

Resettlement Plan

September 2013

PNG: Highlands Region Road Improvement Program: Project 2

Prepared by Department of Works, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 06 September 2013)

Currency unit	–	kina (K)}
K1.00	=	\$.44
\$1.00	=	K 2.25

ABBREVIATIONS

ADB	-	Asian Development Bank
AP	-	Affected people
AH	-	Affected Household
BM&E	-	Benefit Monitoring and Evaluation
CEP	-	Community Engagement Program
COA	-	Certificate of Alienability
CRP	-	Community Relations Program
DLO	-	District Lands Officer
DLPP	-	Department of Lands and Physical Planning
DMS	-	Detailed measurement survey
DOW	-	Department of Works
EA	-	Executing Agency
GoPNG	-	Government of Papua New Guinea
HH	-	Highlands Highway
HRMG	-	Highlands Region Maintenance Group
HRRIP	-	Highlands Region Roads Improvement Investment Program
IA	-	Implementing Agency
IMO	-	Independent monitoring organization
LIR	-	Land Investigation Report
LLCM	-	Local Land Court Magistrate
LLG	-	Local-Level Government
LSD	-	Lands and Survey Division
MFF	-	Multi-Tranche Financing Facility
M&E	-	Monitoring and Evaluation
MOA	-	Memorandum of Agreement
NGO	-	Non-governmental organization
NRA	-	National Roads Authority
NTDP	-	National Transport Development Plan
PA	-	Provincial Administrator
PLO	-	Provincial Land Officer
PNG	-	Papua New Guinea
RF	-	Resettlement Framework
RP	-	Resettlement Plan
RIZ	-	Road Influence Zone
SHP	-	Southern Highlands Province
SP	-	Subproject Profile
T2	-	Tranche 2
WHP	-	Western Highlands Province

NOTE

- (i) In this report, "\$" refers to US dollars.

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I. EXECUTIVE SUMMARY

1. This is the Resettlement Plan (RP) for Mendi-Tambul (55.53 km) road section under the Tranche 2 (T2) of the Highlands Region Roads Improvement Investment Program (HRRIP) for Papua New Guinea (PNG) to upgrade, rehabilitate and maintain roads in the Highlands Highway (HH) network in PNG. This RP is based on the assessment of land acquisition impacts during the detailed engineering design for the road improvements as determined through a Detailed Measurement Survey (DMS). The term “land acquisition” in the RP has been used as a process to obtain land through negotiation; an expropriation or compulsory land acquisition is not expected.

2. In accordance with the HRRIP eligibility criteria for sub-project roads, every effort has been made to minimize impacts on land acquisition and resettlement for this road section. The engineering design for road upgrading and rehabilitation has been formulated to minimize the need to acquire additional land outside of the existing road alignment, to the extent feasible and consistent with agreed design standards and good engineering practice. Among the options considered to minimize resettlement effects were (a) moving the affected structures outside the construction limits, if possible, (b) shifting the road alignment to the opposite side of the affected structure, (c) narrowing of the road shoulders in front of the affected structures, and (d) adjustments on the drainage component to minimize resettlement impacts. However, there are some unavoidable land acquisition and resettlement required to undertake and complete the road project. The summary of the impacts are shown in the following **Error! Reference source not found..**

TABLE 1 SUMMARY OF IMPACTS

Affected Asset	Unit	Total
Land	Square meter	611,945.23
House	Number of houses	6
Trade Store	Number of trade stores	20
Other Structures	Number of farm structures	12
Fences	Number of fences	410
Grave Sites	Number of gravesites	10
Graves	Number of graves	13
Tree Crops	Number of trees	1,295
Single Plants and Trees	Number of plants and trees	16,374
Clump Plants and Trees	Number of plants and trees	51,123
Single Plants	Number of plants	4,276
Vines or Clump Plants	Number of plants	986
Mound Plants	square meter	943
Forest Trees	Number of trees	19,197
Business Losses	Number of households	20
Women Headed Households	Number of households	12
Handicapped Headed Households	Number of households	3
Elderly Headed Households	Number of households	39

3. The cut-off date is the date when the DMS was completed which is June 12, 2013 in this road sub-project. The DMS indicated that the project would permanently use an additional 611, 945.23 sqm of land occupied by 7 tribes/clans whose assets such as

structures, crops and trees and fences will be affected. Based on the DMS there would be losses of 6 houses and 20 trade stores as well as 10 grave sites containing 13 graves. In addition, there are 943 sq.m of affected area planted with mound plants and 92, 251 annual and perennial plants and trees that would be affected by the project. There are 20 small businesses that will suffer business losses and 54 households that are classified as vulnerable households and hence would be eligible to receive vulnerability allowances. The subproject's resettlement category is Category B as the number of affected persons (APs) being physically displaced is only 6 households (around 31 persons) and 7 tribes/clans losing land. In addition, the loss of land or income generating assets is below 10% (insignificant).

4. The consultation process in the project area has been undertaken by DOW and its consultants with assistance from both Provincial and District Administration offices. The APs have already been informed about their right to file complaints and/or queries on any aspects of land acquisition compensation, and resettlement. Different techniques of consultations with stakeholders were used during the project preparation such as in-depth interviews, public meetings, focus group discussions, etc. A census and inventory of losses (DMS) and socio-economic survey were conducted to determine the extent of losses and establish the socio-economic profile of the AHs/APs. Consultations were held with the different villages and included provincial, district and local ward officials and leaders, tribal, clans and sub-clans leaders and the local communities. Consultations were carried out with special emphasis on the vulnerable groups. Public disclosure have been undertaken to disseminate the resettlement plan to APs, communities and different national and local government agencies.

5. The resettlement plan was presented to the ward councilors, tribal and clan leaders and direct stakeholders in Mendi and Tambul districts. They were provided copies of the MOAs for the use of customary land in exchange of public infrastructure. The project entitlements included in the MOA was explained and an open forum followed the information dissemination of project policies and entitlements. In addition, public disclosure on the resettlement plan was also conducted with provincial and district leaders who will help in the implementation of the RP.

6. This RP has been developed as per ADB's Safeguard Policy Statement (SPS) and the pertinent laws of Papua New Guinea. Where the laws of PNG are not clear, a project-specific set of resettlement principles consistent with ADB policy has been adopted. The project's policy principles on involuntary resettlement are in line with SPS principles as follow: (1) Screen early and assess resettlement impacts; (2) Carry out consultations with APs and develop a grievance redress mechanism; (3) Improve/restore livelihoods of APs through land-based strategies, replacement of lost assets, compensation at replacement cost, and additional benefits, as appropriate; (4) Provide appropriate assistance to physically displaced APs; (5) Improve living standards of poor APs and other vulnerable groups; (6) develop transparent procedures for negotiations; (7) provide assistance and compensation to non-titled APs for loss of non-land assets; (8) Prepare RPs; (9) disclose RPs to APs and other stakeholders and document the consultation process; (10) conceive and execute resettlement as part of the project; (11) deliver entitlements to APs before their physical or economic displacement; and (12) monitor and assess resettlement outcomes.

7. Based on nature of losses/impacts, entitlement for compensation has been earmarked in the entitlement matrix. The entitlements are described in the Chapter 8 on Entitlement, Assistance and Benefits and summarized in the Entitlement Matrix.

8. The DOW as the executing agency has overall responsibility to manage the planning, implementation and monitoring related to acquiring use rights for additional land to implement the project, as well as compensation for damages on project-affected land. The

Highlands Region Maintenance Group (HRMG), as the Implementing Agency (IA) for HHRIP subprojects to upgrade and rehabilitate roads, has the responsibility delegated by the DOW to carry out the planning, implementation and monitoring for land activities, as required. DOW, in coordination with Provincial and District Administrations and through its project implementation unit (HRMG) will implement this RP following approval by ADB. A timeline for RP implementation and post implementation activities has been prepared in accordance with processes covered under this RP.

9. The involvement of local government units is vital in the implementation of the RP. The Provincial Land Officer (PLO) will collaborate with HRMG to plan, implement and monitor land activities for HHRIP subprojects in the province and/or delegate responsibility to the relevant District Land Officers (DLO).

10. Grievances will be addressed adequately at all stages of project development. An internal grievance mechanism will be established at the province level with the primary objective of facilitating conflict resolution and minimize court cases. It will also provide affected people with a forum to air their objections and address their issues and concerns adequately. If the AP is still not satisfied with the ruling of the DOW, the AP may take the grievance to the PNG Judicial System.

11. The resettlement cost estimate for this project includes eligible compensation, rehabilitation assistance and support costs for RP implementation. The EA (DOW) will ensure timely allocation of funds and availability of resources for compensation and assistance to the affected households. DOW will plan in advance and include in their budget its counterpart funding for this project. The total estimated cost for resettlement for the Mendi-Tambul is estimated to be **K1, 150, 080.13**.

12. The implementation schedule for this RP has been scheduled based on the overall project implementation. All related activities related to land acquisition and resettlement are planned to ensure that compensation is paid prior to displacement and commencement of civil works. Public consultations, internal and external monitoring will be undertaken intermittently throughout the project duration.

13. The RP implementation will be closely monitored to provide DOW with an effective basis for assessing resettlement progress and identifying potential difficulties and issues. During the implementation of the RP, the HRMG will prepare semi-annual safeguard monitoring reports and submit these reports to ADB in addition to regular quarterly progress reports as part of project performance monitoring. The DOW will appoint an independent monitoring expert or organization (IMO) to undertake external monitoring. The IMO will prepare bi-annual monitoring reports; and, conduct post-acquisition evaluations twelve (12) months after compensation is completed for each subproject. All IMO reports will be submitted to HRMG and ADB.

16. The start of the road is at Tente which is about a kilometer away from Mendi Town. The junction connects to Mendi-Kandep road (a subproject under HRRIP Tranche 1) which goes north-east and Tente-Tambul which goes north-west. The road located is in the populated Upper Mendi (part of Mendi/Munihi and Tambul Districts in the Southern Highlands and Western Highlands Provinces respectively).

17. The road traverses Koin Village, Mountain Paiya, and Enep, then to Kundaka Junction. After Kundaka junction, the road traverses through several village hamlets, ceremonial gathering places until Kumea Village. The road stretch between Kumea Village in Southern Highlands and Mianbel Village (Tambul)/ Western Highlands Province is uninhabited. The road is further accessible after Mianbel Village then to Mailge 1 & 2, and Laigam villages up to the end of the project at Kagul Bridge about 2kms away from Tambul Station. The length of the subproject road is 55.53 km.

18. The subproject is located in the LLGs of Mendi Urban and Upper Mendi Rural, both located in the district of Mendi/Minuhu, SHP and Mt. Giluwe Rural LLG in Tambul/Nebilyer District, WHP. The RIZ of the sub-project has a population of 102, 125 persons in 19, 826 households with an average household size of 5.15 persons. The details are shown in the following Table 2 Population Distribution in the Road Influence Zone (2011).

TABLE 2 POPULATION DISTRIBUTION IN THE ROAD INFLUENCE ZONE (2011)

District	LLGs	Total	Male	Female	% of Male	No. HH	HH Size
Mendi/ Munihi	Mendi Urban	17,266	9,009	8,257	52.18%	3,379	5.11
	Upper Mendi Rural	48,335	24,925	23,410	51.57%	7,824	6.18
Tambul/ Nebilyer	Mt. Giluwe Rural	36,524	18,354	18,170	50.25%	8,623	4.24
Sub-Total		102,125	52,288	49,837	51.20%	19,826	5.15

19. Due to the lack of maintenance of the road, fully-grown vegetation and trees have narrowed the road carriageway. The existing pavement at most locations has disappeared and cannot be excavated where they can be incorporated as sub-base in the new construction. Substantial amount of drainage work is required to lay off the storm water from the mountains and hills. Culvert sizes are proposed for creeks that will require replacement and new culverts at other locations to improve the drainage systems.

20. It is proposed that a 5.5 meter sealed carriageway with 0.25 meter gravel shoulders will be provided under the improvement of the Mendi-Tambul road. The shoulders will be sealed in areas where scouring by carriageway run-off could occur due to high gradients or high super elevation or a combination of both. The existing bridges are in reasonable condition and will be retained with rehabilitation as necessary. Additional drainage culverts will be provided and existing culverts replaced as necessary. Roadside drains will be provided to cater for surface water run-off from the carriageway and adjacent earthwork slopes and the drains will be lined where necessary to prevent scour. Road safety features will include traffic signs, pavement markings and guardrails.

21. The subproject works will therefore take place within the existing road corridor and direct impacts are expected between the edge of the existing road and the construction limits. In addition there are some cut works on the mountainsides that are required to further improve the slope and turning geometry. The road widening may exceed 5m, depending on either the width of the cut or fill in a particular road section.

22. The existing road is situated on customary land, the use of which has been agreed in consultation with the clans and communities that jointly own the land. In order to expedite implementation of the project, the use of customary land required to upgrade the road have been agreed upon by the clans and communities through memoranda of agreement (MOAs) permitting the use of customary land for public infrastructure. This resettlement plan (RP) covers the land acquisition impacts from the edge of the existing road up to the construction limits including road clearance, and other infrastructure (e.g., drainage and culverts).

B. Avoiding and Minimizing Land Acquisition

23. The resettlement framework provided for eligibility criteria for sub-project roads in order to qualify for inclusion in the HRRIP. Among the eligibility criteria are provisions that are intended to avoid or minimize the land requirements such as (a) it is an existing or former road, that is, the road bench exists and restitution of a trafficable road does not require major earthworks or the construction of structures; (b) the proposed works avoid the displacement of residential structures or other, permanent structures; (c) the candidate road is on State-owned land (as per the Land Act), or there is a negotiated agreement with affected communities and landowners to use customary land.

24. The engineering design for road upgrading and rehabilitation has been formulated to avoid or minimize the need to acquire additional land outside of the existing road alignment, to the extent feasible and consistent with agreed design standards and good engineering practice. Based on this principle, the area subject to use of additional land starts at the edge of the existing road (both sides) and ends at the outer limits of the construction limits. The construction limits is defined as the area from the edge of the existing road up to the edge of the construction limits that is required to rehabilitate and upgrade the Mendi-Tambul road section.

25. The project team conducted a validation inspection to further avoid or minimize the structures and other land improvement impacts in the project. Among the options of the team to avoid or minimize resettlement effects are (a) shifting the affected structures outside the construction limits, if possible, (b) shifting the road alignment to the opposite side of the affected structure, (c) narrowing of the road shoulders in front of the affected structures, and (d) adjustments on the drainage component to minimize resettlement impacts. Based on the application of these reduction options, the original affected structures were reduced by 131 structures. The details are shown in Table 3 Effects to Avoid and Minimize Land Acquisition.

TABLE 3 EFFECTS TO AVOID AND MINIMIZE LAND ACQUISITION

Affected Asset	Left Side		Right Side		Total Reduction
	Before	After	Before	After	
Houses	12	3	9	3	15
Trade Stores	23	12	25	8	28
Farm House	5	1	2	0	6
Graves Sites	17	6	21	4	28
Toilets	2	2	5	1	4
Others	32	6	26	2	50
Total	91	30	88	18	131

C. Objectives of the Resettlement Plan

26. The purpose of the final Resettlement Plan (RP) is to identify who will be affected by rehabilitation and upgrading of the Mendi-Tambul road, to what degree they will be affected (i.e. what type of loss they will suffer) and how they will be compensated to ensure that they

are not adversely affected by the project or left in a worse situation than in a “without project” case. In all cases, the overall aim is to at least restore, if not enhance, the livelihoods of APs. The primary objective of the RP is to provide necessary details for compensation, resettlement and rehabilitation by identifying (i) the extent of losses; (ii) the policy and framework for compensation payments and relocation; (iii) institutional framework for participation and implementation, and (iv) responsibilities for monitoring during implementation.

III. SCOPE OF LAND ACQUISITION AND RESETTLEMENT

27. In the Mendi-Tambul sub-project, the Lands and Survey Division (LSD) of DOW indicated the whole existing road is located on customary land that has not been alienated to the State as per the Land Act confirmed by the provincial and district personnel who were part of the survey team.

A. Methodology on the Detailed Measurement Survey

28. Based on the detailed engineering design, the detailed measurement survey (DMS) started on middle of March 2013, led by the project's local land acquisition specialist. The questionnaire used in the survey had been previously used in other ADB projects involving resettlement in PNG and in the process, was further fine tuned by its continuous use.

29. During the community public consultations conducted during the DMS, the APs were informed that the cut-off date of the project will be date when the DMS will be completed. This cut-off date was adopted to ensure minimum introduction of improvements between the date that they were informed and the date when the DMS will be completed. The DMS was completed on **June 12, 2013 and is the cut-off date** for the Mendi-Tambul Road section.

30. In the presentation of this report, the affected persons for the land are the tribes and clans who are the rightful owners of the affected customary lands. The affected areas will be presented per tribe and clan and not per individual member who are presently occupying the affected tribal land. Any negotiation or compensation that will be due to affected land owners will be negotiated or compensated to the tribe. Members of each tribe who were included in the DMS but have no affected personal assets will be presented as members of the tribe only. This will enable other members of the tribe who are not living along the proposed project and not included in the DMS to be recognized as co-owners of the affected customary land and can share in any compensation due to the tribes as owners of the affected lands.

31. All other affected assets beside the land including houses, trade stores, crops, trees, ancillary structures, graves will be presented in this report based on personal ownership of the affected assets. The names of the owners under the tribe where the APs belong will be presented with their affected personal assets.

32. Vulnerability of households will be determined based on the households who will experience actual physical or economic displacement because of the project. Other members of the tribe who will not experience actual physical or economic displacement but whose only qualification to claim vulnerability allowance is their tribal membership will not be considered.

B. Scope of Land Acquisition

1. Land Impacts

33. The length of the road section based on the detailed engineering design is 55.53km. The Mendi/Minuhu district covers the first 39+740km while the remaining 15.79 km segment is located in the Tambul/Nebilyer District. The average width of the existing road is 4.23 meters. To upgrade and rehabilitate the subproject road, an additional 611, 945.23 sqm or an average of 11.02 meters for both sides of the existing road are needed. The details are shown in the following Table 4 Existing Road and Additional Land Required.

TABLE 4 EXISTING ROAD AND ADDITIONAL LAND REQUIRED

Existing Road				
	Mendi (km 0+000 to km39+740)	Tambul (km39+740 to km55.53)	Total	Ave Width
Left Side	84,523.34	33,315.17	117,838.50	2.12
Right Side	83,772.93	33,066.10	116,839.02	2.10
Total	168,296.26	66,381.26	234,677.53	4.23
Additional Land				
Both Sides	433,453.84	178,491.39	611,945.23	11.02
Existing + Additional	601,750.11	244,872.65	846,622.76	15.25
Average Width	10.84	4.41	15.25	

34. There are 7 major tribes and clans on both sides affected by the road project. The whole road section is on customary land. In the Mendi-Tambul road section, there was no previous land survey undertaken. The determination of land parcels were made during the detailed measurement survey (DMS) and were the results of the consultations and physical identification of the individual boundaries within their territorial domains during the DMS by the members of the affected tribes and clans. The details of the affected tribal lands are shown in the following table.

TABLE 5 SUMMARY OF AFFECTED TRIBAL LANDS

Location	Tribe/Clan	Sub-Clan
0+000-0+800	Torol/Omol	Omol/Pea /Waomol
0+800-1+014	Tunzup	Sembiso/Hulup
1+014-3+500	Mendepo	Surepere/Ombia
3+500-17+240	Tunzup	Karel/Kundaka/Tanolame
20+000-40+000	Yakopa/Kerenda/Koraya/Komea	Parole/Yakopa Yana
40+000-43+630	Yakumba/Yap/Birop/Yano	Pingump/Komb
44+000-55+530	Yana	Mumiana/Megapuk/Tarali/Keleps

35. The divisions of the road section based on tribal ownership are not absolute and only reflect the social system of PNG. Ownership and boundaries of land can never be fixed for all time but reflect changes in power and authority. Land rights are best perceived from the center, rather than land having fixed boundaries. This means that greater clarity of tenure occurs at the center of customary land, with less distinction at the boundary of land.

36. Land rights are held in common with other members of the group. The relationships between groups influence the assertion of land rights and subsequent tenure. Land tenure is not absolute but is repeatedly tested by competing groups. Disputes over land are never lost; rather the loser will regroup for a further claim.

2. Houses and other Structures

37. There are a total of 48 structures that will be affected by the subproject. Out of this total, 6 structures are houses, 20 structures are trade stores, and 10 grave sites. There is also a farmhouse that will be affected by the project. The details are shown in the following Table 6 Summary of Affected Structures.

TABLE 6 SUMMARY OF AFFECTED STRUCTURES

Affected Structures	Left	Right	Total
House	3	3	6
Trade Store/shed	12	8	20
Farm House	1	0	1
Grave Sites	6	4	10
Toilets	2	1	3
Others	6	2	8
Total	30	18	48

3. Annual and Perennial Crops and Trees

38. The classification of plants and trees used in this section has been taken from the Valuer General's Schedule of Compensation (2008) which is hereby adopted and facilitates the valuation of the compensation in the latter portions of this report. For valuation purposes there are 3 or 4 stages of development of a plant or tree depending on the specific plant/tree classification. There are also crops that are computed by area such as sweet potato or kunai grass, an economically valuable grass.

39. The values and prices in the schedule are considered guidelines for general use as local conditions and scarcity or abundance will affect the value of a particular item. The trees and plants enumerated in the schedule are economic trees and plants that have value because the products derived from these trees and plants have household and/or commercial use and value. Plants and trees that do not comply with these criteria were not included such as flowers, ornamental plants, grass that maybe valuable only to the owning household.

40. The rates or prices in the Valuer General's Schedule of Compensation were determined in 2008 and there is a need to update these rates to reflect the current prices. A replacement cost study (RCS) applicable specifically for the HRRIP sub-projects has been conducted for DOW and these new rates will be applicable for all Tranche 2 sub-projects, including this subproject. The RCS has recommended an increase of 3.5% per year starting in 2008 for the rates of crops and trees in the Valuer General Schedule of Compensation Rates and these new rates have been adopted in the computation of the resettlement budget.

Commercial Tree Crops – These are trees and plants cultivated in a specific area for the purpose of cash income. In the project area, coffee tree is the only affected commercial crop as classified by the schedule of compensation. There are 1,295 coffee trees (conventional) in the different stages of development that will be affected by the project. The following

41. Table 7 Summary of Affected Crops shows the details of the affected coffee trees.

TABLE 7 SUMMARY OF AFFECTED CROPS

Coffee	Seedling	Small	Medium	Mature	Total
Left	94	364	279	104	841
Right	18	127	115	194	454
Sub-Total	112	491	394	298	1,295

42. Single Plants and Trees – This is classified under Category B1 – Other Commonly Used Plants and Trees by the Valuer General's Schedule of Compensation. There are ten species classified as single plants and trees affected by the project totaling 16, 374 plants and trees in their different stages of development. The details are shown in the following Table 8 Summary of Affected Single Plants and trees.

TABLE 8 SUMMARY OF AFFECTED SINGLE PLANTS AND TREES

Name of Single Plant or Tree	Seedling	Small	Medium	Mature	Total
Avocado (Butter)	274	378	274	257	1,183
Breadfruit	11	107	101	180	399
Causarina	668	1,838	2,593	3,646	8,745
Guava	0	235	85	138	458
Mango	0	12	26	59	97
Orchids	0	0	0	82	82
Pandanus marita	0	4	20	266	290
Pandanus karuka	1,011	1,373	480	2,241	5,105
Pandanus nonedible	0	4	0	2	6
Pao	0	0	7	2	9
Total	1,964	3,951	3,586	6,873	16,374

43. Clump Plants and Trees – This is also classified under Category B – Other Commonly Used Plants and Trees. There are seven species under this category totaling 51, 123 affected plants and trees in their different stages of development. The details are shown in the following Table 9 Summary of Affected Clump Plant or Tree.

TABLE 9 SUMMARY OF AFFECTED CLUMP PLANT OR TREE

Name of Plant or Tree	Small	Medium	Mature	Total
Bamboo	23	62	170	255
Banana	123	413	128	664
Edible Fern/Taki	456	1,191	5,242	6,889
Edible Pitpit	86	1,050	5,421	6,557
Salat	3	0	483	486
Sugarcane	158	52	302	512
Targets	6,320	4,431	25,009	35,760
Sub-Total	7,169	7,199	36,755	51,123

44. Edible Single Plants – There are 15 species in this category that are affected in the project area totaling 4, 276 plants. These are annual crops that bear fruit or the leaves that are harvested within a year. The details of the fifteen species and their numbers are shown in the following Table 10 Summary of Affected Edible Single Plants.

TABLE 10 SUMMARY OF AFFECTED EDIBLE SINGLE PLANTS

Name of Plant	Small	Medium	Mature	Total
Aibika	0	6	5	11
Beans	1	179	108	288
Black Kumu	18	56	21	95
Broccoli	4	30	37	71
Chinese Cabbage	230	208	503	941
Cabbage/English Cabbage	183	344	3	530
Corn	157	50	114	321
Lettuce	0	5	42	47
Onion	12	40	12	64
Pineapple	0	35	94	129
Strawberry	0	1	36	37
Taro	154	144	530	828
Taro Kongkong	72	131	262	465
Tobacco	18	4	7	29
Yam	0	0	420	420
Total Single Plants	849	1,233	2,194	4,276

45. Edible Vines and Clump Plants -- This category is a mixture of annual and perennial plants. There are seven species affected by this subproject totaling 986 plants and out of this total, the most numerous is passion fruit. The other details are shown in the following Table 11 Summary of Affected Edible Vines and Clump Plants.

TABLE 11 SUMMARY OF AFFECTED EDIBLE VINES AND CLUMP PLANTS

Name of Vine or Clump Plant	Small	Medium	Mature	Total
Cassava	43	0	6	49
Choco	0	23	41	64
Cucumber	27	0	0	27
Ginger	160	0	21	181
Passion Fruit	150	86	195	431
Pumpkin	0	13	15	28
Pepper Vine (Daka)	141	35	30	206
Total Vines and Clump Plants	521	157	308	986

46. Mound Plants-- There are only two crops included in this category; potato and sweet potato, the staple crop in the highlands and the most important crop in PNG. There are 943 affected mounds and the average mound is one square meter and this is the basis of computing compensation. The details are shown in the following Table 12 Summary of Affected Mound Plants.

TABLE 12 SUMMARY OF AFFECTED MOUND PLANTS

Mound Plants	Small (<0.75M ²)	Medium (0.75-1.50M ²)	Large (1.50M ²)	Total
English Potato	21.50	43.00	223.00	287.50
Sweet Potato	113.50	115.00	427.00	655.50
Total Area	135.00	158.00	650.00	943.00

47. Forest trees are categorized into four classes and two specific trees (pine and canoe trees) which are very important in PNG. There are 19, 197 affected forest trees and the predominant affected category is minor trees totaling 7,986 trees. The other details are shown in the following Table 13 Summary of Affected Forest Trees.

TABLE 13 SUMMARY OF AFFECTED FOREST TREES

Name of Forest Tree	Small	Medium	Mature	Total
Hardwood (All Species)				
Eucalyptus	70	18	2	90
Gum Tree	646	738	1,209	2,593
Hardwood Tree	89	202	242	533
Oak	16	25	45	86
Red Cedar	0	5	8	13
Total Hardwood Trees	821	988	1,506	3,315
Semi-Hardwood (All Species)				
Semi-Hard Trees	113	96	302	511
All Other Trees	2,008	2,511	3,467	7,986
Pine Tree	1,013	1,168	1,706	3,887
Canoe Tree	123	31	29	183
Total Forest Trees	4,899	5,782	8,516	19,197

4. Fences

48. The main purpose of fences in the project area is to keep animals from straying into food gardens which is the main source of household food. Pigs, cows and goats are especially partial to the leafy vegetables being grown in these food gardens. Hence, the use of fences is not for the protection of the inhabitants but the protection of their food source.

49. The affected fences have a total length of 22,220 linear meters. The predominant fence is made of plant/bush (20,426m). The average height of the fence is around one and one half meters. The details of the affected fences are shown in the following Table 14. Summary of Affected Fences.

TABLE 14. SUMMARY OF AFFECTED FENCES

Fence Material	Left Fence	Length	Right Fence	Length	Total Fences	Total Linear Meters
Metal	0		1	10.00	1	10.00
Wooden	16	1,381.00	5	403.00	21	1,784.00
Plant/Bush	190	9,297.50	198	11,128.50	388	20,426.00
Total	206	10,678.50	204	11,541.50	410	22,220.00

5. Grave Sites

THERE ARE 10 GRAVE SITES CONTAINING 13 GRAVES. THERE ARE THREE TYPES OF GRAVE SITES BASED OF THE VALUER GENERAL'S SCHEDULE OF COMPENSATION, NAMELY THE UNMARKED, PERMANENTLY MARKED AND PERMANENTLY MARKED WITH FEATURES. THE DETAILS ARE SHOWN IN THE FOLLOWING

50. Table 15 Summary of Affected Graves Sites and Graves.

TABLE 15 SUMMARY OF AFFECTED GRAVES SITES AND GRAVES

Type of Grave Site	Left		Right		Total	
	Site	Grave	Site	Grave	Site	Grave
Unmarked (1)	5	6	2	3	7	9
Permanently Marked (2)	1	1	0	0	1	1
W/Permanent Features (3)	0	0	2	3	2	3
Total	6	7	4	6	10	13

6. Business/Income

51. There are 20 trade stores that will be affected by the project and will suffer business losses. The details are shown in the following Table 16 Summary of Affected Businesses.

TABLE 16 SUMMARY OF AFFECTED BUSINESSES

Business Loss	# of Facilities	Left	Right
Trade Store	20	8	12
Total	20	8	12

7. Vulnerability

52. Women headed households totaled 12 households while handicapped headed households accounted for 3 households. In addition, households headed by the elderly accounted for 39 households. In summary, there are 54 vulnerable households in the project affected area as shown in the following Table 17 Summary of Vulnerable Households.

TABLE 17 SUMMARY OF VULNERABLE HOUSEHOLDS

Vulnerability	Left Side	Right Side	Total
Women Headed Households	6	6	12
Handicapped Headed Households	0	3	3
Elderly headed Households	17	22	39
Total	23	31	54

8. Category of Resettlement Impacts

53. The selection criteria for subsequent subprojects for the HRRIP include provisions that the proposed work is on an existing road, does not involve major earthmoving works and avoids the displacement of residential structures or other, permanent structures. These selection criteria in effect aim to minimize the resettlement impacts for any candidate road for the HRRIP. The Mendi Tambul is categorized as Category B for involuntary resettlement based on SPS because of the minimal number of affected owners and the insignificant

impacts on land and/or productive assets. The number of affected persons (APs) being physically displaced is 6 households (around 31 persons) and 7 tribes/clans losing land and the loss of land or income generating assets is below 10%.

54. The land relationship between the tribes and clans who own the customary lands and the members is similar to a contract of usufruct wherein the land owners (tribes and clans) permit their members to use and profit from the use of tribal and clan lands. Hence, in determining the number of affected persons, the tribe is treated as a juridical person with its own separate and distinct personality from that of its members. From the forgoing premises, the number of affected owners of the land is only 7 tribes and clans.

55. The tribal lands in the highlands are very substantial and the increase in the population either by natural growth or through marriages can be adequately addressed by releasing extra lands of the tribes to members who are in need of additional or new land to farm. People along the road project make more than 20 consecutive plantings before a fallow period of 5–15 years. Production is maintained through the use of drainage, composting and mounding. Based on these agricultural practices, a household has several farming areas located in different parts of their tribal lands. Some are currently used as food gardens while others are in the fallow period wherein lands are rested to regain their fertility. In Mendi-Tambul subproject, the socio-economic survey revealed that respondents have an average of 5 food gardens located separately within the tribal land. Hence, lands that will be affected will be addressed by the affected tribes by allocating vacant lands or early activation of fallow lands for the affected members.

56. In assessing the impacts on their productive assets, the assets including the lands of the affected tribe/clan should be the basis and not on individual affected lands presently occupied by the APs. There is a tribal mechanism wherein any decrease in the landholdings of a member will be addressed by the affected tribe through releases of idle tribal lands. In effect, the assessment of impacts to determine whether it would be significant or not, should be on the tribal level because of the uniqueness of PNG society, wherein customary laws prevail on land relations.

57. The determination of the percentage of their affected productive assets had been problematic because the affected households have multiple areas for their productive assets. Further investigations revealed that each household in a tribe has at least 4 food gardens with the majority for household consumption while the rest are cultivated for their potential cash income. In cases of natural growth trees, there is no clear cut ownership on what trees are individually owned and what are tribally owned. In the timber industry, compensation for natural growth trees is given to the affected tribes. While the DMS covered all the affected assets inside the required land to upgrade and rehabilitate the road, it did not cover the scattered food gardens and trees areas of the APs located elsewhere.

58. In terms of the number of affected persons whose permanent houses will be demolished because of the project, there are houses that will be affected and all are made of bush materials. Based on the eligibility criteria that formed part of the resettlement framework, the project works avoided displacement of residential and other permanent structures because the affected houses are classified as temporary houses made of bush materials (wood, bamboo and grass).

IV. SOCIO-ECONOMIC INFORMATION AND PROFILE

Background Information

1. Socio-Economic Information

59. A socio-economic survey was conducted from the middle of March to April 5, 2013. The DMS covered 915 affected persons and after further screening, the number of affected persons was pruned to 797 affected persons. The difference of 118 persons who were interviewed was not included from the list of APs because they have no personnel assets that will be affected by the subproject. The sample size of the socio-economic survey is 116 respondents. All 116 respondents are classified as project affected persons. This represents 14.60% sampling size.

60. The enumerators or interviewers were provided a short summary on ADB Safeguard Policy Statement to provide background information on the conduct of the socio-economic survey. A briefing on the contents of the survey instrument and how interviews should be conducted were also shared with the enumerators. To provide randomness in getting the sample size, the enumerators were instructed to conduct the interviews randomly along the whole road section. If the targeted respondent of the census survey is unwilling to undergo further interview, the enumerators were instructed to interview the next respondent in the census survey.

61. This section contains the results of the socio-economic survey conducted specifically for the project and secondary information gathered from the previous studies for this road section. These are all presented to provide a holistic view of the socio-economic conditions in the Mendi-Tambul road section.

2. Household Demographic Information

62. There are 116 households interviewed in the socio-economic survey (Mendi-Tambul road section). The total population is 692 persons or an average household size of 5.97 persons. There are 415 males against 277 females or a gender ratio of 67 females for every 100 males. There are 431 persons in the economically productive age (15 – 65 yrs old) while there are 261 persons in the dependent ages (under 15 yrs and above 65 yrs old). There are 61 dependent persons for every 100 persons in the economically productive age. (Age Dependency Ratio -- is the ratio of persons in the “dependent” ages (generally under age 15 and over age 65) to those in the “economically productive” ages (15-65 years) in the population.) The details are shown in the following Table 18 Age and Gender Distribution.

TABLE 18 AGE AND GENDER DISTRIBUTION

Gender	<15yrs	15-65	>65 yrs	Total
Male	121	284	10	415
Female	91	147	39	277
Total	212	431	49	692

Out of the total of 116 households, 91 households are nuclear families while 14 households are extended families. There are 6 joint families while only 3 families are polygamous families. The details are shown in

63. Table 19 Summary of Family Types in the Sampled Households.

TABLE 19 SUMMARY OF FAMILY TYPES IN THE SAMPLED HOUSEHOLDS

Type of Family	Frequency	Percentage
Nuclear	91	78.45%
Extended	14	12.07%
Joint	6	5.17%
Polygamous	3	2.59%
Others	2	1.72%
Total	116	100.00%

64. The term nuclear family is used to distinguish a family group consisting of most commonly, a father and mother and their children, from what is known as an extended family. Nuclear families can be any size, as long as the family can support itself and there are only children and two parents, nuclear families meet its individual members' basic needs since available resources are only divided among few individuals or the family would be known as an extended family.

65. In the RIZ, people lived on isolated homesteads or in small hamlets of 4-10 households that form a sub-clan. More recently, and particularly since the upgrading of portions of the Highlands Highway, villages have been established adjacent to roads. Often, a village will have a central meeting area that is located adjacent to the road; this is where trade stores are located and, possibly, an informal market area. Housing is generally clustered behind the central area, away from the road.

66. Out of 116 households, 31 households are affiliated with PNGBC, 21 are Roman Catholics, 19 households are Lutheran and 13 households are with the Seventh Day Adventists. Almost all of the sampled households are affiliated with Christian mainline groups. The other religious groups are shown in the following Table 20 Religious Affiliation of Sampled Households.

TABLE 20 RELIGIOUS AFFILIATION OF SAMPLED HOUSEHOLDS

Religious Affiliation	Frequency	Percentage
PNGBC	31	26.72%
Roman Catholic	21	18.10%
Lutheran	19	16.38%
SDA	13	11.21%
United Church	12	10.34%
Pentecostal	3	2.59%
Others	17	14.66%
Total	116	100.00%

67. In terms of highest educational attainment of sampled households, almost one third is in the primary level while more than one fourth is in the elementary level. There are a limited number of members of the sampled respondents who are in the associate (2 years course) and college levels. The breakdown of their highest educational attainment based on gender is shown in the following

68. Table 21 Highest Educational Attainment.

TABLE 21 HIGHEST EDUCATIONAL ATTAINMENT

Educational Attainment	Male	Female	Total	Percentage
No Schooling	25	14	39	15.66%
Elementary	36	30	66	26.51%

Primary	42	36	78	31.33%
Secondary	23	13	36	14.46%
High School	3	0	3	1.20%
Associate	4	10	14	5.62%
College	10	3	13	5.22%
Total	143	106	249	100.00%

3. Housing Information

69. The major source of domestic water is from nearby streams accounting for 43.97% (51) households. This is followed by spring, a source of water for 34.48% (40) households. Other sources are tanks and piped in water. The major toilet type used by households is the latrine accounting for almost all (91) of respondent households. All households use wood as fuel for cooking.

70. In the RIZ, over 97% of households own their houses; nearly all structures are constructed of semi-permanent traditional materials, i.e., wood frames with woven bamboo walls and thatch roofs. Some people “modernize” their traditional houses with windows and front porches; better-off households construct houses that combine traditional and purchased materials. Also, as roads are upgraded, there is evidence of new houses being constructed entirely of permanent materials (HRMG/DOWT, 2006). A household may have several structures grouped in a small cluster. Some households maintain the custom of men and women living separately; this is particularly true among the older generation, although younger couples tend to live together in the same house.

4. Economic Activities

71. Respondents in the Mendi-Tambul road section were asked about their main household economic activities. Eighty three households were engaged in agriculture as their main economic activity while vending is a distant second with 38 households.

72. Based on the multiple answers given by respondents, there are 2.5 economic activities for every household interviewed in this survey. Small enterprises, business and trading and roadside vending are female dominated activities that are very significant in producing additional income to the families.

5. Cropping Patterns

73. Subsistence agriculture in this region is based on moderate-to- high intensity cultivation of sweet potato. Other common crops include beans, corn, greens, cabbage, sugarcane and peanuts. Households use techniques such as composting and mounding to maintain the productivity of their land; in areas of moderate intensity cultivation, gardens are left fallow for up to 15 years after 2-5 plantings.

74. People walk to work in their gardens on a daily basis. Among surveyed households, the average distance is about 1.5 km. However, women in focus groups in SHP villages said they often walked 5-10 km (3-4 hours) to get to their gardens.

75. Most households raise small livestock such as pigs, goats, sheep and poultry. Among surveyed households in the RIZ, 73% in SHP cited the sale of pigs as a source of cash income; this income ranges from K500 to K1, 500 per year.

76. In the areas around the boundary of Mendi and Tambul (chainage 39), agricultural activities are very limited because of the very limited access to these areas. The survey

team for the DMS had to leave their vehicle and walk for two days towards Tambul. Hence, the area remains basically uninhabited because of inaccessibility.

6. Marketing

77. There are three types of selling that evolved in the Highlands Region; (a) formal market where producers sell to wholesalers who in turn supply retail establishments, (b) informal market, these are open markets throughout the highlands, (c) direct bulk buyers – retailers, restaurateurs and institutions etc, buy from producers at the door. Retailers sell fresh vegetables but often have trouble sourcing local produce due to high transport costs. Kai bars use assorted vegetables on their menus. The institutions (hospitals, technical colleges, prison, armed forces) are a large market.

78. The marketing of cash crops relies on sales to buyers, particularly for households growing coffee and raising pigs. Nearly 90% of coffee growers sell to buyers, while only 40% make direct sales at local and/or regional markets. In SHP 23% of households sell pigs in local markets. Even for vegetables, people sell to buyers. In SHP, only 15% sell vegetables in local markets while 79% rely on buyers.

79. Market sellers generally walk to local markets; in SHP, the average trip is 35 minutes and the majority (60%) sells several times each week. The lack of good marketing opportunities is evident in SHP based on the average daily revenues of K24, as reported by surveyed vendors. On good days, vendors get K58 in SHP markets; on a bad day, the average is K19 a day.

7. Household Income and Expenditure

80. The primary source of household income is from agriculture earning an aggregate amount of 348,930 Kina representing 26.25% of the total annual household income. Income derived from government income contributed 19.02% of the household income while small enterprise came a close third with 17.95%. It is significant that 8.86% of household income came from vending, a female dominated income generating activity. The details are shown in Table 22 Source of Household Income.

TABLE 22 SOURCE OF HOUSEHOLD INCOME (KINA)

Income Source	Amount	Percentage	# of HH	Ave. Annual Income	Ave. Monthly Income
Agriculture	348,930	26.25%	111	3,143.51	261.96
Paid labor	44,990	3.38%	39	1,153.59	96.13
Small Enterprise	238,650	17.95%	59	4,044.92	337.08
Gov't Employment	252,900	19.02%	24	10,537.50	878.13
Business/Trading	8,060	0.61%	3	2,686.67	223.89
Transport	2,500	0.19%	3	833.33	69.44
Vending	117,750	8.86%	58	2,030.17	169.18
Hunting	18,460	1.39%	38	485.79	40.48
Remittance	93,970	7.07%	84	1,118.69	93.22
Royalties	10,190	0.77%	19	536.32	44.69
Others	192,930	14.51%	21	9,187.14	765.60
Total	1,329,330	100.00%	116	11,459.74	954.98

81. Based on the various sources of income, the highest source of income per household came from government employment with around 10,000 kina per family per year. This is

followed by small enterprise with around 4, 000 kina annually. The third is agriculture accounting for around 3, 000 kina annually.

82. Overall, the annual income is 11,459.74 kina per household and this translates into a monthly income of around 955 Kina or a per capita of around 5.33 kina per person per day at an average size of 5.97 persons per household.

83. Household Expenditure – The survey showed that food is the largest household expenditure accounting for 234, 180 kina (25.37%) of total household expenses. Education came a very close second with 230, 650 kina (24.99%) of total household expenses. Third is social functions with 135,555 kina (14.68%). Again, this showed under reporting of food expense as only around 25% of total annual household expense because of the availability of food gardens of the respondents and their tendency to report food expense as out of pocket cash spent on food.

84. The basic reasons that children in RIZ are not in school include the school fees, the long distances to schools, risks for children traveling long distances and the fact that there are insufficient numbers of teachers. Girls are often not sent to school because they are needed at home to help their parents.

85. However, in this sub-project, educational expense incurred by household is around one fourth of their household expenses. Key informants revealed that many of the households send their children to Mendi to board with relatives just to attend school. While lodging may be free, the other expenses like food, supplies and transportation makes education an expensive endeavor in the households in this subproject. The other details are shown in Table 23 Household Expenditure.

TABLE 23 HOUSEHOLD EXPENDITURE

Annual Household Expense	Amount	Percentage	# of HH	Annual Expense	Monthly Expense
Food	234,180	25.37%	115	2,036.35	169.70
Transport	67,799	7.34%	115	589.56	49.13
Clothing	48,410	5.24%	89	543.93	45.33
Health	24,837	2.69%	81	306.63	25.55
Education	230,650	24.99%	82	2,812.80	234.40
Communication	51,482	5.58%	83	620.27	51.69
Social Functions	135,555	14.68%	95	1,426.89	118.91
Agri Inputs	72,390	7.84%	50	1,447.80	120.65
Fuel	40,355	4.37%	43	938.49	78.21
Electricity	10,400	1.13%	13	800.00	66.67
Others	7,050	0.76%	13	542.31	45.19
Total	923,108.00	100.00%	116	7,957.83	663.15

86. The average annual expense of the surveyed households totaled 7,957.83 kina or a monthly expenditure of 663.15 kina a month. Comparing this figure with the average annual income of 11, 459 kina, there is a net savings of around 3, 500 kina per year.

8. Health Services and Facilities

87. The respondents were asked if any member of their family became sick during the past year. Twenty out of a total of 116 households declared that at least one member of their family got sick during the past year. The illnesses mentioned by respondents include

broken bones (4 cases), heart ailments (4 cases), TB (3 cases), malaria, asthma, paralysis, and scabies.

88. The respondents were asked if they sought medical attention for their sicknesses and all households availed of the existing health facilities. Majority of respondents availed of health facilities even households whose members were sick for more than a year ago. Majority went to the provincial hospital because of the gravity of the illnesses of household members.

89. All the respondents were asked their traveling time to the nearest health facility (aid post, district health center or provincial hospital). All respondents were within four hours traveling time from an aid post or district health center but majority use public motor vehicle to go to the nearest health facility.

9. Migration

90. There are generally four types of migration in PNG, (a) rural to urban, (b) rural to peri-urban, (c) rural to rural and (d) rural to resource projects. These movements are associated with the ability to earn cash incomes in particular provinces, with most migrants moving from provinces where incomes are lowest, to provinces where incomes are highest. In many parts of PNG people are moving from areas they perceive as disadvantaged to areas they perceive as advantaged. That is, from poor quality land with poor access to markets and services, to higher quality land with better access to markets and services and with increased chances to engage in the cash economy.

91. The respondents were asked if they or any member of the family migrate for work outside of their district. Out of the total respondents, 38 households have some members of their families migrating to work outside of their provinces.

92. Only three out of the total number of migrant workers are agricultural laborers. The majority of migrant workers are professionals. They earned an average of more than 3,600 kina per month.

10. Status of Women

93. The respondents were asked what kind of activities the female members of their families are engaged in. The question can accommodate multiple answers. The female members of the families are usually responsible for the cultivation of their food gardens (81%). This is a very important source of food in their families and women are responsible for their continuous production. If the women are finished tending their gardens and just waiting for the vegetables and other crops to mature, the women work for other food gardens and nearby coffee plantations to augment their income. The household works, which is a traditional domain of women, are being done by women in 85 households (73.28%). This is augmented by services, offering household services to other households being practiced by 70 households. Other activities are shown in

94. Table 24 Women's Participation in Economic Activities.

TABLE 24 WOMEN'S PARTICIPATION IN ECONOMIC ACTIVITIES

Women's Participation in Economic Activities	Frequency	Percentage
Agricultural Cultivation	94	81.03%
Allied Activities	86	74.14%
Collection/Sale of forest products	71	61.21%
Trade/business	71	61.21%
Agricultural Labor	81	69.83%

Non-Agricultural Labor	75	64.66%
Household Industries	87	75.00%
Services	70	60.34%
Household work	85	73.28%
Others	39	33.62%

95. It is apparent that far from being marginalized, the women in the study area are very active in their pursuit and contribution to the income of the families. Fifty seven households reported an aggregate amount of 53, 730 kina or an average of around 942 kina annually. This average amount is understated because of the local practice of not considering food consumption raised in the food garden as part of the income earned by a family.

96. The respondents were asked about the female participation in decision making in the family. Ninety households reported that female participation is very much present in the surveyed households.

97. Decision making regarding financial matters has 89 female members (76.72%) participating. This topic is associated with the purchase of assets for the family which has 78 females (67.24%) participating. In addition, the survey reflected the traditional role of women in connection with the education.

98. Based on the results of the socio-economic survey, the women in the study area have mainstreamed in generating income to augment family income. In addition, the female participation in decision making process regarding various family aspects is very apparent and observable. Table 25 Summary of Female Participation in Decision Making presents the summary of the female participation in decision making in the study area.

TABLE 25 SUMMARY OF FEMALE PARTICIPATION IN DECISION MAKING

Women's Participation in HH Decision Making	Frequency	Percentage
Females in Decision Making	90	77.59%
Financial Matters	89	76.72%
Education of Child	85	73.28%
Health Care of Child	78	67.24%
Purchase of Assets	78	67.24%
Day to Day Activities	82	70.69%
Social Function/Marriage	82	70.69%
Others	65	56.03%

B. Project Potential Socio-Economic Impacts

99. Positive and adverse impacts may occur simultaneously in a given project. In the Mendi-Tambul road, the positive impacts outweigh the adverse impacts because of the nature of the project. The following paragraphs discuss the positive as well as the negative socio-economic impacts of the Mendi-Tambul road section.

1. Positive Impacts

100. *Generation of Employment Opportunities* -- During construction, the project will generate employment opportunities to the affected tribes and clans. The social condition in PNG is unique in the sense that there is a very strong personal identification with the tribe and clan. The social conditions in the project site would make it very difficult for the contractor to ignore the affected persons who would be desirous to work in the project. It

would doubly difficult if the winning contractor would hire foreigners whose skills are locally available. This would create a serious social backlash against the contractor and would sour any potential cooperative relationship between the direct stakeholders and the contractor. It would not also be remote that district and provincial officials' cooperation would be severely tested because these officials would also be recommending their own set of people as workers to reinforce their high social position within their tribes because of their positions in government.

101. DOW shall ensure that the winning contractor shall hire local laborers based on the distribution of the tribes and clans along the road section to minimize any social conflicts. The affected tribes and clans have permitted the use of their customary land and it is appropriate and their expectations that the members of the affected tribes and clans are hired in their sections of the road project.

102. During the maintenance period (10 years), the road contractor will also be responsible for the maintenance for the whole 55.53 km road section. This will require some maintenance teams that will be distributed along this road section and these teams will be composed of members who live along the road section to facilitate the performance of their maintenance works.

103. *Generation of Business and Livelihood Opportunities* -- This project will generate business and livelihood opportunities in the RIZ especially to the direct stakeholders. The contractor will establish construction camps, quarry sites, motor pools, living quarters and other construction related facilities. Necessarily, these will be manned by the personnel and workers of the contractor who will all require food, shelter, clothing and personal services. Farmers would have a ready market for their agricultural products because of their proximity to the buyers. Tribes and clans owning tree species for timber would have a ready market because the facilities and the actual construction would require a considerable volume of timber. Tribes whose customary lands have been previously identified as potential sources of aggregates will receive compensation from the contractor in exchange for extracting quarry materials from their lands.

104. *Increase in Commercial Activities* -- The road project will increase commercial activities along the road section because of the expected increase of travelers and transport operators who would be using the road because of better driving conditions. Necessarily, businesses connected with the transport sector will be established to exploit the new business opportunities along the road section such as gasoline stations, road side vending, eateries and refreshment parlors, repair and vulcanizing shops.

105. *Improvement in Lifestyle and Culture* -- The upgrading and rehabilitation of the Mendi-Tambul road will hasten the change in the lifestyle and culture of the members of the different tribes and clans living along this road section. The frequency of exposure and interaction of members of a tribe with different tribes is expected to increase because of better road conditions. Frequency of exposure to different cultures usually fosters tolerance if not understanding and this will assist in the process of assimilation and integration wherein inhabitants of PNG will see themselves as members of a nation and not just members of a tribe or clan.

106. *Improve Access to Power and Water* -- It is expected that the upgrading and rehabilitation of the Mendi – Tambul road section will encourage the utility companies supplying electricity and water to provide these facilities to households living along the road section. It must be pointed out that a primary requirement for these utility companies is accessibility to their franchise areas. It would be next to impossible to provide electricity or water to areas where their trucks and service vehicles cannot go. This project will provide the technical platform to seriously consider the provision of these services. It is up to these

companies to also consider other factors such as population density, business and commercial activities, income level, etc in their decision provide such services.

107. *Better Access to Markets* -- The project will create better access to town centers especially on the middle section of the road where access is problematic. An all- weather road would mean better continuous access during rainy season and would improve household income (Manus 2009) because households are able to transport their agricultural produce easier and faster to the markets because of improve road conditions. The residents of the RIZ of the Mendi-Tambul road would have better opportunities to find wage employment in the urban center of Mt. Hagen and/or Mendi because of easier and faster travel time. In many of the road improvement projects, the fares did not reduce but the benefits derived were the time saved during each trip.

108. *Improvement in Health Services* -- It is expected that the Mendi-Tambul road project will improve the health services in the RIZ. The association between better health and roads is based on the quality of the linkage between the village and the place where health services, both treatment and prevention, is being offered. The better the quality of the road and the more cash the smallholder has to spend, the more likely health care will be sought and received for themselves and their children. Some health services are itinerant, MCH clinics being one example. The better the quality of the road, the more likely the service will be offered regularly at the village level. Finally, many health services depend upon the regular and timely delivery of medicines, bandages and vaccinations to the aid post or health centre, and on the effective supervision and administration of health service staff.

109. *Better Educational Services* -- The Mendi – Tambul road project will improve the quality of education available in the road section. Education services are less dependent on the regular delivery of supplies but do depend on effective supervision of teachers, the delivery teaching materials and the teachers' access to urban services. Teachers in isolated areas can spend many days every month traveling between their school and an administrative centre, days that they are absent from the classroom.

110. *Assist in Poverty Alleviation* -- The project will assist in poverty alleviation in the Southern and Western Highlands Provinces. An assessment of the general importance of roads in PNG is contained in the World Bank's study of poverty (Huppi and Gibson 1999). This report argues, "Access to transport infrastructure is an important determinant of economic welfare in PNG". It bases this statement on an expenditure and consumption survey that found that the "poor" travel three times longer than the "non-poor" to reach the closest road. It concluded that "one hour decrease in traveling time to the nearest transport facility reduces real consumption by 10 percent. This suggests that measures which improve rural communities' access to transport infrastructure will be an important aspect of poverty alleviation in PNG' (Huppi and Gibson 1999, 38)."

111. *Improve Household Income* -- The relationship between poverty and markets exists because smallholder incomes depend almost entirely on the sale of export crops and fresh foods. To sell these commodities, smallholders must be able to transport them to a point of sale relatively cheaply and efficiently. In the case of some export crops, the point of sale is the 'farm gate' (the village). The mobile buyer travels to the village in a vehicle and carries the commodity back to an urban place of processing or aggregation and eventual export. In the case of the sale of fresh foods in urban markets, it is the smallholder who travels with the commodity. Either way, the condition of the road connection between the village and the point of sale is critically important.

2. Negative Impacts

112. *Loss of Land* -- The project will require an additional 61.5 hectares of land on both sides of the existing road to rehabilitate and upgrade the Mendi-Tambul road. The land impact of the project is expected to trigger the release of idle tribal lands as substitute lands in favor of the affected households. The location, size and fertility of the substitute lands will be determined by the tribal elders and leaders taking into consideration the conditions and sizes of these affected lands.

113. The project will also affect some structures, trees, crops, graves and other assets of affected persons. These impacts have been addressed in this RP. The affected customary lands will be permitted to be used by the tribes and clans who owned the customary lands in exchange for public infrastructure while the affected assets will be compensated at replacement cost.

114. *Loss of Houses and Other Structures* – Almost all of the affected houses and other structures are made of bush materials which are abundant in the project area. The major cost of constructing these structures is the cost of harvesting, hauling, cutting and installation of these bush materials. Traditionally, the perception of these structures are only temporary, the duration of which is co-terminus to the durability of the bush material used. Seldom will structure owners undertake major repairs because culturally, they will just wait for the structure to deteriorate and construct a new structure in lieu of the dilapidated structure because it would be more onerous to repair than to build a new structure in light of the availability of bush materials in their areas.

115. Unlike permanent structures where their productive lifespan would reach more than 30 years, the road project just shortens and limits the length of time when the bush structure would continue to be useful to the owner/occupant by a few years for newly built structures and maybe less than a year for old and dilapidated ones.

116. Without the project, they will be expected to replace at their own expense the houses as they become old and dilapidated. However, because their structures cannot be avoided but be affected by the road project, they will be compensated at full replacement costs, and in some cases, even if the remaining lifespan of the affected structure is less than a year. This is more than restore the condition where the AP was before the project.

117. In summary, for the affected structure made of bush materials, if the affected structure is new, the compensation is approximately equal to the cost of building the structure. The older the affected structure, the more advantageous to the affected structure owner because there is greater difference between the compensation due and the present worth of the affected structure.

118. *Loss of Graves Sites and Graves* – Based on customs and traditions in the highlands, there is no western concept of a cemetery or memorial park which would contain the human remains of the dead in a certain political jurisdiction. In the highlands, the dead are buried within their customary land, usually very near the residence of the deceased, wherein the spirits of the dead would watch and protect their living relatives. The nearest similarity to the western concept of a cemetery is grave site within the customary land where the dead of a specific clan within a tribe are all buried. The interment of the members of the tribe within their customary land strengthens and reinforces their attachment to the land. The graves served as monuments to their tribal history including their victories and defeats. Customary land is usually not sold except for some legal exceptions because of the intrinsic value to their cultural history which are attached with the land. In cases of territorial conflicts with the adjacent tribes, the existence of the graves is evidence of their boundaries and would support their claims in the land dispute.

119. The relocation of graves and grave sites is enveloped by cultural beliefs in the project area. It is believed that the spirits of the dead are still in the area and if there is no proper showing of respect for the dead through the celebration of proper rituals, the dead will get angry with the living relatives and bad things might happen to them. The relatives of the dead that will be relocated because of the project will insist that these rituals including sacrificing pigs to appease the dead should be properly observed.

120. The materials used in a grave indicate the social status of the deceased and the nature of his/her occupancy over the land. Graves with permanent structures indicate that the deceased had a high social position when he was still living, usually a tribal leader, member of parliament, government official. The simpler the materials used in a grave usually indicate a lowering of the social status of deceased. Unmarked graves usually indicate temporary occupation of the land, usually during tribal warfare when there is no time to construct elaborate graves.

121. In summary, the loss of graves and grave sites has great cultural significance because the graves are their connections to their ancestors. In the face of changing socio-economic and political environments and their consequential anxieties, their connections with their ancestors are the stabilizing factor that holds their tribe together. The graves also serve as their testimonial to the commonality of ancestry between the clans and sub-clans.

122. *Loss of Fences* – In the western concept, fences usually indicate the extent of one's ownership to a property. In the highlands, the prevailing property regime is communal ownership. The tribes are the owners of the land and the members of a tribe occupy a certain portion of the tribal land in the concept of usufruct from the tribe.

123. The primary purpose of fences in the project area is not to delineate ownership but to prevent farm animals in destroying the food gardens which are the primary source of food for the affected households. Most of the time, the fences are made out of shrubs, bush materials, make-shift materials and pig wire, indicating impermanence of the fences. In comparison, fences of schools and churches in the project area are made of permanent materials, usually cyclone wires or hallow blocks which denote a certain degree of permanency. If the food gardens are in the state of fallow, allowing the land to recover its fertility, the fences that protect these food gardens are abandoned because the fences have already served their purpose.

124. *Loss of Perennial Trees and Plants* – The affected trees can be subdivided into fruit trees and timber species. The compensation for the loss of trees (depending on the specie, age and/or diameter) is governed by the Valuer's General Schedule of Compensation (2008). The rates have been updated by a replacement cost survey engaged by DOW to comply or approximate the current market prices.

125. The effects on the loss of fruit trees to the APs are immediate because the fruits are either sources of food or sources of income for the current harvest year. Hence the loss of the fruit trees has an immediate reducing effect on household income. Compensation in this instance is to compensate for the lost income that will be derived from these fruit trees.

126. There is a unique role the timber trees play on household income. Similar to pigs in almost of PNG cultures, timber trees are viewed as instruments of household savings similar to depositing money in a bank. They just let these trees grow, attaining commercial value and these are like money in banks, ready to be cut down to be sold to address cyclic annual expenses such as enrollment or emergencies like payment of compensation or medical expenses. The loss of these timber trees has no immediate effect on household income but would adversely affect the financial capabilities of households during emergencies and annual recurring expenses. Inversely, during tribal conflicts, timber trees are specially targeted by the opposite tribe, either cut and/or burned to deprive their enemies of these

assets and prolong the economic recovery time after the conflict. Compensation in this instance is to provide for the funds in cases wherein there are emergencies and/or recurring annual expenses.

127. *Loss of Annual Crops* – Annual Crops are defined as plants and shrubs whose economic products can be harvested within a year. These include almost all of the crops that are cultivated in the traditional food gardens of the affected areas. It is a policy of the project to permit as possible the harvesting of the products before possession for the construction project is taken over by the contractor. In this instance, there will be no compensation because there was no loss, the agricultural products having been harvested and made use of the owner before possession of the contractor.

128. It is a traditional practice for households to have multiple food gardens following their agricultural concept of resting the land to recover the fertility of the soil. It is also a survival strategy to have a continuous supply of food in the event that there is crop failure in one food garden. Hence, in the event that the road project will affect their food gardens, the affected households still have other food sources.

129. Sufficient to say, the compensation for lost assets are fully adequate because the rates are now based on the present market value. Hence, at this juncture, the conditions of the affected households have been fully restored.

130. The project may also have some adverse social impacts. In D'Cruz's (1990) study of the construction of the Mendi-Koroba Road it was found that most people viewed the road as being a positive development. However, there was evidence that problems of health, law and order, gambling and alcohol consumption increased. Settlements moved to be closer to the road, the value of compensations for deaths and injuries increased, the road was used to move warriors to fights faster, inter-personal fights and theft increased, the rate of STD infections increased significantly. These social problems that may possibly arise from the project should be addressed by frequent police presence in the road section and active interventions of local officials. A separate project but part of this program includes an STD/HIV education and awareness campaign.

131. Environmental and health-related impacts may also occur because of the project. Earth-moving and use of heavy motor equipment during the construction and maintenance phase may cause people near the road and in adjacent settlements to inhale or ingest smoke and dust, experience noise pollution, and face higher risk of accidents. In this regard, the DOW together with the LLG and village leaders will: (i) conduct timely and effective public information dissemination on the schedule of construction and maintenance work so that the people will take proper precautions, (ii) come up with health bulletins/information to avoid or at least minimize hazards caused by smoke, dust, and noise pollution, and (iii) compel the contractor and workers to exercise safety measures (e.g., setting up of early warning devices, avoid or minimize massive earthwork. A separate environment assessment report includes relevant measures on management of environmental issues.

V. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

A. Consultations During Project Preparation

132. In compliance with GoPNG and ADB policies and priorities, the HRRIP will ensure a transparent and accountable process for land acquisition as required in upgrading, rehabilitating and maintaining roads in the Highlands Highway network. Dissemination of information and consultation with stakeholders has occurred at different points in the preparation and implementation of the Mendi-Tambul road project to ensure that affected people (APs) and other stakeholders have timely information about land negotiation and compensation. The DOW through its consultants working in collaboration with Provincial Administrations (PA) and local authorities has organized consultation activities to disseminate project information and elicit their issues and concerns as well as their opinions regarding the project.

133. The project team composed of DOW consultants and staff held consultations in SHP with provincial and district authorities, as well as representatives of Provincial AIDS Councils, Provincial and District Women's Councils, development enclaves, private business houses, local radio stations, NGOs and community organizations. Community consultations and women's focus groups were conducted in several villages on each of the T2 roads including the Mendi-Tambul road section.

B. Consultations During RP Preparation

134. Based on the assessment of the project, the key provincial stakeholders identified for Mendi-Tambul road project include the Provincial Governor, Provincial Administrator and/or Deputy, Provincial Community Development Officers, Provincial Lands Officer, Provincial Women Representatives, Department of Works Manager, Department of Works Principal Advisor for Technical Division, Engineers Representative, Department of Primary Industry and Provincial Value Officer.

135. In the district and LLG levels, the key people identified include the Local Level Government (LLG) Ward Counselors, Village Court Officials, Women and Youth Leader Representatives, Church Groups, Affected People Leaders, Civic and NGO organization groups.

136. The primary stakeholders are the directly affected households whose lands and assets will be affected by the project. The roadside communities and villages located along the Mendi-Tambul road section are also classified as primary stakeholders and their active participation and support are crucial for the success of the project. Secondary stakeholders are residents of villages and communities that are located in the interior areas of the road alignment within the RIZ.

137. The HRRIP resettlement and land acquisition teams provided information about the project. These information may be summarized into the following categories; (a) project information, (b) project benefits, (c) safeguard policies, (d) detailed engineering design, (e) detailed measurement survey, (f) socio-economic survey, (g) resettlement plan, (h) grievance redress mechanism, (i) project ownership and (j) project monitoring.

138. In addition, they also conducted a series of project information dissemination and public consultations with the provincial and district authorities, council wards and residents of the affected areas. The Public Consultations were held on the following dates and locations:

- 03 August 2011 - Tende 1 – Enep (Tende, Koin, Paia Maunten, Timipa, and Enep V)
- 04 August 2011 – Kundaka and Komia Villages

- 05 August 2011 - Laigam and Lama Villages (last village WHP/SHP border)

139. On 03 August 2011, the Project Team met the stakeholders, village elders/leaders, Local Government Officials and other concerned parties in five (5) different locations namely: Tende, Koin, Paia Maunten, Timipa, and Enep Villages and disclosed to them the inclusion of the Mendi to Tambul Road in the Highlands Region Road Improvement Investment Program (HRRIP).

140. The Project Team presented and defined to them the scope as well as explained the need for the rehabilitation of the said roadway. The participants were informed the scope of the Program and the particular sub-project, the possible positive and negative social impacts of the project and the requisite mitigating measures that will be established to enhance the positive impacts and minimize, or if at all possible eliminate, the adverse impacts of the proposed development. Issues and concerns were also elicited from the participants and perceptions were properly noted by the Project Team.

141. This activity was again undertaken on 04 August 2011 in the villages of Kundaka and Komia and on 05 August 2011 in Laigam and Lama Villages (last village before the WHP/SHP border). All in all, more than 170 stakeholders participated in 9 village consultations and strongly endorsed the road project.

142. Unanimous support was expressed by the participants for the upgrading, rehabilitating and maintaining roads in the Mendi-Tambul due to a wide range of economic and social benefits (e.g., rehabilitation of coffee gardens, diversification of coffee factories, expansion of cash cropping for wider markets because of improved accessibility, reduced cost for transport of goods, and better access to health care, education and other services, improved family ties and social network, among others) identified by the participants. Women understand that road improvements offer them particular benefits related to their responsibilities to grow food, opportunity to engage in businesses, and better care for the health and education of their children.

143. The second scheduled community consultations have been undertaken while the actual detailed measurement survey (DMS) was being undertaken. It was announced that the cut-off date is the date where the DMS survey for the whole road section was completed (June 12, 2013). Assets introduced after the cut-off date are not eligible to be compensated.

C. Public Disclosure of RP for Sub-Project

144. This RP has been properly endorsed and disclosed by DOW to concerned national and local government agencies, communities and to directly affected persons before DOW's submission to ADB. Summary of the RP will be translated into Pidgin, one of the official languages of PNG and the full RP posted in both ADB and DOW websites prior to the project appraisal.

145. The HRMG staff and local resettlement specialists have conducted meetings with the APs, tribal leaders, provincial, district and ward officials as well as the relevant government agencies as part of the disclosure process to acquaint them of the substance and mechanics of the RP. These HRMG staff and local consultants will assist in the actual implementation of the resettlement plan.

VI. GRIEVANCE REDRESS MECHANISM

A. Traditional Grievance Redress Mechanism in PNG

146. PNG is the most culturally diverse country in the world, having more than 800 languages and cultures. PNG has three levels of government. These are national, provincial and local levels. Although the government structure is patterned after the Western political system, PNG still upholds its traditional modes of communication and grievance redress through these three recognized structures. The national, provincial and local levels of government have their own elected leaders both men and women who have the responsibility of representing their communities. These people are recognized and respected leaders who carry out allocated functions. Within these levels there are other recognized people such as the community church pastor, community law person, civic organization, women leaders, or recognized NGO worker. These people are selected to help resolve complaints and grievances.

B. Grievance Redress Mechanism for HRRIP

147. A grievance redress process will be established to ensure that all AP grievances on any aspect of the rights to use additional land and/or compensation for affected assets are resolved in a timely and satisfactory manner. The grievance redress mechanism will apply equally to the negotiation of the MOA. APs will be made fully aware of their rights (both verbally and in writing) and informed how they can access to the grievance redress mechanism.

148. APs can initiate a project related complaint by filing a written or oral complaint addressed to HRMG as the implementing agency. Within 5 days upon receipt of complaint, the HRMG will furnish a written summary of the complaint to the AP, provincial land officer and/or district land officer and the tribe/clan where the AP belongs with a notice of a conciliation meeting not later than 10 days from the receipt of the complaint of the AP.

149. During the meeting, HRMG will receive, clarify and simplify the issues involved and would try its best efforts to resolve the issues involved which would be acceptable to the AP and DOW. If there is no agreement reached, HRMG may schedule a final conciliation meeting to provide both parties the final opportunity to re-think and consolidate their positions.

150. The schedule of the final hearing should be not more than 10 days after the first hearing. Both parties may re-negotiate the offer made during the first hearing and may introduce new arguments and evidences to support their respective positions. After the summation of their respective positions, the HRMG shall decide the issues involved based on the policies governing HRRIP, prevailing laws of PNG and customary laws of the place where the dispute arose.

151. If the AP is not satisfied with the HRMG's decision, the AP may then take the grievance to the PNG judicial system. In this case, HRMG and DLO will hold the compensation amounts in escrow. Compensation will be paid in full upon final resolution of the case in the courts or other forum, in accordance with the entitlements of the affected person as decided by the court of competent jurisdiction.

152. The Land Disputes Settlement Act establishes judicial procedures for resolution of landownership disputes on customary land. It has a mediation process whereby a designated mediator meets with the disputing parties to resolve grievances. This process is

closely allied with the village court system and traditional mediation procedures that draw on the skills of recognized local leaders and elders.

VII. LEGAL FRAMEWORK

153. The policy framework and entitlements for land acquisition/resettlement are based on the laws, regulations and policies of the Government of Papua New Guinea (GoPNG) and the ADB safeguard policy. The principal PNG laws include: (i) the 1975 Constitution; (ii) the 1996 Land Act; (iii) the 2000 Land Disputes Settlement Act; (iv) Fairness of Transaction Act (1993), (v) Land Group Incorporation (Amendment) Act (2009), and (vi) Customary Land Registration Act (2009).

154. While T1 was prepared under the ADB Policy on Involuntary Resettlement (1995), T2 including this sub-project and subsequent tranches will follow ADB's Safeguard Policy Statement 2009 (SPS).

A. PNG Legal Framework

155. Majority of the lands in PNG are classified as customary lands wherein specific territories are owned or vested on the clans. Clan members or "primary right holders" are co-owners of their customary lands with the right to use but not to alienate or sell the lands. They own/possess these lands as stewards for future generations. Land ownership and use is an integral part of the identity, the sustenance and the social relations of clans; property rights are inherited from ancestors and maintained in trust for future generations. The State has no authority over customary land other than the provisions of the Land Act to acquire customary land for public purposes or negotiate with customary landowners on land use.

156. During the colonial administration, the 1963 Customs Recognition Act stated that "custom shall be recognized and enforced by, and may be pleaded in, all courts..." (Art. 3(1) (a)). Following independence, these principles were reaffirmed in the Constitution and subsequently elaborated in the 2000 Underlying Act. Customary law is defined as the rules, rights and obligations pertaining to an individual or group by custom and tradition; and, according to the 2000 legislation, shall apply and be recognized by the courts where written and underlying laws do not apply and except as it is inconsistent with written law.

1. PNG Constitution

157. The 1975 Constitution explicitly provides for the adoption of custom as part of the underlying law of PNG (Schedule 2), thus recognizing the property rights attached to customary land. During the colonial administration, the 1963 Customs Recognition Act stated that "custom shall be recognized and enforced by, and may be pleaded in, all courts..." (Art. 3(1) (a)). Following independence, these principles were reaffirmed in the Constitution and, subsequently, in the 2000 Underlying Act. Customary law is defined as the rules, rights and obligations pertaining to an individual or group by custom and tradition; and, according to the 2000 legislation, shall apply and be recognized by the courts where written and underlying laws do not apply and except as it is inconsistent with written law.

158. The Constitution also guarantees the right of PNG citizens to protection from unjust deprivation of property (Art. 53). No land or interest in land may be acquired compulsorily by the State except as it is required for public purposes or other justifiable reasons. Moreover, in the event of expropriation of land, "just compensation must be made on just terms by the expropriating authority" (53(2)).

2. 1996 Land Act

159. The Land Act (No. 45 of 1996) sets out the conditions and procedures for the State to acquire customary land required for public purposes such as roads, tracks, bridges, culverts and quarries. These legal provisions and procedures apply to the acquisition of land and assets by the State, legally owned/leased by other parties (persons) than the State. PNG does not avail of any national, provincial or local government policies for relocating and resettling people. Acquisition of land and assets by the State for public purposes and the related legal procedures, compensations, and the legally defined procedures for appeals, grievance redress, etc. are all arranged for under the Land Act 1996.

3. Land Dispute Settlement Act

160. The Land Disputes Settlement Act (No. 10 of 2000) was initially adopted in 1975. It sets out rights and procedures related to the resolution of disputes involving customary land. It recognizes as parties to these disputes, customary kinship groups, customary descent groups and customary local groups or communities (S2). It also requires that proceedings take into account relevant customs (S35 (1) (d)). The Act provides for the establishment of a Provincial Land Disputes Committee, as well as Land Courts at the local (LLG), district and provincial levels. The Committee can appoint land mediators for specified land mediation areas where disputes occur; a mediator may be the Local Land Court Magistrate (LLCM), a Village Magistrate, a Local Councilor or other senior person of good standing with the litigants. The Act promotes a process for resolution of land disputes through (i) a first step of mediation; if mediation fails, it is followed by (ii) appeal to the designated courts. The mediation process is based on the principles of traditional dispute settlement in PNG.

4. Fairness of Transaction Act of 1993

161. The Fairness of Transaction Act of 1993 relates to the effect of certain transactions, to ensure that they operate fairly without causing undue harm to, or imposing too great a burden on, any person, and in such a way that no person suffers unduly because he is economically weaker than, or is otherwise disadvantaged in relation to, another person. The purposes of this Act are to (a) ensure the overall fairness of any transaction which (i) is entered into between parties in circumstances where one party is for reasons of economic or other advantage predominant and the other is not able to exercise a free choice; or (ii) for one reason or another, without attaching any evil design or bad faith, appears to be manifestly unfair or not to be genuinely mutual; and (b) allow for the re-opening and review of any transaction irrespective of fault and validity, enforceability or effect of any agreement; and (c) ensure the fair distribution and adjustment of rights, benefits, duties, advantages and disadvantages arising out of a transaction. Transaction means any contract, promise, agreement, dealing or undertaking of an economic or commercial nature whether supported by consideration or not entered into between parties, and includes (a) an informal, complete or incomplete transaction; and (b) a transaction governed by customary law.

5. Land Group Incorporation (Amendment) Act and Voluntary Customary Land Registration Act

162. These Acts were brought into effect in 2011, following recommendations from the National Land Development Taskforce. The Acts recognize the corporate nature of customary groups and allow them to hold, manage and deal with land in their customary names, and for related purposes. These also facilitates the voluntary registration of customary land, to be known as “registered clan land”, and makes that land available for development through the use of Incorporated Land Groups (ILGs). These laws encourages (a) greater participation by local people in the national economy by the use of the land; (b) better use of such land; (c) greater certainty of title; (d) better and more effectual settlement

of certain disputes;(e) legal recognition of the corporate status of certain customary and similar groups, and (f) conferring on them, as corporations, of power to acquire, hold, dispose of and manage land, and of ancillary powers; and (g) encouragement of the self-resolution of disputes within such groups.

B. ADB Safeguard Policy Statement (SPS)

163. The Safeguard Policy Statement (SPS) became effective and applicable in January 2010. The SPS was formulated to address the emerging challenges of development, respond to lessons learned from its experience with its old safeguard policies, and adapt to its new lending modalities and financing instruments. Under an MFF arrangement such as the HRRIP, if the management review on any tranche is done after the effectivity of the SPS, the tranches are governed by the SPS. This means that the applicable ADB policy on involuntary resettlement for tranche 2 (T2) and subsequent tranches will be the SPS.

164. The SPS, Safeguard Requirements 2: Involuntary Resettlement aims to avoid or minimize the impacts on people, households, businesses and others affected by the land acquisition required by a project. The scope of the policy includes physical and economic displacement as a result of (i) involuntary acquisition of land, (ii) involuntary restriction on land use and (iii) involuntary restriction of access to legally protected areas. The objectives are to: (i) avoid involuntary resettlement wherever feasible, and minimize involuntary resettlement through assessing project alternatives and alternative project designs. (ii) enhance or at least restore the livelihoods of all affected people (APs) in real terms relative to pre-project levels and improve the standards of living of the affected poor and other vulnerable groups.

165. The SPS's policy principles on involuntary resettlement are as follow: (1) Screen early and assess resettlement impacts; (2) Carry out consultations with APs and develop a grievance redress mechanism; (3) Improve/restore livelihoods of APs through land-based strategies, replacement of lost assets, compensation at replacement cost, and additional benefits, as appropriate; (4) Provide appropriate assistance to physically displaced APs; (5) Improve living standards of poor APs and other vulnerable groups; (6) develop transparent procedures for negotiations; (7) provide assistance and compensation to non-titled APs for loss of non-land assets; (8) Prepare RPs; (9) disclose RPs to APs and other stakeholders and document the consultation process; (10) conceive and execute resettlement as part of the project; (11) deliver entitlements to APs before their physical or economic displacement; and (12) monitor and assess resettlement outcomes.

166. The ADB Accountability Mechanism Policy (2012) provides an independent and effective forum for people adversely affected by ADB-assisted projects to voice their concerns and seek solutions to their problems, and to request compliance review of the alleged non-compliance by ADB with its operational policies and procedures that may have caused or is likely to cause, them direct and material harm. It consists of two separate but complementary functions: (i) the problem solving function led by the Special Project Facilitator who will respond to problems of local people affected by ADB-assisted projects through a range of informal and flexible methods; and, (ii) the compliance review function led by the Compliance Review Panel to investigate alleged non-compliance by ADB with its operational policies and procedures that has caused or are likely to cause, direct and material harm to project-affected people. The relevant ADB operations department has the initial responsibility to respond to the concerns of affected people in coordination with project executing agencies.

C. Gaps between PNG Laws and ADB's SPS and Gap-filling Measures

167. The following Table 26 Gaps and Gap Filling Measures provides the comparison of PNG laws and ADB SPS requirements on land acquisition and resettlement, the assessment of equivalence or gaps between ADB SPS and PNG laws, and gap-filling measures for HRRIP.

TABLE 26 GAPS AND GAP FILLING MEASURES

ADB SPS Requirements on Involuntary Resettlement	PNG Laws on Land Acquisition/Resettlement	Equivalence or Gaps between ADB SPS and PNG Laws	Gap-filling Measures
Avoid involuntary resettlement wherever possible. Minimize involuntary resettlement by exploring project and design alternatives.	The National Constitution (NC) National Goal 5(4) calls for 'traditional villages and communities to remain as viable units of Papua New Guinean society'. Section 53 protects citizens from 'unjust deprivation of property' by limiting the justification for compulsory acquisition by the State.	No explicit reference to the need for avoidance or minimizing resettlement impacts.	The RP has adopted measures to avoiding/minimizing land acquisition.
Enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels. Improve the standards of living of the displaced poor and other vulnerable groups.	General principles of compensation for damage or destruction of physical and economic assets are set out in NC s.53, Land Act (LA) s.23.	PNG Laws do not prescribe measures of replacement cost or restore/improve standard of living.	The RP includes measures on compensation at replacement cost for affected assets and to restore/improve living standard of APs.
Screen the project early on to identify past, present, and future involuntary resettlement impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks.	LA sets out the process for Land Investigation Report which includes identification of affected clans/tribes and their assets.	No specific requirements for census, cut-off date, impact assessment and resettlement planning.	The RP is based on survey/census, defined cut-off-date, and assessment of impacts.
Carry out meaningful consultations with APs, host communities, and concerned NGOs. Inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation, and monitoring and evaluation of resettlement programmes. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and Indigenous Peoples, and those without legal title to land, and ensure their participation in consultations.	NC National Goal 2(9) calls for every citizen to be able to participate, either directly or through a representative, in the consideration of any matter affecting his interests or the interests of his community.	No specific provisions for preparing and implementing RP based on meaningful consultations with APs, including the poor, the landless, elderly, women, and other vulnerable groups	The RP is based on and describes measures on consultations with APs, including vulnerable groups, during preparation and implementation of the RP.
Establish a grievance redress mechanism to receive and facilitate resolution of the affected	Land Disputes Settlement Act provides for measures on resolution of disputes and	No requirements for a project-specific grievance	The RP includes measures on project-specific grievance redress mechanism.

ADB SPS Requirements on Involuntary Resettlement	PNG Laws on Land Acquisition/Resettlement	Equivalence or Gaps between ADB SPS and PNG Laws	Gap-filling Measures
persons' concerns. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.	grievances through both local mediation as well as court process.	redress mechanism. No specific requirement for a social preparation phase for highly complex and sensitive projects.	The project is not expected to involve highly complex and sensitive projects, so it is not needed to have a separate phase.
Improve, or at least restore, the livelihoods of all displaced persons through (i) land-based resettlement strategies when affected livelihoods are land based where possible or cash compensation at replacement value for land when the loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.	Principles of compensation set out in NC s.53, LA s.23.	No specific requirement for land-based resettlement, replacement of assets, compensation at replacement cost, and benefit sharing.	The RP includes measures of on-site relocation/replacement of affected structures, compensation at replacement cost for affected assets on additional land and priority of project employment to APs.
Provide physically and economically displaced persons with needed assistance, including the following: (i) if there is relocation, secured tenure to relocation land, better housing at resettlement sites with comparable access to employment and production opportunities, integration of resettled persons economically and socially into their host communities, and extension of project benefits to host communities; (ii) transitional support and development assistance, such as land development, credit facilities, training, or employment opportunities; and (iii) civic infrastructure and community services, as required.	PNG allow people eligible for compensation to receive their entitlements in cash.	PNG laws have no specific provisions on relocation, transitional support and civil infrastructure and services.	The RP includes measures on-site relocation of affected structures to the adjoining land and transitional allowances.
Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards. In rural	NC and LA include general principles of compensation for damages or losses.	PNG Laws do not prescribe measures on improvement of living standard and	The RP includes measures on restoration/improvement of livelihoods APs. The RP identifies specific number of such APs and additional assistance to them.

ADB SPS Requirements on Involuntary Resettlement	PNG Laws on Land Acquisition/Resettlement	Equivalence or Gaps between ADB SPS and PNG Laws	Gap-filling Measures
areas provide them with legal and affordable access to land and resources, and in urban areas provide them with appropriate income sources and legal and affordable access to adequate housing.		restoration of livelihoods.	
Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement to ensure that those people who enter into negotiated settlements will maintain the same or better income and livelihood status.	<p>NC National Goal 2(9) calls for 'every citizen to be able to participate, either directly or through a representative, in the consideration of any matter affecting his interests or the interests of his community'.</p> <p>LA sets out procedures for outright purchase or lease.</p> <p>The Land Group Incorporation Act and Voluntary Customary Land Registration Act enable incorporation of land groups and to register titles to customary land. These laws allow negotiated lease or transfer of such land.</p> <p>The Fairness of Transaction Act sets out rules on fairness of transactions.</p>	PNG Laws do not specifically require third-party verification of negotiated agreement.	The RP describes procedures of the negotiation on use of additional land with landowner groups resulting in memoranda of agreement (MOA) to be verified by a third-party. The RP includes MOAs signed with respective landowner groups.
Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of nonland assets	LA s.13-15 provides some entitlement to compensation to any people with 'an interest' in land over which the State exercises its power of compulsory acquisition.	PNG Laws do not provide entitlement to non-titleholders who do not have legal interest on land.	The entitlement matrix for the project provides for resettlement assistance and compensation for non-land assets to non-titled APs without legal interest.
Prepare a resettlement plan elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.	NC National Goal 2(3) calls for 'every effort to be made to achieve an equitable distribution of incomes and other benefits of development among individuals and throughout the various parts of the country'.	PNG Laws have no provision of preparing RP.	The RP has been prepared describing APs entitlements and other relevant measures.
Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to affected persons and other stakeholders. Disclose the final resettlement plan and its updates to affected persons and other stakeholders.	NC National Goal 2(9) calls for 'every citizen to be able to participate, either directly or through a representative, in the consideration of any matter affecting his interests or the interests of his community'.	No specific requirements on disclosures.	The RP includes disclosure measures, including posting of RP and RPs on ADB website, providing clan leaders/APs with a summary RP or information brochure in a local language.
Conceive and execute involuntary	No equivalent provision	Gap.	Land acquisition/resettlement costs

ADB SPS Requirements on Involuntary Resettlement	PNG Laws on Land Acquisition/Resettlement	Equivalence or Gaps between ADB SPS and PNG Laws	Gap-filling Measures
resettlement as part of a development project or programme. Include the full costs of resettlement in the presentation of project's costs and benefits. For a project with significant involuntary resettlement impacts, consider implementing the involuntary resettlement component of the project as a stand-alone operation.			have been included in the RP and will be financed out of the project cost.
Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the resettlement plan under close supervision throughout project implementation.	No equivalent provision	Gap.	The RP includes measures on payment of compensation for affected assets before start of civil works on affected land. The RP includes implementation schedule accordingly.
Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the objectives of the resettlement plan have been achieved by taking into account the baseline conditions and the results of resettlement monitoring. Disclose monitoring reports.	No equivalent provision	Gap.	The RP includes monitoring measures, including requirements of semi-annual safeguard monitoring report by EA and third party monitoring.

D. Resettlement Principles for the Project

168. This RP has been developed as per ADB's Safeguard Policy Statement (SPS) and the pertinent laws of Papua New Guinea. Where the laws of PNG are not clear, a project-specific set of resettlement principles consistent with ADB policy has been adopted. The resettlement objectives and policy principles for HRRIP are as follows:

- Land acquisition and resettlement will be avoided or minimized through careful engineering design.
- APs will be consulted meaningfully and effective mechanisms will be established for hearing and resolving grievances.
- Social assessment will be undertaken and RPs will be prepared for roads involving land acquisition/resettlement.
- APs will receive compensation at replacement cost for their loss of assets and necessary assistance to ensure that they will be as well off as without the project.
- Such compensation will be paid to APs prior to commencement of civil works.
- Absence of formal title will not be a bar to compensation or assistance. Particular attention will be paid to women, the elderly and other vulnerable people.
- Land acquisition and resettlement will be conceived of as part of the project and related costs will be included in and financed out of the project cost.
- Resettlement impacts, including any unforeseen losses that may occur during construction will be monitored and remedial steps taken as required

VIII. ENTITLEMENT, ASSISTANCE AND BENEFITS

169. Usually, the unit of loss determines the unit of entitlement. In PNG, 97% is customary land owned by the tribes and clans. For lands and other communal properties required to implement this project, the units of entitlement are the tribes and clans who own the affected lands needed by the project. For individually owned properties such as structures and other land improvements, the units of entitlement are the owners of these individual affected properties.

A. Compensation Entitlements

170. In the Mendi-Tambul road section, land acquisition impacts in the rehabilitation and upgrading activities include the following; (i) permanent use of customary land, as required to permit upgrading and rehabilitation of the road; (ii) temporary use of customary land, as required to establish construction camps; and, (iii) damages to crops, trees and/or structures on affected lands and/or due to ancillary works. Each of these situations is discussed in this section in terms of the entitlements of landowners and/or users to compensation for losses. Table 27 in this sub-section summarizes the compensation entitlements in an Entitlement Matrix.

1. Negotiation for Use Rights of Customary Lands

171. For most public works in PNG, the government authorities often consult with landowners who claim an interest in the land and obtain land through negotiation. The project will continue this tradition of negotiation. When an HRRIP subproject involves a road that is located on customary land, the HRMG will collaborate with the Provincial Land Officer (PLO) and/or the District Land Officer (DLO) in order to enter into negotiations with landowners to acquire the right to use additional land required to upgrade and rehabilitate the road or on a temporary basis to accommodate other activities related to the HRRIP.

172. The use of customary land needed to upgrade or rehabilitate the road has been negotiated through a Memorandum of Agreement (MOA) with the community leaders and affected landowners. See Appendix 4 for the signed Memorandum of Agreements. The subject matter of the MOA is the land between the edge of the existing road and the construction limits. This is the minimum additional land required to upgrade and rehabilitate the Mendi-Tambul road section. Private affected lands, if any, will be compensated based on the prevailing market rates of land in the area (no such land affected so far).

173. Negotiations were conducted with the tribe and clan land owners who are the rightful owners of the affected lands. The DMS conducted for this RP includes names of members of the affected tribes and clans as requested by the affected communities. However, these are not the individual owners but communal owners of customary land. Consent for the use of customary land came from the affected tribes and clans in conformity with the customs and traditions. Compensation for affected assets other than land will be paid to the individual owners of the affected assets such as houses, trade stores, graves, fences, and individually owned trees and crops.

2. Compensation for Damages to Crops, Trees and Structures

174. Crops and trees will be damaged or lost due to the civil works, as a result of earthworks, upgrading drainage structures and other works. Semi-permanent and temporary structures such as roadside trade stores, fences or animal shelters need to be shifted back or be relocated to accommodate civil works or to ensure they are in a safe location. Roadside graves will also be affected.

175. APs who own crops, trees and/or structures that are damaged or lost are entitled to compensation to replace these assets. The compensation rates and amounts shall be determined in the following manner:

a. Annual Crops

176. In the first instance, APs will be encouraged to harvest annual crops; the clearance of the additional land will be timed, to the extent possible, to enable APs to harvest. In this case, no compensation will be paid for crops because APs will be able to use the crops to meet household consumption needs and/or to generate cash income.

177. If APs are unable to harvest prior to clearance of the land, compensation will be paid at replacement cost based on current market prices in the subproject areas.

b. Perennial Crops and Trees

178. For perennial crops and fruit trees, APs will be encouraged to harvest the current year's crop; the clearance of the additional land will be timed, to the extent possible, to enable APs to harvest. In this case, no compensation will be paid for the current crop because APs will be able to use the crops to meet household consumption needs and/or to generate cash income.

179. Compensation for lost plants and/or trees will be paid at replacement cost based on current market prices. The HRRIP will also pay an additional grant equal to the lost income for the period of time until new perennial plants or fruit trees produce a yield similar to the lost plants and trees. For example, in the case of mature coffee trees, the lost income would be incurred over a 3- or 4-year period. If APs have not been able to harvest the current year's crop, the grant for lost income will take this into consideration.

180. For timber trees, APs will be required to cut the trees prior to clearance of the additional land; they will be permitted to harvest the trees and sell the timber.

3. Fences

181. For fences constructed of wood, metal or concrete, APs will be provided the compensation at replacement cost based on current market price (per meter) for similar fencing materials, as determined in the subproject area plus labor costs.

182. For vegetation fences, the compensation will be paid in accordance with replacement cost of plant material used or their commercial value plus labor costs, whenever applicable. Trees used as fences or part of fences will be compensated separately as fruit or timber trees.

4. Structures

183. Along this road, semi-permanent or temporary structures have been constructed as trade stores. As they are located close to the road, it is necessary to shift these buildings back in order to upgrade the road. In this instance, APs will be provided compensation at replacement cost to cover the costs of this activity. They will also be eligible for an allowance due to disruption of their businesses.

184. The additional land required to upgrade roads is not expected to affect residential structures or other permanent structures. Nonetheless, there are 4 affected residential structures made of bush materials (temporary structures) that will be affected by the subproject. APs are entitled to compensation at replacement cost for the materials and labor to repair or reconstruct a similar structure. In addition, these APs are entitled to a moving allowance to relocate their possessions.

5. Graves

185. Compensation will be paid at replacement cost ensuring that the compensation received is equal to the costs for reburial and construction of new graves which are similar to the affected graves. Specific costs have been determined for in the RP.

B. Calculation and Payment of Compensation

186. The initial assessment of affected assets was made at the time of feasibility study, followed by the detailed measurement survey (DMS) and valuation/replacement cost survey (RCS) after completion of the detailed engineering design. For this purpose, DOW engaged a valuer/appraiser to review the applicability of available rates, undertake survey of current market prices and recommend compensation rates at replacement costs for subprojects. The independent valuer has recommended through the RCS, an increase of 3.5% per year from 2008 rates for crops and trees. Compensation rates have been negotiated with APs based on RCS/valuation and has been adapted as the rates for the valuation of affected crops and trees.

187. All compensation rates and the amount of the compensation for damaged crops, trees and structures will be verified and approved by the office of the Valuer General.

188. APs are entitled to payment of all compensation prior to clearance of land and start of civil works. HRMG will ensure that all procedures are followed to facilitate payment of APs prior to the start of civil works.

189. In the case of affected crops, trees and structures, the compensation owed will be paid directly to the person who owns these assets. For example, if women cultivate affected gardens, the compensation will be paid to the affected women.

190. In the event that the losses or damages incurred during civil works are different from those assessed during the DMS and RCS, HRMG will make appropriate adjustments in the compensation amounts, seek verification and approval from the Valuer General and ensure that APs are paid promptly.

C. Entitlements to Rehabilitation Assistance

191. In general, the HRRIP will support APs to restore their living conditions and standards in the most efficient, effective manner possible; and will provide assistance in the following situations:

1. Shifting Allowance

192. APs that own a structure that is used as a trade store or for other business purposes that must be shifted a short distance to a location outside the area designated for the road are entitled to an allowance to cover the loss of business income while the structure is being shifted. The value of the allowance has been calculated based on the RCS and DMS.

193. At the time that the shifting allowance is paid, the structure owner will sign an agreement with HRMG and/or DLO regarding the date by which the structure will be removed from the land required to upgrade/rehabilitate the road.

2. Business Disruption Allowance

194. APs that own a trade store whose business is disrupted due to lack of access caused by civil works are entitled to an allowance to cover the loss of business due to this disruption.

The value of the allowance has been calculated based on RCS and DMS for a period equal to number of days of disrupted business.

3. Moving Allowance

195. APs that relocate housing are entitled to a moving allowance to cover the costs of moving their possessions to the new location. This allowance will be paid in cash or, if organized by HRMG and/or LLG officials, in the form of provided transport.

4. Vulnerable APs

196. The proposed project will assist the following vulnerable households: (i) AP household heads whose age is 65 or older; (ii) female-headed household heads; and (iii) household heads who are physically and/or mentally incapacitated (disabled).

197. It is possible that some APs fall in more than one of these vulnerable groups; they are therefore eligible to receive the allotted entitlements for each count of vulnerability. Nearly all households in the high lands are headed by men and those headed by women are among the poorest.

198. There are no APs that will require to move to other locations other than the present location because the impacts of the road project is linear and there is sufficient land to transfer or relocate the affected structures to the parts of the land that will not be affected by the project. In the event that there will be some who desire to relocate to other locations, there is sufficient tribal lands that would accommodate both the structures and their farming activities.

5. Project Employment

199. People affected by permanent or temporary loss of land or by damage or loss of crops, trees or structures will be given priority for employment by contractors for civil works and/or maintenance works on the road, in accordance with their qualifications to do the work.

D. Income Restoration Measures

200. The loss of the land will be addressed by the tribes by allocating lands in fallow to the affected households if the land losses are significant to the APs. The affected households will continue to subsistence farmers, cultivating their several food gardens located at different parts of their customary land. All APs will be able to continue to be farmers because tribal lands are available when needed.

201. It is anticipated that the upgrading and rehabilitation of the road will create opportunities for livelihood and business. Some APs have signified their intentions to transfer their houses from in the interior to the adjacent areas of the road because they would embark on the transportation business. It is also expected that there would be a significant increase of the volume of traffic and many would be encouraged to engage into roadside vending.

202. Bus bays would be constructed in strategic places along the road that may also serve as roadside vending areas to provide livelihood opportunities for roadside vendors. Safety provisions will be incorporated in the design to ensure that these roadside vendors have adequate protection from wayward vehicles.

203. People affected by permanent or temporary loss of land or by damage or loss of crops, trees or structures will be given priority for employment by contractors for civil works

and/or maintenance works on the road, assuming qualifications to do the work. The implementation of this priority for employment will be the responsibility of DOW as the executing agency. Provisions will be made to include this priority for employment in the contract with the winning contractor. This employment provision will also be encouraged through local sub-contractors as appropriate.

204. DOW through the contractor will establish an apprenticeship program for APs who may not possess the necessary skills but are desirous to work in the project. They will be trained based on the labor requirements in the construction phase through on the job trainings. Tribes would be encouraged to provide the candidates so that they can also participate in the maintenance phase of the project. This aspect will be included as one of the parameters of external monitoring.

205. DOW will encourage women to form associations or use existing ones so that they can tap the opportunities in the construction camps of the contractor. The contractor will require janitorial services, management of dormitories, operations of kitchens and mess halls and maintenance of the camp perimeter and these associations will be contracted by the contractor as part of the project's income restoration measures.

206. Arrangement would be made between DOW through the contractor to source out food that will be used in the kitchens from the nearby food gardens of the APs. This arrangement will be mutually beneficial because farmers would avoid the transportation costs in transporting their products and save time while the contractor will receive fresh produce at more reasonable prices.

207. Owners of non-business related structures that are affected by this project will be compensated for the whole structure irrespective if the road impact will be partial or total to the structures because the structures are too small to provide for partial compensation. The remaining structures are not viable to repair but would require reconstruction of the whole structure. This would ensure that affected persons are better off after the implementation of the road project.

208. There will be use of land during construction and/or maintenance periods, e.g., construction camps and temporary storage for materials and equipment, and as a result will disrupt business activities on land near the road. However, use of land will be temporary in nature and incomes from businesses will be restored once construction and maintenance activities cease. Disruption allowance will be provided to people whose businesses will be temporarily affected due to construction and maintenance work.

E. Indigenous People

209. Following the ADB definition of Indigenous People "as those with a social or cultural identity distinct from the dominant or mainstream society which makes them vulnerable to being disadvantaged in the processes of development", the project will not need an Indigenous People Plan because while AP's may fall under different tribal/linguistic groups, they are considered as part of the mainstream society and of the population living in highland areas which generally characterizes PNG.

210. Inspection of the project areas and interaction with the people in the proposed project sites reveals that the people experience the same social problems and opportunities as other tribes and linguistic groups. Social divides are more pronounced in clans and sub-clans, and living in urban or rural areas rather than by tribe or linguistic group.

211. The recent PNG census figures show that the population is around seven million. Approximately 95 per cent of people are Melanesians. There is no particular ethnic group

that dominates another. Given this backdrop, there is no indigenous or ethnic minority peoples as “those with a social or cultural identity distinct from the dominant or mainstream society, which makes them vulnerable to being disadvantaged in the processes of development.” As such, it is not deemed necessary to prepare separate IP related documents. The RF and the RP address the issue of use of customary land for road widening.

F. Entitlement Matrix

212. The following Table 27. HRRIP Entitlement Matrix summarizes the entitlements to compensation and rehabilitation assistance for the Mendi - Tambul road section under the HRRIP.

TABLE 27. HRRIP ENTITLEMENT MATRIX

Type of Impact	Entitled Person	Entitlement	Expected Results	Implementation
Affected Land				
Temporary use of land	Customary land: Land users as recognized by clan leaders	Use of the land will be acquired through negotiated lease with landowners. Rent as negotiated under the lease. In the case of extraction of materials (e.g., gravel) from the land, the civil works contractor will negotiate directly with the landowner to reach agreement regarding the payment of royalties.	Compensation (in form of land lease) for use of land.	The agreement to use customary land whether temporarily or permanently will be negotiated based on the following conditions: a) landowners agree to and support the upgrading and rehabilitation of the road; b) landowners are consulted and make informed decisions regarding agreements to use land; and c) they guarantee on behalf of all clan members that they will not disrupt the project in other ways. In the case of customary land used temporarily, the cost of restoration of the land following its use will be the responsibility of Contractors as part of their Contracts.
	State-owned land: Users or occupants	No compensation will be paid for use of the land. Cash compensation at replacement cost will be paid for any damaged crops and trees		
Permanent use of land	Customary land: Land users as recognized by clan leaders	Use of the land will be acquired through a negotiated Memorandum of Agreement with landowners.	Agreements on use of customary land.	
	State-owned land: Users or occupants	No compensation will be paid for use of the land. Cash compensation at replacement cost will be paid for any damaged crops, trees, fences or other structures on project-affected land (see below).		

Type of Impact	Entitled Person	Entitlement	Expected Results	Implementation
Other Affected Assets				
Annual crops	Owners of the crops	Compensation for loss of or damage to annual crops on project-affected land as follows: a) APs given notice to harvest crops before clearance or removal from required land; OR, if APs are not able to harvest b) cash compensation calculated at replacement cost based on local market prices.	Compensation for damage to or loss of standing crops to ensure income restoration	DOW will engage a valuer/appraiser to determine compensation rates at replacement cost based on market prices. All compensation rates and amounts will be verified and approved by the office of the Valuer General.
Perennial crops and trees, including timber trees	Owners of crops and trees	Compensation for losses or damages as follows: a) APs given notice to harvest crops before clearance or removal from required land; AND, b) cash compensation for lost plant or tree calculated at replacement cost based on market prices.; AND, c) in the case of perennial crops and trees, a grant equal to the lost income for the period of time until new plants or trees produce a yield similar to the lost plants/trees; OR d) in the case of timber trees, APs will be permitted to harvest trees and sell the timber.	Compensation for damage to or loss of perennial crops and trees to ensure income restoration.	All compensation assessed according to the DMS and RCS shall be paid in full prior to the beginning of civil works. If further damage or loss occurs during civil works, HRMG will carry out supplementary assessments and take steps to get approvals for and payment of additional compensation to which APs are entitled as rapidly as possible.
Fencing	Owners of fencing	For wood and metal fences, cash compensation equal to the replacement cost at local market prices for the type of fencing materials lost or damaged. For vegetation fences, cash compensation at replacement cost for the appropriate type of plant material.	Restoration of affected structures.	All compensation shall be paid to the owners of the affected assets. If, for example, women's gardens are affected, the compensation will be paid to the affected women.
Graves Sites and Graves	Owners of graves	Compensation will be paid at replacement cost ensuring that the compensation received is equal to the costs for	Restoration of affected structures	

Type of Impact	Entitled Person	Entitlement	Expected Results	Implementation
		reburial and construction of new graves		
Residential and other permanent structures	Owners of the structures	Cash compensation for loss or damage of structures on project-affected land at replacement cost (i.e., full value of replacement materials and labor at current market value, together with any other transaction costs).	Restoration of Affected structures	For structures, no deductions will be made to compensation paid for depreciation or the value of salvaged materials
Allowances				
Shifting back of Semi permanent and temporary structures	Owners of structures	A shifting allowance to compensate for lost business revenues while shifting the structure to a location outside the area designated for the road.	Restoration of livelihood /economic activities.	The allowances for shifting structures and loss of business income have been assessed by a valuer in the RP based on the duration of impacts, e.g., to shift a structure and the loss of income.
Disruption of business activities due to civil works	Owners of trade stores and other roadside businesses	A disruption allowance equal for the number of days that business is disrupted due to lack of access or other consequences of civil works	Restoration of livelihood / economic activities	At the time that the shifting allowance is paid, the trade store owner will sign an agreement with HRMG and/or DLO regarding the date of removal from the land required for upgrading the road.
Relocation of housing	Owners of residential structures	A moving allowance to cover the costs of moving personal possessions, paid in cash or in kind (e.g., provision of transport).	Restoration of living conditions.	
Vulnerable APs	APs that are female household heads, handicapped and/or elderly, as determined during census and social surveys	Additional one-time cash grant to head of AP household according to severity of impacts and vulnerability. Specific amounts specified in this RP.	Livelihood restoration, poverty reduction and social development	
Subproject affected	APs including	Priority for paid work for civil works and/or ongoing	Poverty reduction	

Type of Impact	Entitled Person	Entitlement	Expected Results	Implementation
people	vulnerable APs.	<p>maintenance for subproject road, assuming qualifications to do the work.</p> <p>Contractor specifications for provision of HIV/AIDS awareness and prevention programs in construction camps and surrounding communities</p> <p>Extensive community relations and participation program involving women linked to different aspects of subproject preparation and implementation</p> <p>Long-term participatory social monitoring study to track benefits among different road user groups</p>	measure and social development	
Unforeseen Impacts	Unforeseen impacts will be documented and mitigated based on the principles agreed in this RP and ADB SPS.			

G. Eligibility for Compensation and Rehabilitation Assistance

213. General eligibility is defined as people who stand to lose land, houses, structures, trees, crops, businesses, income and other assets as a consequence of the project road as of the formally recognized cut-off date i.e. **June 12, 2013** will be considered as project affected persons (APs). APs entitled to compensation or at least rehabilitation under the project are:

- (i) All APs losing land with title, official/customary deeds or traditional land use rights;
- (ii) All tenants and sharecroppers whether registered or not;
- (iii) All Owners of buildings, crops, plants, or other objects attached to the land disregarding their land occupancy status; and
- (iv) All APs losing business, income, and salaries disregarding their land occupancy status.

214. Compensation eligibility will be limited by the cut-off date set for this project as of June 12, 2013 wherein the impacts assessment and AP census were carried out and completed. All APs who settle in affected areas after this date and who cannot prove that they are displaced users of affected plots will not be eligible for compensation. DOW has informed local communities regarding this cut-off date through the provincial, district and local wards and through the relevant local government agencies.

215. Any person or group that occupies or uses land required for upgrading and rehabilitation of the road after the cut-off date will not be eligible for any compensation and/or rehabilitation assistance; they will be required to remove from the land as per the provisions of the Land Act.

H. Payment of Compensation

216. The HRRIP adopts the principle that all compensation for affected assets will be paid at replacement cost based on current market prices. The office of the Valuer General will verify and approve (i) all compensation rates established through RCS and negotiation for each HRRIP subproject, (ii) the total amount of compensation to be paid.

217. If payment of compensation is delayed, compensation rates will be updated regularly based on inflation rates to ensure that APs receive compensation at replacement cost at the time of compensation payment. Changes to compensation amounts will be verified and approved by the office of the Valuer General.

I. Coordination of Land Acquisition Activities with Civil Works

218. All land acquisition activities will be coordinated with the civil works schedule. Civil works contractors will not be issued a notice of possession of the site until (i) compensation and relocation of APs have been satisfactorily completed; (ii) agreed rehabilitation assistance is in place; and, (iii) the site is free of all encumbrances.

IX. RESETTLEMENT BUDGET AND FINANCING PLAN

A. Sources of Funding for Land Acquisition and Compensation

219. All costs for the HRRIP related to land acquisition, compensation and allowances, operation and administration costs, surveys, monitoring and reporting will be financed by GoPNG using counterpart funds.

220. In the case of designated national roads as with this Mendi-Tambul subproject, DOW will request the National Economic Council (NEC) to allocate and disburse funds for compensation and allowances related to additional land required to upgrade and rehabilitate this subproject.

221. In all instances, the HRMG acting on behalf of the DOW, the HRRIP EA, will monitor the process to ensure that there are minimum delays in the allocation, disbursement and payment of compensation funds.

B. No Costs to Acquire Additional Land to Upgrade Roads

222. There have been negotiations with all affected tribes and clans for the use of the minimum additional land required to rehabilitate and upgrade the Mendi-Tambul road. The list of affected tribes and clans are contained in Table 3. The customary lands required by the project have been gifted to DOW in consideration of public infrastructure as evidenced by the signed MOAs attached in this RP. It is expected that there will be no direct costs to secure the use of the required lands for the project. Documentation expenses for these MOAs will be taken care under administrative expenses of the project.

C. Costs of Compensation for Damages to Houses and Other Structures

223. The costs of compensation for damages to houses and trade stores totaled K100,130.00. This amount represents the full replacement costs of the affected assets. The details are shown in the following Table 28 Costs for Damages to Houses and Other Structures.

TABLE 28 COSTS FOR DAMAGES TO HOUSES AND OTHER STRUCTURES

House	Number of Structure	Bush Material	Semi Permanent	Permanent
Unit	6	6	0	0
Area		96	0	0
Rate		120	350	700
Amount		11,520.00	0	0
Sub-Total				11,520.00
Trade Store				
Unit	20	1	15	4
Area		8	123	43
Rate		120	350	700
Amount		960.00	43,050.00	30,100.00
Sub-Total				74,110.00
Farm House				
Unit	1	1	0	0
Area		10	0	0
Rate		120	350	700
Amount		1,200.00	0	0.00
Sub-Total				1,200.00
Toilet				
Unit	3	1	0	2
Area		5	0	7
Rate		120	350	700
Amount		600.00	0.00	4,900.00
Sub-Total				5,500.00
Others				
Unit	8	6	2	0
Area		30	12	0
Rate		120	350	700
Amount		3,600.00	4,200.00	0.00
Sub-Total				7,800.00
Grand Total				100,130.00

D. Costs of Compensation for Damages to Crops and Trees

224. The resettlement framework provides that the valuation of crops and trees will be based on the replacement cost. Valuers' General Schedule of Compensation rates are from 2008 and some of the rates in the 2008 schedule of compensation do not fully reflect the full replacement costs. Coordination with the Valuer General Office revealed that they are in the process of updating the rates of compensation for crops and trees but the final rates would not be available in the immediate future.

225. DOW engaged a valuer/appraiser to undertake a replacement cost survey (RCS) and the valuer/appraiser has submitted its evaluation in July 8, 2013. The RCS recommended an increase of 3.5% per year from 2008 for the rates of crops and trees of 22008. This RP adopts in full, the recommendations of the RCS and has adjusted all the Valuer General compensation rates for crops and trees by 19% in the computation of the resettlement budget.

226. The costs of compensation related to damages to crops and trees totaled K392, 692, 70. Adding the 19% adjustment for increases in the rates as determined by the replacement costs survey, the grand total for damages to crops and trees amounted to K467, 304.31. A summary of the different classifications of plants and trees based on the Valuer General Schedule of Compensation (2008) and their corresponding amounts are shown in the Table 29. Summary of Costs For Damages to Crops and Trees.

TABLE 29. SUMMARY OF COSTS FOR DAMAGES TO CROPS AND TREES

Summary of Compensation for Trees and Crops			
Code	Tree / Plants Category	Unit	Amount
A1	Tree Crops	1,295	10,052.00
B1	Single Plants and Trees	16,374	114,183.80
B2	Clump Plants and Trees	51,123	79,105.90
C1	Single Plants	4,276	8,034.20
C2	Vines or Clump Plants	986	738.30
C3	Mound Plants	943	4,998.00
D	Forest Trees	19,197	175,580.50
	Total	94,194	392,692.70
19% adjustment			74,611.61
Grand Total			467,304.31

E. Costs of Compensation for Damages to Fences

227. The full replacement cost for damages to the different types of fences in the project area amounted to K50, 072.00 as shown in the following Table 30 Costs for Damages to Fences.

TABLE 30 COSTS FOR DAMAGES TO FENCES

Fence Material	Total Fences	Total Linear Meters	Rate	Amount
Metal	1	10.00	30	300.00
Wooden	21	1,784.00	5	8,920.00
Plant/Bush	388	20,426.00	2	40,852.00
Total	410	22,220.00		50,072.00

F. Costs of Compensation for Damages to Grave Sites and Graves

228. The full replacement costs of compensation for the affected grave sites and graves amounted to K22, 450.00. The details are shown in the following Table 31 Costs for Damages to Grave Sites and Graves.

TABLE 31 COSTS FOR DAMAGES TO GRAVE SITES AND GRAVES

Type of Grave Site	Left		Right		Total	
	Site	Grave	Site	Grave	Site	Grave
Unmarked (1)	5	6	2	3	7	9
Rate	100	1500	100	1500		
Sub-Total	500	9000	200	4500	700	13,500
Permanent (2)	1	1	0	0	1	1
Rate	250	1500	250	1500		
Sub-Total	250	1500	0	0	250	1,500

Permanent with Features	0	0	2	3	2	3
Rate	1000	1500	1000	1500		
Sub-Total	0	0	2000	4500	2000	4,500
Total	750	10,500	2,200	9,000	2,950	19,500
Grand Total						22,450

G. Costs for Compensation for Business Losses

229. The costs of compensation for business losses in the form of shifting allowance totaled K2, 400.00. The details are shown in the following Table 32 Costs of Compensation for Business Losses.

TABLE 32 COSTS OF COMPENSATION FOR BUSINESS LOSSES

Shifting Allowance	Number of Businesses	Rate	Amount
Trade Stores	20	2 weeks X minimum wage (K120)	2,400.00
Total	20		2,400.00

H. Costs of Rehabilitation Assistance

230. The costs of rehabilitation assistance for vulnerable households accounted to K12, 960.00. The details are shown in the following Table 33 Costs of Vulnerable Allowances.

TABLE 33 COSTS OF VULNERABLE ALLOWANCES

Vulnerability	Left Side	Right Side	Total	Rate	Amount
Women Headed Households	6	6	12	K240 (value of minimum wage for 1 month)	2,880.00
Handicapped Headed Households	0	3	3		720.00
Elderly headed Households	17	22	39		9,360.00
Total	23	31	54		12,960.00

J. Costs of Affected Assets and RP Budget

231. The total cost of this resettlement action plan for the Mendi-Tambul road project amounted to **K1, 150, 080.13**. This budget includes costs of compensation for all affected assets, costs of rehabilitation assistance, physical and price contingencies, administrative expenses and cost for external monitoring. The details are shown in the following Table 34. Summary of Cost Estimates of Affected Assets and RP Budget.

TABLE 34. SUMMARY OF COST ESTIMATES OF AFFECTED ASSETS AND RP BUDGET

Houses and Other Structures			
Structure	# of Structures	Rate	Sub-Total
Houses	6	Based on full replacement costs and self valuation of affected owners	11,520.00
Trade Stores	20		74,110.00
Farm House	1		1,200.00
Toilets	3		5,500.00
Others	8		7,800.00
Sub-Total (A)			100,130.00
Crops and Trees			

Plant and Tree	# of Plants/Trees	Rate	Sub-Total
Tree Crops	1,295	Rates for the various plants and trees are based on Valuer General Rates	10,052.00
Single Plants and Trees	16,374		114,183.80
Clump Plants and Trees	51,123		79,105.90
Single Plants	4,276		8034.20
Vines or Clump Plants	986		738.30
Mound Plants (by area)	943		4,998.00
Forest Trees	19,197		175,580.50
Sub-Total (B)	94,194.00		392,692.70
19% Rate Adjustment			74,611.61
Grand Total			467,304.31
Fences			
Material Used	Length	Rate/Linear Meter	Amount
Metal	10	30	300.00
Wooden	1,784	5	8,920.00
Plant/Bush	20,426	2	40,852.00
Sub-Total (C)	22,220		50,072.00
Grave Sites and Graves			
Graves Sites and Graves	# Sites/Graves	Rate	Amount
Unmarked			
Grave Site	7	100	700.00
Grave	9	1500	13,500.00
Permanent			
Grave Site	1	250	250.00
Grave	1	1500	1,500.00
Permanent with Features			
Grave Site	2	1000	2,000.00
Grave	3	1500	4,500.00
Sub-Total (D)			22,450.00
Special Allowances			
	# of Entitled HHs	Rate	Amount
Shifting Allowance	20	120	2,400.00
Vulnerable Allowance	54	240	12,960.00
Sub-Total (E)			15,360.00
Total (A+B+C+D+E)			655,316.31
Physical Contingency (20%)			131,063.26
Price Contingency (10%)			65,531.63
Total			851,911.21
Administrative Expenses (15%)			127,786.68
Independent Monitoring (20%)			170,382.24
Grand Total			1,150,080.13

X. INSTITUTIONAL ARRANGEMENTS

A. Department of Works (DOW)

232. As Executing Agency (EA) for the HRRIP, Department of Works (DOW) has overall responsibility to manage the planning, implementation and monitoring related to acquiring use rights for additional land to implement HRRIP subprojects, as well as compensation for damages on project-affected land.

B. Highlands Region Maintenance Group

233. The Highlands Region Maintenance Group (HRMG), as the DOW's Project Implementation Unit (PUI) for HRRIP subprojects to upgrade and rehabilitate roads, has the responsibility delegated by the DOW to carry out the planning, implementation and monitoring for land activities, as required. These include but may not be limited to the following:

- Collaborate with and assist PLO and/or DLO to carry out their work in compliance with the HRRIP policies and ADB requirements;
- Provide qualified personnel to conduct and/or assist PLO and/or DLO to carry out surveys including fieldwork to support the subproject screening and preliminary assessment of additional land requirements; and, as required, a census of affected people, the detailed measurement survey (DMS), RCS and socio-economic baseline survey;
- Collaborate with PLO and/or DLO for negotiations regarding Memoranda of Agreement (MOA) and leases for temporary use of land;
- Coordinate and carry out consultations with affected communities, including leaders, affected people and other interested community members; and, ensure that all stakeholders are informed in a timely manner about the project, its policies and procedures; ensure that all requirements are carried out concerning public disclosure of the provisions for land acquisition and compensation; and, oversee and monitor the grievance redress process;
- Review and endorse the draft RP as prepared by the Consultants prior to submitting it to DOW and, subsequently, to ADB for approval, making sure that all matters related to land acquisition are complete and properly reported;
- Monitor the process of allocation and disbursement of funds for compensation at both the national and provincial levels, and ensure that funds are available and compensation is paid in a timely manner as per the provisions of the RP;
- Carry out all other activities related to internal monitoring of land acquisition activities and collaborate with and support the work of the independent monitoring organization;
- Coordinate with civil works contractors to ensure that required land is cleared in a timely manner, that unforeseen damages and losses are recorded and compensation paid and that all other steps and measures are taken to complete the civil works in an efficient manner.

C. Provincial Administrations

234. The Provincial Land Officer (PLO) will collaborate with the HRMG to plan, implement and monitor land activities for HRRIP subprojects in the province and/or delegate responsibility to the relevant District Land Officers (DLO). The PLO responsibilities include:

- Conducting surveys of land required permanently or temporarily for the subproject;

- Negotiating and signing a Memorandum of Agreement for permanent use of customary land with the leaders and affected landowners in communities will land is affected;
- Negotiating and signing leases for temporary use of land required for the subproject; and,
- Consulting with and advising affected communities about the HRRIP, the policies and procedures when additional land is required and the rights and responsibilities of affected people and other stakeholders.

235. The Provincial Governor and/or Provincial Administrator (PA) in coordination with DOW are responsible to ensure that funds are allocated and disbursed to pay compensation and allowances for provincial (and/or district) roads that are included in the HRRIP.

D. District and LLG Administrations

236. The District Land Officer (DLO), as delegated by the PLO, will collaborate with HRMG to plan, implement and monitor land activities for HRRIP subprojects in the district, including:

- Conducting surveys of land required permanently or temporarily for the subproject, and preparing LIR;
- Negotiating and signing a Memorandum of Agreement for permanent use of customary land with the leaders and affected landowners in communities will land is affected;
- Negotiating and signing leases for temporary use of land required for the subproject; and,
- Consulting with and advising affected communities about the HRRIP, the policies and procedures when additional land is required and the rights and responsibilities of affected people and other stakeholders.

237. LLG Ward Councilors will be effective participants in all consultations with local communities, affected people and other stakeholders. They will be responsible for collaborating with HRMG to organize and carry out these consultations.

E. Institutional Capacity for Land Acquisition Activities

238. The National Department of Lands and Physical Planning (DLPP) and the Lands and Survey Division (LSD) situated within the DOW are well-organized to assist the Executing Agency (EA) to (i) oversee and manage the land acquisition and compensation process; and, in particular, to support the work of the IA and others with respect to identification of land tenure, review and endorsement of procedures and plans, as well as facilitation of requests for allocation and disbursement of funds to pay compensation.

239. The Implementing Agency (IA), the HRMG has experience in dealing with issues related to community consultations and negotiation of Memorandum of Agreements (MOA) for additional land required to upgrade and rehabilitate national and provincial roads, as well as other aspects of compensation for lost and damaged assets as per the GoPNG procedures. Similarly, the personnel of the PLO and DLO in most jurisdictions also have experience with MOA and compensation issues.

240. The HRRIP will train staff of DOW/HRMG, DLPP and other relevant agencies and provide necessary support to carry out the work on land acquisition and resettlement. The scope and detailed TOR of capacity building support including inputs of social safeguard specialists for overall HRRIP are provided in the resettlement framework (see the RF Section VIII and Appendix 5).

XI. IMPLEMENTATION SCHEDULE

241. DOW will begin the implementation process of RP immediately after its approval by the ADB. A timeline for the implementation and post implementation of the RP implementation has been prepared in accordance with different steps covered under this RP and presented in Table 35 RP Implementation Schedule.

TABLE 35 RP IMPLEMENTATION SCHEDULE (2013)

Main Resettlement Plan Activities	Responsibility	July	Aug	Sept	Oct	Nov	Dec
Translation of the summary RP into Pidgin	DOW/HRMG						
RP disclosure: Distribution of RP and information pamphlets in Pidgin in the affected communities	DOW/HRMG/ Consultant						
Distribute Public Information Booklet to APs and Consultation with APs	DOW/HRMG/ Consultant						
Submission of RP to ADB for approval	DOW/ Consultants						
Allocation of financial resources for land acquisition	DOW/National Economic Council						
Award of compensation cheques to APs	DOW/HRMG						
Disputes/ objections (complaints & grievances)	DOW/HRMG/ Court						
Shifting of APs/ Demolishing/ relocation of affected structures/assets	DOW/HRMG/ AHs						
Confirmatory letter to ADB for completion of all payments	DOW						
Confirmation and verification of completion of payments by	DOW						

Independent Monitoring Organization							
Issuance of no-objection for commencement of civil works by ADB	ADB						
Commencement of civil works	DOW/ Contractor						
Internal monitoring. Quarterly Progress Reporting and semi-annual safeguard monitoring reports to ADB	DOW/HRMG Consultant						
Independent evaluation of RP program (After 3-months of the RP Implementation)	IMO						

XII. MONITORING AND REPORTING

242. RP activities in the Mendi-Tambul road project will undergo both internal and external monitoring. Internal monitoring will be conducted by DOW through HRMG, assisted by the Supervision Consultant. External monitoring will be assigned to an independent Monitoring Organization (IMO) to be hired by DOW, and approved by ADB.

A. Internal Monitoring

243. The HRMG will monitor all activities associated with land acquisition and payment of compensation to APs. The scope of internal monitoring includes: (i) compliance with the agreed policies and procedures for land acquisition; (ii) prompt approval, allocation and disbursements of funds and payment of compensation to APs, including supplemental compensation for additional and/or unforeseen losses; (iii) the availability of other resources and efficient, effective use of these resources; and, (iv) requirements for remedial actions.

244. During the implementation of the RP, the HRMG will prepare semi-annual safeguard monitoring reports and submit these reports to ADB in addition to regular quarterly progress reports as part of project performance monitoring. HRMG will also submit a subproject land acquisition completion report to ADB when compensation has been paid and request approval to proceed with civil works.

B. External Monitoring

245. The HRMG will recruit an independent monitoring organization (IMO) to conduct external monitoring for HRRIP subprojects that require land acquisition. The external monitoring will focus on the social impacts of the subprojects and whether APs are able to restore, and preferably improve, their pre-project living standards, incomes, and productive capacity.

246. The IMO will be specialized in social sciences and experienced in resettlement monitoring. It will be recruited and mobilized from the first tranche of the HHRIP; and, will monitor all activities related to land acquisition, community consultations, preparation of RPs and payment of compensation. Proposed terms of reference for the IMO are found in Appendix 8

247. The IMO will prepare bi-annual monitoring reports; and, conduct post-acquisition evaluations twelve (12) months after compensation is completed for each subproject. All IMO reports will be submitted to HRMG and ADB.

ANNEXES

ANNEX 1 –MEMORANDUM OF AGREEMENT



DEPARTMENT OF WORKS



Tel: (675) 324 1114
Fax: (675) 324 1102

MEMORANDUM OF AGREEMENT

This **Memorandum of Agreement** entered into by and between;

The Independent State of Papua New Guinea as represented by the Department of Works;

—AND—

The council wards of Mendi Urban, Tente 1, Tente 2, Essenda, Kin, Timupa, Enap, Kundaka, Karel, Kumar, Kerenda, Komea 1 and Komea 2, District of Mendi, Province of Southern Highlands represented by its wards leaders, district leaders, leaders of clans and sub-clans, the names of which are enumerated at the end of this document;

—WITNESSETH—

Whereas, the State through the Department of Works is formulating, administering and implementing the Highlands Region Roads Improvement Investment Program (HRRIP), with loan assistance from the ADB, for the upgrading, rehabilitation and maintenance of selected roads in the Highlands Region Road Network;

Whereas, one of the qualification of a road for the HRRIP is that it is an existing or former road, that is, the road bench exists and restitution of a trafficable road does not require major earthworks or construction of structures and the local population as well as district and provincial administrators have clearly stated their support for upgrading and rehabilitation of the pre-selected road;

Whereas, the Mendi – Tambul road section has been pre-selected by the State through the Department of Works (DOW) and approved by the Asian Development Bank (ADB) based on certain assumptions including two conditions namely that the right to use (a) existing road carriage has been negotiated in the past when such road was constructed, and (b) additional land to be required for the HRRIP project has been negotiated with the customary owners;

Whereas, after diligent searches and inquiries from the relevant government agencies, the existence of a writing document on the agreement for the use of customary land in the past cannot be ascertained and that the agreement may not have been put into writing;

Whereas, the absence of any proof of the existence of previous agreements for the use of the existing road carriage and the use of additional road for the HRRIP project by the government might jeopardize the continued inclusion of the pre-selected road to the HRRIP because the previous assumptions of the existence of these documents for the use of existing road and additional land may not be defensible;

Whereas, there is an urgent need to cure any deficiencies that may affect the eligibility of the pre-selected Mendi - Tambul road section with the HRRIP and may create or foster future conditions that would give rise to misunderstandings, resentments and possible conflicts on the right to use the customary lands;

Whereas, the clans and communities who jointly own the customary land are fully aware of the benefits of an ungraded and rehabilitated road for their communities such as faster travelling time and cheaper transport costs, better access to health and educational facilities, increase economic activities, better access of farm products to markets among others;

Whereas, the clans and communities, who jointly own the affected customary land that will be needed by the government for road improvements, are fully supportive of the proposed project to improve the existing road section passing through their communities, wards and districts;

Whereas, the clans and communities, who jointly own the affected customary land are desirous for the road section which is located in their customary land, to retain its status as a pre-selected road of HRRIP subject to a feasibility study including qualifications of the project's eligibility criteria and detailed engineering design;

Whereas, there is an urgent need for a close public – private partnership between the Independent State of Papua New Guinea as represented by the Department of Works who has the legal mandate to undertake infrastructure development in the country and the clans and communities who jointly own the customary land where the proposed road development will be constructed;

NOW, THEREFORE, for and in consideration of the foregoing premises and covenants hereinafter stipulated, the Independent State of Papua New Guinea, represented in this Memorandum of Agreement by the Department of Works (DOW) and the clans and communities who jointly own the customary land where the existing road carriage is located and the additional land that will be required to improve the existing road:

1.0 Identification and Location of Road Section

1.1 DOW has considered the road section from Mendi Tambul as a pre-selected road for the HRRIP. This road section has a length of around 55.5 Km and will start at chainage 0+000 located at Mendi and will end at chainage 55+530 at Tambul.

1.2 We certify that we, as individuals and representatives of our communities and clans, are the exclusive customary owners of the road section that is a pre-selected road for the HRRIP. The particulars of our customary land are described below;

Road section :Mendi - Tambul

Km to km (chainage): From 0+000 to 39+740

Wards: Mendi Urban, Tente 1, Tente 2, Essenda, Kin, Timupa, Enap, Kundaka, Karel, Kumar, Kerenda, Komea 1 and Komea 2

District: Mendi Province: Southern Highlands

2.0 Additional Land Requirements

The upgrading and rehabilitation of this pre-selected road will require additional customary land and that based on the existing road and the proposed road, both described below, the preliminary estimate of the DOW for the additional land requirement is 26.52 hectares,

Existing Road	Proposed Road
Carriageway 4.00 meters Formation width 4.20 meters Total width 4.23 meters, to outside of drainage structures Total area 16.83 hectares of existing road within the customary land.	Carriageway 6.00 meters Formation width 6.50 meters Total width 10.91 meters of construction limits Total area 43.35 hectares of proposed road
Difference of area between existing road and proposed road: 26.52 hectares (additional land required)	

3.0 Agreement

3.1 Responsibilities and Commitments of Clans and Communities

1. We, members and representatives of the clans and communities who jointly own the customary lands on the above mentioned road section agree to permit the Independent State of Papua New Guinea (State), as represented by DOW, to use our additional customary land for the upgrading, rehabilitating and maintaining the road section described above exclusively under the HRRIP and guarantee the unimpeded use of the road by the public;
2. That we enter into this agreement on the basis of our free and prior informed choice and consent, having been provided with full information by the State through the DOW and DLPP about the HRRIP project and are fully aware of the consequences for our tribes, clans/sub-clans and communities and waive any and all customary interests over the additional lands in lieu of public infrastructure;
3. That we are aware that the State will be using public funds for the improvement of roads situated in customary lands and if the issue of land use is not properly addressed now, future generations of customary owners may restrict and limit public and private vehicles from using the improved road that may cause conflict and unrest in our communities and villages;
4. That our full permission for the State to use the additional land is premised on the existence of the said road and in the event that the use of our customary land as a road is discontinued for any cause, our permission will also cease and the use of the land will revert to the former owners and users of the land at the time of taking;
5. That we are validating and reiterating the permission given by our ascendants to permit the State through the DOW, to use our customary lands where the existing road carriage is located and in the event that the use of our customary land as a road is discontinued for any cause, our permission will also cease and the use of the land will revert to the former users of the land at the time of taking;
6. In the event that the State will seek to use or establish a public road reserve beyond the actual construction limits of the proposed road under the HRRIP, the required additional lands is not included in the subject matter of this MOA and will require a separate agreement with the customary land owners;
7. That if there are any dislocations on land use that will be caused to any member of our clans and community because of the additional land requirement of the road, in considerations for the positive effects of the project, our clans and communities involved will address this issue based on our customs and traditions and provide for adequate land replacement;
8. That we are representing all the clans and communities that jointly owned the land as described in Section 2 of this agreement and that we will all be jointly responsible to control and police our ranks in complying with the terms and conditions of this agreement.
9. That we are guaranteeing the State on behalf of all members of this community and its clans that there will be no land claims or grievances on the existing road as well as on the additional land required and that there will be no disruption and/or disturbance of the civil works to upgrade and rehabilitate the road;
10. That in the event that there is disruption and/or disturbance of data gathering for planning, surveys and during the implementation of civil works of the above road section, the clan and/or community involved will be jointly liable for the appropriate compensation and the erring person who may be criminally liable, be surrendered to the proper authorities for the appropriate legal measures.

3.2 Responsibilities and Commitments of the State through the Department of Works

1. The DOW has minimized as far as possible additional land requirements for the improvement of the existing road based on existing road standards to ensure the safety of passengers and vehicles using the improved road. However, there are instances that improvements in the hairpin curves sections, relocation of some bridges and improvement in the drainage system will result in using more lands than expected which are unavoidable but necessary to improve the safety of the existing road carriage.
2. DOW has conducted a detailed measurement survey to determine the additional land required to upgrade, rehabilitate and maintain the above mentioned road section based on the detailed engineering design and has a list of all the affected persons (APs) and their affected assets such as annual crops, perennial plants and trees, fences, structures, and graves and these will all be

- compensated based on the most recent Valuer General's Compensation Schedule (hereinafter referred to as the Schedule);
3. The clans and communities will ensure that after the detailed measurement survey, there will be no new structures built or crops, plants, trees planted within the construction limits. Structures built and improvements planted or made after the detailed measurement survey (cut-off date) will not be compensated.
 4. *Temporary Use of Land* – The road contractor will negotiate with customary land owners for the temporary use of customary land for the construction camps, motor pools, stockpile areas for aggregates, etc. The road contractors will be responsible for the restoration of the area after the completion of the road as part of their contract.
 5. *Compensation for Loss of Annual Crops* – APs will be encouraged to harvest their annual crops, in this case, no compensation will be paid; however, if the annual crop is not yet harvestable upon land taking, compensation will be based on latest Schedule;
 6. *Compensation for Loss of Perennial Plants and Trees* – Compensation for lost plants and/or trees will be paid based on the Schedule. An additional grant equal to the lost income for the period of time until new perennial plants or fruit trees produce a yield similar to the lost plants and trees. For timber trees, APs will be required to cut the trees prior to clearance of the additional land; in lieu of compensation, they will be permitted to harvest the trees and sell the timber.
 7. *Compensation for Loss of Fences* – Fences constructed of wood or metal will have a compensation rate equal to the current market price (per meter) for similar fencing materials, as determined in the subproject area. For vegetation fences, the compensation will be based on Schedule for the type of plant material used.
 8. *Compensation for Loss of Semi-Permanent or Temporary Structures* – Semi-permanent or temporary structures may be located close to the road and it may be necessary to shift these buildings back in order to upgrade the road. In this instance, APs will be provided with a shifting allowance to cover the costs of this activity. If such structures cannot be moved, APs are entitled to compensation at replacement cost for the materials and labor to repair or reconstruct a similar structure.
 9. *Compensation for Loss of Graves* – Compensation will be paid for the affected graves based on the Schedule. In addition, HRRIP will pay an additional grant to ensure that compensation received is equal to the costs for reburial and construction of new grave.
 10. *Construction Employment* – People affected by permanent or temporary loss of land or by damage or loss of crops, trees or structures will be given priority for employment by contractors for civil works and/or maintenance works on the road, preferably on road sections where they own the customary land, provided that these applicants are qualified to perform the work required.
 11. *Shifting Allowance* – The value of the shifting allowance will be calculated based on the provincial minimum wage as established by the Minimum Wage Board for a maximum period of two weeks. At the time that the shifting allowance is paid, the landowner will sign an agreement with DOW and/or DLO regarding the date by which the structure will be removed from the land required to upgrade/rehabilitate the road.
 12. *Business Disruption Allowance* – APs that own a temporary or semi-permanent structure that is used as a trade store or for other business purposes that must be shifted a short distance to a location outside the area designated for the road are entitled to an allowance to cover the loss of business income while the structure is being shifted calculated based on the provincial minimum wage as established by the Minimum Wage Board for a period equal to number of days of disrupted business.
 13. *Time for Valuation of Assets* – The valuation of assets will be made at the time of the detailed measurement survey (DMS) conducted following completion of detailed engineering design calculated based on the Valuer General's Compensation Schedule and assessing the requirement for additional grants and the grant amount based on existing conditions in the subproject area.
 14. *Delayed Payment* – If payment of compensation is delayed, compensation rates will be updated regularly based on inflation rates to ensure that APs receive compensation at replacement cost at the time of compensation payment. Changes to compensation amounts will be verified and approved by the office of the Valuer General.
 15. *Full Payment of Compensation* – APs are entitled to payment of all compensation based on the DMS prior to clearance of land and start of civil works. DOW will ensure that all procedures are followed to facilitate payment of APs prior to the start of civil works. In the case of affected crops,

trees and structures, the compensation owed will be paid directly to the person who owns these assets.

16. All land acquisition activities will be coordinated with the civil works schedule. Civil works contractors will not be issued a notice of possession of the site until (i) compensation and relocation of APs have been satisfactorily completed; (ii) agreed rehabilitation assistance is in place; and, (iii) the site is free of all encumbrances.

4.0 General Conditions

1. If the negotiated agreement for the use of the customary land, both for the existing road and for the whole road section as described earlier have not been attained for any cause, both parties agree that this memorandum of agreement will become null and void and unenforceable, to any or both parties; In this case, the State through the DOW will inform in writing the clans and communities through their leaders and representatives about this development and this is sufficient notice for the State to invoke the unenforceability of the MOA;
2. The State through the DOW and its consultant together with the provincial, district and ward administrations will conduct periodic consultations and encourage active participation of affected clans and communities covered by this road section to inform and update all stakeholders of the development of the project;
3. The State through the DOW in collaboration with the provincial and/or district land officer will institute a grievance process based on the accepted practices of mediation to address any complaint or issue regarding the valuation of asset or any resettlement related matter. If the complaint or issue is not resolved in this level, the HRRJIP will adopt procedures to refer matters to the system of land courts as set out in the Land Disputes Settlement Act;
4. In the event of grievances that cannot be resolved through mediation at the local level, the State through the relevant authorities will hold the compensation amounts in escrow. Compensation will be paid in full upon final resolution of the case in the courts or other forum, in accordance with the entitlements of the affected person;
5. This MOA repeals and/or supersedes any written or verbal agreement for the use of customary land on the existing road carriage and the proposed road referred to in Section 2 of this MOA issued previously by either the DLPP, DOW and the customary land owners;
6. No amendment or additional terms and conditions to this MOA shall be deemed binding between the parties unless mutually agreed upon by them in writing.

IN WITNESS WHEREOF, we have hereunto affixed our signatures this ____ day of _____, 2013.

By and on behalf of the Independent State
of Papua New Guinea Minister for Works








DAVID WEREN

(Name and Signature)




(Designation)

1. SECRETARY

MENDI TO TAMBUL ROAD PROJECT 2013

No.	Name of Leader & Status	Council Ward	Village	Clan & Sub-Clan	Signature	Date
1	COUNCILOR MARIL AKO	TEATE 2	TEATE	OSOM SEMA		10/02/013
2	COUNCILOR WENDO ALEON	KIEN	KIEN	OMARA		✓
3	COUNCILOR ROM KACIA	KARER 1	KARER	MANOM SEM	ROM	✓
4	COUNCILOR JOHN MEYA	ENEP	TIMISA	EMENQ.		✓
5	COUNCILOR RAYMOND WALO	KUNDARAKA	KUNDARAKA	TUL WAKAN.		✓
6	COUNCILOR BION TOLAA	KOMETA 1	KOMETA	PONOLA YAKOP		✓
7	KENIN SUMEAKA VILLAGE CHIEF.	KARERAKA	KARERAKA	YANGUNAN		✓
8	PENE ANDA VILLAGE CHIEF	KARER 2	KARER	KERAKA KAPAKA		✓

MENDI TO TAMBUL ROAD PROJECT 2013

No.	Name of Leader & Status	Council Ward	Village	Clan & Sub-Clan	Signature	Date
9	RAWE POMBORA. VILLAGE CHIEF	KUMA 2	KUMA	NOTOLA		16/07/013
10	KEREME RUPU VILLAGE CHIEF	KUMA 1	KUMA	MUNP		✓
11	KEET PUAL VILLAGE MAGISTRATE	TENITE 1	TENITE	UNULUP		✓
12	PONENIG SUGAL VILLAGE CHIEF	KOMBA 2	KOMBA	KOMBA YAKAP	PONGE	✓
13						
14						
15						
16						

Witness:

I, Maria Miamil Fie a Provincial Lands Officer of W.H/S.A Province, a public servant of Papua New Guinea, do hereby certify that the contents of this Agreement were read over by NIKO LADERS in the ENGLISH language that is understood by the signatories to this Agreement and I further certify that to the best of my knowledge and belief the contents of this Agreement are understood by the signatories hereto.

Dated at Don HQ this 2nd day of AUGUST, 2013.

Signature:

Designation:



ANNEX 2

TOR FOR INDEPENDENT MONITORING ORGANIZATION

A. External Monitoring Objectives

1. The objectives for external monitoring are to provide an independent review and assessment of (i) the achievement of HRRIP resettlement objectives and principles, (ii) the effectiveness, impact and sustainability of entitlements, (iii) the need for further mitigation measures if any, and (iv) to identify strategic lessons for future policy formulation and planning.

B. Hiring, Qualifications and Timing

2. In accordance with ADB requirements for consultant procurement, HRMG will engage an individual or organization for the independent monitoring and evaluation of RP implementation. The individual or organization, to be called the Independent Monitoring Organization (IMO), will be a) a specialist and/or specialized in social sciences and b) experienced in resettlement monitoring for international agencies. All candidates will be academically trained as social anthropologists and/or sociologists.

C. Monitoring and Evaluation Indicators

3. The following indicators will be monitored and evaluated by the IMO:

- (i) Public consultation and disclosure: a) APs and other stakeholders should be fully informed and consulted about land acquisition activities; b) the monitoring team should attend public consultation meetings to monitor procedures, problems and issues that arise during the meetings and solutions that are proposed; c) public awareness of the compensation policy and entitlements will be assessed among APs.
- (ii) Identification of APs and their entitlements: a) all APs identified and informed of their rights and entitlements; b) participatory process to collect data on affected assets; c) calculation of compensation and allowances according to HRRIP policies.
- (iii) Payment of compensation: a) full payment to be made to all APs sufficiently before land acquisition; adequacy of payment to replace affected assets; b) prompt attention to unforeseen damages or losses, to ensure APs are fully compensated for losses.
- (iv) Co-ordination of resettlement activities with construction schedule: The completion of land acquisition and resettlement activities for any sub-project to be completed prior to the approval to award of the civil works contract for that sub-project.
- (v) Restoration of productive activities: Affected persons should be monitored regarding restoration of productive activities so as to ensure the process is satisfactory for the APs.
- (vi) The level of satisfaction of APs with various aspects of the RP: This will be assessed, reviewed and recorded, and the operation of the mechanisms for grievance redress and the speed of grievance redress will be monitored.

D. Methodology

4. The methodology for monitoring and evaluation of the preparation and implementation of land acquisition activities associated with HRRIP tranches will include the following activities:

1. Detailed Measurement Survey

5. The detailed measurement survey (DMS) is to provide data on 100% of APs. The DMS will establish a database for each AP in terms of his/her social-economic status, the nature and extent of losses suffered, compensation and entitlements etc. Data will be disaggregated according to LLG and district. This database will become the basis for compensation and for monitoring the benefits as well as entitlements the AP receives during the process of implementation.

6. As soon as the detailed engineering design is finalized and marked on the ground, the HRMG, PLO/DLO and LLG officials for each road section will carry out the DMS with the full participation of all APs. The IMO will monitor the DMS process. The resulting data will be made available to the IMO to enable them to create their initial database.

2. Socio-Economic Survey

7. In conjunction with the preparation of detailed engineering design, HRMG will conduct a baseline social survey in communities along the subproject road. The IMO will collaborate with the HRMG to ensure that data are collected to provide a baseline for external monitoring, including:

- (i) Inclusion of 20% of APs in the samples of households and business owners that are surveyed.
- (ii) Baseline data to document the characteristics of AP households including demographic, education, income and occupational profiles; livelihood and production systems, economic activities, income sources and poverty levels; access to and use of land and natural resources, tenure security and common property resources; and, social and cultural systems and networks. All data must be disaggregated, as relevant, by gender, tribal group and income group.

8. Special attention should be paid so that women, elderly persons and other vulnerable target groups are not omitted and/or overlooked. The sample should have, as far as possible, equal representation of male and female respondents. Certain set questions in the interview should be specifically marked and answered only by female members of the household and/or those who are vulnerable (such as the lonely elderly, people with disabilities etc). Data should be disaggregated according to gender, age, ethnicity and socio-economic status where appropriate.

3. Participatory Rapid Appraisals

9. The IMO will conduct periodic participatory rapid appraisals (PRA) to consult with the various stakeholders (local government, implementing agencies, social organizations, community leaders and APs). PRA will involve obtaining information, identifying problems and finding solutions through participatory means, which will include the following:

- (i) Key informant interviews with selected local leaders at village, LLG and district levels; and, informal surveys and interviews with APs, vulnerable groups and other stakeholders.
- (ii) Community public meetings to discuss community losses and impacts and construction work employment; as required, separate meetings will be organized with women or other groups who because of cultural constraints are less likely to contribute in general community meetings'
- (iii) Structured direct field observations on the status of land acquisition activities in addition to individual and groups interview for cross-checking purposes.

E. Database Management and Storage

10. The IMO will collaborate with HRMG to establish and maintain a database of resettlement monitoring information. It will contain certain files on each affected household and, as required, will be updated based on information to reflect changes in socio-economic conditions. All databases compiled will be fully accessible by all implementing agencies and those involved in the management of land acquisition activities.

F. Reporting

11. The IMO is required to file monitoring reports at intervals to be agreed (generally, once or twice per year). These monitoring reports shall be directly submitted to HRMG and the ADB. The report should contain the following topics:

- (i) Progress of land acquisition and compensation activities;
- (ii) Deviations, if any, from the provisions and principles of the RP and an explanation thereof;
- (iii) Identification of problem issues and recommended solutions so that implementing agencies are informed about the ongoing situation and can resolve problems in a timely manner; and
- (iv) Progress of the follow-up of problems and issues identified in the previous report.

G. Monitoring Report Follow-up

12. The monitoring reports will be discussed in a meeting between the IMO, HRMG and the other implementing agencies (e.g., PLO/DLO) held immediately after submission of the report. Necessary follow-up action will be taken based on the problems and issues identified in the reports and follow-up discussions.

H. Evaluation

13. For each HRRIP subproject, the IMO will conduct an evaluation of the resettlement process and outcomes 6-12 months after completion of all land acquisition and compensation activities, using the same survey questionnaire and sample as used during the monitoring activities.

Co ntr ol #	Househol d Head	Chainage		Sid e	C&T	Structu re	Fence	Buss Loss	Vulner able	Total
1	Rodney Kur	0+22 5	0+25 4	Rig ht	20.00		58.00		0.00	78.00
2	Daniel Buka	0+40 7	0+48 8	Rig ht	6.20		0.00		0.00	6.20
3	Non Boski	0+48 8	0+52 4	Rig ht	89.00		0.00		0.00	89.00
4	Nolpi Mosumbi o	0+52 4	0+54 4	Rig ht	189.70		0.00		0.00	189.70
5	Eddie Kink	0+54 4	0+61 1	Rig ht	10.00		174.0 0		0.00	184.00
6	Simon Buka	0+61 1	0+72 0	Rig ht	456.80		0.00		0.00	456.80
7	Petrus Max	0+72 0	0+77 2	Rig ht	62.50		50.00		0.00	112.50
8	Daniel Simion	0+77 2	0+84 4	Rig ht	162.00		0.00		0.00	162.00
9	Lucy Yano	1+16 8	1+31 6	Rig ht	716.50		120.0 0		0.00	836.50
10	Mupi Irap Sure	1+31 6	1+38 5	Rig ht	678.00		300.0 0		0.00	978.00
11	Pastor Amos	1+38 5	1+45 0	Rig ht	143.50		0.00		0.00	143.50
12	Francis Bepi	1+82 6	1+85 6	Rig ht	30.40		35.00		240.0 0	305.40
13	Nowas Kombus	1+85 6	1+86 6	Rig ht	41.00		0.00		0.00	41.00
14	Kunjap Toli	1+86 6	1+94 2	Rig ht	23.50		100.0 0		0.00	123.50
15	Pastor Michael	1+94 2	2+04 0	Rig ht	1,065.50		196.0 0		0.00	1,261.5 0
16	William Kep	2+04 0	2+14 0	Rig ht	451.40		100.0 0		0.00	551.40
17	Lui Kep	2+14 0	2+25 2	Rig ht	333.50		448.0 0		0.00	781.50
18	Wer Kep	2+25 2	2+31 2	Rig ht	1,600.00		500.0 0		0.00	2,100.0 0
19	Michael Kep	2+31 2	2+40 6	Rig ht	1,149.00		0.00		0.00	1,149.0 0
20	Nosum Epeol	2+40 6	2+45 5	Rig ht	85.00		0.00		0.00	85.00
21	Levi Osial	2+45 5	2+47 4	Rig ht	2,971.20		100.0 0		0.00	3,071.2 0
22	Alep Kengi	2+47 4	2+54 6	Rig ht	1,420.90		0.00		0.00	1,420.9 0
23	Anis Som	2+54 6	2+64 6	Rig ht	375.20		0.00		0.00	375.20
24	Jay Alex	2+64 6	2+73 6	Rig ht	91.00		48.00		240.0 0	379.00
25	Nopas	2+73	2+80	Rig	344.00		100.0		0.00	444.00

	Mawe	6	0	ht		0			
26	Petrus Mawe	2+80 0	2+84 0	Rig ht	615.00		20.00	0.00	635.00
27	Elly Mawe	2+80 0	2+88 0	Rig ht	103.00		0.00	0.00	103.00
28	Nopas Mawe	2+88 0	2+92 8	Rig ht	665.00		30.00	0.00	695.00
29	Lucy Yoks	2+92 8	3+07 6	Rig ht	309.00		40.00	0.00	349.00
30	Bon White	3+07 6	3+12 0	Rig ht	71.00		0.00	0.00	71.00
31	Tugula Sak	3+12 0	3+17 0	Rig ht	610.00		120.0 0	0.00	730.00
32	Timbol Tugula	3+17 0	3+25 0	Rig ht	250.20		40.00	0.00	290.20
33	Robin Simon	3+25 0	3+29 0	Rig ht	254.50		0.00	0.00	254.50
34	John Mondo	3+26 0	3+29 0	Rig ht	259.00		50.00	0.00	309.00
35	Wendo Akon	3+29 0	3+34 0	Rig ht	202.60	1,200.0 0	0.00	0.00	1,402.6 0
36	Mathian Lusman	3+34 0	3+38 0	Rig ht	241.80		36.00	0.00	277.80
37	Embya Clan	3+38 0	3+52 0	Rig ht	252.00		0.00	0.00	252.00
38	Kuli Mulip	3+52 0	3+56 0	Rig ht	129.00		0.00	0.00	129.00
39	Donal Kuru	3+56 0	3+60 0	Rig ht	728.00		0.00	0.00	728.00
40	Albert Wallis	3+60 0	3+72 0	Rig ht	40.00		0.00	0.00	40.00
41	Dimo Pes	3+72 0	3+82 0	Rig ht	417.10	3,600.0 0	120.0 0	0.00	4,137.1 0
42	Wasi Makip	3+82 0	3+90 0	Rig ht	29.20		0.00	240.0 0	269.20
43	Pastor James	3+90 0	4+02 0	Rig ht	834.50		0.00	0.00	834.50
44	Solomon Timbon	4+02 0	4+07 6	Rig ht	296.10		28.00	0.00	324.10
45	Mark Kiol	4+07 6	4+13 2	Rig ht	385.00		0.00	0.00	385.00
46	OldMeld Pepik	4+13 2	4+23 4	Rig ht	637.80		0.00	0.00	637.80
47	Nancy Kupul	4+23 4	4+27 4	Rig ht	820.00		24.00	0.00	844.00
48	Nancy Mother	4+27 4	4+62 0	Rig ht	110.40		80.00	240.0 0	430.40
49	Peter Pond	4+82 0	4+94 0	Rig ht	1,006.00		0.00	0.00	1,006.0 0
50	Nelson Solo	4+94 0	5+00 0	Rig ht	35.40		80.00	0.00	115.40
51	Serep Konduwa	5+00 0	5+05 0	Rig ht	718.30		0.00	0.00	718.30
52	Koipo	5+05	5+10	Rig	470.00		0.00	0.00	470.00

	Undin	0	0	ht						
53	Yakiel Buka	5+10 0	5+26 0	Rig ht	74.00		0.00		0.00	74.00
54	Peter Link	5+74 0	5+79 0	Rig ht	440.60		30.00		0.00	470.60
55	Francis Sowal	5+84 0	5+88 0	Rig ht	335.50		0.00		0.00	335.50
56	Peter Undri	5+86 0	5+88 0	Rig ht	60.00		0.00		0.00	60.00
57	John Peter	5+92 0	6+20 0	Rig ht	3,246.00		1,000.00		0.00	4,246.00
58	Cas Rapa	6+58 0	7+06 6	Rig ht	586.80		0.00		0.00	586.80
59	Billy Thomas	7+06 6	7+08 0	Rig ht	15.00		28.00		0.00	43.00
60	Boldi Heron	7+08 0	7+16 0	Rig ht	852.30	1,600.00	0.00		0.00	2,452.30
61	Temapa United Church	7+16 0	7+24 6	Rig ht	199.60		0.00		0.00	199.60
62	Adward Ondue	7+24 6	7+26 6	Rig ht	38.00		7.00		0.00	45.00
63	Terry Paik	7+26 6	7+30 6	Rig ht	65.50		430.00		0.00	495.50
64	Thomas Kuru	7+30 6	7+40 4	Rig ht	336.20		0.00		0.00	336.20
65	Billy Thomas	7+40 6	7+46 0	Rig ht	49.20		0.00		0.00	49.20
66	Episo Yomec	7+46 0	7+54 0	Rig ht	50.40		0.00		0.00	50.40
67	James Mela	7+54 0	7+58 0	Rig ht	15.00		0.00		0.00	15.00
68	Tolly Michael	7+58 0	7+67 5	Rig ht	1,408.60		0.00		0.00	1,408.60
69	Kunjup Kem	7+67 5	7+70 0	Rig ht	73.60		0.00		0.00	73.60
70	Roselyn Human	7+70 0	7+84 0	Rig ht	145.80		0.00		0.00	145.80
71	PS. Peter Pondo	7+84 0	8+03 4	Rig ht	40.80		388.00		0.00	428.80
72	John Pank	8+03 4	8+10 0	Rig ht	188.40		0.00		0.00	188.40
73	Dickson Momokani	8+10 0	8+20 0	Rig ht	827.00		28.00		0.00	855.00
74	Council John Maya	8+20 0	8+36 8	Rig ht	1,365.50		40.00		0.00	1,405.50
75	Paul Peke	8+36 8	8+48 0	Rig ht	2,792.00		40.00		0.00	2,832.00
76	Benson Kol	8+48 0	8+54 4	Rig ht	70.00		0.00		0.00	70.00
77	Peter Kaimb	8+54 4	8+60 0	Rig ht	1,018.00		112.00		0.00	1,130.00

78	Serip Kondua	8+60 0	9+00 0	Rig ht	1,965.00		40.00		0.00	2,005.0 0
79	Peter Link	9+00 0	9+48 0	Rig ht	1,411.00		0.00		0.00	1,411.0 0
80	Issack Toro	9+48 0	9+96 0	Rig ht	201.00		0.00		0.00	201.00
81	Lun Nopi	9+96 0	10+4 20	Rig ht	339.80		0.00		0.00	339.80
82	Enep Clan	10+4 20	10+7 40	Rig ht	34.50		0.00		0.00	34.50
83	Kaibuso Undaki	10+7 40	10+9 40	Rig ht	81.60		0.00		0.00	81.60
84	Ps. Phil Yombo	10+9 40	11+0 20	Rig ht	280.50		0.00		0.00	280.50
85	Kendi Til	11+0 20	11+1 08	Rig ht	96.80		0.00		0.00	96.80
86	Mek Dopo	11+1 08	11+1 40	Rig ht	40.00		0.00		0.00	40.00
87	Ess Raik	11+1 08	11+1 40	Rig ht	48.00		0.00		0.00	48.00
88	Walop Alu	11+1 08	11+1 40	Rig ht	237.60		0.00		0.00	237.60
89	Junior Tera	11+1 40	11+1 80	Rig ht	100.00		0.00		0.00	100.00
90	Andy Simon	11+1 80	11+2 20	Rig ht	24.00		0.00		0.00	24.00
91	Moldu Westo	11+1 80	11+2 20	Rig ht	132.00		0.00		0.00	132.00
92	Danny Kun	11+2 20	11+2 60	Rig ht	117.00		16.00		0.00	133.00
93	Walop Alu	11+2 60	11+3 00	Rig ht	12.00		0.00		0.00	12.00
94	Dominic Wek	11+5 05	11+6 80	Rig ht	857.50		0.00		0.00	857.50
95	Mek Dopo	11+6 80	11+7 20	Rig ht	375.00		100.0 0		0.00	475.00
96	Danny Molu	11+7 20	11+7 68	Rig ht	10.50		0.00		0.00	10.50
97	Jack Dodo	11+7 68	11+9 20	Rig ht	3,237.50		200.0 0		0.00	3,437.5 0
98	Charls Kolot	12+5 80	12+6 60	Rig ht	105.00		80.00		0.00	185.00
99	Mathew Kolot	12+6 60	12+8 32	Rig ht	302.50		60.00		0.00	362.50
100	Peter Kogepina	12+8 32	12+8 52	Rig ht	32.00		40.00		0.00	72.00
101	Timothy Kuskus	12+8 52	12+9 04	Rig ht	56.00		104.0 0		0.00	160.00
102	Kolman Kuma	12+9 04	12+9 40	Rig ht	104.00		0.00		0.00	104.00
103	Clement Spendi	12+9 40	13+0 00	Rig ht	29.00		120.0 0		0.00	149.00
104	Paul Posu	13+0 00	13+0 80	Rig ht	107.60	4,000.0 0	0.00		0.00	4,107.6 0

105	Peter Sipendi	13+080	13+155	Right	949.10		120.00		0.00	1,069.10
106	Kondaka C/Church	13+155	13+240	Right	48.00		160.00		0.00	208.00
107	Malaki Norongi	13+310	13+315	Right	11.60	2,100.00	0.00	120.00	0.00	2,231.60
108	Geri Nepe	13+310	13+315	Right	13.00	0.00	0.00		0.00	13.00
109	Micheal Keno	13+315	13+320	Right	12.00	0.00	0.00		0.00	12.00
110	James Konaya	13+320	13+330	Right	18.00	0.00	20.00		0.00	38.00
111	Rems Purrem	13+369	13+400	Right	324.50	0.00	62.00		0.00	386.50
112	Firman Angu	13+400	13+452	Right	66.00	0.00	0.00		0.00	66.00
113	Elly Peter	13+400	13+452	Right	24.00	0.00	0.00		0.00	24.00
114	Susan Sikiapi	13+400	13+452	Right	92.30	0.00	104.00		0.00	196.30
115	Numba Koku	13+400	13+452	Right	127.00	0.00	0.00		0.00	127.00
116	Owen Wanpis	13+452	13+460	Right	29.10	0.00	16.00		0.00	45.10
117	Jack Serum	13+452	13+462	Right	52.70	0.00	0.00		0.00	52.70
118	Klitus Yani	13+452	13+608	Right	776.80	0.00	360.00		0.00	1,136.80
119	Mark Alu	13+608	13+720	Right	49.00	0.00	224.00		0.00	273.00
120	Thomas Tomba	13+720	13+769	Right	126.20	0.00	98.00		0.00	224.20
121	Freddy Lepil	13+769	13+790	Right	49.00	0.00	42.00		0.00	91.00
122	Joseph Alopa	13+790	13+854	Right	80.30	0.00	60.00		0.00	140.30
123	James Serum	13+854	13+880	Right	56.40	0.00	0.00		0.00	56.40
124	Thomas Tomba	13+880	13+910	Right	71.00	0.00	20.00		0.00	91.00
125	James Takopa	13+910	14+004	Right	118.00	2,450.00	0.00	120.00	0.00	2,688.00
126	Lorance Julies	14+004	14+040	Right	310.50	2,100.00	40.00	120.00	0.00	2,570.50
127	Wake Kurum	14+040	14+160	Right	516.00	0.00	240.00		0.00	756.00
128	Paul Ningpa	14+160	14+190	Right	358.00	0.00	60.00		0.00	418.00
129	Levi Sipendi	14+190	14+200	Right	105.10	0.00	20.00		0.00	125.10
130	Pipa Sependi	14+200	14+232	Right	74.70	0.00	64.00		0.00	138.70
131	Levi Sipendi	14+232	14+268	Right	233.80	0.00	50.00		0.00	283.80

13 2	Fabian Pis	14+2 68	14+3 90	Rig ht	561.00	0.00	244.0 0		0.00	805.00
13 3	David Bur	14+3 90	14+4 40	Rig ht	335.00	0.00	0.00		0.00	335.00
13 4	Eliza David	14+4 40	14+4 92	Rig ht	46.00	0.00	80.00		0.00	126.00
13 5	Samson Rambi	14+4 92	14+5 32	Rig ht	8.00	0.00	80.00		0.00	88.00
13 6	Micheal Rambi	14+5 32	14+5 80	Rig ht	127.10	0.00	48.00		0.00	175.10
13 7	Danny Rambe	14+5 80	14+6 40	Rig ht	21.20	0.00	120.0 0		0.00	141.20
13 8	Pastor Thomas Akon	14+6 40	14+7 20	Rig ht	883.50	0.00	130.0 0		0.00	1,013.5 0
13 9	Ali wanpis	14+7 20	14+8 04	Rig ht	176.00	2,100.0 0	20.00	120.0 0	0.00	2,416.0 0
14 0	Clitus Pinel	14+8 04	14+8 25	Rig ht	123.00	0.00	30.00		0.00	153.00
14 1	Jackery Yagan	14+8 25	14+8 72	Rig ht	252.30		60.00		0.00	312.30
14 2	Haris Sapsil	14+8 72	14+9 20	Rig ht	107.00	0.00	96.00		0.00	203.00
14 3	Lepil Karl	14+8 72	14+9 20	Rig ht	0.00	0.00	96.00		0.00	96.00
14 4	Kipam Opa	14+9 20	14+9 45	Rig ht	9.20	0.00	0.00		0.00	9.20
14 5	Robert Wandi	14+9 45	15+0 00	Rig ht	14.00	0.00	20.00		0.00	34.00
14 6	Rom Kola	15+0 00	15+0 52	Rig ht	149.50	0.00	104.0 0		0.00	253.50
14 7	Kevin Kera	15+0 52	15+0 70	Rig ht	23.50	0.00	0.00		0.00	23.50
14 8	Erias Yangan	15+0 52	15+1 20	Rig ht	47.70	0.00	100.0 0		0.00	147.70
14 9	Philip Gunwa	15+1 20	15+1 86	Rig ht	29.00	0.00	132.0 0		0.00	161.00
15 0	Lepil Karl	15+1 86	15+2 00	Rig ht	14.50	0.00	20.00		0.00	34.50
15 1	John Semane	15+2 35	15+2 40	Rig ht	7.00	0.00	0.00		0.00	7.00
15 2	Norman Takis	15+2 00	15+2 35	Rig ht	90.00	0.00	70.00		0.00	160.00
15 3	Iven Mul	15+2 40	15+2 60	Rig ht	80.20	0.00	40.00		0.00	120.20
15 4	Ponenge Mexil	15+2 60	15+3 06	Rig ht	30.40	0.00	92.00		0.00	122.40
15 5	Gas Pimbur	15+3 06	15+3 50	Rig ht	106.50	0.00	88.00		0.00	194.50
15 6	Christina Martin	15+3 50	15+3 68	Rig ht	21.30	0.00	36.00		0.00	57.30
15 7	Clitus Pinel	15+3 68	15+4 10	Rig ht	82.00	0.00	0.00		0.00	82.00
15 8	Pinal	15+3	15+4	Rig	42.20	0.00	50.00		0.00	92.20

8	Omil	68	10	ht						
15	Jeremiah	15+4	15+5	Rig			220.0			
9	Unda	10	20	ht	18.00	0.00	0		0.00	238.00
16	Wos	15+4	15+5	Rig						
0	Gorama	10	20	ht	812.10	0.00	0.00		0.00	812.10
16	James	15+5	15+5	Rig		5,600.0		120.0		7,190.0
1	Anda	20	60	ht	1,470.00	0	0.00	0	0.00	0
16	James	15+5	15+5	Rig						
2	Anda	20	60	ht	455.00		80.00		0.00	535.00
16	Ali	15+5	15+5	Rig						
3	wanpis	60	80	ht	328.00		40.00		0.00	368.00
16	Sapul	15+5	15+6	Rig						
4	Anda	80	10	ht	150.00		60.00		0.00	210.00
16	Pet	15+6	15+6	Rig						
5	William	10	48	ht	1,100.30		76.00		0.00	1,176.30
16	Sakias	15+6	15+6	Rig						
6	Unda	48	70	ht	123.00		44.00		0.00	167.00
16	John	15+6	15+6	Rig		2,500.0				2,500.0
7	Anda	70	80	ht	0.00	0	0.00		0.00	0
16	John	15+6	15+6	Rig		3,100.0				3,100.0
8	Anda	70	80	ht	0.00	0	0.00		0.00	0
16	Benny	15+6	15+7	Rig						
9	Aruru	70	50	ht	132.50		80.00		0.00	212.50
17	Maria	15+7	15+8	Rig						
0	Semal	50	30	ht	433.50		0.00		0.00	433.50
17	Pera	15+8	15+8	Rig						
1	Waru	30	60	ht	32.00		0.00		0.00	32.00
17	Frank	15+8	15+9	Rig						
2	Kuruma	60	20	ht	110.00		0.00		0.00	110.00
17	Buka	15+9	15+9	Rig						
3	Nonda	40	70	ht	95.10		60.00		0.00	155.10
17	Ninipa	15+9	16+0	Rig						
4	John	70	05	ht	129.50		30.00		0.00	159.50
17	Junior	16+0	16+0	Rig						
5	Nathan	05	80	ht	32.80		0.00		0.00	32.80
17	John	16+0	16+0	Rig			100.0			1,156.0
6	Peia	05	80	ht	1,056.00		0		0.00	0
17	Malu	16+0	16+1	Rig						
7	Sakarias	80	00	ht	46.60		0.00		0.00	46.60
17	Kumb	16+1	16+1	Rig						
8	Malu	00	10	ht	100.00		0.00		0.00	100.00
17	Enoch	16+1	16+1	Rig						
9	Mau	10	20	ht	166.50		0.00		0.00	166.50
18	Ben Malu	16+1	16+1	Rig						
0		20	30	ht	41.20		0.00		0.00	41.20
18	Amos	16+1	16+1	Rig						
1	Malu	30	50	ht	94.00		0.00		0.00	94.00
18	Maria	16+1	16+1	Rig		4,200.0		120.0		4,320.0
2	Noli	50	86	ht	0.00	0	0.00	0	0.00	0
18	Inge Wer	16+1	16+2	Rig						
3		86	68	ht	61.70		0.00		0.00	61.70
18	Henry	16+2	16+3	Rig						
					23.00		0.00		0.00	23.00

4	Sumunda	68	00	ht						
18	Simon	16+3	16+4	Rig						
5	Nikia	00	20	ht	28.50		0.00		0.00	28.50
18	Wili Kera	16+4	16+9	Rig						
6		20	00	ht	118.40		0.00		0.00	118.40
18	Henry	16+9	16+9	Rig						
7	Nana	00	20	ht	50.50		0.00		0.00	50.50
18	Bejamin	16+9	16+9	Rig						
8	Rero	20	80	ht	48.50		0.00		0.00	48.50
18	Kips	16+9	17+0	Rig						
9	Mara	80	40	ht	76.00		0.00		0.00	76.00
19	Pr.Make	17+0	17+0	Rig			110.0			
0	Mepo	40	95	ht	422.20		0		0.00	532.20
19	Awa	17+0	17+1	Rig						
1	Sapsi	95	80	ht	20.00				0.00	20.00
19	George	17+1	17+2	Rig						
2	Nomba	80	70	ht	44.00		0.00		0.00	44.00
19	Rawa	17+2	17+3	Rig						
3	Pombra	70	00	ht	63.70		92.00		0.00	155.70
19	Gibson	17+3	17+4	Rig			200.0			
4	Pombra	00	40	ht	2,816.40		0		0.00	3,016.40
19	David	17+4	17+5	Rig						
5	Beri	40	90	ht	120.60		0.00		0.00	120.60
19	Mekricka	17+5	17+5	Rig			180.0			
6	Clancy	00	90	ht	0.00		0		0.00	180.00
19	Paul	17+5	17+5	Rig			180.0			
7	Kata	00	90	ht	75.00		0		0.00	255.00
19	Pukri	17+5	17+6	Rig						
8	Kisombo	90	35	ht	45.50		0.00		0.00	45.50
19	NinidelKi	17+6	17+6	Rig						
9	sombo	35	50	ht	36.00		0.00		0.00	36.00
20	Francis	17+6	17+7	Rig			260.0			
0	Alalo	50	54	ht	185.60		0		0.00	445.60
20	Peter	17+7	17+7	Rig						
1	Kisombo	54	80	ht	59.10	480.00	30.00		0.00	569.10
20	Toyambo	17+7	17+8	Rig			140.0			
2	Kisambo	80	52	ht	251.00		0		0.00	391.00
20	Daimen	17+8	17+9	Rig						
3	Kisambo	52	00	ht	91.50		96.00		0.00	187.50
20	John	17+9	18+0	Rig						
4	Kambu	00	00	ht	162.60		0.00		0.00	162.60
20	Waga	18+0	18+1	Rig			360.0			
5	Tami	00	80	ht	783.20		0		0.00	1,143.20
20	wake	18+0	18+1	Rig			360.0			
6	Tame	00	80	ht	253.30		0		0.00	613.30
20	Kera	18+1	18+2	Rig						
7	Family	80	30	ht	3.50		90.00		0.00	93.50
20	Thomas	18+2	18+2	Rig			120.0			
8	Lupa	30	90	ht	86.50		0		0.00	206.50
20	TIC/Stanl	18+2	18+4	Rig						
9	ey Nobert	90	30	ht	215.90	2,100.00	274.00		0.00	2,589.90
21	Norman	18+5	18+7	Rig						
0	Wangi	60	40	ht	66.50		80.00		0.00	146.50

21 1	Felix Ogi	18+6 30	18+7 40	Rig ht	201.10		100.0 0		0.00	301.10
21 2	Nathan Simon	18+7 40	18+8 00	Rig ht	228.00		120.0 0		0.00	348.00
21 3	Wesley Simon	18+8 00	18+8 80	Rig ht	182.00		340.0 0		0.00	522.00
21 4	Simon Poss	18+8 80	18+9 60	Rig ht	329.60		0.00		0.00	329.60
21 5	Marley Brian	18+9 60	19+0 20	Rig ht	88.70		120.0 0		0.00	208.70
21 6	Philip Norbet	19+0 20	19+1 12	Rig ht	15.80		0.00		0.00	15.80
21 7	Council Pee	19+1 12	19+1 50	Rig ht	146.10		0.00		0.00	146.10
21 8	Jackson John	19+1 50	19+1 80	Rig ht	33.80		60.00		0.00	93.80
21 9	Manapa S	19+1 80	19+1 95	Rig ht	4.40		0.00		0.00	4.40
22 0	Brian Tasa	19+1 95	19+2 20	Rig ht	72.60		50.00		0.00	122.60
22 1	Barnabas Kalandu	19+2 20	19+3 10	Rig ht	231.80		140.0 0		0.00	371.80
22 2	Thomas Tisa	19+3 10	19+3 20	Rig ht	45.50		0.00		0.00	45.50
22 3	Sam Konwal	19+3 20	19+3 40	Rig ht	16.00		40.00		0.00	56.00
22 4	Philip Norbert	19+3 40	19+3 60	Rig ht	290.00		0.00		0.00	290.00
22 5	Lucas Nana	19+3 60	19+3 90	Rig ht	20.50		100.0 0		0.00	120.50
22 6	Frank Othma	19+3 90	19+4 60	Rig ht	194.00		140.0 0		0.00	334.00
22 7	John Kepa	19+4 60	19+5 10	Rig ht	226.00		0.00		0.00	226.00
22 8	Kuh Ono	19+5 10	19+6 00	Rig ht	237.60		0.00		0.00	237.60
22 9	Nipu Owno	19+6 00	19+6 80	Rig ht	190.50		40.00		0.00	230.50
23 0	Niron	19+6 80	19+7 80	Rig ht	568.00		200.0 0		0.00	768.00
23 1	Noring Sangai	19+7 80	20+0 60	Rig ht	436.30		0.00		0.00	436.30
23 2	Eliza Nana	20+0 60	20+1 20	Rig ht	491.00		0.00		0.00	491.00
23 3	Nipu Owno	20+1 20	20+1 60	Rig ht	373.50		0.00		0.00	373.50
23 4	John Kero	20+1 60	20+2 60	Rig ht	1,391.50		0.00		0.00	1,391.50
23 5	Tom Tisa	20+2 60	20+3 20	Rig ht	188.30		0.00		0.00	188.30
23 6	Kekera Toypo	20+3 20	20+3 75	Rig ht	284.00		0.00		0.00	284.00
23 7	Toni Tel	20+3 75	20+5 00	Rig ht	618.00		80.00		0.00	698.00

238	Pastor Isau Onne	20+500	20+680	Right	1,517.00		360.00		0.00	1,877.00
239	Wallo Korango	20+680	20+800	Right	338.30		0.00		0.00	338.30
240	Noria Korango	20+800	20+860	Right	1,273.80		120.00		0.00	1,393.80
241	Ambros Wapi	20+920	21+020	Right	615.00		160.00		0.00	775.00
242	Dominic Nema	21+020	21+080	Right	2,274.20		120.00		240.00	2,634.20
243	Nimba Tomba	21+080	21+120	Right	345.50		160.00		0.00	505.50
244	Dominic Nema	21+200	21+240	Right	365.00	5,600.00	0.00	120.00	480.00	6,565.00
245	Tomson Pea	21+120	21+210	Right	753.00		0.00		0.00	753.00
246	Dominic Nema	21+210	21+240	Right	1,094.40		60.00		0.00	1,154.40
247	James Mangu	21+240	21+360	Right	179.00		240.00		0.00	419.00
248	Wake Mangu	21+240	21+360	Right	408.00		0.00		0.00	408.00
249	Andson Mangu	21+240	21+360	Right	3,046.00		0.00		0.00	3,046.00
250	Nana Pungikara	21+360	21+425	Right	362.50		0.00		0.00	362.50
251	Ps Tony Gini	22+990	23+030	Right	416.00		80.00		0.00	496.00
252	Firman Lawer	23+125	23+160	Right	138.00		70.00		240.00	448.00
253	Kiap Ningi	23+185	23+205	Right	127.50		40.00		240.00	407.50
254	Paul Didima	23+800	23+860	Right	554.00		120.00		240.00	914.00
255	Pepena Kari	23+860	24+060	Right	36.00		400.00		240.00	676.00
256	Wambia Wiku	24+200	24+300	Right	123.00		200.00		0.00	323.00
257	Kiap Niki	24+780	25+270	Right	311.00		940.00		240.00	1,491.00
258	Rouwe Karuk	26+035	26+245	Right	60.00		0.00		0.00	60.00
259	Eki Tomba	26+340	28+620	Right	240.00		0.00		240.00	480.00
260	Albert Nomba	28+260	29+415	Right	210.00		0.00		240.00	450.00
261	Tamalu Karl	29+960	30+500	Right	0.00		0.00		240.00	240.00
262	Kurili Nowe	30+500	31+414	Right	600.00		0.00		240.00	840.00
263	Kepold Toloboto	31+414	31+900	Right	0.00		0.00		240.00	240.00

264	Robin Neno	31+900	32+400	Rig ht	0.00		0.00		240.00	240.00
265	Wake Kereme	32+400	32+520	Rig ht	0.00		0.00		240.00	240.00
266	Waine Naweya	32+520	32+900	Rig ht	1,180.00		0.00		0.00	1,180.00
267	Kutikil Wugu	32+900	33+860	Rig ht	0.00		0.00		240.00	240.00
268	Suki Ninigi	33+860	34+700	Rig ht	570.00		0.00		240.00	810.00
269	Nana Yokaipibu	34+700	35+100	Rig ht	0.00		0.00		240.00	240.00
270	Mambu Nemaieke	35+100	36+000	Rig ht	1,910.00		0.00		240.00	2,150.00
271	Miria Dinja	36+000	36+100	Rig ht	0.00		0.00		240.00	240.00
272	Poke Kuleko	39+750	40+000	Rig ht	1,065.00		0.00		0.00	1,065.00
273	Mondo Mandi	40+800	40+860	Rig ht	5.00		0.00		0.00	5.00
274	Nangu Paul	40+950	41+050	Rig ht	20.00		0.00		0.00	20.00
275	Pok Marld	41+700	41+950	Rig ht	145.00		0.00		0.00	145.00
276	EBM Church	42+575	42+660	Rig ht	506.80		250.00		0.00	756.80
277	Lesly Koropa	42+660	42+720	Rig ht	846.00		120.00		0.00	966.00
278	Konex Rubem	42+720	42+840	Rig ht	43.20		0.00		0.00	43.20
279	Rodney Mondo	42+840	42+940	Rig ht	30.60		100.00		0.00	130.60
280	Buna Moro	43+080	43+110	Rig ht	225.00		0.00		0.00	225.00
281	Peter Wania	43+190	43+240	Rig ht	1.20		40.00		0.00	41.20
282	Peter Wania	43+190	43+240	Rig ht	1.20		0.00		0.00	1.20
283	Jack Moro	43+240	43+575	Rig ht	0.00		120.00		0.00	120.00
284	Michael Moro	43+320	43+430	Rig ht	164.00	2,100.00	0.00		0.00	2,264.00
285	Michael Moro	43+320	43+430	Rig ht	158.00	2,100.00	0.00		0.00	2,258.00
286	Stanly Koropa	43+430	43+490	Rig ht	574.00		120.00		0.00	694.00
287	Eddy Justin	43+490	43+520	Rig ht	19.20		0.00		0.00	19.20
288	Eddy Justin	43+490	43+520	Rig ht	9.00		0.00		0.00	9.00
289	Jonson Ninga	43+575	43+630	Rig ht	0.00		80.00		0.00	80.00
29	Jonson	43+5	43+6	Rig	536.20		80.00		0.00	616.20

0	Ninga	75	30	ht						
29 1	Rubben Yaks	43+6 30	43+7 00	Rig ht	0.00		100.0 0		0.00	100.00
29 2	Mete Goria	43+7 00	44+0 00	Rig ht	140.00		0.00		0.00	140.00
29 3	Mete Goria	43+7 00	44+0 00	Rig ht	140.00		0.00		0.00	140.00
29 4	Paki Sula	44+0 00	44+2 00	Rig ht	355.00		120.0 0		0.00	475.00
29 5	Benjamin Yareli	44+2 00	44+3 00	Rig ht	14.80		0.00		0.00	14.80
29 6	Benjamin Yareli	44+2 20	44+3 00	Rig ht	17.20		0.00		0.00	17.20
29 7	Laka Waldpum	45+4 55	45+9 40	Rig ht	110.80		0.00		0.00	110.80
29 8	Wane Martha	45+7 00	45+9 40	Rig ht	81.00		0.00		0.00	81.00
29 9	Erams Family	45+9 40	46+0 80	Rig ht	45.20		0.00		0.00	45.20
30 0	Jerry Yetena	46+0 80	46+1 20	Rig ht	175.20		0.00		0.00	175.20
30 1	Aso Puri	46+1 20	46+3 40	Rig ht	678.00		80.00		0.00	758.00
30 2	Kapil Kopolo	46+3 40	46+7 15	Rig ht	1,047.70		0.00		0.00	1,047.7 0
30 3	Wania Kaminalp o	46+7 15	46+9 00	Rig ht	40.80		0.00		0.00	40.80
30 4	Lip Family	47+0 00	47+0 60	Rig ht	350.20		0.00		0.00	350.20
30 5	Andrew Kapi	47+0 60	47+2 60	Rig ht	307.20		0.00		0.00	307.20
30 6	Moses Lip	47+0 80	47+6 90	Rig ht	1,068.00		0.00		0.00	1,068.0 0
30 7	Banzii Mapoy	47+2 60	47+3 70	Rig ht	1,128.00		160.0 0		0.00	1,288.0 0
30 8	Kilo Wak	47+3 70	47+4 50	Rig ht	704.00		0.00		0.00	704.00
30 9	Hundi Pund	47+6 90	47+7 40	Rig ht	254.00		40.00		0.00	294.00
31 0	Wane Hena	47+7 40	47+8 50	Rig ht	97.20		20.00		0.00	117.20
31 1	Michael Manda	47+8 50	47+9 40	Rig ht	416.00		100.0 0		0.00	516.00
31 2	Lewa Kaime	47+9 40	47+9 90	Rig ht	472.00		80.00		0.00	552.00
31 3	John Yapai	48+0 30	48+1 20	Rig ht	389.50		0.00		0.00	389.50
31 4	Thomas Moma	48+1 00	48+1 60	Rig ht	213.00		80.00		0.00	293.00
31 5	Gedion Kalgua	48+1 60	48+2 00	Rig ht	54.00		80.00		0.00	134.00
31 6	Laka Waldkum	48+2 00	48+2 60	Rig ht	85.00		60.00		0.00	145.00

317	Win Kungs	48+260	48+320	Rig ht	232.00		20.00		0.00	252.00
318	Malakai Jefry	48+340	48+355	Rig ht	51.00		20.00		0.00	71.00
319	Yaka Walipum	48+355	48+370	Rig ht	104.00		0.00		0.00	104.00
320	Nazaren Church	48+370	48+470	Rig ht	1,070.00		200.00		0.00	1,270.00
321	Sikindi Noya	48+470	48+490	Rig ht	172.00		0.00		0.00	172.00
322	Tami Wangali	48+490	48+560	Rig ht	51.00		80.00		0.00	131.00
323	Lewa Pupi	48+490	48+560	Rig ht	156.00		20.00		0.00	176.00
324	Kangi Pora	48+560	48+650	Rig ht	240.00		80.00		0.00	320.00
325	Aris Nori	48+560	48+630	Rig ht	120.00		0.00		0.00	120.00
326	Pure Yako	48+630	48+670	Rig ht	288.00		80.00		0.00	368.00
327	Levi Kill	48+670	48+710	Rig ht	0.00		80.00		0.00	80.00
328	Paul Kill	48+710	48+780	Rig ht	1,480.00		140.00		0.00	1,620.00
329	Wan Kupa	48+780	48+830	Rig ht	851.50		100.00		0.00	951.50
330	Cl Minja Kaspar	48+830	49+200	Rig ht	3,935.00		140.00		0.00	4,075.00
331	Kalsie Kakaru	49+280	49+340	Rig ht	103.00		0.00		0.00	103.00
332	Aru Aram	49+200	49+7005	Rig ht	30.00		0.00		0.00	30.00
333	Oki Buka	49+700	49+790	Rig ht	81.00		180.00		0.00	261.00
334	Jim Wano	50+230	50+250	Rig ht	0.00		30.00		0.00	30.00
335	Memba Sokinde	50+250	50+300	Rig ht	293.00		30.00		0.00	323.00
336	Pis Doa	50+420	50+550	Rig ht	94.50		0.00		0.00	94.50
337	Karu Poiya	50+420	50+550	Rig ht	115.00		0.00		0.00	115.00
338	Nope Brand	50+570	50+610	Rig ht	206.00		80.00		0.00	286.00
339	Gari Pora	50+610	50+670	Rig ht	22.80		0.00		0.00	22.80
340	Nepol Napa	50+670	50+700	Rig ht	48.40		0.00		0.00	48.40
341	John Numa	50+700	50+900	Rig ht	1.20		400.00		0.00	401.20
342	Buna Ku	50+900	51+180	Rig ht	4,657.80		0.00		0.00	4,657.80
343	Das Ty	51+180	51+160	Rig ht	1,070.00		360.00		0.00	1,430.00

344	Laikam SDA Church	51+360	51+380	Right	117.00		0.00		0.00	117.00
345	Pundu Napam	51+380	51+410	Right	610.00		60.00		0.00	670.00
346	Noria Wando	51+410	51+450	Right	544.00		0.00		0.00	544.00
347	Noria Wando	51+410	51+450	Right	544.00		0.00		0.00	544.00
348	Andrew Sikind	51+450	51+470	Right	94.50		0.00		0.00	94.50
349	Ken Kome	51+470	51+500	Right	4.80		0.00		0.00	4.80
350	Samson Kome	51+500	51+620	Right	209.20		0.00		0.00	209.20
351	Ten Yako			Right	432.00		200.00		0.00	632.00
352	George Mapa			Right	152.50		40.00		0.00	192.50
353	Ken Kome	51+600	51+700	Right	28.00		0.00		0.00	28.00
354	Micheal Allo	51+620	51+680	Right	142.20		0.00		0.00	142.20
355	Miambu Nema	51+780	51+820	Right	36.00		0.00		0.00	36.00
356	Berem Wai	51+820	51+850	Right	618.40		0.00		0.00	618.40
357	Alko Wai	51+850	51+900	Right	164.20		100.00		0.00	264.20
358	Tax Mom	51+900	51+950	Right	160.00		0.00		0.00	160.00
359	Albert Mome	51+950	52+005	Right	178.00		40.00		0.00	218.00
360	Jacob Baraki	52+000	52+030	Right	126.00		20.00		0.00	146.00
361	Simon Waringe	52+030	52+060	Right	87.40		0.00		0.00	87.40
362	Lapun Warangi	52+060	52+070	Right	0.00		20.00		0.00	20.00
363	Penge Kuma	52+060	52+080	Right	42.00		0.00		0.00	42.00
364	Benni Peni	52+070	52+080	Right	5.00		0.00		0.00	5.00
365	Yama Job	52+080	52+100	Right	0.00		40.00		0.00	40.00
366	Sumda Malto	52+080	52+100	Right	32.00		0.00		0.00	32.00
367	Terrim Ferm	52+100	52+130	Right	0.00	3,500.00	10.00	120.00	0.00	3,630.00
368	Sam Naia	52+160	52+200	Right	303.00		80.00		0.00	383.00
369	Piss Kongu	52+130	52+160	Right	229.00		60.00		0.00	289.00
37	Timoty	52+2	52+2	Rig	94.00		60.00		0.00	154.00

0	Seria	00	30	ht					
371	Pos Hai	52+230	52+270	Rig ht	226.00		0.00		226.00
372	Robert Anzu	52+270	52+350	Rig ht	287.00		0.00		287.00
373	Wani Hai	52+270	52+350	Rig ht	1,095.00		0.00		1,095.00
374	Rechard Poss	52+350	52+370	Rig ht	800.00		20.00		820.00
375	Paul Katapa	52+390	52+410	Rig ht	160.00		20.00		180.00
376	Melbourne Kandiki	52+355	52+390	Rig ht	10.00		70.00		80.00
377	Joi Hoki	52+450	52+470	Rig ht	225.20		40.00		265.20
378	Gar Sova	52+470	52+490	Rig ht	167.20		40.00		207.20
379	Ten Yako	52+490	52+570	Rig ht	512.00		40.00		552.00
380	Robert Yako	52+490	52+570	Rig ht	27.50		0.00		27.50
381	Carolina Yako	52+570	52+630	Rig ht	192.00		0.00	240.00	432.00
382	Monge Yako	52+570	52+630	Rig ht	320.00		0.00	240.00	560.00
383	Tore Kamisua	52+630	52+675	Rig ht	99.00		30.00		129.00
384	George Mapa	52+680	52+700	Rig ht	103.50		40.00		143.50
385	Jerimiah Kerowi	52+700	52+710	Rig ht	104.00		20.00		124.00
386	Poss Hai	52+710	52+750	Rig ht	284.00		80.00		364.00
387	Mek Pangua	52+750	52+770	Rig ht	154.00		0.00		154.00
388	Asapa Gini	52+770	52+830	Rig ht	45.00		0.00		45.00
389	Mama Monge Family	52+770	52+830	Rig ht	347.20		10.00		357.20
390	Levi Ako	52+830	52+870	Rig ht	564.00		4.00		568.00
391	Siri Kanex	52+870	52+940	Rig ht	286.00		0.00		286.00
392	Ponage Mawa	52+940	53+020	Rig ht	720.00		1,840.00		2,560.00
393	Pius Lilua	53+020	53+090	Rig ht	250.00		100.00		350.00
394	Wamo Rangip	53+090	53+110	Rig ht	42.60		0.00		42.60
395	Martin Moses	53+110	53+130	Rig ht	221.00		0.00		221.00
396	Moses Kambing	53+130	53+370	Rig ht	208.00		80.00		288.00

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397	Mumyana Clan	53+370	53+620	Right	45.00		0.00		0.00	45.00
398	Cr.Kaiso Mai	53+620	53+860	Right	120.00		0.00		0.00	120.00
399	Paul Kai	53+620	53+860	Right	452.80		0.00		0.00	452.80
400	Topu Tongii	53+860	53+870	Right	80.00		0.00		0.00	80.00
401	Nil Mulu	53+860	54+000	Right	542.00		60.00		0.00	602.00
402	Monda Aldupa	54+000	54+050	Right	118.80		0.00		240.00	358.80
403	Ponegi Pinja	54+050	54+130	Right	643.00		0.00		0.00	643.00
404	Tepatol Pelhil	54+130	54+220	Right	273.00		0.00		0.00	273.00
405	Hasipa Gini	54+220	54+340	Right	276.00		0.00		0.00	276.00
406	Pasi Koldm	54+340	54+520	Right	592.20		0.00		240.00	832.20
407	Himbu Kerema	54+520	54+560	Right	148.00		0.00		240.00	388.00
408	Bapi Temel	54+560	54+590	Right	476.00		40.00		0.00	516.00
409	Temal Guinea	54+590	54+620	Right	131.80		0.00		240.00	371.80
410	Laspe Pupi	54+620	54+670	Right	886.00		80.00		0.00	966.00
411	Ken Emba	54+670	54+730	Right	108.00		0.00		0.00	108.00
412	Kenol Imbu	54+720	54+730	Right	48.00		20.00		0.00	68.00
413	Bot Bona	54+730	54+780	Right	16.00		0.00		0.00	16.00
414	Bobo Imbu	54+760	54+780	Right	212.00		0.00		0.00	212.00
415	Marthin Gini	54+760	54+780	Right	64.00		0.00		0.00	64.00
416	Asapa Gini	54+780	54+850	Right	5.00		0.00		0.00	5.00
417	Joseph Buna	54+850	54+900	Right	672.00		0.00		0.00	672.00
418	Cr.Imbu Cerema	54+900	54+960	Right	168.00		0.00		0.00	168.00
419	Marthin Gini	54+960	55+070	Right	700.00		0.00		0.00	700.00
420	Cr.Imbu Cerema	55+070	55+300	Right	59.10		0.00		0.00	59.10
421	Asapa Gini	55+300	55+530	Right	567.20		0.00		240.00	807.20
422	Robert Tola	0+231	0+257	Left	464.40		0.00		0.00	464.40
42	Wenol	0+25	0+32	Left	174.60		0.00		0.00	174.60

3	Ako	7	8.5	t						
42	Thomas	0+42	0+50	Lef			145.0			1,546.0
4	Tiso	0	0	t	1,401.00		0		0.00	0
42	Wasnaik	0+45	0+50	Lef						
5	Kowi	2	4	t	377.40				0.00	377.40
42		0+50	0+54	Lef						
6	John Tex	0	0	t	822.70				0.00	822.70
42	Samuel	0+54	0+56	Lef						
7	Domanic	0	0	t	913.00				0.00	913.00
42		0+56	0+60	Lef						
8	Jack Tui	0	0	t	754.50				0.00	754.50
42	Mark	0+60	0+67	Lef			174.0			
9	Sula	0	8	t	0.00		0		0.00	174.00
43	Noah	0+67	0+76	Lef						
0	Simon	8	0	t	894.00				0.00	894.00
43	Setrick	0+76	0+80	Lef						
1	Sukil	0	0	t	578.70		50.00		0.00	628.70
43	Posi	1+18	1+20	Lef						
2	Wasi	0	0	t	762.60				0.00	762.60
43	Robert	1+28	1+32	Lef						
3	Sepoi	0	0	t	1,113.80				0.00	1,113.80
43		1+32	1+34	Lef						
4	Lun Paul	0	0	t	692.40				0.00	692.40
43	Gibson	1+38	1+42	Lef			120.0			
5	Tupio	2	6	t	0.00		0		0.00	120.00
43	Joseph	1+48	1+52	Lef						
6	Mogol	0	0	t	489.60				0.00	489.60
43	Ruben	1+52	1+56	Lef						
7	Molmol	0	0	t	210.00				0.00	210.00
43	Nickson	1+54	1+59	Lef						
8	Buka	8	0	t	2,094.10				0.00	2,094.10
43		1+88	1+92	Lef						
9	John Kai	0	0	t	307.50		35.00		0.00	342.50
44	Mendepo	1+92	1+01	Lef						
0	Family	0	4	t	1,587.20				0.00	1,587.20
44	Epgol	2+22	2+30	Lef			250.0			
1	Mum	0	0	t	1,018.70		0		0.00	1,268.70
44	David	2+30	2+31	Lef			700.0			
2	Ongol	0	8	t	0.00		0		0.00	700.00
44	Sond	2+31	2+36	Lef			250.0			
3	Billy	2	0	t	396.80		0		0.00	646.80
44	David	2+31	2+36	Lef			1,120.00			
4	Aply	8	4	t	0.00		00		0.00	1,120.00
44	Simon	2+36	2+38	Lef			500.0			
5	Golma	0	6	t	706.80		0		0.00	1,206.80
44	Ruth	2+38	2+40	Lef						
6	Golma	6	0	t	249.80				0.00	249.80
44	Paki	2+36	3+52	Lef						
7	Family	4	0	t	1,730.10				0.00	1,730.10
44	Sopanaik	2+52	2+62	Lef			100.0			
8	Yah	0	0	t	0.00		0		0.00	100.00
44	Sopowol	2+66	2+68	Lef						
9	Keri	0	0	t	266.30				0.00	266.30
45	Essenda	2+76	2+81	Lef	236.20		48.00		0.00	284.20

0	Uni/Ch	5	0	t						
45 1	Weri Yoks	2+82 0	2+90 0	Lef t	374.60		100.0 0		0.00	474.60
45 2	Senis White	2+90 0	3+00 0	Lef t	309.60		20.00		0.00	329.60
45 3	Max Kep	3+00 0	3+13 0	Lef t	311.00				0.00	311.00
45 4	Max Kep	3+13 0	3+26 0	Lef t	462.00		30.00		0.00	492.00
45 5	Dopo Akon	3+28 0	3+32 0	Lef t	462.00		40.00		0.00	502.00
45 6	Albert Walis	3+37 8	3+40 0	Lef t	0.00		300.0 0		0.00	300.00
45 7	Cr. Wendo Ako	3+34 0	3+50 0	Lef t	64.00		100.0 0		0.00	164.00
45 8	Wep Family	3+42 0	3+44 9	Lef t	560.70				0.00	560.70
45 9	Timbol Family	3+47 0	3+53 0	Lef t	1,026.80		50.00		0.00	1,076.8 0
46 0	Wanal Tupio Family	3+54 0	3+56 0	Lef t	4,312.00	1,200.0 0			0.00	5,512.0 0
46 1	Kusa Sap	3+66 0	3+84 0	Lef t	318.00		36.00		0.00	354.00
46 2	Norman Albert	3+66 0	3+72 0	Lef t	1,138.20				0.00	1,138.2 0
46 3	Andrew Timol	3+62 0	3+65 7	Lef t	1,649.00				0.00	1,649.0 0
46 4	Vincent Sap	3+66 0	3+84 0	Lef t	587.30				0.00	587.30
46 5	Yaki Kol	3+84 0	4+04 0	Lef t	3,699.30				0.00	3,699.3 0
46 6	Andrew Timbol	4+04 0	4+13 0	Lef t	441.60	3,600.0 0	120.0 0		0.00	4,161.6 0
46 7	Angum Wendo	4+13 0	4+21 6	Lef t	255.60				240.0 0	495.60
46 8	Issach Moko	4+92 0	5+08 0	Lef t	1,105.80		28.00		0.00	1,133.8 0
46 9	David Tim	5+08 0	5+17 0	Lef t	459.00				0.00	459.00
47 0	Luke Wanpis	5+08 0	5+17 0	Lef t	912.30				0.00	912.30
47 1	Timothy Suku	5+18 0	5+26 0	Lef t	135.00		24.00		0.00	159.00
47 2	Yaki Yol	5+40 0	5+43 0	Lef t	162.00		80.00		240.0 0	482.00
47 3	Senis Kep	5+43 0	5+46 0	Lef t	154.20				0.00	154.20
47 4	Wesa Kep	5+46 0	5+79 0	Lef t	1,243.00				0.00	1,243.0 0
47 5	Kele Kuna	5+83 5	5+87 5	Lef t	285.00		200.0 0		0.00	485.00
47	Edward	6+16	6+31	Lef	630.30				0.00	630.30

6	Ondwi	0	0	t						
47 7	Peter Lingk	6+31 0	7+02 0	Lef t	142.00				0.00	142.00
47 8	Nick John	6+44 0	6+60 0	Lef t	340.00				0.00	340.00
47 9	Eskaik White	6+75 0	7+72 0	Lef t	565.60				0.00	565.60
48 0	PNGBC Church	7+84	7+96 0	Lef t	342.60		30.00		0.00	372.60
48 1	Karapus Pukma	7+14 0	7+20 0	Lef t	271.00				0.00	271.00
48 2	Wanpis Irek	7+02 0	7+12 0	Lef t	206.00	960.00		120.0 0	0.00	1,286.0 0
48 3	Ipso Yomesi	7+20 0	7+25 0	Lef t	502.90				0.00	502.90
48 4	Ps Pita Pond	7+43 0	7+46 5	Lef t	226.70		1,000. 00		0.00	1,226.7 0
48 5	Rommie Mea	8+08 0	8+26 0	Lef t	290.00				0.00	290.00
48 6	Koperei Ekol	8+53 0	10+4 80	Lef t	1,630.00		28.00		0.00	1,658.0 0
48 7	Yaki Yol	8+53 0	10+4 80	Lef t	1,637.50	1,600.0 0			0.00	3,237.5 0
48 8	Paul Rasol	10+4 90	10+5 30	Lef t	85.00				0.00	85.00
48 9	Kakapu Pius	10+5 30	10+5 60	Lef t	3,785.80	4,200.0 0	7.00	120.0 0	0.00	8,112.8 0
49 0	Till Piku	10+5 60	10+9 40	Lef t	12,237.0 0	1,750.0 0	430.0 0	120.0 0	0.00	14,537. 00
49 1	Amos Pos	10+9 40	11+1 10	Lef t	359.00				0.00	359.00
49 2	Danny Molu	11+1 10	11+1 37	Lef t	0.00		40.00		0.00	40.00
49 3	Jackson Tera	11+1 37	11+1 55	Lef t	290.80				0.00	290.80
49 4	Andy Saimon	11+1 37	11+1 55	Lef t	134.00				0.00	134.00
49 5	Daniel Kiambso	11+2 20	11+2 97	Lef t	172.70				0.00	172.70
49 6	John Molu	11+1 55	11+2 20	Lef t	632.50		40.00		0.00	672.50
49 7	Malex Kakapu	11+2 97	11+3 77	Lef t	100.00				0.00	100.00
49 8	Endy Simon	11+2 97	11+3 77	Lef t	690.00		388.0 0		0.00	1,078.0 0
49 9	Enep United Ch	11+3 80	11+5 80	Lef t	173.00		40.00		0.00	213.00
50 0	Enep Pri/Sch	11+4 69	11+5 80	Lef t	1,376.00		28.00		0.00	1,404.0 0
50 1	Loma Kus	11+5 80	11+6 40	Lef t	392.00		4.00		0.00	396.00
50 2	Belly Walop	11+6 60	11+6 70	Lef t	479.60		40.00		0.00	519.60

503	Felix Yomini	11+680	11+780	Left	1,522.20				0.00	1,522.20
504	Clive Yomini	11+780	11+794	Left	701.00		112.00		0.00	813.00
505	Malaki Amos	11+794	11+820	Left	1,137.00		40.00		0.00	1,177.00
506	Paul Kimbu	12+260	12+380	Left	660.00				0.00	660.00
507	Steven Kimbu	12+380	12+480	Left	1,958.00		40.00		0.00	1,998.00
508	Josepa Sep	12+480	12+660	Left	8,219.60		40.00		0.00	8,259.60
509	Josepa Sep	12+660	12+770	Left	3,376.40				0.00	3,376.40
510	Kundaka Church	12+720	12+830	Left	79.40				0.00	79.40
511	Senis Lama	12+880	12+865	Left	316.70		40.00		0.00	356.70
512	Joseph Sep	12+865	12+900	Left	917.40				0.00	917.40
513	Luke Putke	12+945	12+980	Left	492.40				0.00	492.40
514	James Pasongo	12+980	13+040	Left	954.60				0.00	954.60
515	Jackson Talopa	13+300	13+320	Left	58.00				0.00	58.00
516	David Pasonga	13+040	13+160	Left	1,658.20				0.00	1,658.20
517	Remond Walo	13+160	13+240	Left	622.00				0.00	622.00
518	Kurum Sikipi	13+320	13+380	Left	495.00				0.00	495.00
519	Thomas Tomba	13+440	13+460	Left	105.60		16.00		0.00	121.60
520	Luke Ponade	13+460	13+480	Left	661.80				0.00	661.80
521	Elizbert Kurum	13+380	13+400	Left	225.20				0.00	225.20
522	Cano Micheal	13+380	13+417	Left	128.00				0.00	128.00
523	Mark Alu	13+420	13+440	Left	84.00				0.00	84.00
524	Permen Angu	13+580	13+640	Left	678.50		100.00		0.00	778.50
525	Cletus Olmel	13+500	13+580	Left	1,786.50				0.00	1,786.50
526	Robert Wanpis	13+480	13+500	Left	733.10		200.00		0.00	933.10
527	Jack Kilutus	13+940	13+915	Left	132.40				0.00	132.40
528	Norman Kurum	13+720	13+800	Left	179.80		80.00		0.00	259.80
529	Mathew Dopo	13+960	14+000	Left	668.00		60.00		0.00	728.00

530	Lepii Sowiya	14+000	14+040	Lef t	399.00		40.00		0.00	439.00
531	Robert Tomba	14+040	14+080	Lef t	603.20		104.00		0.00	707.20
532	Ehen Tomba	14+100	14+120	Lef t	581.60				0.00	581.60
533	Sms Sependi	14+120	14+220	Lef t	1,700.10		120.00		0.00	1,820.10
534	Paul Ninjapa	14+120	14+220	Lef t	195.00	1,750.00	28.00		0.00	1,973.00
535	Jammy Sependi	14+220	14+340	Lef t	1,316.00		120.00		0.00	1,436.00
536	Muli Aspo	14+470	14+560	Lef t	292.80		160.00		0.00	452.80
537	Lepil Kal Pr	14+597	14+780	Lef t	6,994.80	1,400.00	40.00	120.00	0.00	8,554.80
538	Thomas Akon	14+785	14+860	Lef t	349.00				0.00	349.00
539	Cletus Pinel	14+860	14+900	Lef t	866.30				0.00	866.30
540	Robert Wande	14+940	15+180	Lef t	1,007.00		20.00		0.00	1,027.00
541	Nil Kope	14+940	15+180	Lef t	142.00				0.00	142.00
542	Wapungu Siriya	15+180	15+300	Lef t	3,402.10		62.00		0.00	3,464.10
543	Tom Pawa	15+290	15+340	Lef t	290.00				0.00	290.00
544	Makrol Wangi	15+345	15+410	Lef t	209.00				0.00	209.00
545	Gibson William	15+420	15+465	Lef t	172.20		104.00		0.00	276.20
546	Philip Pua	15+465	15+600	Lef t	1,066.90				0.00	1,066.90
547	Puap Leplepi	15+600	15+665	Lef t	1,655.70		16.00		0.00	1,671.70
548	Seron Benny	15+700	15+760	Lef t	50.00				0.00	50.00
549	Waia Aruru	15+665	15+700	Lef t	298.80		360.00		0.00	658.80
550	Charies Racha	15+770	15+840	Lef t	264.30		224.00		0.00	488.30
551	Margret Kuruma	15+880	15+900	Lef t	0.00		98.00		0.00	98.00
552	Ope Kuruma	15+900	15+940	Lef t	92.00		42.00		0.00	134.00
553	Margret Kuruma	15+900	15+940	Lef t	349.00		60.00		0.00	409.00
554	Nonda Sumunda	15+940	15+960	Lef t	1,494.00				0.00	1,494.00
555	Yando Belinda	15+980	16+000	Lef t	1,414.60		20.00		0.00	1,434.60
556	John	15+980	16+000	Lef t	326.00	2,100.00		120.00	0.00	2,546.00

6	Wande	80	30	t		0		0		0
55	Jackson	16+0	16+0	Lef		2,800.0		120.0		4,068.9
7	Balim	30	80	t	1,108.90	0	40.00	0	0.00	0
55	Jonathan	16+0	16+1	Lef			240.0			
8	Poneng	80	20	t	669.90		0		0.00	909.90
55	Buka	16+1	16+1	Lef						2,284.8
9	Nonda	20	60	t	2,224.80		60.00		0.00	0
56	Nonda	16+1	16+2	Lef						
0	Sumunda	60	20	t	630.90		20.00		0.00	650.90
56	Kency	16+2	16+2	Lef						
1	Nonda	20	60	t	455.60		64.00		0.00	519.60
56	Nonda	16+2	16+3	Lef						
2	Walo	60	00	t	585.50		50.00		0.00	635.50
56	Chralers	16+3	16+3	Lef			244.0			
3	Suku	40	60	t	85.60		0		0.00	329.60
56	Kultiya	16+2	16+3	Lef						
4	Noeli	00	60	t	80.20				0.00	80.20
56	Simon	16+3	16+4	Lef						
5	Nikia	60	20	t	413.90		80.00		0.00	493.90
56	Robert	16+5	16+1	Lef						
6	Sapisi	50	65	t	430.60		80.00		0.00	510.60
56		16+4	16+5	Lef						
7	Waina Pil	20	50	t	62.00		48.00		0.00	110.00
56	Moses	16+6	16+7	Lef			120.0			
8	Joe	50	50	t	3,270.00		0		0.00	3,390.0
56	Ess	16+7	16+8	Lef			130.0			
9	Koloma	50	00	t	273.00		0		0.00	403.00
57		16+8	16+8	Lef		3,150.0		120.0		
0	Puglu Pel	00	70	t	91.00	0	12.00	0	0.00	3,373.0
57	Robert	16+9	17+1	Lef						
1	Sapsi	40	00	t	2,084.20		30.00		0.00	2,114.2
57	Terry	17+1	17+2	Lef						
2	Kinoli	00	40	t	1,947.50		60.00		0.00	2,007.5
57	Mr Lucas	17+2	17+6	Lef						
3	Kolandii	40	40	t	1,583.60		96.00		0.00	1,679.6
57	Michael	17+2	17+2	Lef						
4	Karape	50	80	t	212.60		96.00		0.00	308.60
57	Paul	17+6	17+6	Lef						
5	Kisimbo	40	80	t	69.60				0.00	69.60
57	Setrick	17+6	17+6	Lef						
6	Kisimbo	40	80	t	0.00		20.00		0.00	20.00
57	Wanpis	17+6	17+6	Lef			104.0			
7	Suwawa	40	80	t	0.00		0		0.00	104.00
57	Kera	17+7	21+7	Lef						
8	Kaima	35	85	t	982.00				0.00	982.00
57	Tom	17+6	17+8	Lef			100.0			
9	Kisimbo	80	20	t	871.00		0		0.00	971.00
58	John	17+8	18+0	Lef			132.0			
0	Sale	20	00	t	726.80		0		0.00	858.80
58	Kopo	17+9	18+0	Lef						
1	Tolo	95	60	t	329.00		20.00		0.00	349.00
58	John	18+1	18+1	Lef						
2	Sale	60	80	t	31.60				0.00	31.60
58	Samuel	18+2	18+4	Lef	90.00		70.00		0.00	160.00

3	Fox	90	40	t						
58	Warew	18+7	18+7	Lef						
4	Tawa	40	54	t	170.00		40.00		0.00	210.00
58	Willson	18+7	18+2	Lef						
5	Lupa	80	90	t	124.00		92.00		0.00	216.00
58	Planga	18+2	18+4	Lef						
6	Kuh	93	25	t	272.60		88.00		0.00	360.60
58	Sem	18+6	18+6	Lef						
7	Konol	10	40	t	188.80		36.00		0.00	224.80
58	Tipi Kaki	18+6	18+8	Lef						
8		40	80	t	389.20				0.00	389.20
58	George	18+6	18+8	Lef						
9	Wangeke	40	80	t	282.00		50.00		0.00	332.00
59	Lucas	18+6	18+6	Lef						
0	Nana	80	90	t	175.60		220.00		0.00	395.60
59	Pastor	18+7	18+8	Lef		9,800.00		120.00		10,290.20
1	David	60	35	t	370.20				0.00	
59	Cr. Pee	18+8	18+8	Lef						
2	Ess	40	90	t	243.20		80.00		0.00	323.20
59	Perman	18+9	18+9	Lef		1,600.00				2,564.00
3	Mali	40	50	t	924.00		40.00		0.00	0
59	Sika	18+9	19+0	Lef						
4	Pundu	57	10	t	611.40		60.00		0.00	671.40
59	Thomas	19+1	19+2	Lef						
5	Taisa	60	70	t	545.60		76.00		0.00	621.60
59	Lucas	19+2	19+3	Lef						
6	Kinwi	70	90	t	204.80		44.00		0.00	248.80
59	Bryan	19+2	19+4	Lef		1,600.00				2,143.20
7	Taisa	88	28	t	543.20				0.00	0
59	Paias	19+5	19+6	Lef		3,100.00				3,340.00
8	Nea	20	10	t	240.00				0.00	0
59	Plauga	19+5	19+6	Lef						
9	Kuh	20	10	t	54.00		80.00		0.00	134.00
60	David	19+6	19+7	Lef						
0	Semdip	60	10	t	884.00				0.00	884.00
60	Paul	19+7	19+7	Lef						
1	Ponenge	10	40	t	582.40				0.00	582.40
60	Fredick	19+8	19+9	Lef						
2	Nambil	50	20	t	1,444.00				0.00	1,444.00
60	Sape	19+9	20+0	Lef						
3	Wanya	51	61	t	185.40				0.00	185.40
60	Frendy	20+0	20+0	Lef						
4	Nambil	60	80	t	364.00		60.00		0.00	424.00
60	Peter	20+1	20+2	Lef						
5	Blacky	80	75	t	861.50		30.00		0.00	891.50
60	Paul	20+1	20+2	Lef						
6	Pongege	80	75	t	536.00				0.00	536.00
60	Neil	20+2	20+3	Lef						
7	Noring	75	75	t	1,807.00		100.00		0.00	1,907.00
60	Hendrew	20+8	20+9	Lef						
8	Pasago	60	40	t	237.60				0.00	237.60
60	Lewa	20+9	20+9	Lef						
9	Harur	40	60	t	286.00				0.00	286.00
61	John	20+4	20+4	Lef	121.00				0.00	121.00

0	Kumaga	20	70	t						
61	Peke	20+5	20+5	Lef						
1	Ena	55	80	t	116.00				0.00	116.00
61	Rex	21+2	21+3	Lef						
2	Poipeya	70	00	t	177.20				0.00	177.20
61	Koia	21+2	21+2	Lef		4,200.0		120.0		
3	Pepena	20	70	t	183.00	0		0	0.00	4,503.0
61	Nelson	21+6	21+6	Lef						
4	Tombita	00	40	t	379.00				0.00	379.00
61	Norman	21+6	21+7	Lef						
5	Tomba	40	20	t	98.40				0.00	98.40
61	Tony	21+7	22+0	Lef						
6	Teld	20	20	t	682.60				0.00	682.60
61	Mali	22+0	22+0	Lef						
7	Wange	20	60	t	176.00				0.00	176.00
61	Pongeng	22+0	22+1	Lef						
8	e Sukel	20	00	t	526.00				0.00	526.00
61	Lucas	19+0	19+1	Lef						
9	Kepa	30	55	t	327.20				0.00	327.20
62	Helen	19+0	19+1	Lef		1,600.0				
0	Kepa	30	55	t	1,410.20	0			0.00	3,010.2
62	Ferman	19+1	19+1	Lef			110.0			
1	Mali	36	55	t	86.00		0		0.00	196.00
62	Ps David	19+4	19+4	Lef						
2	Sembip	28	60	t	201.80				0.00	201.80
62	Malaki	19+4	19+5	Lef						
3	John	60	10	t	442.70				0.00	442.70
62	David	19+6	19+6	Lef						
4	Semdip	10	60	t	208.50		92.00		0.00	300.50
62	Lewa Yali	19+7	19+8	Lef			200.0			
5		40	50	t	3,993.50	0			0.00	4,193.5
62	Ur Opi	19+8	19+9	Lef						
6		50	50	t	1,357.00				0.00	1,357.0
62	Nana	20+1	20+1	Lef						
7	Ono	00	80	t	492.60				0.00	492.60
62	Peao	20+3	20+4	Lef			180.0			
8	Koropa	75	40	t	97.00		0		0.00	277.00
62	Robert	20+4	20+5	Lef			180.0			
9	Kumanga	70	40	t	946.40		0		0.00	1,126.4
63	O8 Waka	20+5	20+5	Lef						
0		50	55	t	72.00				0.00	72.00
63	Semal	20+5	20+8	Lef						
1	Peandi	80	60	t	722.50				0.00	722.50
63	Lapa	20+9	21+1	Lef			260.0			
2	Yawe	60	00	t	1,064.60		0		0.00	1,324.6
63	Nikints	21+1	21+2	Lef		1,200.0				
3	Nikim	00	20	t	862.00	0	30.00		0.00	2,092.0
63	Toria	21+3	21+3	Lef			140.0			
4	Wendo	00	40	t	80.00	600.00	0		0.00	820.00
63	Tonny	21+3	21+3	Lef						
5	Teld	45	70	t	473.50		96.00		0.00	569.50
63	Terry	21+3	21+5	Lef						
6	Tomba	70	20	t	612.80				0.00	612.80
63	Clement	21+5	21+6	Lef	352.60		360.0		0.00	712.60

7	Tomba	20	00	t			0			
63	Peke	21+7	21+8	Lef			360.0			
8	Wapia	85	75	t	285.80		0		0.00	645.80
63	Simon	21+8	21+9	Lef						
9	Keneth	80	40	t	575.50		90.00		0.00	665.50
64	Waina	21+9	21+9	Lef			120.0			
0	Paia	40	85	t	639.20		0		0.00	759.20
64	Yawi	21+9	22+0	Lef		2,800.0	274.0			
1	Molto	80	20	t	709.40	0	0		0.00	3,783.40
64	Tamulu	21+9	21+0	Lef						
2	Kale	80	20	t	377.80				0.00	377.80
64	Epen	22+1	22+1	Lef						
3	Aruru	00	45	t	337.60		80.00		0.00	417.60
64		22+1	22+2	Lef			100.0			
4	Pok Paia	55	55	t	104.00		0		0.00	204.00
64	Pusel	22+4	22+5	Lef			120.0			
5	Saimon	40	20	t	222.40		0		0.00	342.40
64	Kewa	22+4	22+5	Lef			140.0			
6	Mai	40	20	t	80.00		0		0.00	220.00
64	Danny	22+5	22+6	Lef						
7	Waik	63	00	t	135.00				0.00	135.00
64	Serum	22+6	22+6	Lef			120.0			
8	Kepa	00	60	t	952.00		0		0.00	1,072.00
64	Pepena	22+6	22+8	Lef						
9	Kari	80	00	t	327.00				0.00	327.00
65	Keyap	22+8	22+8	Lef						
0	Niki	60	00	t	40.00				0.00	40.00
65		22+6	22+8	Lef						
1	Rawi Kari	80	00	t	194.00		60.00		0.00	254.00
65	Benjamin	23+3	23+6	Lef						
2	Mala	10	00	t	989.50		50.00		0.00	1,039.50
65	Danny	23+6	24+1	Lef			140.0			
3	Samuel	40	60	t	1,459.00		0		0.00	1,599.00
65	Nidiya	24+1	24+4	Lef						
4	Kea	60	00	t	4,549.80				0.00	4,549.80
65	Paul	24+4	24+8	Lef						
5	Rerema	00	85	t	1,522.00		40.00		0.00	1,562.00
65	Samuel	24+7	24+9	Lef			100.0			
6	Waik	95	70	t	629.00		0		0.00	729.00
65	Poke	24+6	24+7	Lef			140.0			
7	Pumbu	85	95	t	942.00		0		0.00	1,082.00
65	Jack	25+0	25+0	Lef						
8	Kuna	00	60	t	444.00				0.00	444.00
65	Toring	25+0	25+1	Lef						
9	Poea	60	40	t	4,512.00				0.00	4,512.00
66	Rerema	25+1	25+4	Lef						
0	Sumuda	40	20	t	1,724.00		40.00		0.00	1,764.00
66	Nedia	25+4	25+5	Lef						
1	Simbil	20	00	t	1,435.00		200.0		0.00	1,635.00
66	Augustin	25+5	26+2	Lef						
2	Toya	00	45	t	178.00				0.00	178.00
66		38+2	38+2	Lef						
3	Toya Pok	00	90	t	340.00				0.00	340.00

664	Albert Sel	26+340	29+415	Lef t	1,580.00				0.00	1,580.00
665	Dominic Nema	29+300	29+415	Lef t	42.00				0.00	42.00
666	Toiea Pok (Yawi)	29+415	31+426	Lef t	30.00		80.00		0.00	110.00
667	Spendi Kisipa	31+426	31+900	Lef t	0.00		900.00		0.00	900.00
668	Nana Pangi Kera	34+700	35+000	Lef t	54.00				0.00	54.00
669	Maxon Nema	35+000	35+200	Lef t	11.30	1,440.00	120.00		0.00	1,571.30
670	Manage Kumba	35+930	36+100	Lef t	918.60		160.00		0.00	1,078.60
671	Pawa Sende	36+100	36+200	Lef t	1,296.60		120.00		240.00	1,656.60
672	Paul Manage	36+200	36+300	Lef t	771.00		160.00		0.00	931.00
673	Raba Manage	36+300	36+400	Lef t	820.50	9,100.00		120.00	240.00	10,280.50
674	Ps Ekep Manage	36+400	36+500	Lef t	0.00	480.00			0.00	480.00
675	Peri Manage	36+500	36+600	Lef t	0.00		150.00		0.00	150.00
676	Sende Kumba	36+600	36+700	Lef t	0.00		240.00		0.00	240.00
677	Mata Piu	36+800	36+900	Lef t	525.80				0.00	525.80
678	Mata Piu	36+900	37+000	Lef t	402.60				0.00	402.60
679	Torea Wendo	37+000	37+100	Lef t	406.60		80.00		0.00	486.60
680	Rabol Moko	37+100	37+200	Lef t	0.00		70.00		240.00	310.00
681	Kera Kalo	37+200	37+300	Lef t	0.00		40.00		240.00	280.00
682	Nedel Sepema	37+300	37+400	Lef t	0.00		120.00		240.00	360.00
683	Mendil Epu	37+400	37+500	Lef t	0.00		400.00		240.00	640.00
684	Engiya Poloepa	37+500	37+600	Lef t	0.00		200.00		0.00	200.00
685	Kolol Poloepa	37+600	37+700	Lef t	0.00		940.00		240.00	1,180.00
686	Nigega Peke	37+900	38+000	Lef t	36.00				240.00	276.00
687	Semal Onn	38+000	38+100	Lef t	0.00				240.00	240.00
688	Kola Pepena	38+200	38+290	Lef t	0.00				240.00	240.00
689	Walpe Kopa/Nal	38+290	38+300	Lef t	0.00				240.00	240.00

	de Kopa									
69 0	Numi Yombon	38+3 00	38+4 00	Lef t	0.00				240.0 0	240.00
69 1	John Wapia	38+4 00	38+5 00	Lef t	0.00				240.0 0	240.00
69 2	Ess Sondo	38+5 00	38+6 00	Lef t	0.00				240.0 0	240.00
69 3	Jonah Ess	38+7 00	38+8 00	Lef t	0.00				240.0 0	240.00
69 4	Jack Ningi	38+8 00	38+9 00	Lef t	0.00				240.0 0	240.00
69 5	Semal Papra	38+9 00	39+0 00	Lef t	0.00				240.0 0	240.00
69 6	Maning Keke/Noy a Karin	39+0 00	39+7 00	Lef t	0.00				240.0 0	240.00
69 7	Toya Pok	39+7 00	39+9 00	Lef t	0.00				240.0 0	240.00
69 8	Nissa Yana	40+3 80	40+4 10	Lef t	420.00				0.00	420.00
69 9	Wanpis Kolandi	41+1 85	41+2 45	Lef t	0.00		775.0 0		0.00	775.00
70 0	Mambol Mandia	41+2 45	41+2 65	Lef t	0.00		120.0 0		0.00	120.00
70 1	Tapural Pomu	41+7 30	41+9 40	Lef t	0.00		100.0 0		0.00	100.00
70 2	Lesly Kewa	42+4 10	42+6 60	Lef t	40.00				0.00	40.00
70 3	Sailas Hukupuk a	42+7 10	42+9 80	Lef t	37.60				0.00	37.60
70 4	Serum Ekep	42+9 80	43+1 60	Lef t	0.00		40.00		0.00	40.00
70 5	Esmond Moro	43+1 60	43+2 50	Lef t	121.60				0.00	121.60
70 6	Nonge Paki	43+2 50	43+3 20	Lef t	205.60		120.0 0		0.00	325.60
70 7	Seki Esmond	43+3 25	43+3 95	Lef t	216.00	480.00			0.00	696.00
70 8	Felix Justin	43+4 00	43+5 00	Lef t	0.00	840.00			0.00	840.00
70 9	Kongi Aitare	43+5 05	43+5 70	Lef t	251.60		120.0 0		0.00	371.60
71 0	Peter Waine	43+5 75	43+6 30	Lef t	265.60				0.00	265.60
71 1	Jessie Kuriya	43+7 05	43+9 30	Lef t	18.60				0.00	18.60
71 2	Zachery Liven	43+9 35	44+0 65	Lef t	9.60		80.00		0.00	89.60
71 3	Samson Goria	44+0 70	44+1 30	Lef t	62.40		80.00		0.00	142.40
71 4	Joel Nil	44+1 35	44+2 30	Lef t	25.20		100.0 0		0.00	125.20
71	Yaks	44+2	44+3	Lef	276.00				0.00	276.00

5	Piawa	35	05	t						
71 6	Brandy Yamba	45+9 00	46+2 00	Lef t	456.90				0.00	456.90
71 7	Moses Kurum	46+5 00	46+6 40	Lef t	164.00		120.0 0		0.00	284.00
71 8	Kil Poko	46+6 40	46+7 15	Lef t	66.00				0.00	66.00
71 9	Noiye Jimmy	46+7 15	46+8 10	Lef t	55.60				0.00	55.60
72 0	Kepa Nolpo	46+8 10	46+9 90	Lef t	16.50				0.00	16.50
72 1	Blacky Muku	46+9 90	47+0 20	Lef t	12.00				0.00	12.00
72 2	Taxi Lopalo	47+0 20	47+2 60	Lef t	100.00				0.00	100.00
72 3	Jackson Yando	47+2 60	47+3 00	Lef t	394.80				0.00	394.80
72 4	Pepe Walbu	47+3 00	47+3 90	Lef t	5.00				0.00	5.00
72 5	Brian Monda	47+3 90	47+4 50	Lef t	27.00				0.00	27.00
72 6	Blak Lipu	47+4 50	47+5 55	Lef t	512.00				0.00	512.00
72 7	Wantol Pundu	47+6 50	47+7 15	Lef t	384.00		80.00		0.00	464.00
72 8	Purul Kumm	44+4 70	45+2 60	Lef t	0.00		40.00		0.00	40.00
72 9	Mark Talpa	44+4 70	45+2 60	Lef t	0.00		40.00		0.00	40.00
73 0	Pokpea Kill	44+4 70	45+2 60	Lef t	0.00		160.0 0		0.00	160.00
73 1	Pem Toriea	44+4 70	45+2 60	Lef t	0.00		40.00		0.00	40.00
73 2	Nepame Wak	45+2 60	45+4 55	Lef t	0.00		20.00		0.00	20.00
73 3	Moses Takara	45+4 55	45+7 00	Lef t	0.00		100.0 0		0.00	100.00
73 4	Maina Korowa	45+7 00	45+9 00	Lef t	0.00		80.00		0.00	80.00
73 5	Black Gipu	45+9 00	46+2 00	Lef t	130.00				0.00	130.00
73 6	Bobby Kurum	46+3 40	46+5 00	Lef t	252.00		80.00		0.00	332.00
73 7	Gul Kaku	47+7 15	47+8 20	Lef t	326.00		80.00		0.00	406.00
73 8	Michael Noriea	47+9 00	47+9 40	Lef t	5,300.00		60.00		0.00	5,360.0 0
73 9	Kep Enda	47+9 40	48+0 80	Lef t	600.00		20.00		0.00	620.00
74 0	Warea Kulyana	48+0 80	48+1 40	Lef t	1,571.00		40.00		0.00	1,611.0 0
74 1	Kapolo Kulyana	48+1 40	48+2 00	Lef t	321.20		20.00		0.00	341.20
74	Nicky	48+2	48+2	Lef	1,388.00		40.00		0.00	1,428.0

2	Paul	00	50	t					0
74	Tame	48+4	48+4	Lef			200.0		1,145.0
3	Wagala	00	90	t	945.00		0	0.00	0
74	Jimmy	48+4	48+5	Lef					
4	Noah	90	10	t	288.00			0.00	288.00
74	Pup Lewi	48+5	48+5	Lef					
5		10	60	t	542.00		80.00	0.00	622.00
74	Mumu	48+2	48+3	Lef					
6	Marlyn	50	20	t	1,257.00		20.00	0.00	1,277.0
74	Yosip	48+8	48+9	Lef					
7	Karme	00	00	t	318.00		80.00	0.00	398.00
74	Simisi	49+0	49+1	Lef					
8	Kakaru	60	10	t	416.00			0.00	416.00
74	Paul	49+0	49+1	Lef		2,800.0		120.0	3,076.0
9	Mata	60	10	t	76.00	0	80.00	0	0.00
75	Sai	49+3	49+4	Lef					
0	Tende	40	20	t	671.00			0.00	671.00
75	Ponege	49+4	49+5	Lef			140.0		1,280.0
1	Emba	20	90	t	1,140.00		0	0.00	0
75	Harur	50+0	50+3	Lef			100.0		1,468.8
2	Akon	60	00	t	1,368.80		0	0.00	0
75	Paul	50+3	50+4	Lef			140.0		
3	Pangi	20	20	t	130.00		0	0.00	270.00
75	Paul	50+3	50+4	Lef					
4	Pangi	20	20	t	405.00			0.00	405.00
75	Mapy	50+3	50+4	Lef					
5	Paul	20	20	t	525.00			0.00	525.00
75	Nicky	50+3	50+4	Lef					
6	Paul	20	20	t	80.00			0.00	80.00
75	Paul	50+3	50+4	Lef					
7	Pangi	20	20	t	546.00			0.00	546.00
75	Das	50+5	50+6	Lef			180.0		
8	Yano	50	80	t	0.00		0	0.00	180.00
75	Eso	50+7	50+8	Lef					
9	Samson	50	00	t	2,067.60			0.00	2,067.6
76	Radien	50+9	51+1	Lef					
0	Mom	00	00	t	48.00			0.00	48.00
76	Epi Mom	50+9	51+1	Lef					
1		00	00	t	64.00		30.00	0.00	94.00
76	Miriya	51+2	51+2	Lef					
2	Lumbu	00	80	t	0.00		30.00	0.00	30.00
76	Keno	51+3	51+3	Lef					
3	Mero	60	90	t	105.00			0.00	105.00
76	Jackson	51+4	51+5	Lef					
4	Kambi	30	50	t	445.00			0.00	445.00
76	Lucy	51+6	51+7	Lef					
5	Mom	30	10	t	913.00			0.00	913.00
76	Meyamb	51+7	51+7	Lef					
6	o Paraka	10	50	t	6,420.00		80.00	0.00	6,500.0
76	Makagi	51+7	51+8	Lef					
7	Nicky	50	20	t	526.00			0.00	526.00
76	Amos	51+9	51+9	Lef					
8	Taia	10	50	t	532.00			0.00	532.00
76	Smith	51+9	51+9	Lef	32.00		400.0	0.00	432.00

9	Onga	10	50	t			0			
77 0	Mom Taia	51+9 50	52+0 15	Lef t	318.00				0.00	318.00
77 1	Kandaki Alco	51+9 50	52+0 15	Lef t	192.00	360.00	360.0 0		0.00	912.00
77 2	Poro Kanex	51+9 50	52+0 15	Lef t	48.00				0.00	48.00
77 3	Das Yana	52+0 15	52+1 00	Lef t	90.00		60.00		0.00	150.00
77 4	Gonol Lepleppi	52+0 15	52+1 00	Lef t	48.00	840.00			0.00	888.00
77 5	Lukas Kera	52+0 15	52+1 00	Lef t	48.00	600.00			0.00	648.00
77 6	John Soo	52+0 15	52+1 00	Lef t	48.00				0.00	48.00
77 7	Yamba Sai	52+2 00	52+2 15	Lef t	547.00				0.00	547.00
77 8	Pis Kongu	52+2 15	52+2 15	Lef t	474.00				0.00	474.00
77 9	Rex Tapu	52+2 25	52+3 00	Lef t	519.00		200.0 0		0.00	719.00
78 0	Paul Katapa	52+4 00	52+4 20	Lef t	0.00		40.00		0.00	40.00
78 1	Mark Yanda	52+4 20	52+4 70	Lef t	172.00				0.00	172.00
78 2	Timoty Lupa	52+5 30	52+5 80	Lef t	142.00				0.00	142.00
78 3	Jona Timoty	52+5 30	52+5 80	Lef t	104.00				0.00	104.00
78 4	Nimbu Timoty	52+5 30	52+5 80	Lef t	40.00				0.00	40.00
78 5	Alphonse	52+5 30	52+5 80	Lef t	237.00		100.0 0		0.00	337.00
78 6	Yanda Top	52+6 20	52+5 80	Lef t	258.80				0.00	258.80
78 7	Sumunda	52+7 70	53+0 00	Lef t	1,075.00		40.00		0.00	1,115.0 0
78 8	Able Sumanda	52+7 70	53+0 00	Lef t	333.20		20.00		0.00	353.20
78 9	Okay Kerowa	52+7 70	53+0 00	Lef t	202.00				0.00	202.00
79 0	James Tepera	52+7 70	53+0 00	Lef t	123.20		20.00		0.00	143.20
79 1	Buka Kerowa	52+7 70	53+0 00	Lef t	335.80				0.00	335.80
79 2	Vagi Sumunda	52+7 70	53+0 00	Lef t	218.00				0.00	218.00
79 3	Mark Sumanda	52+7 70	53+0 00	Lef t	184.00		40.00		0.00	224.00
79 4	Pais Sumanda	52+7 70	53+0 00	Lef t	218.00				0.00	218.00
79 5	Kepa Malto	52+7 70	53+0 00	Lef t	520.00	4,200.0 0	10.00	120.0 0	0.00	4,850.0 0
79	Jerry	52+7	53+0	Lef	199.00		80.00		0.00	279.00

6	Sumanda	70	00	t						
79	Jimmy	53+0	53+1	Lef						
7	Wendo	00	00	t	168.00		60.00		0.00	228.00
79	Petrus	53+0	53+1	Lef						
8	Mond	00	00	t	168.00		60.00		0.00	228.00
79	Koroba	53+3	53+7	Lef						
9	Grab	70	10	t	664.00				0.00	664.00
80	Pasi	53+7	53+7	Lef						
0	Kolom	10	50	t	144.00				0.00	144.00
80	Benjamin	53+7	53+7	Lef						
1	Pasi	50	90	t	144.00				0.00	144.00
80	Temal	53+7	53+8	Lef						
2	Gini	90	50	t	224.00				0.00	224.00
80	Akilup	53+8	53+9	Lef						
3	Peke	50	50	t	339.00		40.00		0.00	379.00
80	Yando	54+0	54+1	Lef						
4	Monda	65	30	t	612.00		70.00		0.00	682.00
80	Thomas	54+1	54+1	Lef						
5	Wane	30	70	t	200.00				0.00	200.00
80	Daniel	54+1	53+1	Lef						
6	Leawa	30	70	t	389.60		40.00		0.00	429.60
80	Ken	54+1	54+2	Lef						
7	Amber	70	10	t	149.00		40.00		0.00	189.00
80	Samuel	54+2	54+2	Lef						
8	Amber	10	50	t	176.00		40.00		0.00	216.00
80	Josepa	54+2	54+2	Lef						
9	Buna	50	70	t	543.00				0.00	543.00
81	Bot Buna	54+2	54+3	Lef					240.0	
0	Joe	70	20	t	144.00				0	384.00
81	Mukumb	54+3	54+4	Lef					240.0	
1	a	20	30	t	786.00				0	1,026.0
81	Lewi	54+4	54+4	Lef						
2	Kundi	50	80	t	0.00		30.00		0.00	30.00
81	Lewe	54+4	54+5	Lef						
3	Kundi	80	80	t	587.00		40.00		0.00	627.00
81	Keven	54+5	54+7	Lef						
4	Pasi	80	30	t	288.80		20.00		0.00	308.80
81	Ken	54+7	54+7	Lef						
5	Amber	05	85	t	619.00		80.00		0.00	699.00
81	Martin	54+7	55+0	Lef						
6	Gini	85	00	t	1,692.50				0.00	1,692.5
81	Thomas	55+0	55+0	Lef						
7	Kikia	00	70	t	1,194.00				0.00	1,194.0
81	Temal	55+0	55+1	Lef						
8	Gini	70	80	t	75.00		120.0		0.00	195.00
81	Martin	55+1	55+5	Lef						
9	Gini	80	30	t	641.40		120.0		0.00	761.40
					392,692.70	122,580.00	50,072.00	2,400.00	12.960.00	580,704.70

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467,3
04.31

74611
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Add 19% to all amount under crops and Trees (C&P) as adjustment as per results of the replacement cost survey.