Kunabau	977	977	1	1	2
	25	Goglme	684	1,351	1	1	2
Sub Total		25 villages	32,911	34,045	25	24	49
Eastern Highlands	1	Senafanigagu	635	1,828	1	1	2
	2	Bihute	500	1,388	1	1	2
	3	Haiyafaga	528	3,113	1	2	3
	4	Ulele	652	1,651	1	2	3
	5	Afamu	642	854	1	1	2
	6	Homori	620	973	1	1	2
	7	Kanamba	512	512	1	2	3
	8	Avia	599	1,162	1	1	2
	9	Yanofi	663	1,086	1	1	2
	10	Anamontina	910	910	1	1	2
	11	Anaraparoka	827	827	1	2	3
	12	Barapa	890	1,062	1	1	2
	13	Bilimoia	567	597	1	1	2
	14	Kainoa	861	1,607	1	1	2
	15	Sosointenu	504	1,255	1	1	2
	16	Unantu	643	1,708	1	1	2
	17	Bioka	594	944	1	1	2
	18	Omaura	934	2,666	1	1	2
	19	Kasoru	805	1,530	1	1	2
	20	Okapa	500	2,028	1	1	2
Sub Total		20 villages	13,386	27,701	20	24	44

Province Name	No.	Village Name	Population		Number of Sub.		
			Village	Surr.Area	Pay	Pri.	Total
Gulf	1	Mei'i 1	626	1,216	1	1	2
	2	Uaripi	747	1,810	1	1	2
	3	Karama 1	562	1,106	1	1	2
	4	Koaru	596	876	1	1	2
	5	Hamuhamu	871	871	1	2	3
	6	Heatoare	1,012	1,402	1	1	2
	7	Heavala	1,997	2,422	1	1	2
	8	Kukipi	673	939	1	1	2
	9	Lelefiru	982	982	1	1	2
	10	Luluapo	531	1,242	1	1	2
	11	Uritai	1,040	2,374	1	1	2
	12	Iokea	2,005	2,132	1	1	2
	13	Lese Havihara	781	821	1	1	2
	14	Lese Kavora	835	835	1	1	2
	15	Lese Oalai	763	1,088	1	1	2
	16	Miaru	1,734	1,734	1	1	2
Sub Total		16 villages	15,755	21,850	16	17	33
Central	1	Gavuone	1,449	1,474	1	1	2
	2	Ilimorupu	642	1,054	1	2	3
	3	Kapari	743	1,873	1	1	2
	4	Kelerakwa	667	679	1	1	2
	5	Maopa 1	973	1,847	1	1	2
	6	Pelagai	509	1,026	1	2	3
	7	Waiori	1,328	1,346	1	1	2
	8	Wairavanua	539	1,393	1	1	2
	9	Wanigela	3,407	3,438	1	2	3
	10	Borgaina	633	842	1	1	2
	11	Gabagaba	543	1,251	1	1	2
	12	Irupara	558	866	1	1	2
	13	Kalo	761	785	1	1	2
	14	Kaparoko	528	858	1	1	2
	15	Kemabolo	515	1,634	1	1	2
	16	Makirupu	686	1,510	1	1	2
	17	Tauruba	772	1,246	1	1	2
	18	Bioto	550	550	1	1	2
	19	Delena	514	865	1	1	2
	20	Rapa	534	596	1	1	2
	21	Aviara-Waima	510	1,106	1	1	2
	22	Ere-Ere	648	1,508	1	1	2
	23	Inawabui	650	650	1	1	2
	24	Inawaia	784	2,087	1	1	2
	25	Inawi	938	3,288	1	1	2
Sub Total		25 villages	20,381	33,772	25	28	53

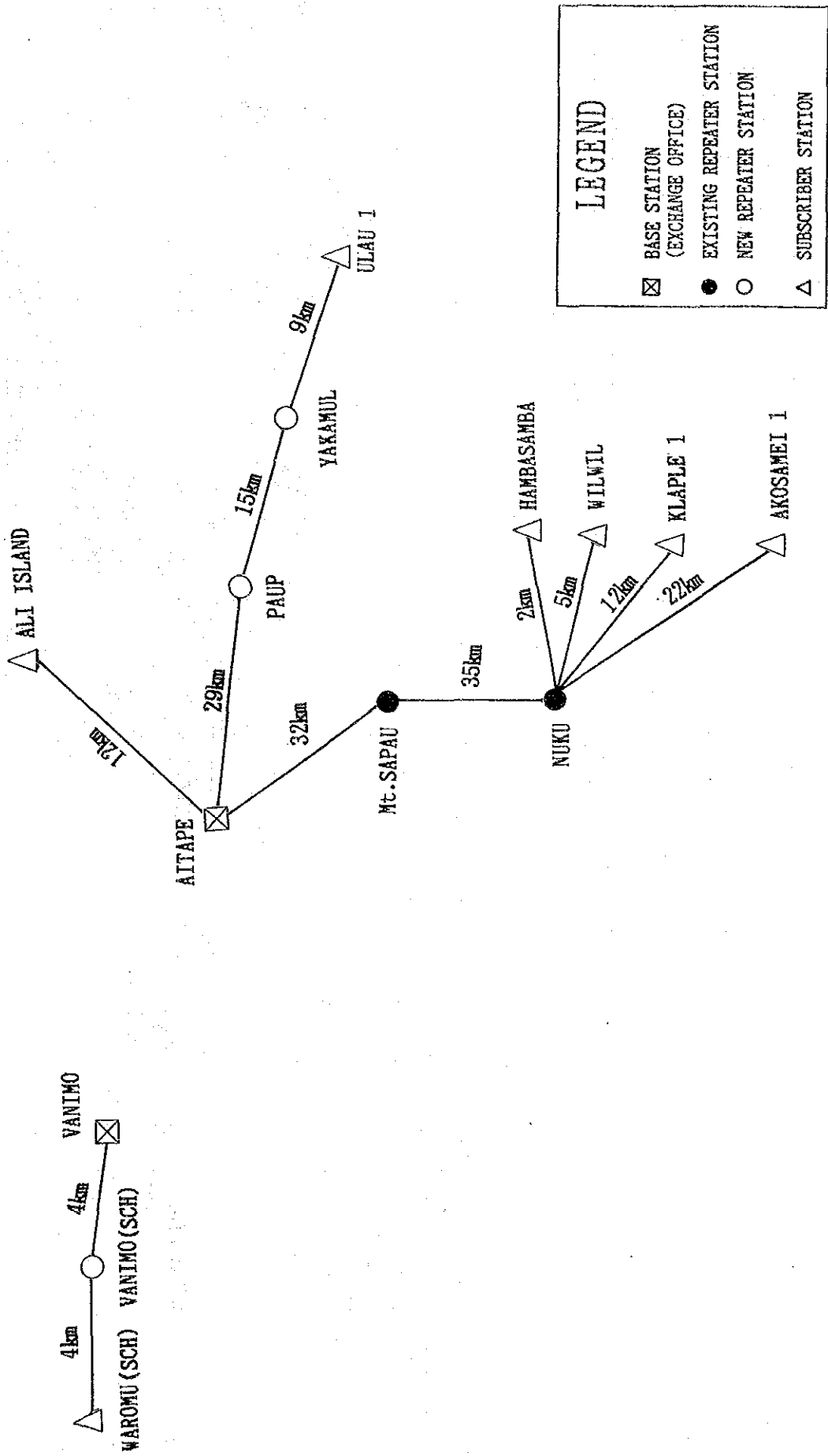
Province Name	No.	Village Name	Population		Number of Sub.		Total
			Village	Surr. Area	Pay	Pri.	
Northern	1	Mamba	582	695	1	1	2
	2	Awala	625	1,570	1	1	2
	3	Baravaturu	964	2,047	1	2	3
	4	Kendata	826	1,471	1	2	3
	5	Kiorota	1,101	1,109	1	1	2
	6	Hohorita	793	799	1	1	2
	7	Garara	539	575	1	1	2
Sub Total		7 villages	5,430	8,266	7	9	16
West New Britain	1	Harghy	784	1,452	1	1	2
	2	Mai	502	665	1	1	2
Sub Total		2 villages	1,286	2,117	2	2	4
East New Britain	1	Raluana	530	530	1	1	2
	2	Vunaulul	545	907	1	1	2
	3	Ngator	754	754	1	1	2
	4	Vunamami	542	542	1	1	2
	5	Bitarebarebe	649	1,259	1	1	2
	6	Kabaleo TCH	500	530	1	1	2
	7	Pilapila	546	546	1	1	2
	8	Tavul 1	596	596	1	1	2
	9	Rakunai	519	519	1	1	2
	10	Tavuiliu	589	589	1	1	2
	11	Kabilomo	736	936	1	1	2
	12	Matalau	848	848	1	1	2
	13	Talwat	703	703	1	1	2
	14	Rapindik	1,343	1,343	1	0	1
	15	Matupit 1	884	884	1	1	2
	16	Vudal Agri Col.	500	978	1	1	2
	17	Vunapalading	500	833	1	0	1
	18	Vunairoto	654	838	1	1	2
	19	Tamanairik	582	582	1	1	2
Sub Total		19 villages	12,520	14,717	19	17	36
Milne Bay	1	Gabugabuna	538	1,035	1	1	2
	2	Naura	503	546	1	1	2
	3	Waema	535	980	1	1	2
	4	Logea	749	749	1	0	1
	5	Sidudu	608	698	1	1	2
	6	Eaus	887	1,247	1	1	2
	7	Kaubwaga	559	900	1	1	2
	8	Siagara	802	802	1	1	2
Sub Total		8 villages	5,181	6,957	8	7	15
North Solomons	1	Hahalis	722	737	1	1	2
	2	Hanahan	865	2,127	1	1	2
	3	Lemankoa	1,517	1,529	1	1	2
	4	Lemanmanu	1,204	1,217	1	1	2
	5	Lontis	1,344	1,335	1	1	2
	6	Tandeki	579	579	1	1	2
	7	Gagan	668	1,942	1	1	2
	8	Pororan	578	831	1	1	2

Province Name	No.	Village Name	Population		Number of Sub.		
			Village	Surr. Area	Pay	Pri.	Total
North	9	Gogohei 1	507	1,537	1	1	2
Solomons	10	Lonahan	894	899	1	1	2
	11	Malasang	1,036	1,411	1	1	2
	12	Taiof	618	669	1	1	2
	13	Laguai	615	775	1	1	2
Sub Total		13 villages	11,147	15,588	13	13	26
Manus	1	A'hus	560	560	1	1	2
	2	Pere	537	1,487	1	1	2
Sub Total		2 villages	1,097	2,047	2	2	4
Grand Total		374 villages	305,003	531,533	379	359	738

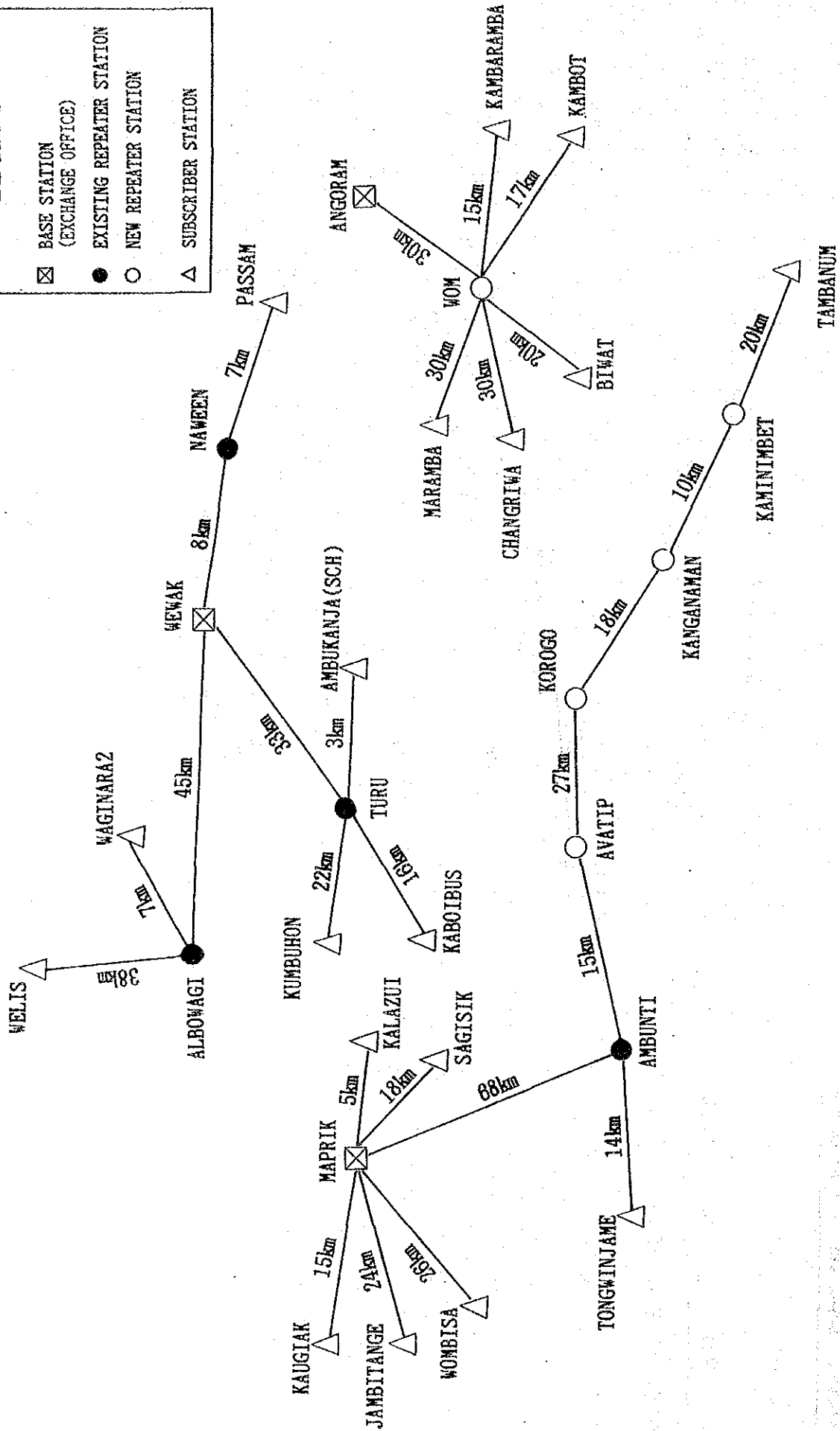
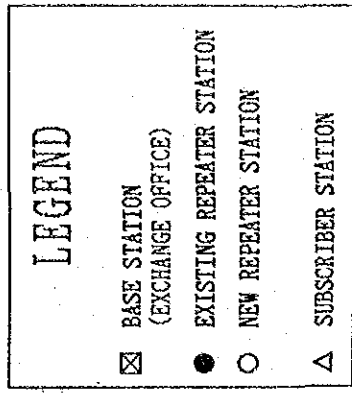
ANNEX 2

RURAL TELECOMMUNICATION NETWORK IN EACH PROVINCE

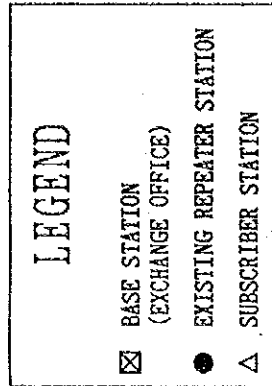
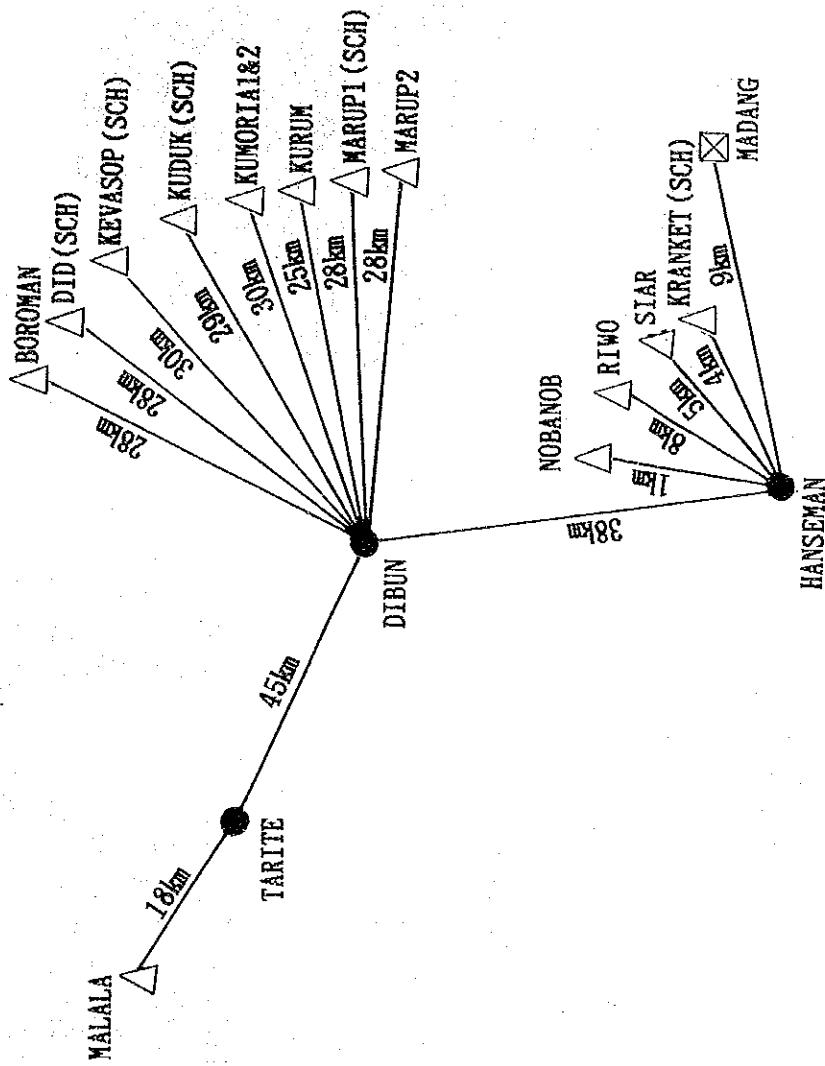
WEST SEPIK PROVINCE



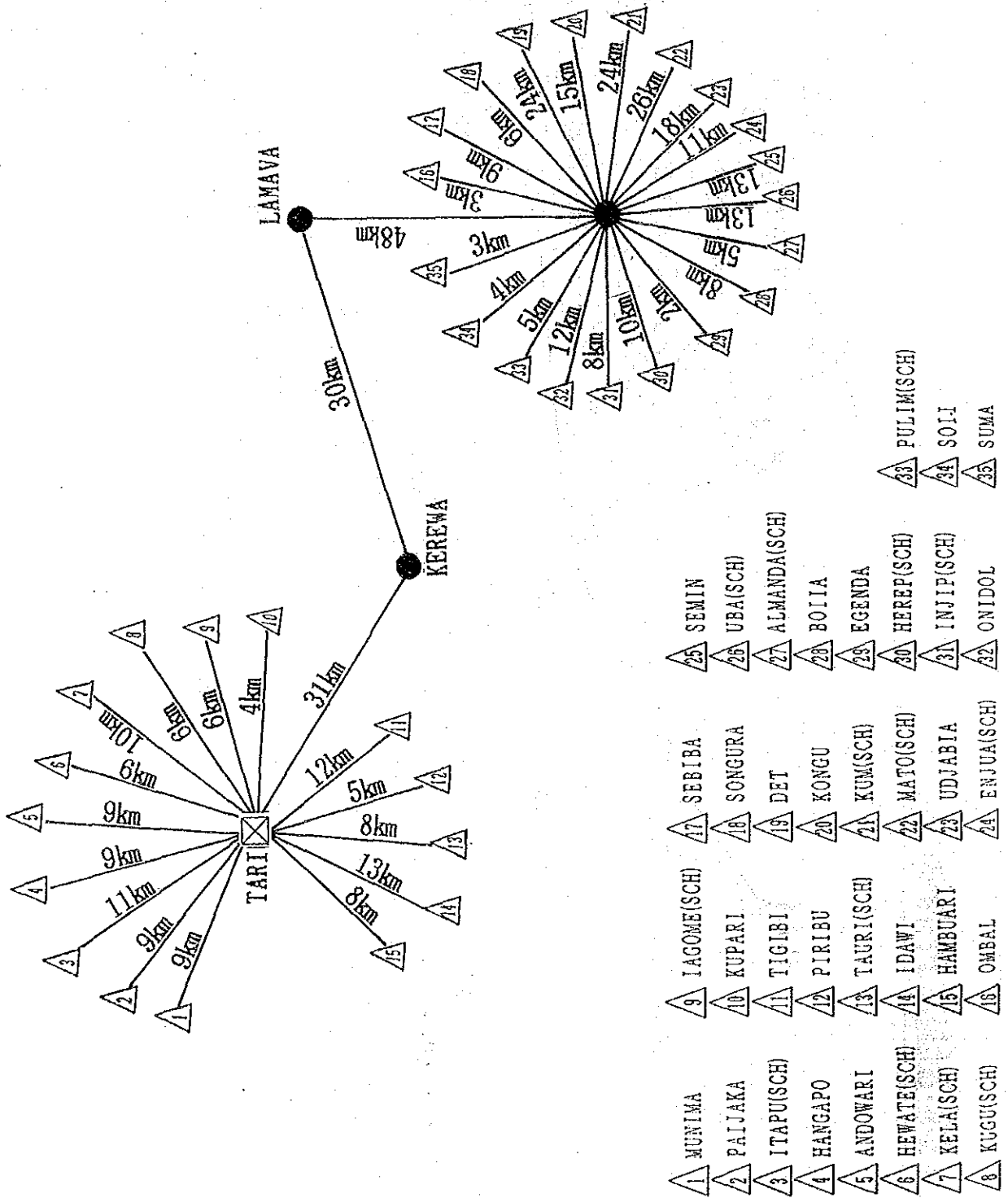
EAST SEPIK Province



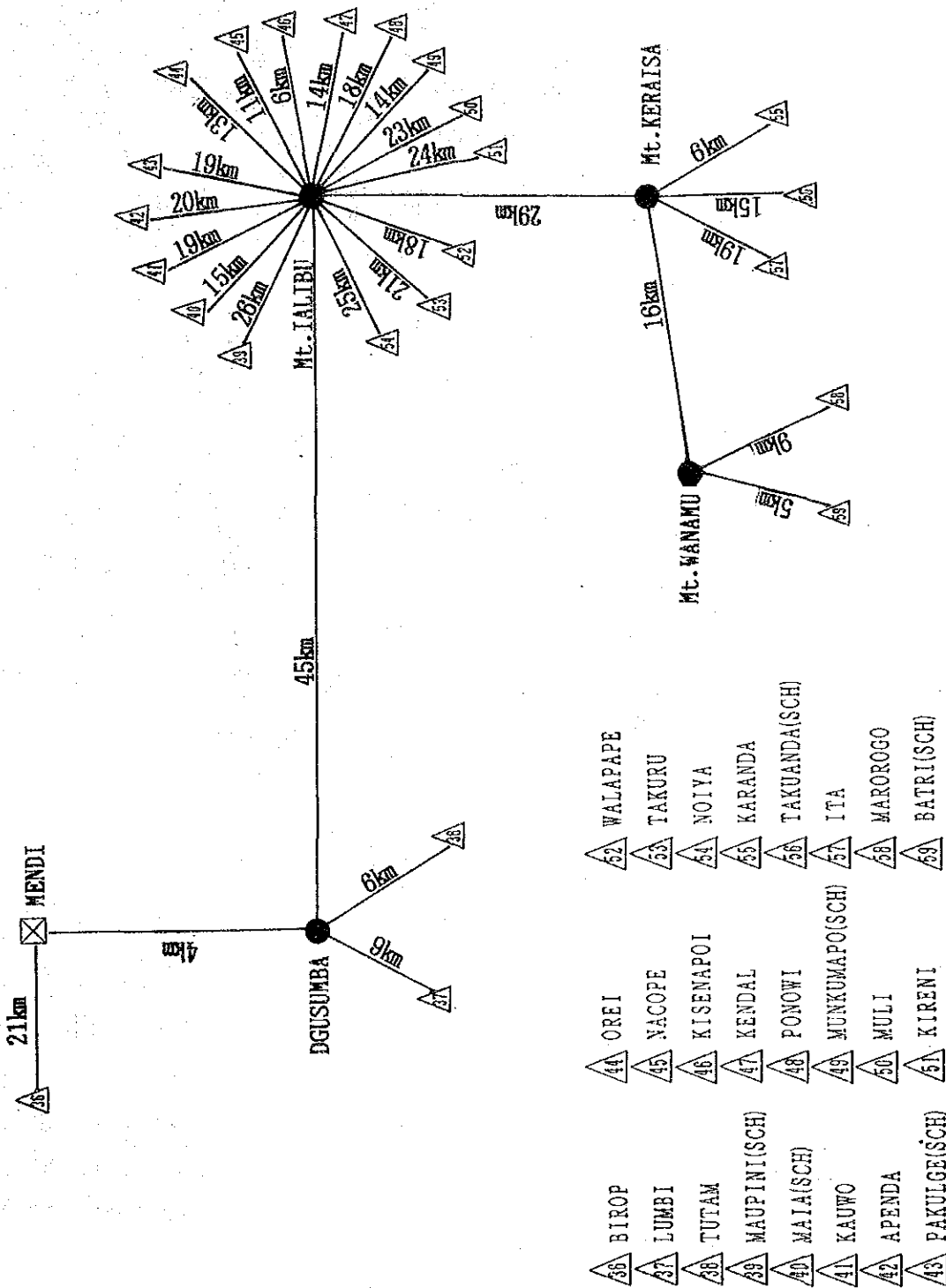
MADANG PROVINCE



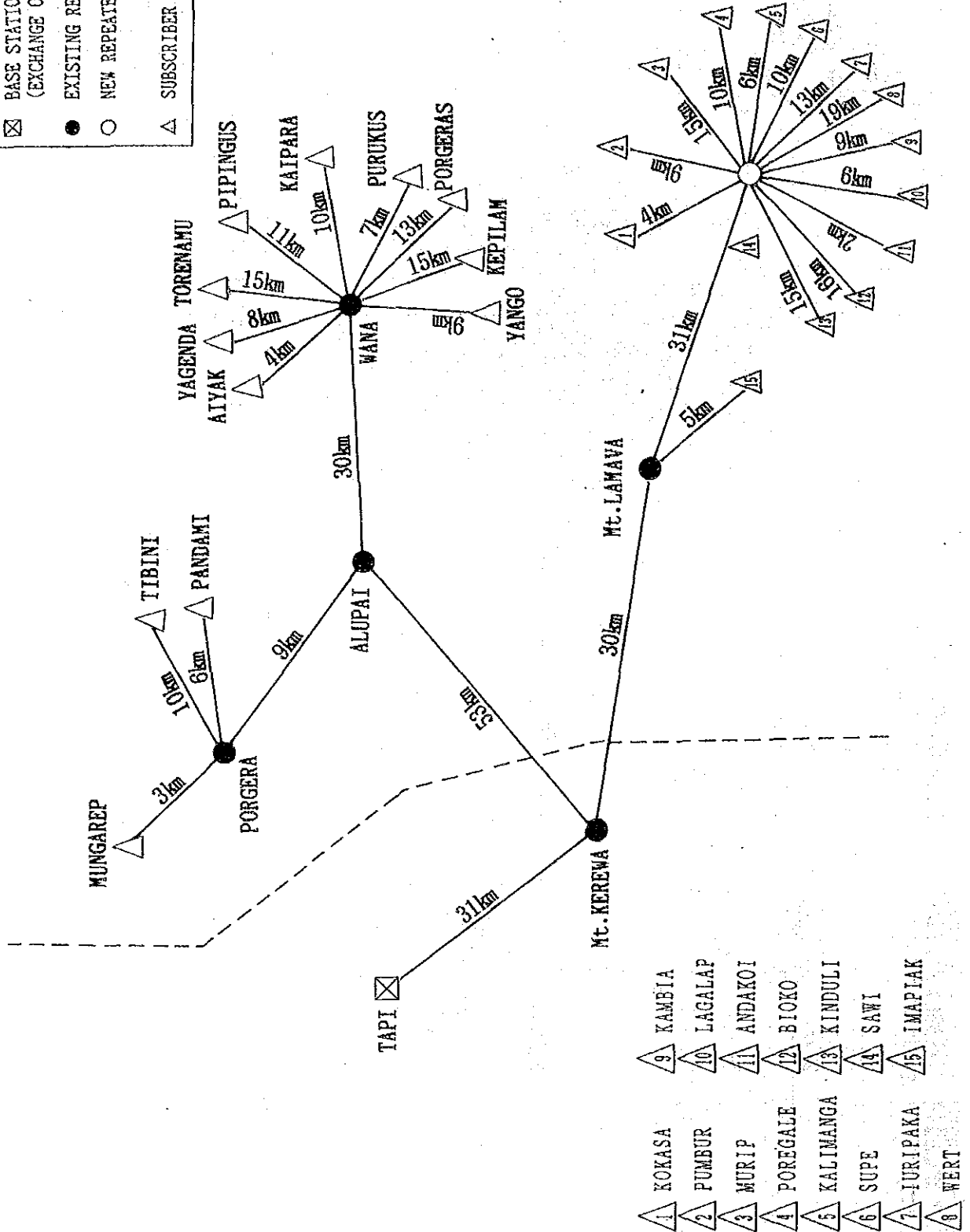
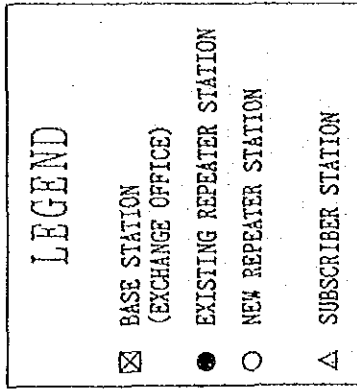
SOUTHERN HIGHLANDS Province(1/2)



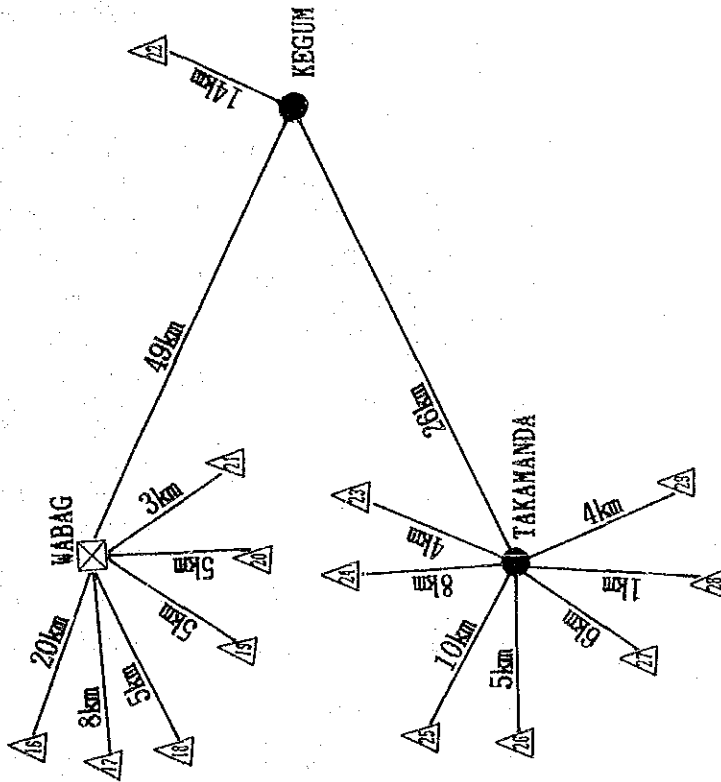
SOUTHERN HIGHLANDS PROVINCE (2/2)



ENGA Province(1/2)



ENGA Province (2/2)

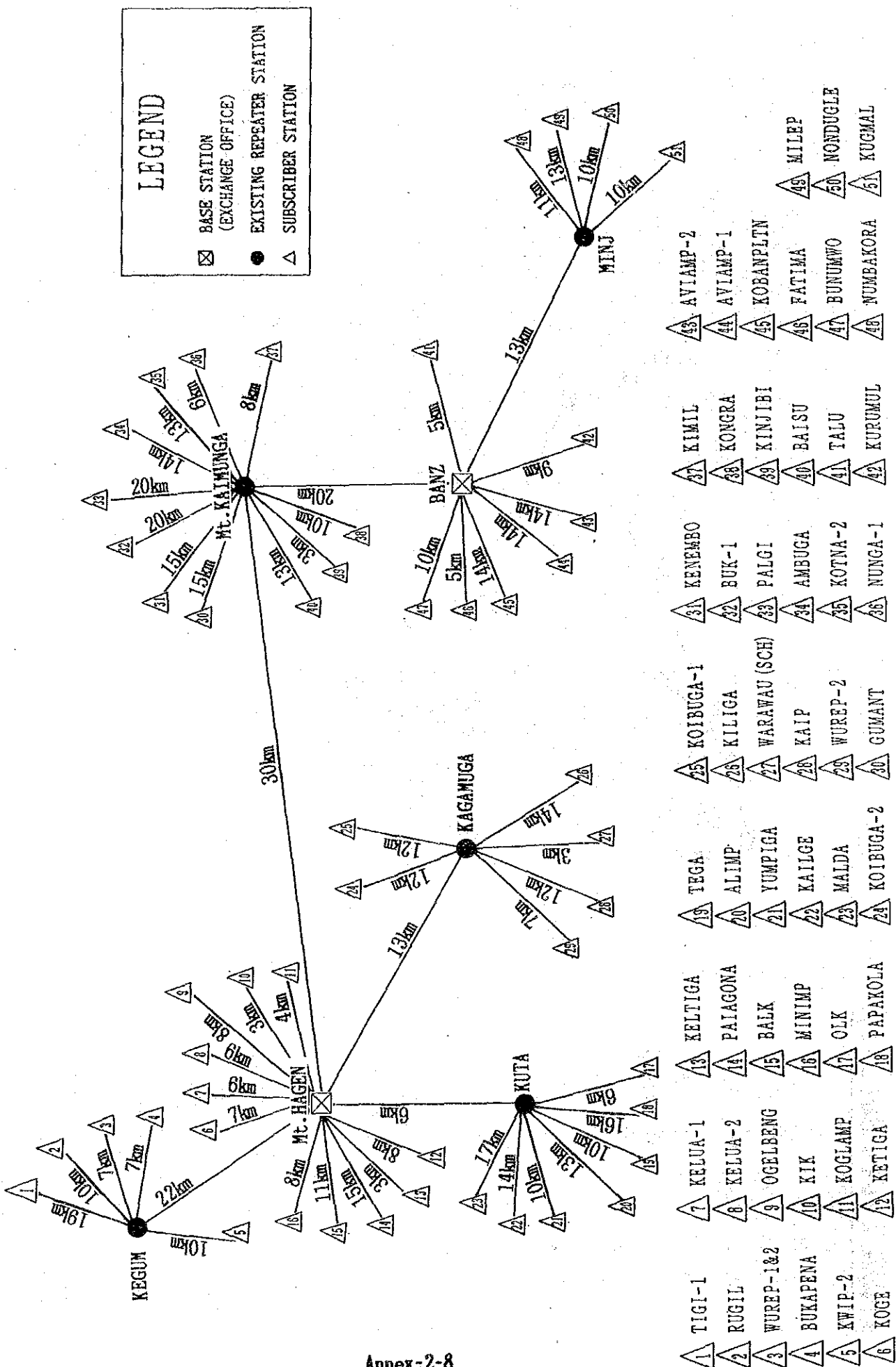


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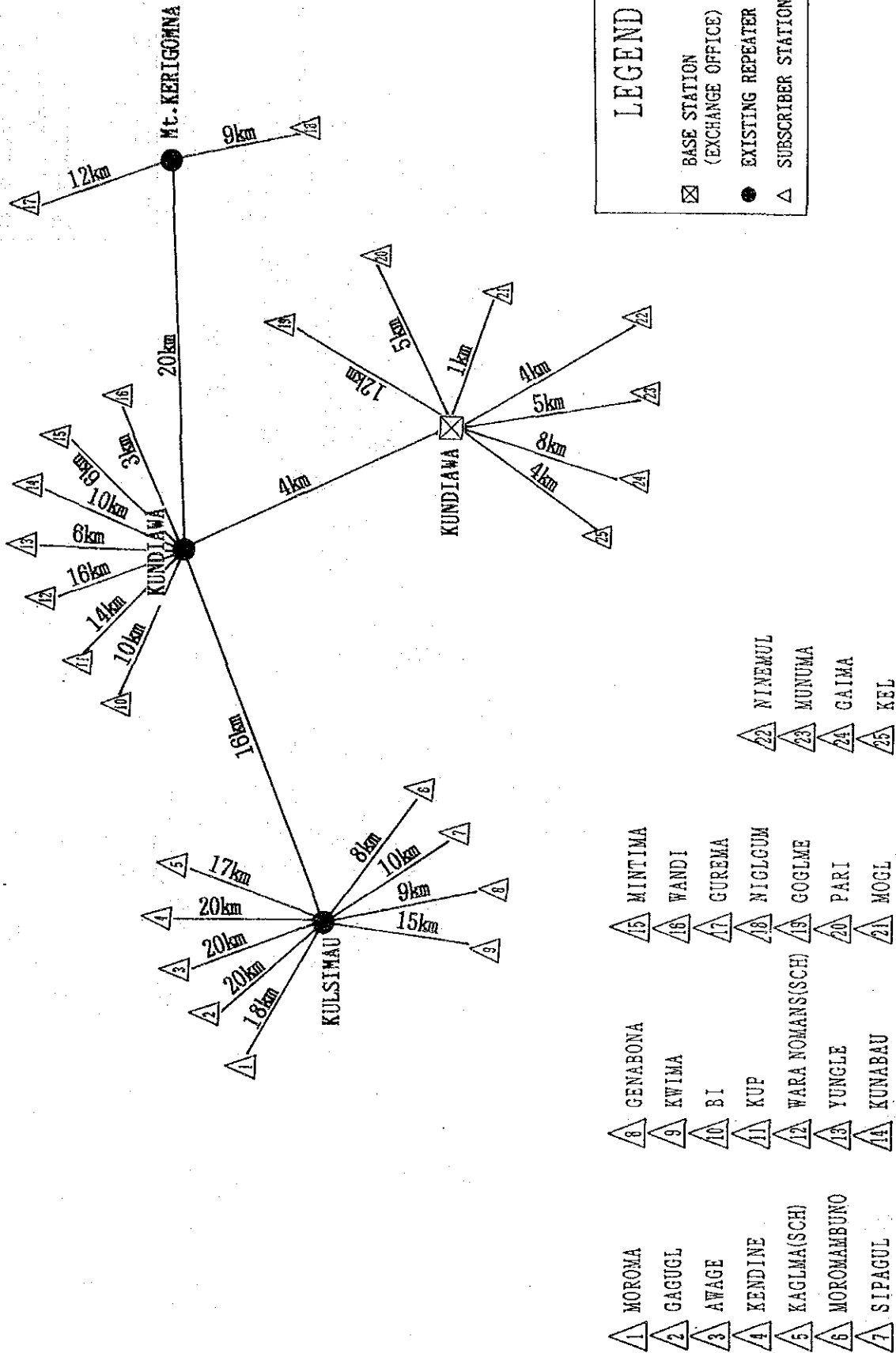
- ☒ BASE STATION (EXCHANGE OFFICE)
- EXISTING REPEATER STATION
- △ SUBSCRIBER STATION

- | | |
|------------------|------------------|
| △ 16 AIPANDA | △ 24 PAUS |
| △ 17 SUPAS | △ 25 PINE |
| △ 18 SARI | △ 26 POMPABUS |
| △ 19 BIRIP | △ 27 RAIAGAM |
| △ 20 BIAKA | △ 28 WAPENAMANDA |
| △ 21 IRELYA | △ 29 YARAMANDA |
| △ 22 YALIS | |
| △ 23 MUKURUMANDA | |

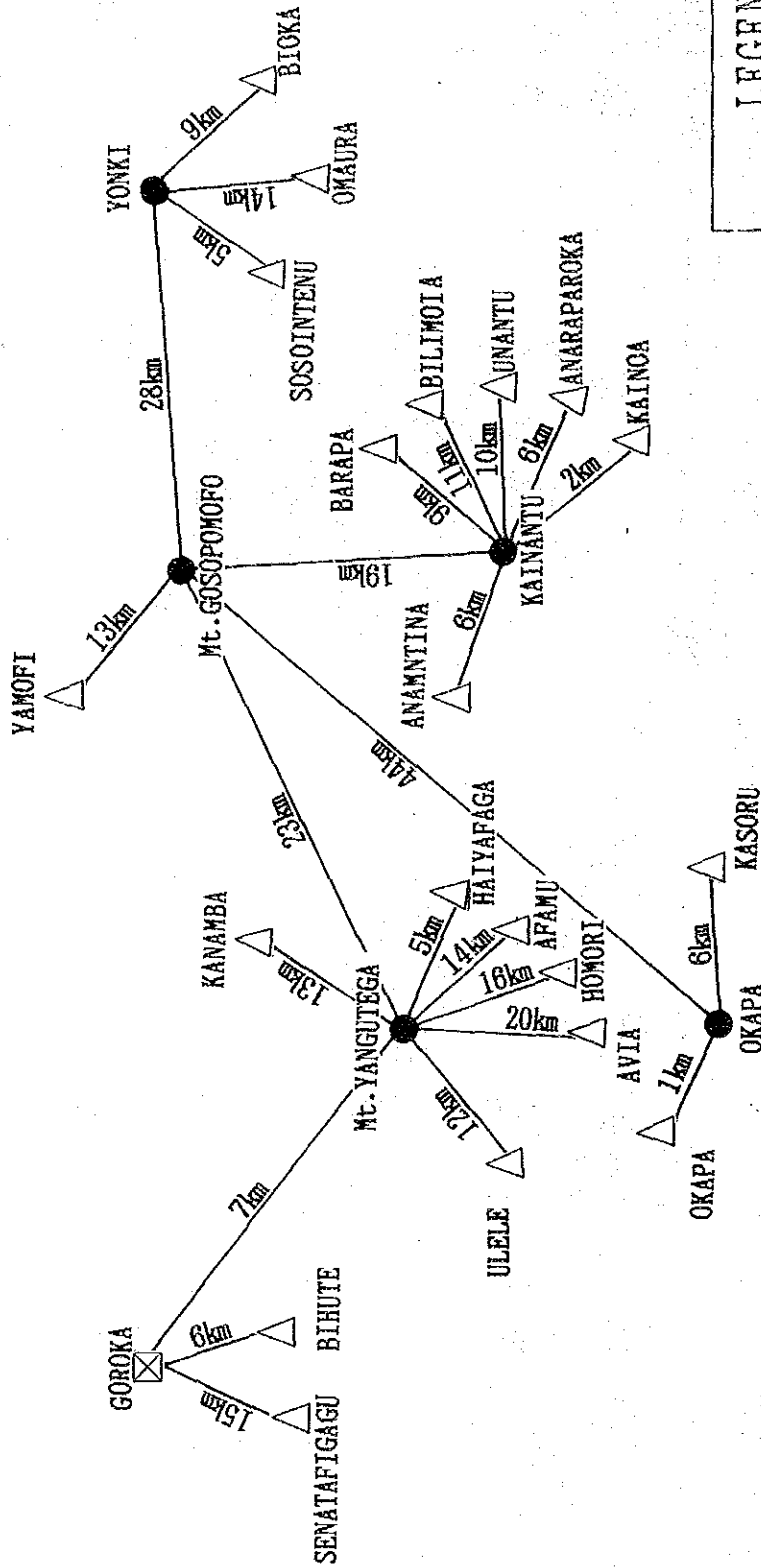
WESTERN HIGHLANDS Province



CHIMBU Province



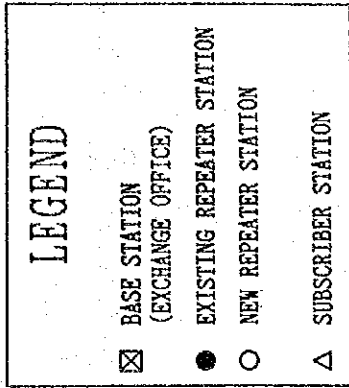
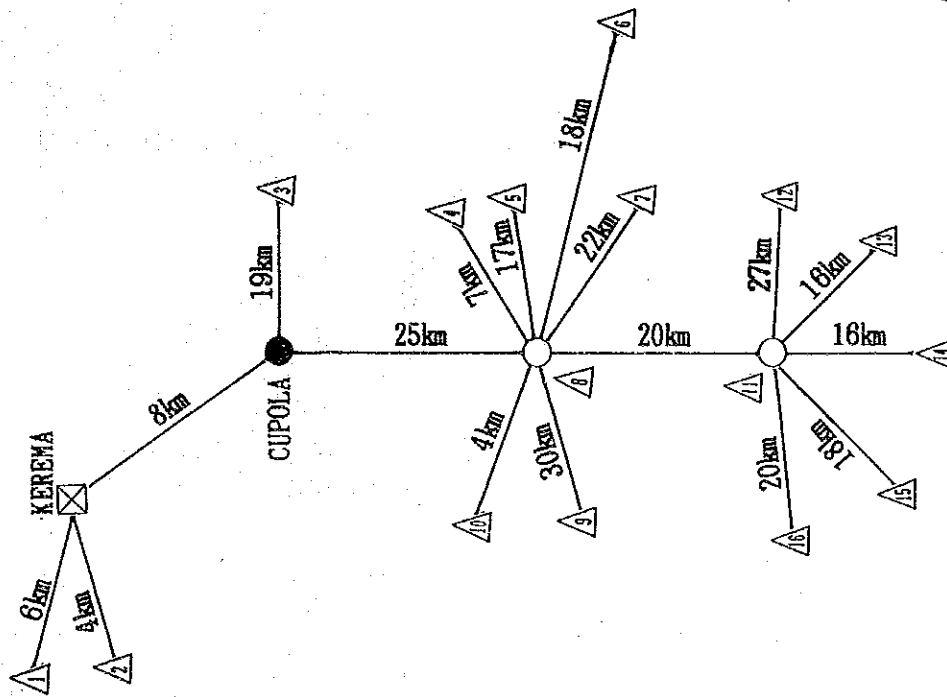
EASTERN HIGHLANDS PROVINCE



LEGEND

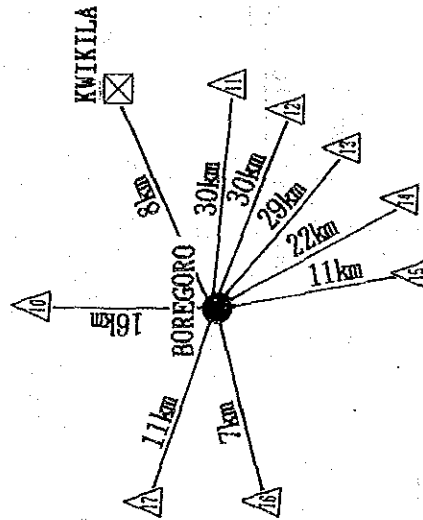
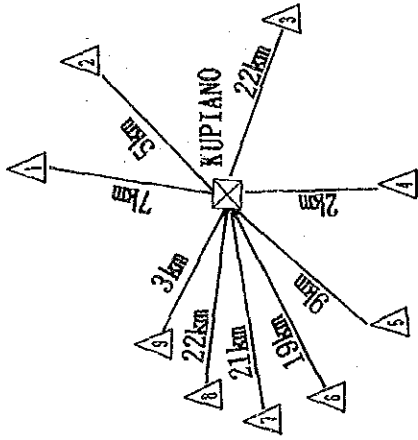
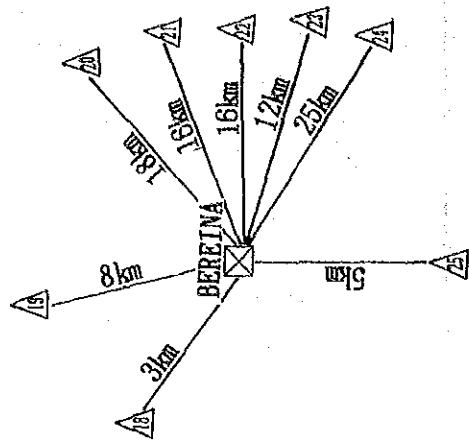
- ☒ BASE STATION (EXCHANGE OFFICE)
- EXISTING REPEATER STATION
- △ SUBSCRIBER STATION

GULF Province



- | | | |
|----------|----------|---------------|
| △ 1 | △ 7 | △ 13 |
| MEI'IL | KUKIPI | LESE HAVIHARA |
| △ 2 | △ 8 | △ 14 |
| UARIPI | KOARU | LESE KAVORA |
| △ 3 | △ 9 | △ 15 |
| KARAMA-1 | LULUAPO | LESE OALAI |
| △ 4 | △ 10 | △ 16 |
| HAMUHAMU | LELEFIRU | MIARU |
| △ 5 | △ 11 | |
| HEAVALA | URITAI | |
| △ 6 | △ 12 | |
| HEATOARE | LOKEA | |

CENTRAL Province



- | | | | | | | | |
|---|------------|----|-----------|----|----------|----|--------------|
| 1 | WAIORI | 9 | KELERAKWA | 17 | GABAGABA | 25 | AVIARA-WAIMA |
| 2 | WANIGELA | 10 | BORGAINA | 18 | EREERE | | |
| 3 | KAPARI | 11 | TAURUBA | 19 | INAWI | | |
| 4 | GAVUONE | 12 | MAKIRUFU | 20 | BIOTO | | |
| 5 | WAIRAVANUA | 13 | IRUPARA | 21 | INAWAIA | | |
| 6 | MAOPA-1 | 14 | KAPAROKO | 22 | INAWABUI | | |
| 7 | ILIMORUPU | 15 | KEMABOLO | 23 | RAPA | | |
| 8 | PELAGAI | 16 | TAURUBA | 24 | DELENA | | |

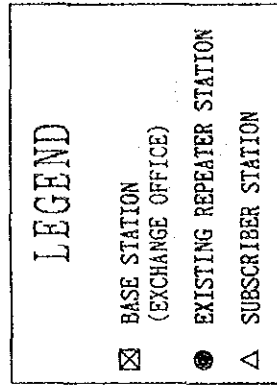
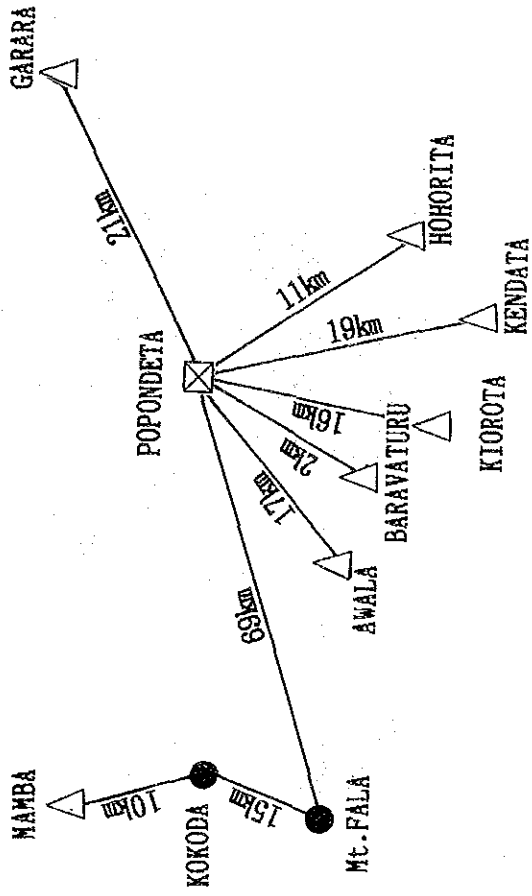
LEGEND

X BASE STATION
 (EXCHANGE OFFICE)

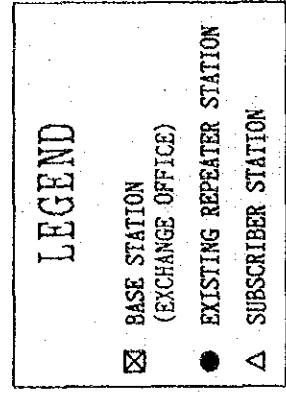
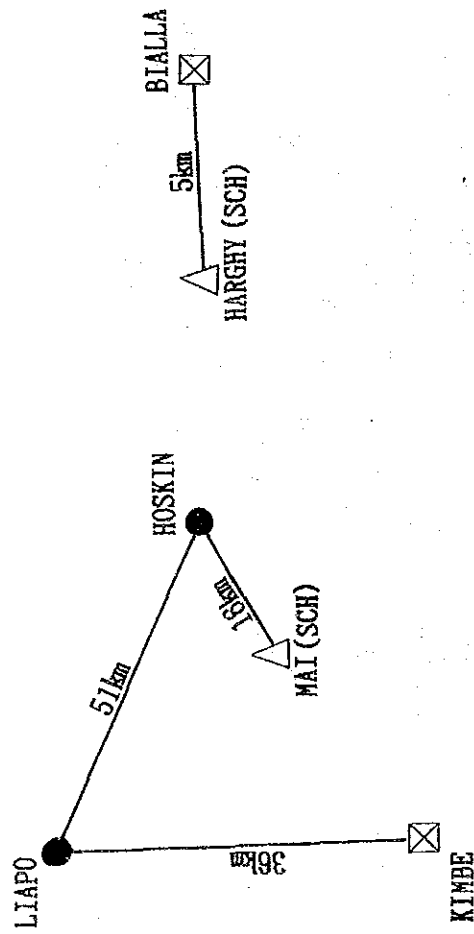
● EXISTING REPEATER STATION

△ SUBSCRIBER STATION

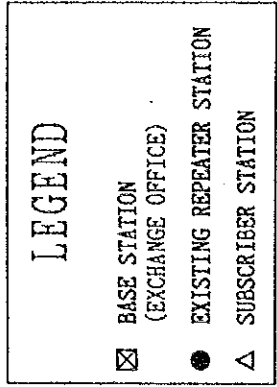
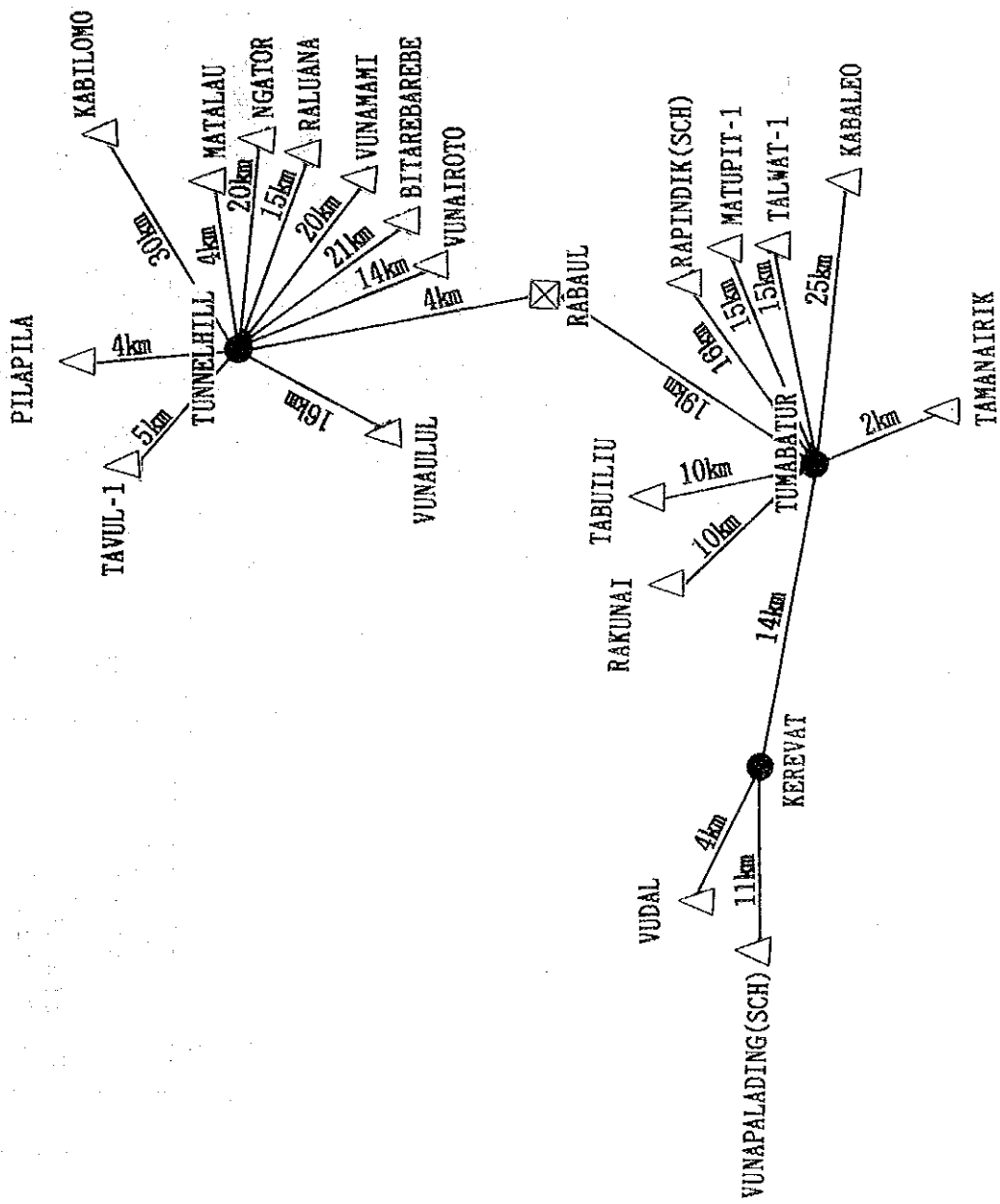
NORTHERN Province



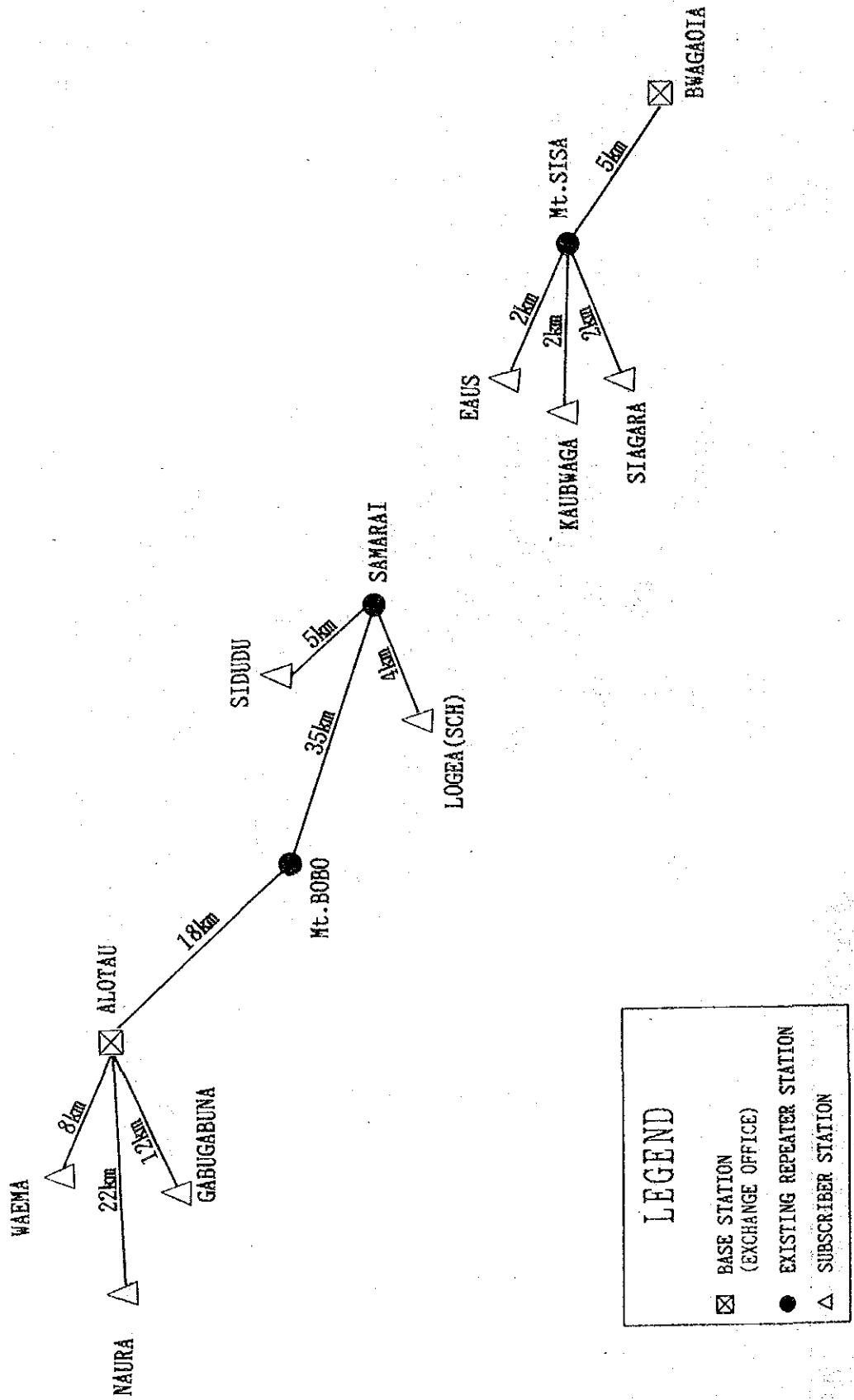
WEST NEW BRITAIN PROVINCE



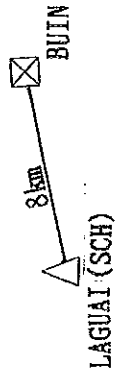
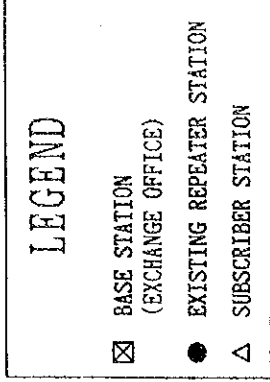
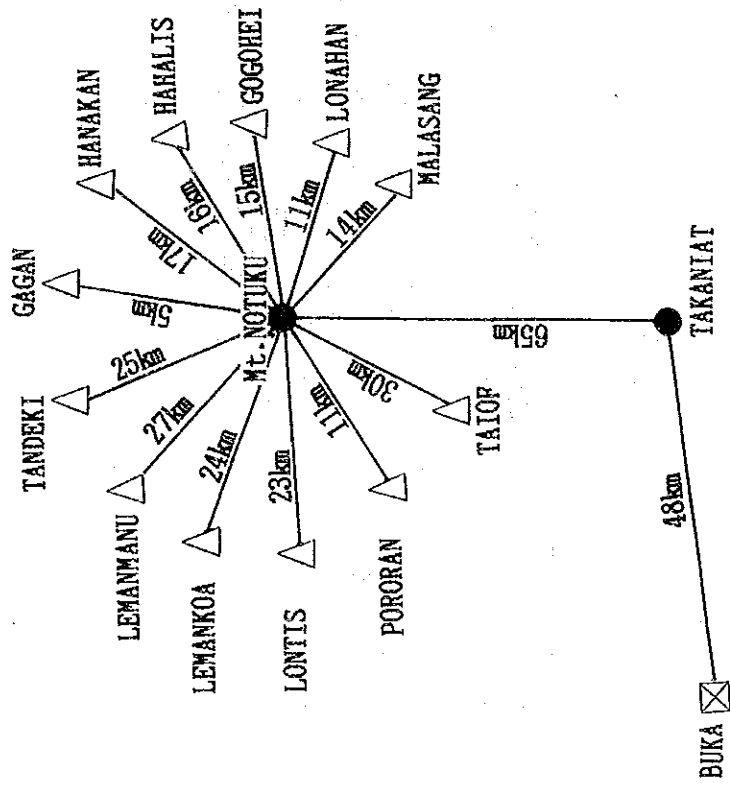
EAST NEW BRITAIN PROVINCE



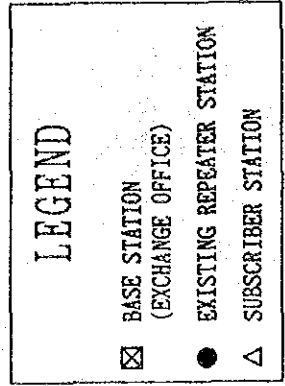
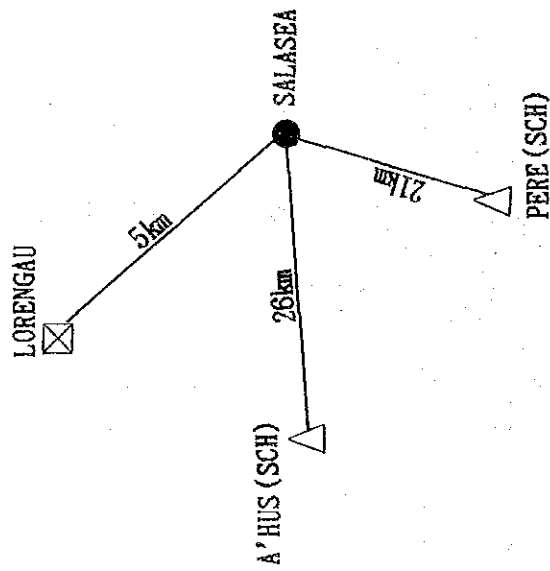
MILNE BAY Province



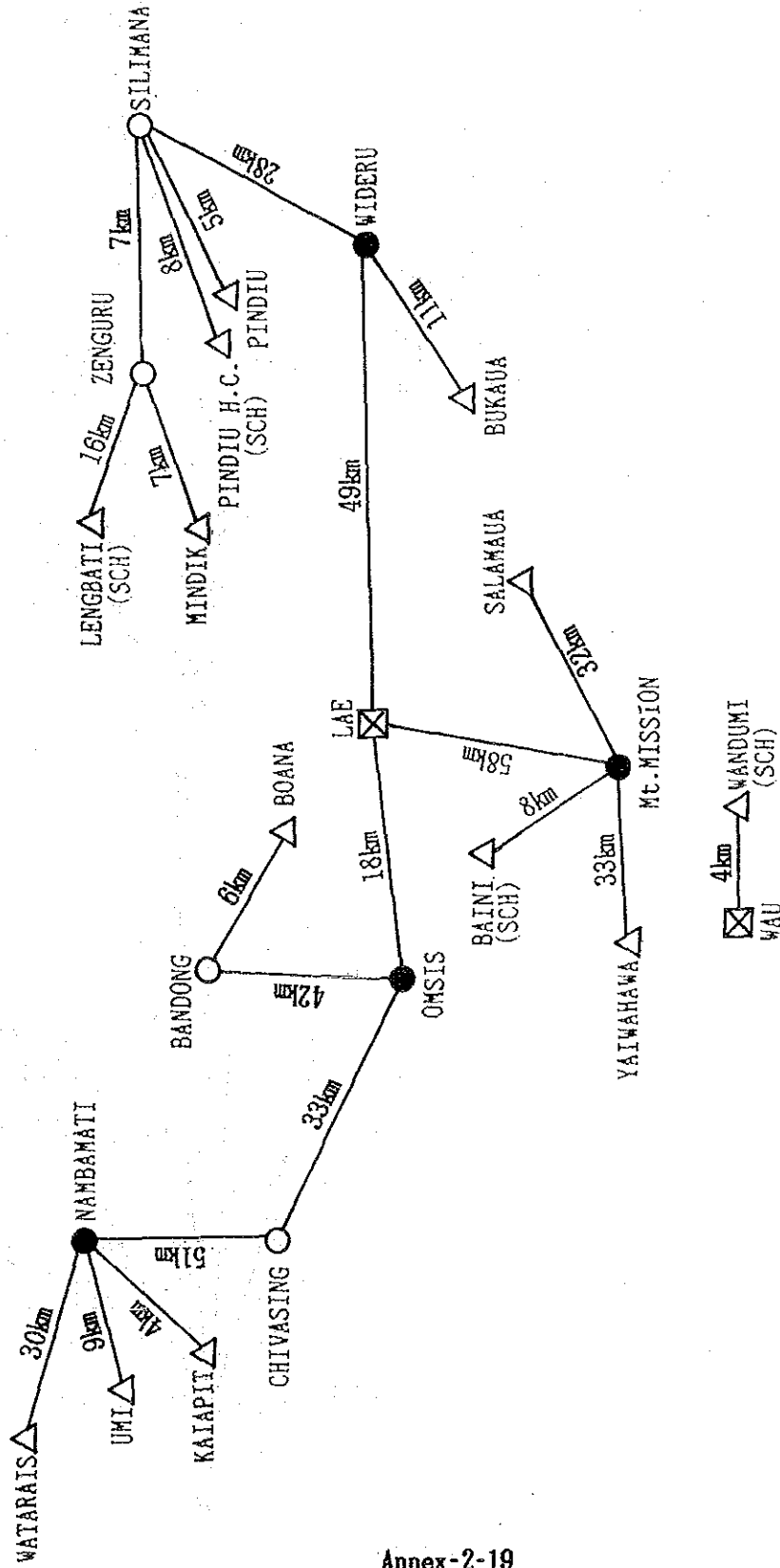
NORTH SOLOMONS PROVINCE



MANUS Province



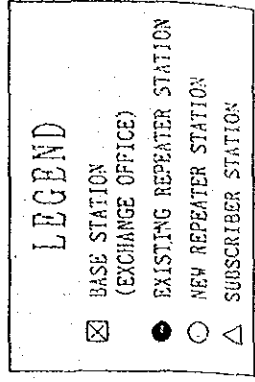
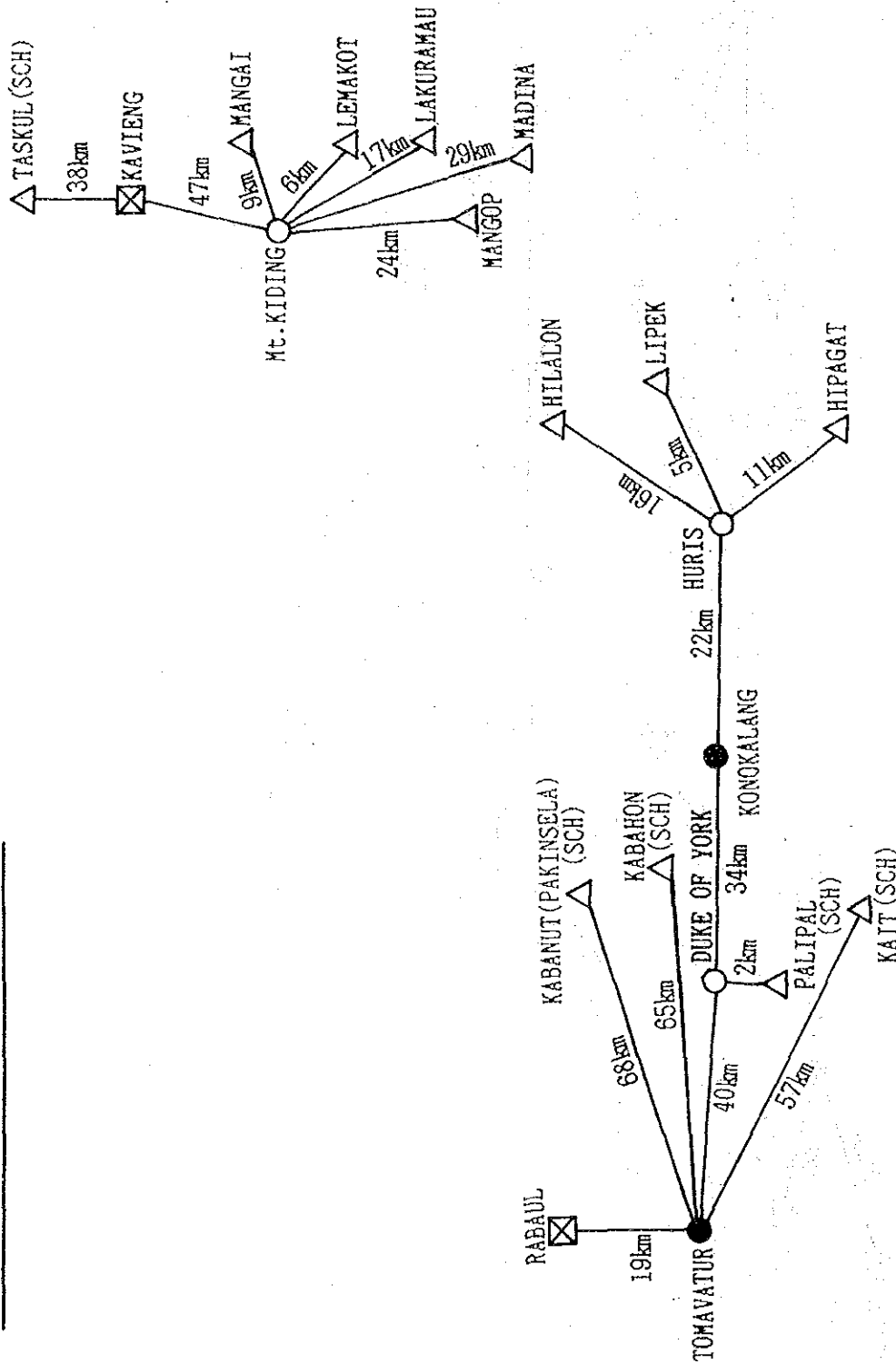
MOROBE PROVINCE



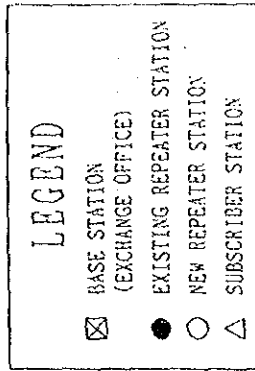
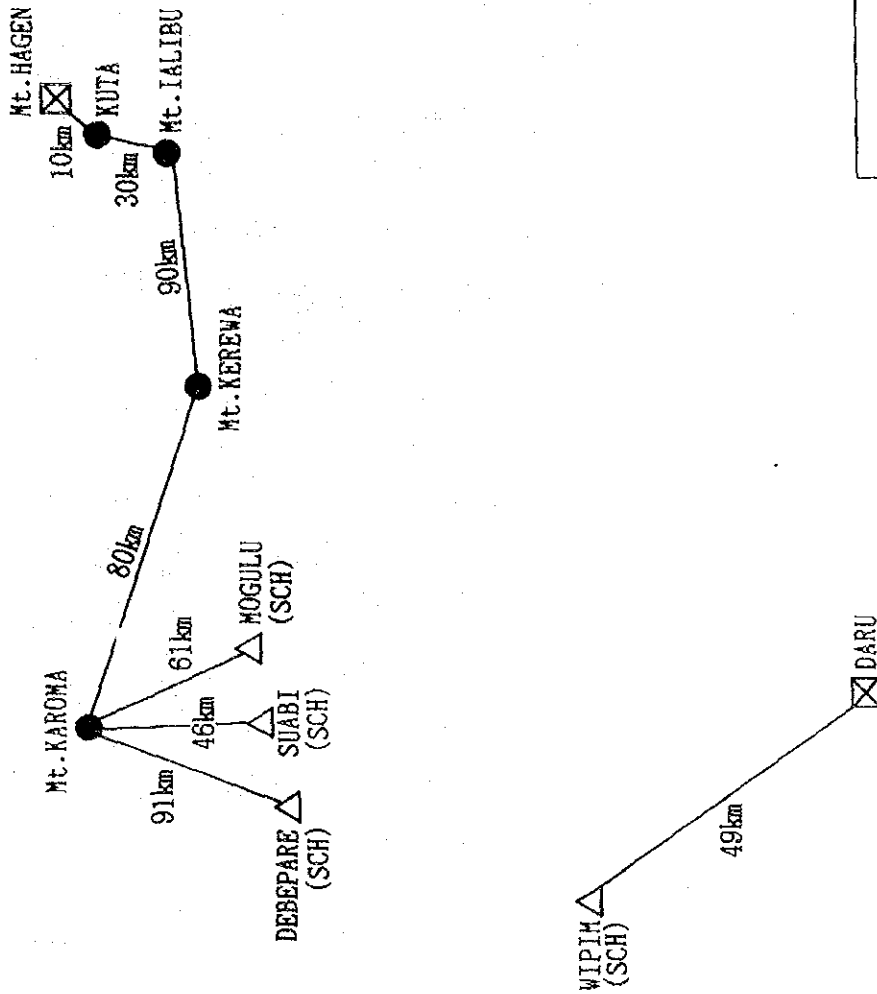
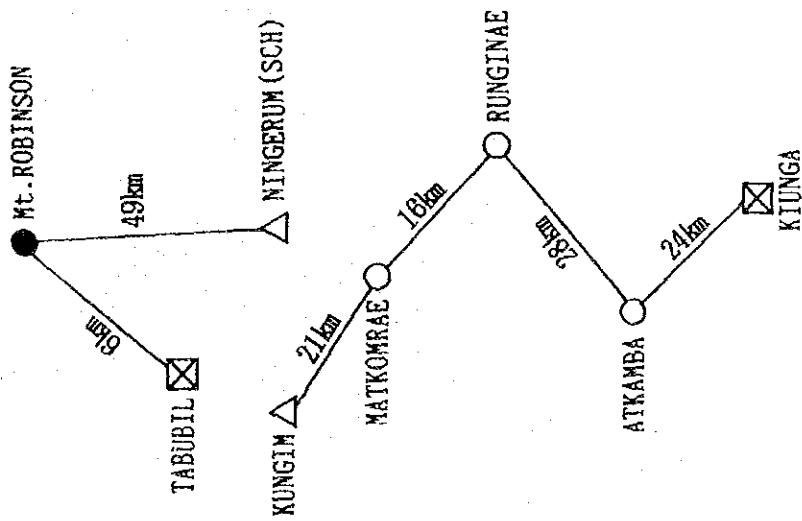
LEGEND

- ☒ BASE STATION (EXCHANGE OFFICE)
- EXISTING REPEATER STATION
- NEW REPEATER STATION
- △ SUBSCRIBER STATION

NEW IRELAND PROVINCE



WESTERN PROVINCE



ANNEX 3

TRAFFIC DATA OF OBJECTIVE VILLAGES

TRAFFIC DATA OF THE OBJECTIVE VILLAGES

	Province Name	Village Name	Exchange Centre	Rank	Traffic
1	Western	Wipim	Daru	C	0.06
2		Ningerum	Tabubil	C	0.06
3		Runginae	Kiunga	C	0.07
4		Matkomrae		B	0.14
5		Atkamba		C	0.07
6		Kungim		C	0.07
7		Mogulu	Tari	B	0.17
8		Suabi		C	0.09
9		Debepare		C	0.09
Sub Total 9 villages					0.82
1	Morobe	Pindiu	Lae	B	0.17
2		Pindiu H.C		C	0.09
3		Mindik		B	0.17
4		Lengbate		B	0.17
5		Bukaua		B	0.17
6		Silimana		C	0.09
7		Zenguru		C	0.09
8		Kaiapit		B	0.17
9		Watarais		C	0.09
10		Umi		C	0.09
11		Chivasing		B	0.17
12		Bandong		B	0.17
13		Boana		A	0.28
14		Salamaua		A	0.28
15		Baini		B	0.17
16		Yaiwahawa		B	0.17
17		Wandumi	Wau	B	0.09
Sub Total 17 village					2.63
1	New Ireland	Mangop	Kavieng	B	0.10
2		Madina		C	0.06
3		Mangai		B	0.10
4		Lakulamau		C	0.06
5		Lemakot		C	0.06
6		Taskul		B	0.10
7		Hilalon	Rabaul	C	0.06
8		Lipek		C	0.06
9		Hipagat		B	0.12
10		Huris		C	0.06
11		Kabanut		B	0.12
12		Kait		C	0.06
13		Palipal		C	0.06
14		Kabahon		B	0.12
Sub Total 14 villages					1.14

	Province Name	Village Name	Exchange Centre	Rank	Traffic
1	West Sepik	Paup	Aitape	C	0.06
2		Ulau 1		C	0.06
3		Yakamul		C	0.06
4		Ali Island		C	0.06
5		Hambasamba		C	0.06
6		Akosamei 1		C	0.06
7		Klaple 1		C	0.06
8		Wilwil		C	0.06
9		Vanimo	Vanimo	C	0.06
10		Waromu		C	0.06
Sub Total 10 villages					0.60
1	East Sepik	Biwat	Angoram	C	0.07
2		Changrima		C	0.07
3		Maramba		C	0.07
4		Kambaramba		B	0.13
5		Kambot		C	0.07
6		Wom		C	0.07
7		Kaminimbet		Maprik	C
8		Tambanum	C		0.05
9		Sagisik	C		0.05
10		Kalabui	C		0.05
11		Jambitange	C		0.05
12		Kaugiak	C		0.05
13		Wombisa	C	0.05	
14		Kanganaman	C	0.05	
15		Korogo	C	0.05	
16		Avatip	C	0.05	
17		Tongwinjame	C	0.05	
18		Walis	Wewak	C	0.06
19		Woginara 2		C	0.06
20		Passam		C	0.06
21		Ambukanja		C	0.06
22		Kumbuhon		C	0.06
23		Kaboibus		C	0.06
Sub Total 23 villages					1.39
1	Madang	Nobanob	Madang	C	0.06
2		Riwo		C	0.06
3		Siar		C	0.06
4		Kranket		C	0.06
5		Boroman		C	0.06
6		Did		C	0.06
7		Kevasop		C	0.06
8		Kuduk		C	0.06
9		Kumoria 1&2		C	0.06
10		Kurum		C	0.06
11		Marup 1		C	0.06
12		Marup 2		C	0.06
13		Malala		C	0.06
Sub Total 13 villages					0.78

	Province Name	Village Name	Exchange Centre	Rank	Traffic
1	Southern Highlands	Andowari	Tari	C	0.09
2		Hangapo		C	0.09
3		Hewate		C	0.09
4		Itapu		C	0.09
5		Kela		C	0.09
6		Kugu		C	0.09
7		Munima		C	0.09
8		Paijaka		C	0.09
9		Hambuari		C	0.09
10		Kupari		B	0.17
11		Piribu		B	0.17
12		Iagome		C	0.09
13		Tauri		C	0.09
14		Tigibi		B	0.17
15		Idauwi		C	0.09
16		Det		B	0.17
17		Kongu		C	0.09
18		Kum		C	0.09
19		Mato		C	0.09
20		Udjabia		C	0.09
21		Enjua		C	0.09
22		Semin		B	0.17
23		Uba		C	0.09
24		Almanda		C	0.09
25		Boia		C	0.09
26		Egenda		C	0.09
27		Herep		C	0.09
28		Injip		C	0.09
29		Onidol		C	0.09
30		Pulim		C	0.09
31		Soii		C	0.09
32		Suma		C	0.09
33		Ombal		C	0.09
34		Sebiba		C	0.09
35		Songura		C	0.09
36		Birap	Mendi	B	0.11
37		Lumbi		C	0.06
38		Tutam		C	0.06
39		Ita		C	0.06
40		Takuanda		C	0.06
41		Batri		C	0.06
42		Karanda		C	0.06
43		Marorogo		C	0.06
44		Apenda		C	0.06
45		Kauwo		B	0.11
46		Maia		C	0.06
47		Maupini		C	0.06
48		Noiya		C	0.06
49		Takuru		C	0.06
50		Walapape		C	0.06
51		Kireni		C	0.06
52		Muli		C	0.06

	Province Name	Village Name	Exchange Centre	Rank	Traffic
53	Southern Highlands	Munkumapo	Mendi	C	0.06
54		Ponowi		C	0.06
55		Kendal		C	0.06
56		Kisenapoi		B	0.11
57		Nacope		B	0.11
58		Orei		C	0.06
59		Pakulge		C	0.06
	Sub Total	59 villages			5.19
1	Enga	Aiyak	Tari	B	0.17
2		Yagenda		B	0.17
3		Mungarep		B	0.17
4		Pandami		C	0.09
5		Tibini		C	0.09
6		Kepilam		C	0.09
7		Porgeras		B	0.17
8		Pulukus		B	0.17
9		Yango		C	0.09
10		Kaipare		C	0.09
11		Pipingus		C	0.09
12		Torenam		B	0.17
13		Iuripaka		C	0.09
14		Kalimanga		B	0.17
15		Kambia		B	0.17
16		Kokas		C	0.09
17		Lagalap		B	0.17
18		Murip		B	0.17
19		Pumbur		B	0.17
20		Sawi		C	0.09
21		Supi		B	0.17
22		Wert		B	0.17
23		Andakos		B	0.17
24		Bioko		C	0.09
25		Imapiak		C	0.09
26		Kinduli		C	0.09
27		Poregale		C	0.09
28		Aipanda	Wabag	B	0.11
29		Biaka		C	0.06
30		Sari		B	0.11
31		Supas		B	0.11
32		Birip		B	0.11
33		Irelya		B	0.11
34		Yalis		C	0.06
35		Mukurumanda		B	0.11
36		Paus		B	0.11
37		Pina		C	0.06
38		Pompabus		B	0.11
39		Wapenamanda		C	0.06
40		Yaramanda		B	0.11
41		Raiagam		C	0.06
	Sub Total	41 villages			4.84

	Province Name	Village Name	Exchange Centre	Rank	Traffic
1	Western Highlands	Baisu	Banz	B	0.09
2		Kongra		C	0.05
3		Ambuga		C	0.05
4		Buk 1		B	0.09
5		Kenembo		C	0.05
6		Kinjibi		C	0.05
7		Kotna 2		C	0.05
8		Nunga 1		C	0.05
9		Palgi		C	0.05
10		Gumant		A	0.16
11		Aviamp 1		B	0.09
12		Aviamp 2		C	0.05
13		Kugmal		C	0.05
14		Kurumul 1&2		B	0.09
15		Kimil		B	0.09
16		Milep 1		C	0.05
17		Nondugle		B	0.09
18		Numbakora		C	0.05
19		Talu		B	0.09
20		Bunumwo		C	0.05
21		Fatima		C	0.05
22		Koban Pltn		C	0.05
23		Kaip	Mt. Hagen	B	0.14
24		Kiliga 1		B	0.14
25		Wurep 1&2		A	0.22
26		Warawau		C	0.07
27		Koibuga 1		C	0.07
28		Koibuga 2		C	0.07
29		Kelua 1		C	0.07
30		Kelua 2		B	0.14
31		Keltiga		B	0.14
32		Ketiga		B	0.14
33		Kik		B	0.14
34		Koge		B	0.14
35		Koglamp		B	0.14
36		Minimp		C	0.07
37		Ogelbeng		C	0.07
38		Alimp		C	0.07
39		Malda		B	0.14
40		Olk		C	0.07
41		Papakola		C	0.07
42		Tega 2		C	0.07
43		Balk 2		C	0.07
44		Bukapena		C	0.07
45		Kwip 2		C	0.07
46		Rugu(Rugil)		C	0.07
47		Wurep 2		C	0.07
48		Tigi 1		C	0.07
49		Paiagona 1&2		B	0.14
50		Kailge		C	0.07
51	Yumpiga	C		0.07	
	Sub Total	51 villages			4.37

	Province Name	Village Name	Exchange Centre	Rank	Traffic
1	Chimbu	Pari RH	Kundiawa	B	0.11
2		Yungle		B	0.11
3		Mintima		B	0.11
4		Wandi		B	0.11
5		Kel		B	0.11
6		Munuma		C	0.06
7		Gaima		B	0.11
8		Genabona		B	0.11
9		Sipagul		B	0.11
10		Mogl		B	0.11
11		Gurema		B	0.11
12		Niglgum		A	0.18
13		Ninemul		B	0.11
14		Kwima		C	0.06
15		Kup		C	0.06
16		Wara Nomans		C	0.06
17		Ri		C	0.06
18		Moromambuno		B	0.11
19		Gagugl		B	0.11
20		Awage		B	0.11
21		Moroma		C	0.06
22		Kendine		A	0.18
23		Kaglma		B	0.11
24		Kunabau		C	0.06
25		Goglime		C	0.06
Sub Total 25 villages					2.49
1	Eastern Highlands	Senafanigagu	Goroka	C	0.05
2		Bihute		C	0.05
3		Haiyafaga		C	0.05
4		Ulele		C	0.05
5		Afamu		C	0.05
6		Homori		C	0.05
7		Kanamba		C	0.05
8		Avia		C	0.05
9		Yanofi		C	0.05
10		Anamontina		C	0.05
11		Anaraparoka		C	0.05
12		Barapa		C	0.05
13		Bilimoia		C	0.05
14		Kainoa		C	0.05
15		Sosointenu		C	0.05
16		Unantu		C	0.05
17		Bioka		C	0.05
18		Omaura		C	0.05
19		Kasoru		C	0.05
20		Okapa		C	0.05
Sub Total 20 villages					1.00

Province Name	Village Name	Exchange Centre	Rank	Traffic
1 Gulf	Mei'i I	Kerema	C	0.06
	2 Uaripi		C	0.06
	3 Karama I		C	0.06
	4 Koaru		C	0.06
	5 Hamuhamu		C	0.06
	6 Heatoare		B	0.12
	7 Heavala		B	0.12
	8 Kukipi		C	0.06
	9 Lelefiru		C	0.06
	10 Luluapo		C	0.06
	11 Uritai		B	0.12
	12 Tokea		A	0.20
	13 Lese Havihara		C	0.06
	14 Lese Kavora		C	0.06
	15 Lese Oalai		C	0.06
	16 Miaru		B	0.12
Sub Total 16 villages				1.34
1 Central	Gavuone	Kupiano	B	0.17
	2 Ilimorupu		C	0.09
	3 Kapari		C	0.09
	4 Kelerakwa		C	0.09
	5 Maopa I		C	0.09
	6 Pelagai		C	0.09
	7 Waiori		B	0.17
	8 Wairavanua		C	0.09
	9 Wanigela		A	0.28
	10 Borgaina		Kwikila	C
	11 Gabagaba	C		0.06
	12 Irupara	C		0.06
	13 Kalo	C		0.06
	14 Kaparoko	C		0.06
	15 Kemabolo	C	0.06	
	16 Makirupu	C	0.06	
	17 Tauruba	C	0.06	
	18 Bioto	Bereina	C	0.09
	19 Delena		C	0.09
	20 Rapa		C	0.09
	21 Aviara-Waima		C	0.09
	22 Ere-Ere		C	0.09
	23 Inawabui		C	0.09
	24 Inawaia		C	0.09
	25 Inawi		C	0.09
Sub Total 25 villages				2.36

	Province Name	Village Name	Exchange Centre	Rank	Traffic	
1	Northern	Namba	Popondeta	C	0.05	
2		Awala		C	0.05	
3		Baravaturu		C	0.05	
4		Kendata		C	0.05	
5		Kiorota		B	0.10	
6		Hohorita		C	0.05	
7		Garara		C	0.05	
	Sub Total	7 villages			0.40	
1	West New Britain	Harghy	Bialla	C	0.05	
2		Mai	Kimbe	C	0.05	
	Sub Total	2 villages			0.10	
1	East New Britain	Raluana	Rabaul	C	0.06	
2		Vunaulul		C	0.06	
3		Ngator		C	0.06	
4		Vunamami		C	0.06	
5		Bitarebarebe		C	0.06	
6		Kabaleo TCH		C	0.06	
7		Pilapila		C	0.06	
8		Tavul i		C	0.06	
9		Rakunai		C	0.06	
10		Tavuiliu		C	0.06	
11		Kabilomo		C	0.06	
12		Matalau		C	0.06	
13		Talwal		C	0.06	
14		Rapindik		B	0.12	
15		Matupit 1		C	0.06	
16		Vudal Agri College		C	0.06	
17		Vunapalading Sett		C	0.06	
18		Vunairoto		C	0.06	
19		Tamanairik		C	0.06	
	Sub Total	19 villages			1.20	
1	Milne Bay	Gabugabuna	Alotau	C	0.05	
2		Naura		C	0.05	
3		Waema		C	0.05	
4		Logea		C	0.05	
5		Sidudu		C	0.05	
6		Faus		Bwagaioia	C	0.05
7		Kaubwaga			C	0.05
8		Siagara			C	0.05
	Sub Total	8 villages			0.40	
1	North Solomons	Hahalis	Buka	C	0.07	
2		Hanahan		C	0.07	
3		Lemankoa		B	0.13	
4		Lemanmanu		B	0.13	
5		Lontis		B	0.13	
6		Tandeki		C	0.07	
7		Gagan		C	0.07	
8		Pororan		C	0.07	

	Province Name	Village Name	Exchange Centre	Rank	Traffic
9	North Solomons	Gogohei 1	Buka	C	0.07
10		Lonahan		C	0.07
11		Malasang		B	0.13
12		Taiof		C	0.07
13		Laguai	Buin	C	0.07
Sub Total 13 villages					1.15
1	Manus	A'hus	Lorengau	C	0.07
2		Pere		C	0.07
Sub Total 2 villages					0.14
Grand Total 374 villages					32.34



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