

Nancy Sullivan & Associates Ltd  
December 2009 (January 2010)

**Middle to Lower Ramu subsistence,**  
**household**  
**and culture study**  
**second revision**

For Phil Shearman and Bismark Ramu Group



<b><u>CONTENTS</u></b>	
<b><u>EXECUTIVE SUMMARY</u></b>	4
<b><u>TERMS OF REFERENCE</u></b>	6
<b><u>METHODOLOGY</u></b>	7
Sampling rationale	7
Timetable	8
<b><u>BACKGROUND</u></b>	13
Prehistory of the Sepik-Ramu floodplain	13
Time of darknes stories	18
Bosmun potter and trade networks	19
Dirk Smidt in Kominimung	22
Germans on the Ramu	23
<b><u>LANGUAGES</u></b>	25
<b><u>SOCIAL STRUCTURE</u></b>	27
Clan leaders	27
The kukurai system	27
Land management	28
Sister exchange	28
<b><u>SOCIAL AND CULTURAL MEANINGS OF THE RAMU RIVER</u></b>	29
Spiritual associations	29
Aloys Kasprus' record	30
Survey data	34
<b><u>SURVEY RESULTS</u></b>	37
Education and literacy	37
Marriage and family	37
Residence and place of birth	37
Religious affiliation	38
Present uses of the Ramu River	39
<b><u>ECONOMY OF THE RAMU RIVER VILLAGES</u></b>	39
Trade	40
Agriculture	40
Marketing	41
Fishing	43
Cash crops: Cocoa, copra	44
Household consumption of processed foods	45
<b><u>ANALYSIS</u></b>	47
<b><u>CONCLUSION</u></b>	52
<b><u>REFERENCES</u></b>	55
<b><u>APPENDICES</u></b>	61
<b><u>VILLAGE ASSESSMENTS</u></b>	61
1. Marangis	61
2. Tzumbar	63
3. Wukibu	66
4. Watabu	68
5. Grengabu	69
6. Missingi	70
7. Bangapela	72
8. Jukin	72
9. Akurai	75
10. Bosmun	75

<b>Ramu River Community Income Survey</b>	<b>77</b>
<b>Original Ramu River survey instrument</b>	<b>89</b>
<b>Qualitative Component Questions</b>	<b>98</b>
<b>Ramu River Stories: Manup and Kilibob</b>	<b>99</b>
<b>Legends of the Lower Ramu from T.H. Slone</b>	<b>108</b>
<b>Two myth types of the Lower Ramu recounted by Z'Graggen</b>	<b>109</b>
<b>Ramu River material culture: shields</b>	<b>111</b>
<b>Post-Courier article 28.1.10</b>	<b>114</b>

## EXECUTIVE SUMMARY

The Lower and Middle Ramu villages are much like riverine villages elsewhere in PNG: they live in sago, fish, small garden plots and basic bush mammals. Everything faces the river, from their homes to their transport, their trade and their origin myths.

Children play in the river, men and women fish in it, most forms of social intercourse go on by the river, and the future of their particular way of life depends entirely upon the river.

No village, and no region, is ever autonomous in PNG, and these Lower to Middle Ramu communities are knitted together by networks of trade in material as well as ideological goods. Stories run up and down the river, just as pots, fish, axe blades and other necessities do. Sisters are exchanged along these paths, and all forms of innovation make their way along them, either from the coast or the Upper Ramu.

The Middle and Lower Ramu communities are comparatively young for Papua New Guinea. 6000 years ago they were at the bottom on an inland sea, and 2000 years ago they were virtually coastal, as the sea receded and the coastline as we know it now began to emerge.

But these are not ahistorical communities. There are two mechanisms by which these people are embedded in the greater north coast of New Guinea. The first is their participation in a myth cycle

known as Manup and Kilibob, which is described below. People from the offshore islands of East Sepik, down to Bosmun and Madang, Rai Coast and the Huon Pensinsula all share a basic origin myth involving the brithers Manup and Kilibob. Like the Ok Min system of the West Sepik, this belief system constitutes a culture area in itself, and the many language groups that participate in it are all therefor related in some larger imagined community of understanding. The stories precede Christianity of course, and have been thoroughly grafted onto Biblical stories since missionization. But they are also like Dreamings in the Aboriginal Australian sense, with distinct locations that relate to different passages of the many myth stories. In this way, the larger sweep of geography from Wewak across the north coast is a kind of Holy Land for this belief system, with the area just east of the mouth of the Ramu River representing a kind of

Bethlehem for everyone who shares these stories. Karkar island, manam island, Bogia and inland to the Adelbert Mountains are all claimed to be birth sites of the mythical brothers.

The other interesting means by which to understand these villages is trade networking. Again, these relationships range in all directions, and trace historical connections from points of origin and intermarriage. Fortunately, much like the archeological attention that has been given to the region, there has been significant attention to the pottery of this area already, as a major object and vehicle in these trade networks. But the importance of this entire area cannot be overestimated for the prehistory of New Guinea. Much archaeological work remains to be done, and when it is, we will know that much more about the original migrations to the Sahul continent and the later waves of Lapita cultures migrating from Taiwan.

Our study covered ten villages along the Middle and Lower Ramu: Marangis, Bosmun (Nemnem and Dongan villages), Akurai, Jukin, Bagapela, Tzumbar, Grangabu, Missingi, Watabu and Wukibu. There are 7 vernaculars spoken in the Middle and Lower Ramu.<sup>1</sup>

- Bakindi- spoken in Tzumbar, Banem (Sogeram), Sungribu, Koitobu, Grengabu, Dibu, Watabu, Batobu, Moibu, Nodobu, Chabu, Krangabu, Anaberg, Wukibu, Jam and Jutibu villages.
- Iski- spoken in Missingi, Kwanga, Sotobu, Potabu and Wengebu villages
- Biaramba (Maneng)- spoken in Bosmun area
- Waran- spoken in Bagapela village
- Mera- spoken in Jukin and Igom village
- Abu- spoken in Gwaiya, Amarong, Akurai, Asou, Danget and Jirikin villages
- Fobara- spoken in Dop, Biwi, Kimning and Warning villages

The river has been sedimenting, building sandbank and becoming less palatable to drink over the past few years. Children, people observe, are growing sick. People fish mainly for their own consumption, and services and infrastructure are poor, which prevents more income-generation ambitions. Their cash crops are not especially productive, and their diets now rely on a significant percentage of store bought food like rice, salt and sugar. It's not a bad existence, but it is a precarious one. These people are less self-sufficient than some of their neighbours, but also more fortunate for living along a major thoroughfare. They have a better, more diverse diet than people in the Almami LLG, from what we can see, but not as diverse a diet as those nearer the ocean.

Although Pamela Swadling and other archaeologists have conducted extensive research in the area, there has never been a comprehensive ethnographic study of the Lower Ramu. Interestingly, Paul Roscoe has recently (2005) written about contemporary foraging societies farther west of the Ramu as templates for understanding the entire Sepik-Ramu Basin in the past, but the unique mixture of Keram-Madang cultures that now makes up the Lower Ramu is still largely under-documented.

---

<sup>1</sup> Ethnologue, the Summer Institute of Linguistic encyclopedia of languages in Papua New Guinea, maps a series of languages running over the same terrain as follow: Bosmun, Kire, Abu, Aruamu, Andarum, Gorovu, Romkun and Rao.

## **TERMS OF REFERENCE**

This project involves interviews, questionnaires, and observations, regarding the subsistence patterns for the villages along the Middle to Lower Ramu River, within Madang Province.

The objective is to establish a baseline understanding of the agricultural and other subsistence patterns for these riverside communities. These interviews should provide a well-rounded picture of how the villages survive by and on the river, and an understanding of their dependence upon the river itself. Ultimately, these findings will form the 2009 baseline of an extended socioeconomic study along the Middle and Lower Ramu River, as mining and other development effect water quality and levels, and therefore the subsistence of these communities.

Questionnaires shall cover basic demographics regarding these communities---how many households, estimates of population, by gender and age; education levels; income levels and kinds; absentee/remittance incomes; presence of schools, aid posts, trade stores, etc. Questions will furthermore cover information on the garden produce currently and recently being planted; what proportion of this produce is sold at market, and what proportion feeds the farmers' families; whether these households also fish for market or subsistence, and what kinds of fish and their quantities is collected; how much market (and other) income is used to purchase foodstuffs, and what kinds.

The output will be one comprehensive report with all data available to the client (for future use of any kind), but analyzed and summarized for the purpose of this project. The report will also include an Executive Summary written for the general public. Report is to be written by Nancy Sullivan.

The research team shall include 2-3 fieldworkers traveling the river from August 1 through September 15. Data analysis and write up will occur from September 16-30, with a final report for the client due Wednesday 30 September 2009.

Language groups covered by this research include: Borei, Bosngun, Kire, Aruamu, Adarum, Romkun, Gorovu, Kominimung, Breri, Rao, Anor and Aiome. The extent of this survey ranges from Yamka through Rabaka Districts, to the border of Simbai. An estimate of twenty five major villages shall be canvassed, dependent upon their accessibility. An estimated total of 150 interviews will be conducted. In each site, the team will conduct initial village-wide group interviews, followed by more detailed interviews with age, clan and gender-representative informants.

Team Members:

1. Chris Dominic (team leader)
2. Dickson Mandengat
3. Joshua Meraveka
4. Michael Kasuk -RRCMA representative and field assistant
5. Patrick –Outboard motor skipper

The 10 villages visited during the study were:



1. Marangis village-Lower Ramu
2. Bosmun (Nemnem and Dongan villages)-Lower Ramu
3. Akurai village-Lower Ramu
4. Jukin village-Lower Ramu
5. Bagapela village-Lower Ramu
6. Tzumbar village-Middle Ramu
7. Grangabu village-Middle Ramu
8. Missingi village-Middle Ramu
9. Watabu village-Middle Ramu
10. Wukibu village-Middle Ramu

## **METHODOLOGY**

This project involved interviews, questionnaires, and observations, regarding the subsistence patterns for the villages along the Middle to Lower Ramu River, within Madang Province.

We used both qualitative and quantitative methods. In-depth interviews with individuals and key informants, and recorded narratives of origin stories were the qualitative instruments used; and questionnaires were used to elicit quantitative data. We also conducted observations to help glean information on village life.

The questionnaires covered basic demographics regarding these communities---how many households, population by gender and age; education levels; income levels and kinds; absentee/remittance incomes; presence of schools, aid posts, trade stores, etc. Further questions covered information on the garden produce currently and recently planted; what proportion of this produce is sold at market, and what proportion feeds the farmers' families; whether these households also fish for market or subsistence, and what kinds of fish and their quantities is collected; how much market (and other) income is used to purchase foodstuffs, and what kinds of foodstuffs are purchased. Our survey can be found in the Appendix..

### **Sampling rationale**

We have used a purposive non-probability sampling method for this study. 'Purposive' because we know what we want to achieve from this study and we know the interests of our sample population. Of roughly 40 Lower-to-Middle Ramu River villages, we have selected ten. Our data target was 160 surveys, 50 interviews, and 20 focus group discussions (for each village, will be 16 surveys, 5 interviews, 2 focus group discussions [FGD]). There were 160 surveys conducted: 16 surveys for each village, with 8 surveys for males and 8 for females. A total of 40 radio interviews for individuals and 10 interviews for focus groups were also conducted in the ten villages visited.

IDIs were conducted from 10 villages along the Lower and Middle regions of Ramu River. These villagers were Magangis, Wukibu, Dongon, Jukin, Bangapela, Tzumbar, Missingi, Grangabu and Watabu. In each village, 16 surveys were done of which male edged slightly more than females with 50.6% over the female 49.4%.

To get a balanced perspective, we recruited equal proportion of youths and elderly people. The youngest recruited for study was 19 years and the oldest was 73 years. Also every participant represented a household; therefore, 16 households in each village were sampled.

Our question list was drafted and sent to BRG for input, and they provided feedback that helped finalise the survey.

### Timetable of work

Date/Time	Place	Activity	Comments
Wednesday 19 <sup>th</sup> August 10:00 am	Madang to Bosmun via arranged transport	Travelled from Madang to Bosmun (Banis Kau) on vehicle and then by boat to Nemnem village.  After meeting with community members in Nemnem the team was taken to Dongan to spend the night there.  Had meeting with Melchior Pendame- a former agriculture officer and one of the founder of RRCMA. Michael Daragum, Michael Kasuk- a former high school teacher and now a vocal advocate in RRCMA. and other leaders of the organized RRCMA.	Welcomed warmly by the community with traditional singsing.
Thursday 20 <sup>th</sup> August	Dongan & Mangarong village which is part of the main Marangis village	Travelled from Dongan to Mangarong village.  Met Bruno the village recorder and arrange for participants for the survey. Never had the chance to meet the councillor because he was in town on a private business trip.	It was an hour trip to Mangarong village. Though people were not aware of the study, the team manages to get in contact with the recorder arrange for people to participate in the survey.
Friday 21 <sup>st</sup> August 7:00 am – 5:00 pm	Mangarong Village	Met with the community members and proceeded on with the interviews and surveys.	It was hard in the morning to do the survey because people were busy with their activities. People started coming after lunch to participate in the study.
Saturday 22 <sup>nd</sup> August 7:00 am – 11:30 am	Mangarong to Nemnem (Bosmun)	Completed work in Mangarong and then travel to Nemnem village in the afternoon. Met Michael Kasuk who was returning from town to join the team.	A total of 16 surveys were done with 8 individual radio interviews and 2 focus group interviews.
Sunday 23 <sup>rd</sup> August	Dongan village	Stayed in the village because it was Sunday and people were attending church service. Took the day off and did some laundry.  After the service the team went to Nemnem village for Sunday market.	No Interviews. Just rest and did some observation in the community.
Monday 24 <sup>th</sup> August 6:30 am	Dongan & Tzumbar	Travelled from Dongan village to Anaberg, diverted Tzumbar.	The plan was to go to Anaberg but we encountered problems with the out board motor and had to go into Tzumbar village.



			The skipper left the team for town to get the motor part which has ceased. No interviews. Only toksave was given to the village via some leaders of the community.
Tuesday 25 <sup>th</sup> August 7:00 am	Tzumbar village	Met with village leaders, staff and students of the Integrated Christian School and other village. After an hour of orientation by the team and awareness by Micheal Kasuk the team started the surveys.	The ICS school is the only school in Tzumbar which is headed by Mr. Harry who is from Simbu and is married to a local woman. He is also the founder of the school in the village. the school is church run school by the AOG church.
Wednesday 26 <sup>th</sup> August 7:00 am-5:00 pm	Tzumbar village	Continued surveys and interviews.	
Thursday 27 <sup>th</sup> August 7:00 am-5:00 pm	Tzumbar village	Continued work in the village.	Total of 16 interviews, 8 males and 8 females. 5 recorded interviews, 2 males, 2 females and 1 community leader/chief
Friday 28 <sup>th</sup> August 7:00 am-12:10 pm	Tzumbar & Anaberg (Wikubu village)	<p>Travelled from Tzumbar to Wikubu village via Missingi, Kwanga, Sogeram maus baret, Grangebu and Watabu villages.</p> <p>After two hours of rest the team conducted surveys and interviews.</p> <p>There was a proper orientation in the evening where the members of the team introduced themselves and discussed awareness on the impacts of major invested projects like mining in the country.</p>	<p>The team stopped at each target villages to leave notice for the team's visit. Like in Grangebu, Missingi and Watabu village. The team arrived at Wikubu village at around 12:10 pm and was first met by Joe Nekwai who is a village court magistrate.</p> <p>The LLG Councillor came an hour later o met the team because he was attending another village organized sports meeting. The team was given a newly built community hall to camp in.</p> <p>Total of 16 interviews, 8 males and 8 females. 5 recorded interviews, 2 males, 2 females and 1 community leader/chief</p>
Saturday 29 <sup>th</sup> August 6:30 am-12:30 pm	Wukibu & Watabu village	<p>Completed work in Wukibu and travel Watabu village</p> <p>Met the village councillor John Yen and the village recorder Jeffery Koni and brief them with the purpose of the visit and arrange for participants of the survey.</p> <p>After an hour of rest the team conducted 10 surveys (6 males and 4 females) and two interviews.</p>	Arrived at Watabu village 12:30 pm.
Sunday 30 <sup>th</sup> August 6:30 am – 1:45 pm	Watabu & Grengabu village	<p>Completed the remaining 2 male surveys and 4 females and 2 more interviews and left for Grengabu village.</p> <p>One of the interviewee was Derrick Brian who was the community manager working with LLG councillor.</p>	A total of 16 surveys was done and 5 interviews was conducted for Watabu village.

		Arrive in the afternoon at Grengabu and did some surveys and interviews.	
Monday 31 <sup>st</sup> August 7:00 am-4:00 pm	Grengabu & Missingi village	Continued with the surveys and interviews and completed the work at around 4:00 pm. Left the Grengabu and arrive 5: 38 pm in Missingi. Awaiting the teams arrival in Missingi was Timothy the chairman of RRCMA. The team a few surveys in later part of the afternoon and a radio interview in the night with the RRCMA Chairman.	A total of 16 surveys and 5 interviews were done in Grengabu.
Tuesday 1 <sup>st</sup> September 6:30 am – 3:00 pm	Missingi & Bangapela village	Continued with surveys and interviews.  After completion the team had a meeting with about 100 community members. Attending the meeting were teachers from the Kwanga upper primary school, health workers from Kwanga health, the village recorder and other members of the community.	
Wednesday 2 <sup>nd</sup> September 6:00 am – 2:00 pm	Bangapela & Jukin village	Met Daniel Mambura-a former health worker and now a community leader and a businessman.  Had a briefing with Daniel and other village leaders and arranged for the survey to be done.  Conducted surveys and interviews in the afternoon.	
Thursday 3 <sup>rd</sup> September 6:30 am – 1:30 pm	Jukin village & Akurai village	Traveled from Jukin village to Akurai village. Arrive in Akurai at 4:00 pm and went to met David who was one of the RRCMA contact person.  Conducted a few surveys and rested.	Total of 16 interviews, 8 males and 8 females. 5 recorded interviews, 2 males, 2 females and 1 community leader/chief was done for Jukin.  People were not aware of the visit of the team but after arrival they started coming to meet the team.  The team decided to sleep in the community house even though there was offer from the headmaster of the SDA run school for the team to sleep in a school house built by American volunteers.
Friday 4 <sup>th</sup> September 6:00 am – 1:00 pm	Akurai village & Nemnem village	Completed surveys and interviews in Akurai. After the completion of work the team was farewell by the community and was prayed over by Ken Bola a missionary to the SDA church in Akurai. Travelled from Akurai down to Nemnem (Bosmun)	Total of 16 interviews, 8 males and 8 females. 5 recorded interviews, 2 males, 2 females and 1 community leader/chief.  Arrived in Nemnem village at 5:15 pm and rested. No interviews.
Saturday 5 <sup>th</sup> September	Nemnem village (Bosmun)	Conducted interviews and surveys.	Total of 8 interviews, 4 males and 4 females. 5 recorded interviews, 2

6:00 am – 6:00 pm			males, 2 females and 1 community leader/chief
Sunday 6 <sup>th</sup> September	Nemnem village	The team attended the first Holy Communion Mess for Gr 4 students of Bosmun Upper Primary School. After the mess the team packed staff in Nemnem and moved to Dongan village	
Monday 7 <sup>th</sup> September 6:30 am	Dongan Village	Conducted surveys and interviews	Total of 8 interviews, 4 males and 4 females. 5 recorded interviews, 2 males, 2 females and 1 community leader/chief  After the days work the team was invited by the Bosmun's primary school headmaster to visit the school and give some talk to the students
Tuesday 8 <sup>th</sup> September 10:30 am – 1:00 pm	Dongan primary school	Went to the school and was met by the headmaster and two other senior teachers. The students were called up assembled.  The team talked to the students on the nature of the work and also gave some insights on ethnographic research and anthropology.  After the meeting with the students the team met with village leaders of the RRCMA for a debriefing. During the meeting the team presented up dates of the field trip and highlighted the challenges and success of the field trip	The students were very curious and asked a lot of questions. Even the teachers joined in on asking questions. The meeting took 2 hours which was longer than what we anticipated.  There was a farewell party hosted by the Nemnem village for the team. There was also a devotion held after the party to pray over the team.  The community was so organized, cooperative and hospitable to the team, especially people like the Chief of the village in Nemnem, the village court magistrate, the village recorder and other leaders. But overall it was the whole community who showed passion and took ownership of the study. Meaning helped and supported the team any possible way they can.
Wednesday 9 <sup>th</sup> September 12:30 pm- 2:40 am	Bosmun to Madang	Farewell by the community and travelled to Base Camp. Then travelled from Base Camp to Madang on a PMV. Michael Kasuk escorted team back to Madang.	
Thursday 10 <sup>th</sup> September	BRG office	the NSA team with Michael Kasuk debriefed with BRG	The BRG team were pleased with the NSA field work.

The team left Madang on the 19<sup>th</sup> of August for Base Camp (Bogia) on a truck hired by BRG as part of its commitment towards the study. We were met by community members from Bosmun and taken to Nemnem village by outboard motor. The community welcomed us warmly with traditional song and dances.

The team thanked the villagers for their special welcome ceremony and then had a briefing with village elders in the afternoon to confirm the schedule. We then spent the

night in the village and prepared for the trip to Marangis the next day. The initial program was for the team to complete Marangis at the river mouth and then travel to Anaberg which is the last area in the Middle Ramu. From Anaberg we would conduct the survey moving downstream and complete the work in Bosmun.

The team left Bosmun on Thursday 20<sup>th</sup> of August and travelled to Marangis where we spent two days completing the survey. In the afternoon of Saturday 22<sup>nd</sup> of August we returned to Bosmun, leaving again in the morning of Monday August 24<sup>th</sup> to travel up to Anaberg. But we were on the river four hours when we encountered a problem with the out board motor and had to go into Tzumbar village. Fortunately Tzumbar was one of the villages in the Middle Ramu on our schedule, so we spent three nights there from the 25<sup>th</sup> to the 27<sup>th</sup> of August. During this period our skipper went to purchase a spare part. On the 28<sup>th</sup> we travelled to Wukibi Village (Annanberg).

Here again the team was given a warm welcome and provided a newly built community hall to use. The work in Wukibu took the team a day and half to complete and we left the village in the afternoon of Saturday 29<sup>th</sup> of August. The next village was Watabu, an hour travel from Wukibu. The team completed half of the surveys and interviews on the same day because the community was organized and waiting for the team which was of great assistance to the team. The team left Wukibu on the 30<sup>th</sup> of August and travel down to Grangabu village. The team took two days to complete work in Grangabu and then moved on to Missingi on Tuesday the 1<sup>st</sup> of September. From the 2<sup>nd</sup> to the 3<sup>rd</sup> of September the work was completed in Missingi and then the team moved on to Bangapela village. The team left Bangapela in the morning of Saturday 5<sup>th</sup> of September and arrived in the afternoon in Jukin village. The work was completed in two days and the team left for Akurai village on the 8<sup>th</sup> of August. The team completed work in Akurai on the Tuesday the 10<sup>th</sup> of August and then left Akurai for Bosmun on Friday 11<sup>th</sup> of September 2009. The team completed work in Bosmun villages of Nemnem and Dongan and then left for town on Wednesday 16<sup>th</sup> of September 2009. The survey was completed early, thanks to the effective ground work by the BRG and RRCMA.

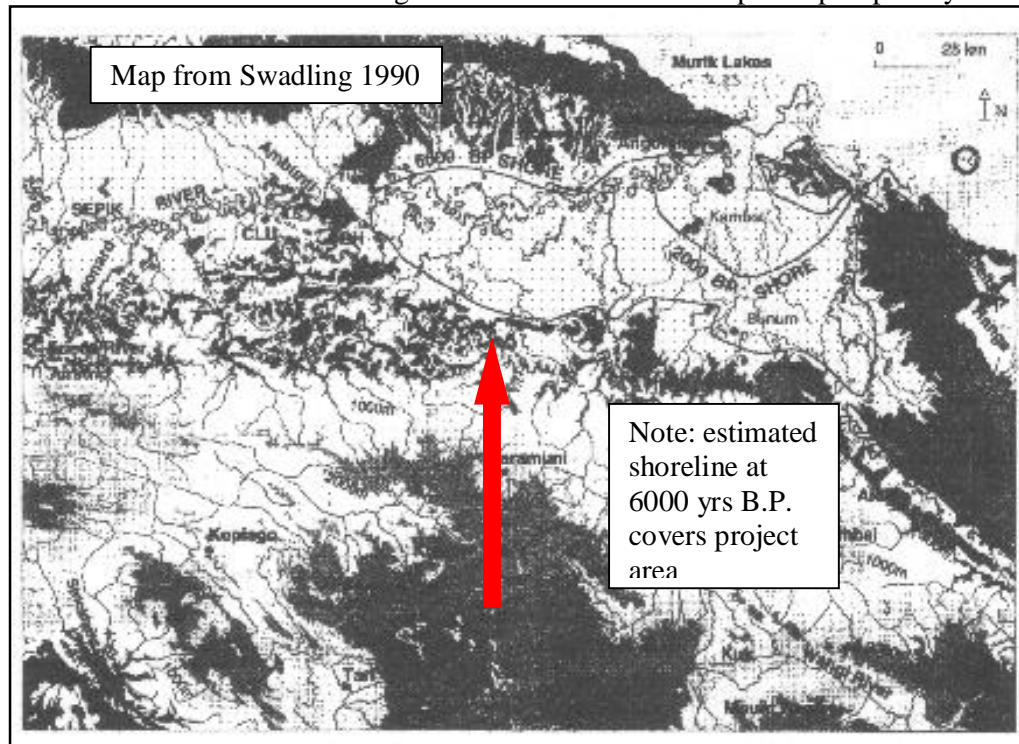
## **BACKGROUND**

### **Prehistory of the Sepik-Ramu floodplain**

One of the long-term implications of rising Ramu River levels is the flooding of nationally and globally important archaeological sites. There are early Holocene middens all over the Sepik-Ramu floodplains, especially along riversides, dating back more than 6000 years to the time when the area was an inland sea. Archaeologists speculate that unexplored sites across the floodplains will tell us about early trade contacts with the Highlands, and the peoples who lived in the area prior to the Lapita migrations 5000 years ago. In this way, rising river levels could mean the occlusion of whole chapters in Indo-Pacific prehistory, chapters we have yet to read.

Today the Sepik and Ramu rivers drain the north-west mainland of Papua New Guinea. Archaeological and geomorphic research has revealed that their joint flood-plains were once a brackish inland sea. During the period of the inland sea the north coast was much closer to the intermontane valleys of the Papua New Guinea highlands. Six to five thousand years ago, this former inland sea would have allowed an almost direct exchange of ideas and products between the people inhabiting its shoreline and the highlands. Bosmun, at the mouth of the Ramu River, has never been submerged and remained an island of terra firma as the sea disappeared around it.

This was also a period of growing contact with Asia, as attested by the 5800 BP betelnut husk excavated from a Dongan marine midden and the pre-Lapita pottery found in



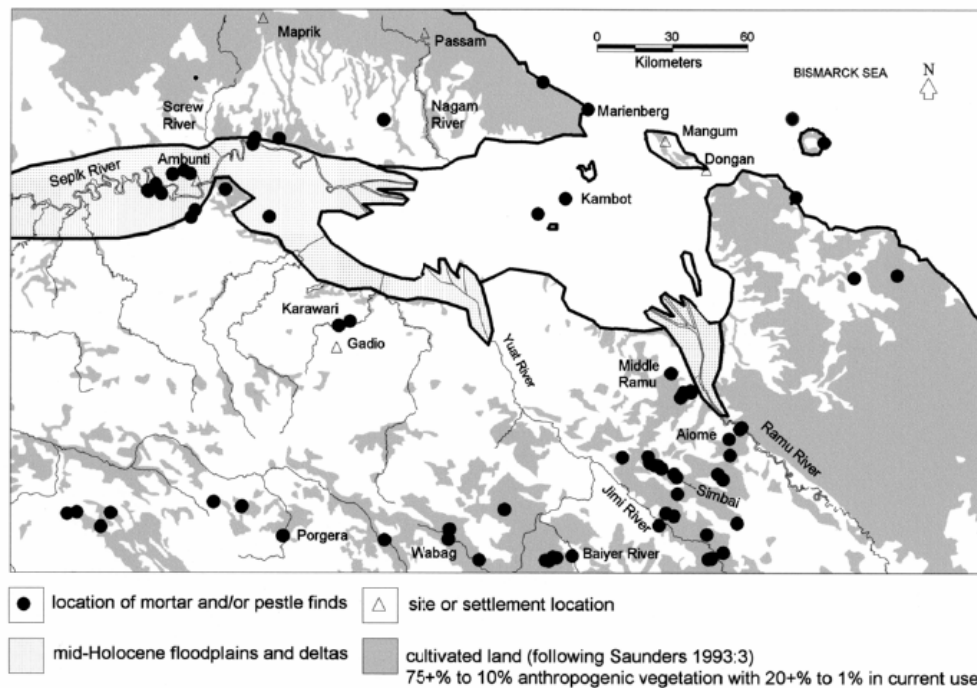
the north coast sites and in the Madang highlands at Wanelek. Such finds challenge the assumption that Lapita pottery signals the entry of Austronesian speakers throughout Melanesia. But this is still unconfirmed, and much archaeological research has yet to be

done. We do not know when Asian contact began in the area, or the nature of the pre-Lapita migrations within the region. Pamela Swadling (Swadling et al 1988:3) and others tell us that the Sepik-Ramu inland sea may have extended some 250 kilometres from east to west, and up to 100 kilometres from north to south at its entrance. The world sea level ceased rising some 6000 years ago when the last Ice Age had finally melted. But following this peak rise, the inland sea rapidly decreased in size. The sedimentation resulting from the uplift of neighbouring ranges then led to its disappearance. From 6000 to 5000 years ago, these high sea levels would have allowed direct exchanges of ideas, trade goods and perhaps marriage partners, between shoreline and highlands peoples. This is also the time of the first evidence of contact with Asia, as it is attested by the 5800 BP betel-nut husk found in a marine midden of the Sepik-Ramu watershed called Dongan, and some pre-Lapita pottery found in the north coast sites (Swadling et al 1989), from rock shelters on the north coast near Vanimo (Gorecki et al 1991) and from a site near Simbai in the highlands (Bulmer 1973). This is still speculative, but scholars are exploring the possibility that trade and migration contacts started to occur on the deeply-recessed north coast as early as 2000 years before the renowned migration of the Lapita peoples from Southeast Asia. This might signal the first entry of Austronesian languages, as well as a pre-Lapita pot-making tradition that quickly found its way into the highlands.

Swadling makes an interesting connection between some of the lower Ramu and highlands artifacts of about 5000 years ago. "Both marine shells and pigs are present at Akari [lower Ramu] and also appear in the highlands sites some 5000 years ago. Confirmation that this was a two-way trade is the presence of highlands products in the Akari site. A tooth from a Copper Ringtailed Possum, *Pseudocheirus cupreus*, was found in spit 5 at Akari. This favoured highlands meat animal is the first indication of highlands fauna in the lowland. It is not found in the Adalbert Range of Madang, but inhabits forest above 2000m in the New Guinea highlands. Neither this species nor its teeth were traditional trade items to the lower Ramu" (1997:10-11).

Andrew Fairbairn and Pamela Swadling (2005) say that the excavations at Dongan, at the edge of the Bosmun Plateau, provide some of the earliest evidence in the Pacific of a prehistoric population consuming edible fruits and nuts. Preserved in sediments, the plant assemblages contain large fragments from species such as galip nut (*Canarium* sp.), coconut (*Cocos nucifera* L.), screwpine (*Pandanus* sp.), and betelnut (*Areca catechu* L.), as well as a leaf fragment tentatively identified as sago (*Metroxylon sagu* Rottb.) Three conventional radiocarbon dates derived from wood charcoal associated with the fruit and nut remains produced a date range of ~5500–6000 14C BP.

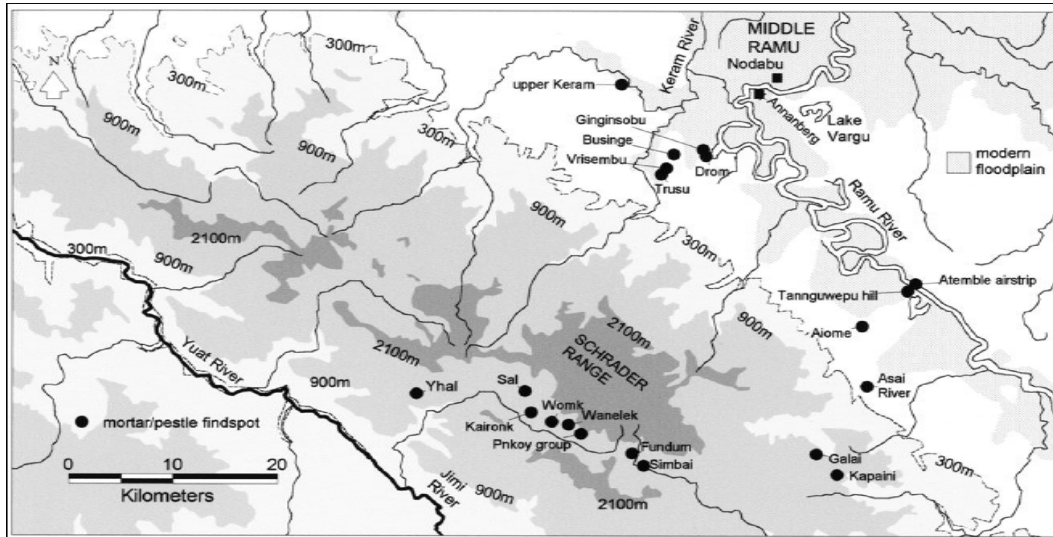
As trivial as it may seem, the husk of a betelnut found and dated to ca. 5000 b.p. at Dongun has become the object of ideological contention for archaeo-anthropologists of Melanesia. It is part of an argument that challenges the dominant view that many crops and most agricultural techniques were introduced to Oceania from Southeast Asia along with Lapita pottery 3 to 4000 yr BP. In particular, the betelnut find prompted a great deal of interest. It is thought to have spread from a center of domestication in Southeast Asia into Oceania, and the fact that it pre-dates Lapita presence at Dongan opens the door to possibly earlier Asian connections.



Father Kasprus (1973) and Dirk Smidt (then at the PNG National Museum) have been the main researchers for the Lower Ramu, although Nick Araho and Pamela Swadling made a brief visit in 1986. But mortars and pestles have been collected from the area, including some bird-shaped pestles. Similar pestles have been found widely in New Guinea, with only a few being reported from the New Guinea Islands (Swadling and Hides Op Cit:297).

It is possible that their distribution is related to that of birds of paradise, which are found only on the New Guinea mainland and some islands in Milne Bay and not in the New Guinea Islands (Frith & Beehler 1998). For anthropologists and archeologists the distribution in archeological digs from 2-6000 years old and earlier tell us how the Sepik-Ramu basin was peopled when the water started to drain out. With the end of the inland sea about 4000 years ago, the interaction sphere that linked the Highlands with the Sepik-Ramu and the North Coast ceased, and so what we find in middens from this period represents a migration terminus.





Where ca. 6000 y. old mortar and pestles have been found in the Middle Ramu and Simbai area (from Swadling and Hide 2005)

Further east, the Madang stretch of the north coast has suffered several volcanic eruptions in the last 10,000 years (Blong pers. comm. 2003, cited by Swadling and Hide Op Cit), severe enough to deposit tephra in the Kuk swamp near Mount Hagen (Blong 1982:10). The most recent large eruption was of Long Island, for which a mid-seventeenth century date as initially proposed by Blong (1982:193–194) seems certain, with the latest revisions to the radiocarbon calibration curve giving AD 1646–1668 at 1 s.d. (Blong pers. comm. 2003, Swadling and Hides Op Cit). A discussion of this follows in the section ‘Time of darkness stories,’

Swadling and Hide tell us (Op cit 317-20):

In summary, the infilling of the Sepik–Ramu inland sea saw the end of a dynamic period of interaction between the Sepik–Ramu and the Highlands on the one hand and the New Guinea Islands on the other. The Witori eruption of 3600 years ago devastated much of West New Britain, including the obsidian sources. Other eruptions, earthquakes and tsunamis on the North Coast probably added to the demise of a former maritime culture, of which stone mortars and pestles were a part. With its decline, a new interaction sphere emerged with Lapita pottery (Kirch 1997) as its main archaeological marker. It was a time of new cultural inputs from the west and changing interactions centred on the New Guinea Islands. This model may explain how most New Guinea Islanders subsequently became Austronesian speakers. It is also argued that major landscape changes within the Sepik–Ramu during the Holocene led to population relocations and that the high population density of the southern foothills of the coastal ranges postdates the infilling of the former Sepik–Ramu inland sea. We propose that prior to 4000 years ago the main population concentrations were located on the river alluviums, shores and deltas of the former inland sea, especially the Sepik and Ramu deltas. The end of the inland sea saw population relocations which may have played out over a long period of time.

By 3500 years ago the inland sea was rapidly drying up. Whatever trade from highlands to lowlands continued would have become elaborated by Lapita migrations all along the north coast. Swadling notes that, “(f)rom after the time of Christ, New Guinea may have become the outer fringe of a number of trade networks which extended out of the various trading kingdoms in Southeast Asia.” (1990:76)

The import of these archaeological sites cannot be overstated, because the north coast of New Guinea not only represents one of the entries of humankind into the Sahul landmass much earlier, 50,000 years ago, but the current linguistic and cultural diversity of the region has never been fully explained. Anthropologists have speculated that the bio-cultural diversity of New Guinea predates the Lapita migrations, and reflects a remarkably adaptable population base. Indeed, earliest evidence on the flora and fauna of the Sepik-Ramu basin tell us how limited and nutritionally marginal their diets have been all the while. It is not a leap to say this is less a reflection of the dysfunctional nature of these societies than it is a comment about the extraordinary importance of place and culture for New Guinea people, and, by inference, the pivotal role trade would have played.

Swadling et al (Op cit) tell us that, “These remarkable environmental changes have also had an impact on the natural resources, particularly the sago and fish which provide the staple diet for the people of the Sepik-Ramu lowlands. The recency of the Sepik-Ramu floodplain has not provided much opportunity for the development and diversification of the freshwater flora and fauna. All the fish species found in the Sepik and the Ramu (except the introduced tilapia and carp) have some association with the sea. The permanent freshwater inhabitants belong to families that are essentially marine such as fork-tailed catfish, gudgeons, etc. The other species found are temporary visitors from that sea. For instance jacks, sharks and trevallies.”

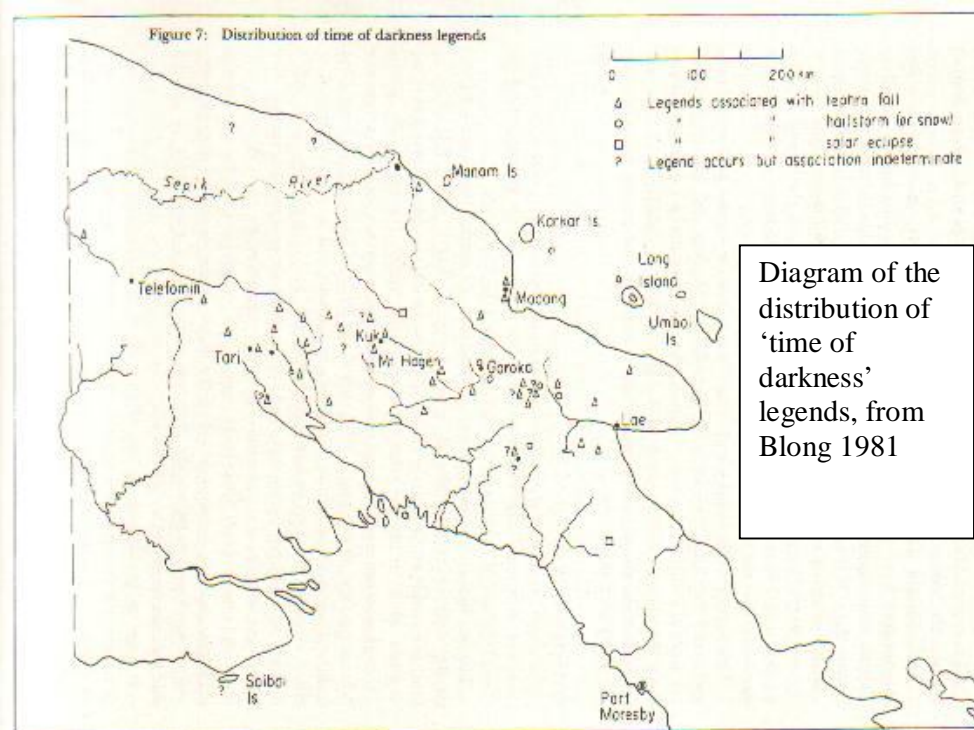
Furthermore, they tell us, (Ibid:36):

The current catch of the floodplain during the wet season, when the Sepik and Ramu become one, is only 10% of that achieved for comparable floodplains in Africa. This low yield reflects the recent formation of the Sepik-Ramu floodplain. Freshwater fish just have not had time to diversify and fully exploit the local conditions. Only two small native species move on and off the floodplain during the seasonal changes in water level. Introduced species such as tilapia (makau) are well adapted to exploiting the floodplain during the wet season and retreating to lakes and streams during the dry.

### Time of darkness stories

One of the most provocative windows into 300 or so years ago comes from a series of stories about the 'time of darkness.' These are found throughout the project area, and always, consistently, refer to three days of darkness. Ash fell, gardens, houses and animals were killed, and people went hungry. The details are the same in each place. Apparently they are also the same in stories told across the highlands from the Morobe coast to the Tari valley. A mysterious ash blocked out the sky, causing complete darkness for three days. People stayed in their houses, although one or two were sent outside to find food. Some people killed a pig, in one case a dog, at the end of darkness. Houses collapsed, animals and birds were blinded or killed, crops ruined and many people killed either by house collapses or starvation.

Sometimes rain came afterwards, which saved some crops. Some legends refer to preparations for the time of darkness, loud explosions, earthquakes, and the terrible



smells of the ash. Russell J. Blong (1981) surveys these stories across the highlands and Madang, and traces them all to one volcanic eruption. As he explains, this study begins with "thin volcanic ash beds in the Papua New Guinea Highlands stems from the detailed archaeological investigations centred on Kuk Tea Research Station, 15 km east of Mt. Hagen." This ash fall is associated with the cataclysmic eruption of Long Island, 150 km east of Madang. Tibito Tephra (uppermost youngest ash) ranges across the highlands and over an area more than 50,000 km squared.

These legends, when first collected by anthropologists, were assumed to refer to the 1883 eruption of Krakatoa, or perhaps an eclipse of the sun. In some places the stories include hailstorms and cold weather, or omens and preparations for the catastrophe. But a review of the probable sources (Manam, Karkar, Long Island, Crater Mountain, Mt. Yelia, even Ambrym in Vanuatu) ruled out all the recent eruptions of these volcanoes. Radiocarbon dating of the ash, and a mapping of where these stories occur, combined

with probably wind patterns, all point to an eruption of Long Island sometime between 1620 and 1800. A median time would be 1710, meaning that the people all across these inland areas have retained this story intact for almost 300 years.

Many Sepik people have legends relating to this 'flooded' period.

As can be seen on Blong's own map above, there are two points along the Ramu River where time of darkness stories have been collected. One is roughly Usino, Middle Ramu, and the other is Bunapas, on the lower Ramu near Bosmun. Most of the villages situated along the lower Ramu River have migrated inland from East Sepik or from foothills of Bogia District. Other villages, like Bosmun, Missingi and Kwanga, have been established on the banks of the Ramu for centuries. The Bosmun and the Missingi people were great rivals who fought each other for many years over land boundaries along the river.

### **Bosmun pottery and trade networks**

Some of the first ethnographic descriptions of Lower Ramu peoples come from Beatrice Blackwood, the Pitt River Museum, Oxford, anthropologist who stayed in Bosmun for a few months during 1937, principally to record and collect samples of their the material culture. Her photos of Bosmun pottery and the flashfire process are reproduced in the 1982 book by May and Tuckson, who also discuss a number of pottery making peoples along and just east of the lower Ramu River. While Blackwood says very little about the trade networks for these pots, May and T mention seeing Bosmun pots all over the province, as well as the Yuat River region just to the northwest. This is hardly surprising, as we know the entire Adelbert and Bogia inland region was heavily involved in hundreds of trade networks before contact with Europeans, many of which remain viable today. During the German era, a shipping chart for the north coast also recorded trade networks known to the administrators at that time---the applicable portion of which is reproduced below. Here we can see how much Manam Island and Bosmun were both clearinghouses for local and far-flung networks of exchange, and this would have meant a free flow of ideas, objects and to some extent wives from the seashore up the Lower Ramu, as from the Upper Yuat and Sepik River tributaries down to the Lower and Middle Ramu.

May and Tuckson (1982: 201-3) report that:

Three villages belonging to the Bosman language group are located about 18 kilometres inland from the mouth of the Ramu River, on a small tributary leading off the main river. These villages, always referred to as the 'Bosman' villages, are now named separately Mangai, Dongon and Goinbang. Pots are made by the Awar-speaking people in two other villages located on the coast at Awar and Nubia. Beatrice Blackwood (1951), an anthropologist from the Pitt river Museum, Oxford, lived in the centre of the Bosmun group in 1937 and recorded pot making there. Georg von Holtker (1965) has also written a detailed report on pottery in the area. At the time of Blackwood's sojourn pottery making was one of the principal industries of the women but today the industry is declining. Pots, gun, are made in the coiling technique, with paddle and anvil finish. Two types of cooking vessel are made....There is some evidence that clay objects were used in ritual. Holtker describes a kind of water drum, a pot filled with water which is blown into nit from a hollow bamboo tube. The noise this makes is to frighten the

women and children. After the ceremony the pots were buried in one of the old men's houses. Another clay object, shaped like a penis and undoubtedly made by men, is unknown to the women and Holtker suspects it was used in fertility rites....But no information regarding trading is given by Blackwood but sightings by the authors of Bosmun pots in distant villages and reports by informants suggest that they were traded over a wide area in the past and that some are still exchanged or sold. They were traded to the Mikarew and Tangu people, south to Pir near the Ramu River and up into the Porapora country to the west.<sup>2</sup>

Sue Bulmer laid the groundwork for the hypothesis of a pre-Lapita tradition in New Guinea at Wanelek, in the highlands of Madang near Aiome, in the Middle Ramu (1973, 1982). The Wanelek site has shards of various pottery traditions, although the dating of these is still incomplete. Most recent dating for Wanelek has the main deposits between 2500 and 850 BC, which suggests either a land-locked pre-Lapita tradition or a population of highlanders inspired by the trading activity with their (at that time, very close) coastal neighbours. The earliest Wanelek sherds are probably older than Dongan, dating from 4827-3831 BP. There is even one sherd that dates back to between 15000 and 9000 years ago. But these debates are too complex to do justice to here. (Spriggs 1998:334).

A table below represents most of the archaeological sites and dates across Papua New Guinea, including Wanelek and Dongan, both situated at the edges of the Sepik-Ramu inland sea. Of note here is how few sites have actually been excavated for PNG, and how rare the data from the Sepik-Ramu floodplain. Flooding of the Ramu River today will seriously undermine the archaeological record that exists, and eliminate the record we have yet to establish. (Also note that sites are mis-identified by province below: Dongan is in Bosmun, Madang Province, as is Wanelek, in the Middle Ramu Kaironk Valley).

---

<sup>2</sup> The authors saw Bosman pots as far afield as Rurunat on the Bogia coast, at Amron inland from Alexishafen and at Usino patrol post near the source of the Ramu, close to the Morobe-Madang border. ...From the Tumba area pots used to be traded north to Bingo, east to the Guam River villages, west into the Porapora country and south into the middle Keram area and to some villages on the Ramu; this trading has almost ceased now. Nodabu seems to be one of the main potting villages and people come there from great distances to trade yam, fish, betel nut, string bags, bows, arrows and tobacco for pots. The people of Jitibu obtain pots from all of the villages mentioned in exchange for the usual trading items as well as canoes and the bark of the tulip tree (*Gnetum gnemon*) which is used in making string for string bags. Twenty pots could be obtained for one canoe, four for a large fish and from five to ten pots for a larger bundle of bark. The Rao who live in the Schrader Range foothills act as middle-men between the river people and the people of the mountains. Kasprus (1973) reports that these mountaingroups wanted sago, salt and pots from the lower areas. The foothill group provided pandanus fruit and the mountain people sent tobacco, string bags, sweet potatoes, stone axes and bird of paradise feathers. The pygmy mountain people were particularly keen to acquire money cowries from the river people and in return supplied them with lumps of clay-like earth which was used as a 'medicine' for dogs, being added to their food and supposedly turning them into ferocious hunters of bush pigs.

Intruding into the Rao area is the Breri language group, which occupies a 20-kilometre length of the Ramu River from south of the Tumba to just north of Nodabu. The only report of pot making among the Breri is from Kasprus (1973), who records that the Ormon-ke Breri make cone-shaped pots which have the great disadvantage of not being water-tight. The Breri themselves prefer the Rao vessels.

**Table 22.2** Radiocarbon dates calibration of putative pre-Lapita pottery associations in New Guinea and island Melanesia

Lab. no.	Conventional age BP	Material	Calibrated date BP (2 s.d.)	Site and context
<b>West Sepik</b>				
ANU-7611	5810 ± 90	Marine shell	6409–5989	F4, 30 cm, Taora (pottery association)
ANU-7612	6040 ± 80	Marine shell	6689–6269	F4, 50 cm, Taora (aceramic)
ANU-7701	2650 ± 70	Marine shell	2489–2149	X2, 15 cm, Taora (pottery association)
ANU-7702	5770 ± 90	Marine shell	6369–5959	X2, 40 cm, Taora (pottery association)
ANU-7604 (Gorecki <i>et al.</i> 1991)	5950 ± 70	Marine shell	6519–6249	X2, 50 cm, Taora (aceramic)
<b>East Sepik</b>				
ANU-6087	6130 ± 80	Marine shell	6739–6389	Beri site (pottery association)
ANU-6085 (Swadling <i>et al.</i> 1989)	3510 ± 80	Marine shell	3579–3209	No site name given (pottery association)
ANU-7079	5980 ± 130	Charcoal	7179–6528	Midden lens, Akari A (aceramic)
ANU-7080	6170 ± 90	Marine shell	6819–6409	Midden lens, Akari A (aceramic)
ANU-7083	5580 ± 130	Charcoal	6721–6103	Spit 6, Akari A (aceramic?)
ANU-7084	6400 ± 90	Marine shell	7119–6679	Spit 6, Akari A (aceramic?)
ANU-7081	1630 ± 120	Charcoal	1830–1300	Spit 5, Akari A (pottery association)
ANU-7082	6320 ± 90	Marine shell	6999–6599	Spit 5, Akari A (pottery association)
ANU-7085	3280 ± 200	Charcoal	4073–2989	Basal level, Akari B (aceramic)
ANU-7086	6360 ± 90	Marine shell	7059–6639	Basal level, Akari B (aceramic)
Beta-19075	5690 ± 170	Charcoal	6889–6115	Spit 4, Dongan (aceramic)
Beta-19076	5810 ± 80	Charcoal	6847–6439	Spit 11, Dongan (aceramic)
Beta-19077 (Swadling <i>et al.</i> 1991)	5830 ± 90	Charcoal	6885–6439	Spit 27, Dongan (aceramic)
<b>Enga</b>				
I-6860	5455 ± 105	Charcoal	6459–5957	10A, Layer 10, Unit E, Wanelek (pottery association?)
GX-3333B	3840 ± 175	Charcoal	4827–3731	11B, Layer 9, Unit D, Wanelek (pottery association)
GX-3326	3430 ± 175	Charcoal	4149–3278	17–18B(I), fireplace in Layer 7, Unit D, Wanelek (pottery association)
GX-3227B	3230 ± 230	Charcoal	4080–2859	17–18B(I), Layer 5, Unit D, Wanelek (pottery association)
GX-3330	3225 ± 180	Charcoal	3889–2979	16B, fireplace in Layer 6, Unit D, Wanelek (pottery association)
GX-3332	3170 ± 210	Charcoal	3899–2849	17–18B(II), pit, top of layer 6, Unit D, Wanelek (pottery association)
I-6859	2865 ± 90	Charcoal	3322–2779	TR1, pit, deepest fill, Unit D, Wanelek (pottery association)
I-6861 (Bulmer 1991)	2840 ± 90	Charcoal	3250–2769	TR1, fireplace in Layer 4, Unit D, Wanelek (pottery association)
<b>Manus</b>				
ANU-6973	5860 ± 240	Charcoal	7263–6189	1, Spit 4, Pamwak (pottery association)
ANU-6974	4760 ± 140	Charcoal	5880–5049	1, Spit 5, Pamwak (aceramic)
ANU-8248	5830 ± 190	Charcoal	7169–6289	3SE, Spit 5B, Pamwak (aceramic)
ANU-7761	4830 ± 230	<i>Celtis</i> sp. nut	6168–4876	4SW, Spit 2A, Pamwak (pottery association)
ANU-8246	8190 ± 250	Charcoal	No calibration available	4NW, Spit 4A, Pamwak (aceramic)
(Author's data; general ref. Fredericksen <i>et al.</i> 1993)				
<b>Buka Island, North Solomons</b>				
ANU-6757	4680 ± 140	Charcoal	5728–4896	I, level 2, DJA, Kilu Cave (pottery association)
Beta-25617 (Wickler 1990)	6670 ± 80	Charcoal	7669–7370	I, level 4, DJA, Kilu Cave (aceramic)

s.d.: standard deviation.

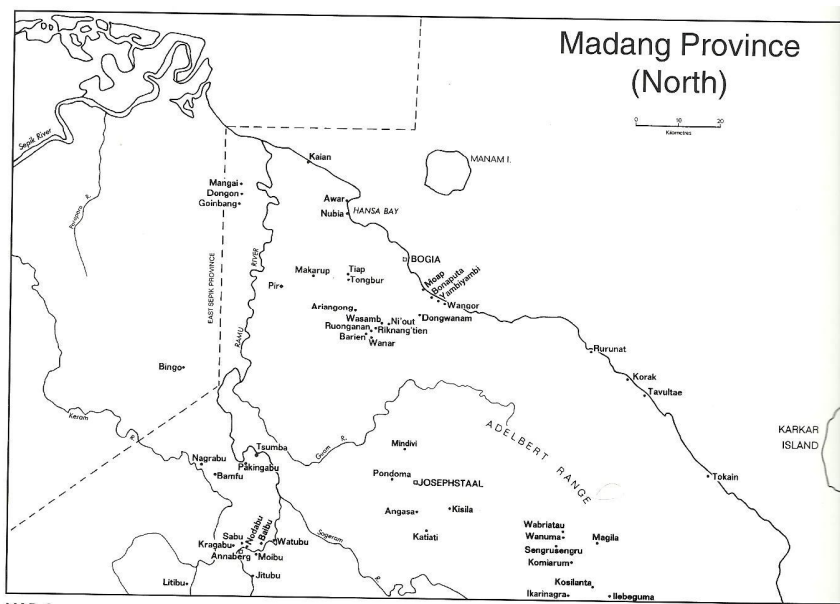
Calibration after Stuiver and Reimer (1986). For charcoal dates the 20 year values have been used, for marine shell Delta-R = 0.

[Table from Spriggs 1998: 332-333]





Beatrice Blackwood photos of Bosmun pottery 1937



MAP 8

Important pottery centres in Madang province, as reproduced from May and Tuckson 1982

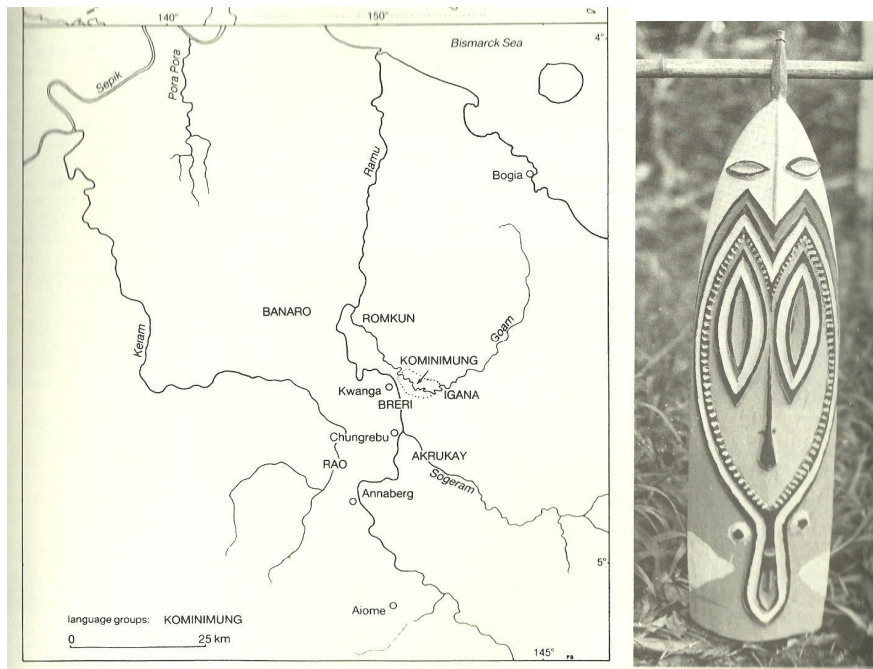
### **Dirk Smidt in Kominimung**

In the late seventies the anthropologist Dirk Smidt conducted a study of the masks made in Kominimung, which is just off the Middle Ramu on an eastern tributary called the Goam. The people in Kominimung, Breri, Igana and Chungrebu are just south of the Banaro people and north of Annaberg on the Ramu. He collected over 570 masks at



the time, which he categorized as houses masks and dance masks. As Smidt tells us, these masks

...are representations of bwongogo, the mythical ancestor spirit called tambaran n Tok Pisin. Every man and woman is associated with several bwongogo, and through these individual associations each bwongogo is linked to a certain clan. Bwongogo play an important role in regard to the well-being of the individuals with whom they are associated and their clans. They may be invoked to promote the growth of food crops in gardens, to ensure success in hunting and fishing, to provide protection in warfare, and to help destroy an enemy. They are also influential in the context of rites of passage such as initiation, marriage, and death. (1990:516)



Smidt goes on to explain that female masks are associated with gardening and male masks with hunting (especially pig hunting). This parity of roles is in keeping with the fact that the Kominumung are matrilineal, and land moves through the women's line. The people intermarry with others on the Goam, but not with others. Masks are marked with moiety as well as clan symbols and so are deeply involved with social structure and making a lineage visible (Ibid: 518-21).

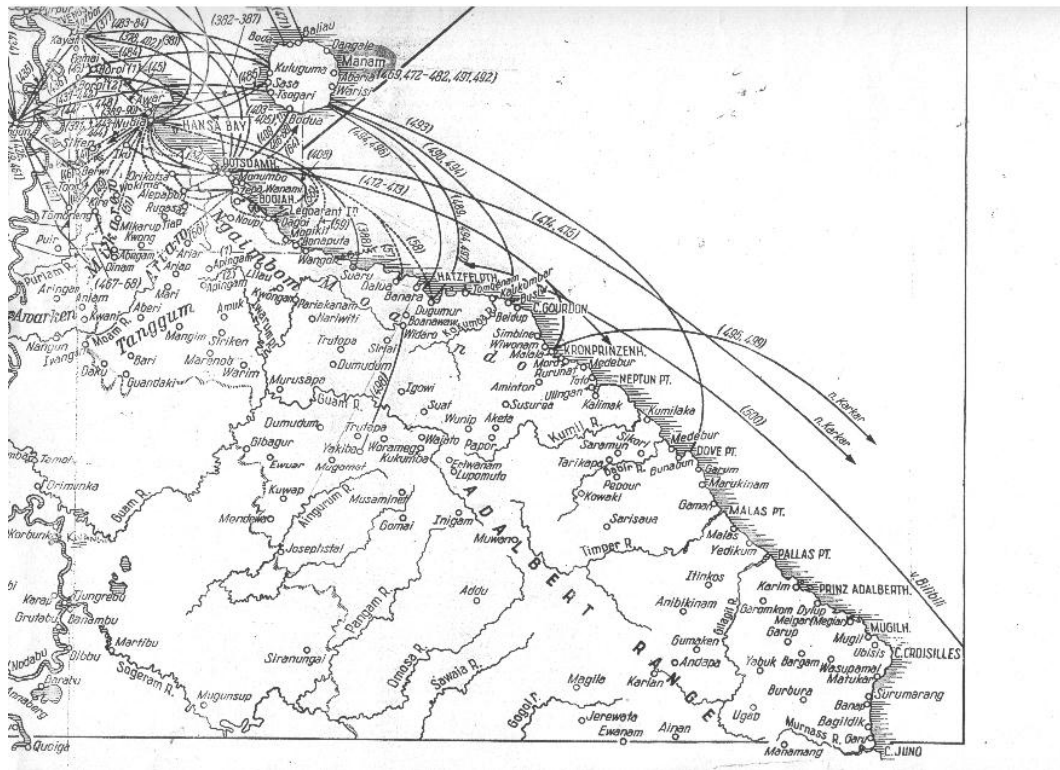
### **Germans on the Ramu**

The mouth of the Ramu was discovered in 1886 by Vice-Admiral Freiherr von Schleinitz after returning to Finschhafen from an expedition to the near-by Sepik. Schleinitz called the Ramu, *Otilien* after his ship the *Otilie* (Souter 1963:73). Ten years later, in 1896, Dr Carl Lauterbach, a botanist, led an expedition organised by the *Neu Guinea Kompagnie* to find the headwaters of the Markham River (Ibid:77) After crossing the Ortzen Mountains from Astrolabe Bay south of Madang, Lauterbach's party found an unknown river flowing north-west. They canoed along a section before returning to the coast retracing their route (Ibid).

Ernst Tappenbeck, who had accompanied Lauterbach, was the first to lead an expedition up the Ramu, in 1898. Tappenbeck wanted to confirm whether the *Ottilien* found in 1886 was the same river Lauterbach found. He was accompanied by former Prussian Army officers, a *Kompagnie* official and an Australian Gold prospector, Robert Phillip, in the *Neu Guinea Kompagnie* steamer *Herzog Johann Albrecht* (Ibid:78). The party managed to navigate 190 mi (310 km) upstream and go farther still by canoe. By the end of 1898 the expedition had established a station on the river, mapped it and tributaries and made a large botanical collection (Ibid).

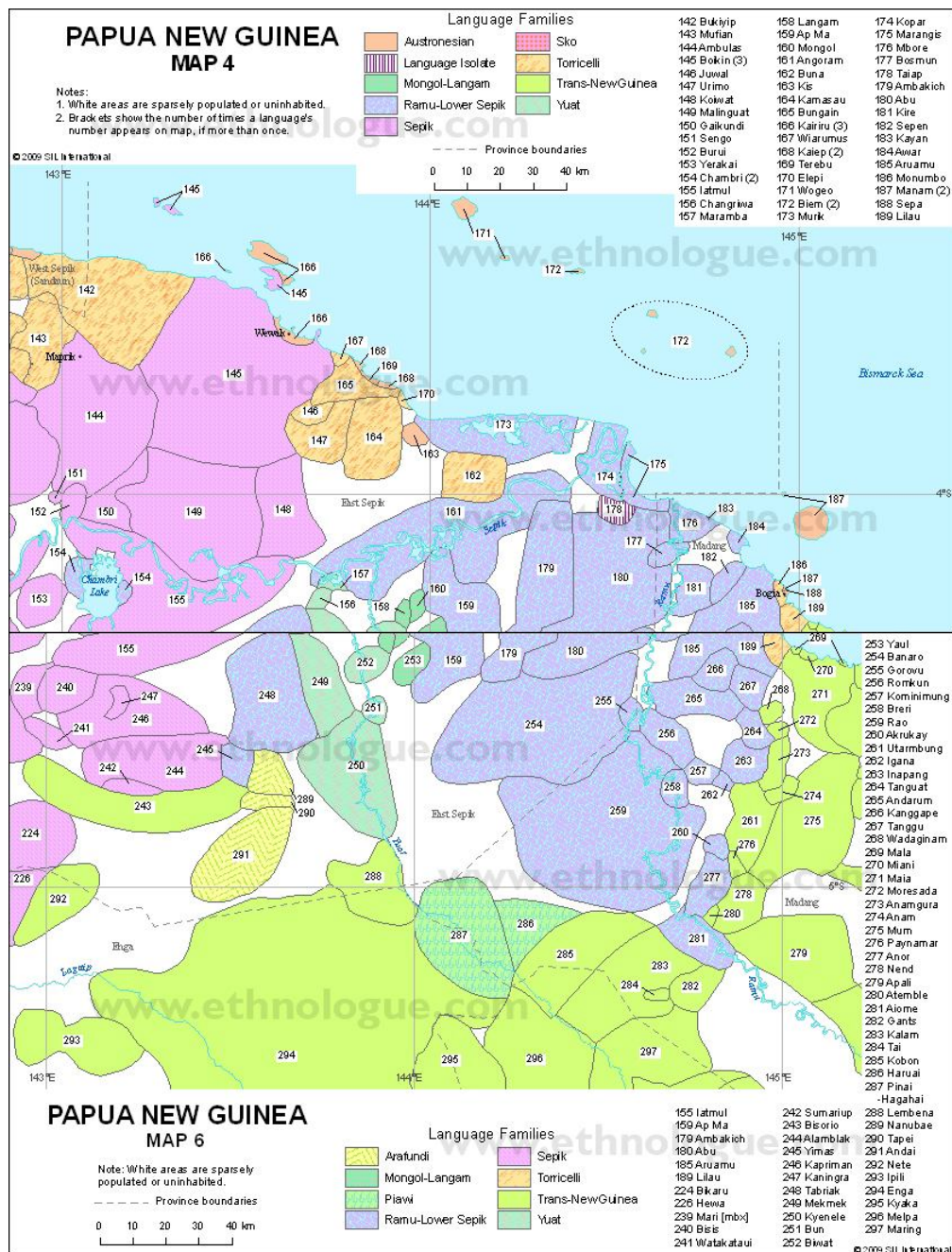
Later Germans explored the river for gold and botanical specimens. 1902 by Hans Klink and J. Schlenzig established a new Ramu station that was later connected to the coast (Ibid: 111-112). Dr R. Schlechter led another expedition in 1902 in search of gutta-percha trees, and in 1907 an Austrian explorer Wilhelm Dammköhler led an expedition that linked the headwaters of the Markham River with the Ramu River for the first time (Ibid).

One of the earliest plantations the New Guinea Compagnie established was in 1885 at Hatzfeldhafen, near the villages of Tobenam and Dugumor on the north coast. Heavy labour recruitment, head tax, and land alienation were all soon to follow. Administrative and jural power resided in these planters on a de jure basis until 1919, and then on more of a de facto basis. Nancy Lutkehaus notes that, it was through their exchange partners at Tobenam and Dugumor, the Manam Island people first had access to papaya, cassava, new varieties of sweet potatoes, and superior strains of tobacco, introduced by the Germans (Lutkehaus 1995:63-4).



Excerpt of a German Niuguinea Compagnie shipping map with networks of trade and inter-village relations marked. The Ramu River runs along the western edge of the map.

## LANGUAGES



There are 7 vernaculars spoken in the Middle and Lower Ramu:

- Bakindi- spoken in Tzumbar, Banem (Sogeram), Sungribu, Koitobu, Grengabu, Dibub, Watabu, Batobu, Moibu, Nodobu, Chabu, Krangabu, Anaberg, Wukibu, Jam and Jutibu villages.
- Iski- spoken in Missingi, Kwanga, Sotobu, Potabu and Wengebu villages
- Biaramba (Maneng)- spoken in Bosmun area
- Waran- spoken in Bangapela village
- Mera- spoken in Jukin and Igom village

- Abu- spoken in Gwaiya, Amarong, Akurai, Asou, Danget and Jirikin villages
- Fobara- spoken in Dop, Biwi, Kimning and Warning villages

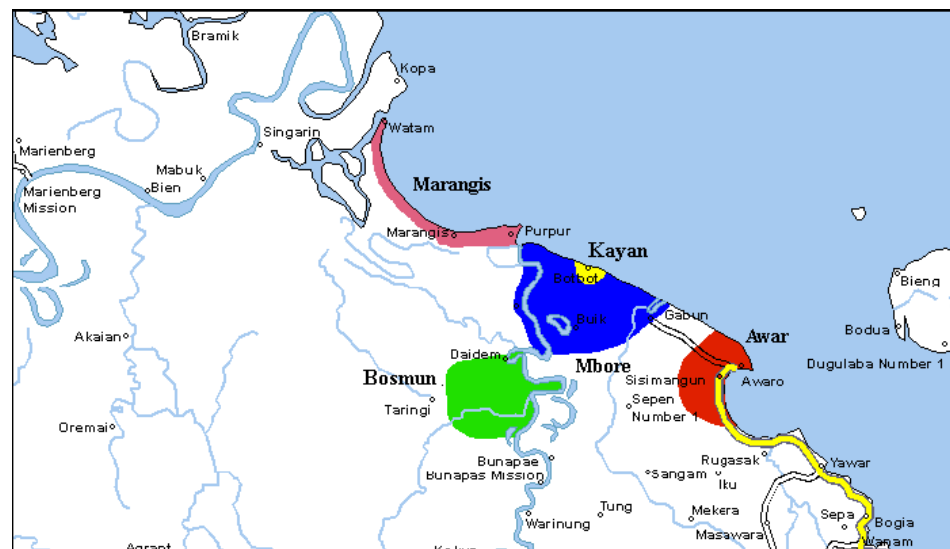
Ethnologue, the Summer Institute of Linguistic encyclopedia of languages in Papua New Guinea, maps a series of languages running over the same terrain as follow:

Bosmun, Kire, Abu, Aruamu, Andarum, Gorovu, Romkun and Rao.

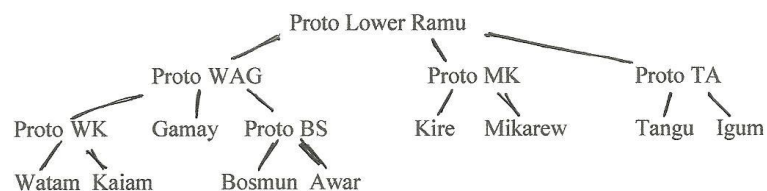
Three lines of migration are thought by the villagers to have peopled the Lower –Mid Ramu River. They are

- From the highlands of Aiome to the Middle Ramu River villages
- From the northwestern inland area of the Keram River to the Mid and Lower Ramu River
- From the Adelbert Mountain Bogia District region west to the Lower Ramu River.

Bosmun language is one of the Otilien languages, being recorded by Pioneer Bible Translators of Kyle and Kathy Harris, whose website map of their ministry can be seen below ([www.flyingfox.org](http://www.flyingfox.org)):



The languages of the Sepik and Ramu River lowlands belong to one language phylum, the Sepik-Ramu Phylum, which itself descends from a number parent phylums. The one of interest to this study is referred to by linguists as the Proto Lower Sepik-Ramu Phylum, and it is the parent to a Poroto Lower Sepik Phylum, and a Proto Lower Ramu Phylum. The latter breaks down as follows (Foley 2005:111):



## **SOCIAL STRUCTURE**

### **Clan leaders**

The Lower Ramu villages are not that different from inland Bogia and Lower Sepik villages that embrace them on either side of the river. These are small populations living a hunting and gardening subsistence, with the advantage of being riverine cultures as well. This broadens their nutritional base compared to the Tangu, for example, who live to the northeast, but does not give them the great range of food sources that the villages at the mouth of the river and along the coast enjoy. The communities are all migrants from other parts, either thousands or hundreds of years ago (since the in-filling of the Sepik-Ramu basin). Some of them therefore retain residual chieftainship features, with noble and common clan lines which might have once been endogamous (and could not inter-marry), but which now exist more like moiety divisions than class or descent structures. The villages to the west of the riverside, or with greater affiliations to the Keram area in the west, are not hierarchical, but have clans in the Sepik pattern of older-young brothers or founding fathers. It is along these lines that subclans generally split and contests of descent can be reckoned. These villages are virilocal, meaning that men and women can claim land from both parents (although they are patrilineal systems) and bring spouses to settle in either place.

There are pockets of difference in this general pattern of course, chief among them the Kominung people and the Breri, Igana, Chungrebu villages on the Goan tributary just above Anaberg and below the Banaro region. These are matrilineal villages and have distinctly different material cultural forms and ceremonies, as Dirk Smidt has recorded (see 1990). They may have come from the Josephstahl or Tumanduapuar region near the Adalberts. Significantly, however, they have remained largely in-married.

### **The kukurai system**

Kukurai succession is an issue that requires clarification. Toward the coast, we found the kukurai system very much intact, but the introduction of democratic institutions has actually sidelined the role of the kukurai. Some clan kukurai have migrated to the coast, and others, now elderly, are reluctant to mark their successors. Inland communities have more successfully integrated the traditional and modern roles, so that clan kukurai sit on Ward Development Committees and are more likely to be Members or Councilors as well. In these locations, succession is not as reluctant, but the rules nevertheless also need clarification and recording. Our 2003 research in the nearby Almami LLG (Sullivan et al 2003) revealed that there, the eldest son of the eldest son of the eldest son takes the seat, in others, due to the exigencies of any given generation—where a mother/brother/cousin may hold the seat for another—there seem to be wider rules. Towards the coast, for example, we heard about succession from elder to younger brother, then from elder to younger son of the first brother, to elder to younger son of the second, and so forth. Flexibility of succession may be necessary, and should be retained, but the rules in general need discussion and clarification in most places.



## **Land management**

Land management strategies are minimal. There are no conservation-sensitive customs for crop rotation, or taboos or limits on hunting for that matter. But the general trend toward more individual choice, more nuclear-family decision-making and sustenance patterns has also prevented these peoples from developing the kinds of restrictions they might have developed in earlier times. Informants told us that before, during the time of haus tambarans, when men exceeded a certain hunting amount, others would chide them to a limit. Today, better fishing and hunting technologies are more and more the choice of individuals who, much as in former times, are allowed unrestricted freedom to catch.

## **Sister exchange**

As is typical throughout the western part of Madang Province, these societies practice a form of sister-exchange. In some cases this means finding a wife through a designated clan line, usually one's maternal grandmother's, because your sister's husband will be from that clan and the effect becomes two men exchanging categorical sisters. More commonly, these days, this means marrying into a brother-in-law's line wherever he originates. In the Bogia and Adalbert area these exchanges knit people together from as disparate locations as Karkar, Manam and Amele. In the Lower Ramu, however, the exchange tends to be very local and a handy means of avoiding brideprice by creating a quid-pro-quo balance of payments.

Missionaries from Pioneer Bible translators have blogged their reaction to this practice as follows ([www.flyingfox.org](http://www.flyingfox.org)):

One of the more interesting cultural practices among the people of the Middle Ramu District of Papua New Guinea involves the exchange of sisters in an arranged marriage. Traditionally marriages in this area were arranged by the parents, sometimes years before the young people would be ready to marry. These arranged marriages, however, did not involve just one couple. They involved two couples – a brother and sister from one family would marry a brother and sister from another family. The women would leave their respective villages and come to live with their new husbands, who also happened to be their new brothers-in-law.

This system works well to cement relationships between villages, clans, and families. But what happens when a young man does not have a sister to exchange? In this case prior to arranging the marriage, the family of the sisterless boy will arrange to “adopt” a girl from another family for the purpose of the marriage arrangements. This adoption usually involves gifts of some food and a pig or two to the original family of the girl. Pity the poor father who has several sons but no daughters. The obligations involved in adopting enough sisters to get them married off could be formidable.



Image from [www.flyingfox.com](http://www.flyingfox.com)

Part of a puberty rite before marriage. No he is not going to actually shoot her.

One benefit that derives from this system is that it tends to stabilize the marriages. This is because if one of the couples involved in an exchange were to get a divorce, there would be pressure brought to bear on the other couple to also dissolve the marriage. Therefore there is a LOT of pressure from the families involved to keep the marriages together.

## **SOCIAL AND CULTURAL MEANINGS OF THE RAMU RIVER**

### **Spiritual associations**

The social and cultural significance of the Ramu River is detailed in stories passed on from generation to generation by oral tradition only. These stories express ancestral beliefs and still give focus to people's lives today. Legends in Papua New Guinea can be guiding lights in ethical dilemmas, invoked to support resource claims or debated to establish tenure principles. Along the Lower Ramu there are stories of two male spirits and a female spirit who live in the mouth of the river, where it meets the sea. These beings are responsible for garden yields and fishing catches, so they are often adored as fertility figures. But they are also important on other occasions. For instance, people call on them like talismen for sporting events or fights, to summon power or good luck for the event.

It is hard to thereby claim that the mouth of the Ramu is a 'sacred site', especially as the legend derives from people downriver and not the people at Purpur or some other coastal village. But it is possible to argue that the erosion of the river mouth, or any significant destruction of its coastline, would constitute a spiritual violation to the Lower Ramu people, much the same way that the destruction of Uttar Pradesh, rather than, say the village of Lumbini, Buddha's mythical birthplace, would signal a crime to Buddhists.

In Papua New Guinea, and particularly in the Sepik-Ramu area, clans generally have specific stones, tree clusters, river rapids or swampy areas where their ancestors mythically emerged from the earth. In these cases ancestors are not always human, but instead masalai figures, or part human-part masalai (animal or ghou). North Coast New Guinea peoples have a layered perception of the past, and in some cases make a distinction between deep history, or 'masalai time'---wherein their creation stories are set---and living history, or the grandparents' time.



John Z'graggen, writing about Madang myths, explains these layers of mythical historical time as follows (1983: 263):

There was originally a division of various worlds, i.e., the world in which our generation lives, and the other world, which is in the sky, under the ground, or in water, etc. A three-tiered structure appears to be [not] uncommon. There was a link between the two worlds via a rope, thread, cane, ladder, or fog, which was severed because of misconduct by the inhabitants of our world.... The texts are, however, fragmentary and difficult to understand, because the storyteller had to strive to remember the content, and that hindered him in his fluency. They appear to be more of a philosophical nature with little direct impact on everyday life. For this reason, they are not cared for and forgotten.

### **Aloys Kasprus' record**

One of the few ethnographic records of the communities between the Lower Ramu and the Upper Keram Rivers comes from an SVD Catholic missionary, Aloys Kasprus, posted to the region between 1936 and 1943 (when the Japanese invaded). His residency became the fieldwork basis for a 200-page Masters dissertation titled, *The Tribes of the Middle Ramu and Upper Keram Rivers*, for the Anthropos Institute in Bonn, Germany, published in 1973 (Kasprus 1973).

Kasprus' comments on the religious significance of the river to these people are especially pertinent. His main focus is on the dominant Rao tribe, which ranges from the Annaberg Mission on the Ramu River to the Keram headwaters, including a rivulet of water called the Yam.

In Kasprus' text, he speaks generally about spirits and animist concepts shared by the Rao and their neighbours. His discussions are important for understanding the cultural logic of today's Middle Ramu communities (Kasprus 1973:146):

The question of the origin of life on earth is readily solved by [the Rao]. At least as far as the more insignificant types of animals are concerned they believe that they have come abiogenetically into existence, i.e. they have become alive after developing in the dead matter of the earth, from lifeless matter. That belief prevails with regard to various grubs and worms, especially earthworms. This is one of the primitives' gross inconsistencies who never assume an independency of antecedent life for humans and invisible supernormal beings, like spirits, gnomes and all sorts of ghosts. The rainbow is believed the useless discharge of a giant snake which, usually after it rains, comes down to earth from above the cloudy skies. The same belief prevails on the coast where a giant serpent, called Mah, is the ancestress of the people around Mahbak. As a young snake she was brought to Karkar Island. However after marriage she escaped with her husband. She was pursued by her mother-in-law who was also a snake in the form of a human being. She could not capture Mah with her husband and so the latter peacefully remained at Mahbak....Further downstream, some of the Raos believe that their ancestral spirits blow them out of their giant bamboos.

The sun and moon are explained as follows (Ibid:146-7):

I could never observe any sun or moon cult. In the Rao tribe they seem to have been degraded into totems. When I asked them whether there are any sun and moon totemites among them, they assured me that some of their tribal friends were gra- (sun) and (moon) kru-nenduri. ...The legend that the moon is responsible for the monthly catamenia of the women is not unknown to the Raos. In the backwoods of the Mugil area the story is told that the irate moon is responsible for the monthly bloodflow of all women to avenge the death of his own wives who were slain by earthmen while the former were thieving in the gardens of the latter. As the earthmen's wives were the instigators of the moon wives' deaths, the moon causes the monthly catamenia of the latter to avenge his wives' death.

The Rao and their neighbours in this watershed area between the Ramu and the Keram Rivers are part of the ndaro cult. This is a combined healing and initiation ritual that emanates from an angry water spirit in the Ramu River, called ndaro. This spirit must be propitiated in various ways, by observing certain taboos, or an individual will fall sick. As Kasprus explains (Ibid:152-3):

Individuals who have been afflicted with a sudden disease must undergo a ceremonial washing. They must be cleansed from the sacredness which they have incurred by the infraction of some rule or taboo. The ndaro's displeasure may become worse and he may punish the whole community should they fail to perform the rites prescribed for such occasions. Hence if anyone be afflicted with an inexplicable ailment, the ndaro has to be propitiated by an offering of pork-meat or fish or whatever there may be left of the season's best. ...The following morning the group of participants in the ceremonial washing betake themselves to the habitat of the ndaro. They are led by the elected executive who is usually one of the MC's during the initiation rites of the initiands. Certain elderly women, preferably those endowed with anagogical powers and a good knowledge of magical spells are allowed to enter the precincts of the clubhouse and settle underneath its verandah. Even younger women who are known as soothsayers and believed often to be in a trance and under the influence of, or possessed by, the spirit, may participate in the ceremonial washing of the spirit. To free a sick person from his mystical uncleanness symptomized by mysterious aches and pains in his body, the MC takes some sprigs of a plant (a kind of *Alpinia*) and makes them into a package. These he heats up over a fire until the juices of the sprigs drip down. Now the sick person is made to lie down with his legs spread. The package is undone, and, taking one hot sprig at a time, the MC places the first one on the painful spot, the other one between the legs and with the remaining ones he strokes and rubs the whole body, while mumbling the following incantation:....

It is also the ndaro that controls the initiation of young Rao men. This ritual follows a fairly conventional course for Sepik and Madang area initiations, including a confinement of the initiates in a spirit house constructed at some distance from the village. During this period they are tutored by their Uncles and senior relatives in clan esoterica, a privilege that will entitle them to rise in status as they grow older in the village. Kasprus explains his awareness of the ceremony as follows (Ibid:154):

[My informants] did not own up to me about initiations taking place in the swamp units of Pai-bu in all secrecy. Being nearly inaccessible because of the sago swamps, it was hardly visited by any missionary or any whites for that matter. As it

was situated two hours from the Ramu River and Keram River, it formed with the Gupunge and other swamp settlements an initiation unit for the whole area. Having a large clubhouse they gathered there all the young boys for the initiation rites. In the swamps and grasslands all the young boys were hidden by their parents and prevented from visiting the schools lest they miss their course of initiation at the right time...

Elsewhere Kasprus explains the nature of the ndaro spirit by an incident with his mission boat (Ibid):

Another name for the ndaro is mnro. Its habitat is the river. The following event does not leave any doubt that mnro is a water ghost. They have to propitiate it with foodgifts whenever they require its help. Once I was on my way to Atemble, to bring a load of fresh sago to my neighbour, the late Fr. Ziegler. My motor launch suddenly was running backwards. We had to anchor very fast because we were thrown against a hidden snag or submerged tree. ...As the engine did not stop running, the natives thought at once that the water spirit was pulling us back and holding us fast. At the moment it did not occur to my ignorance about diesel motors that the clutch might have slipped. The natives took that fact as a very gracious gesture of their water spirit and they asked me to stay at their place to build a station there. At the same time they promised to cajole the local water spirit by the name Dantu-nfe, to release her grip on the pinnacle. They conducted me to their hamlet and started to prepare a foodgift for the lady spirit. For this purpose a green and still unripe coconut was taken and bespelled by two "big men" and a barren woman. After mumbling some spells over the coconut and rubbing it along their extremities, armpits, chests and breast, they finally sprayed it with their saliva of masticated betel nut, quicklime, ginger and betel pepper. This done they split the coconut, caught the somewhat milky fluid in wooden dishes and scraped the soft coconut into them. After bringing the coconut mixture down to the spot where the pinnacle was left in the grip of Dantu-nfe, they sprayed the contents of the wooden dishes around the motor launch, invoking the spirit with the following words: ...("Lady-spirit Dantu-nfe, pater his boat this one though it after having held fast, let it be enough, thou it let go! Thou it detain do not, please..."). The imprecations and utterings of the placation of the lady water ghost were repeated and continued until the supply of the coconut mixture was exhausted. However, to the great disappointment and disillusion of the food people, Dantu-nfe did not loose her grip on the launch...

Possibly the most important descriptions in Kasprus' text concern the stone mortar and pestle objects that were worshipped by the Rao and all of their neighbours along the Lower Ramu. Much like mortar and pestles found buried in sites across the Wahgi Valley from the 1930's onward, these are functional implements that have been left behind from a previous settlement or population. The effect of their discovery has everywhere been mystical, in ways that recollect the Madonna cult of Medieval Spain. At that time, people rediscovered the Madonna figures their ancestors had buried during the Inquisition, and as a result a cult of the Madonna flourished across Spain. Similarly, these mortar and pestle implements, which are not unlike the Shiva lingams of India for their clearly phallic and vaginal associations, have everywhere in the Wahgi and Ramu valley gained second lives as fertility symbols, featuring in men's houses and cult ceremonies exclusive to men. These cults are about reinstalling the power of fertility

(and pseudo-parturition) in the hands of men, who are said to have lost this to women at some time in the distant past.

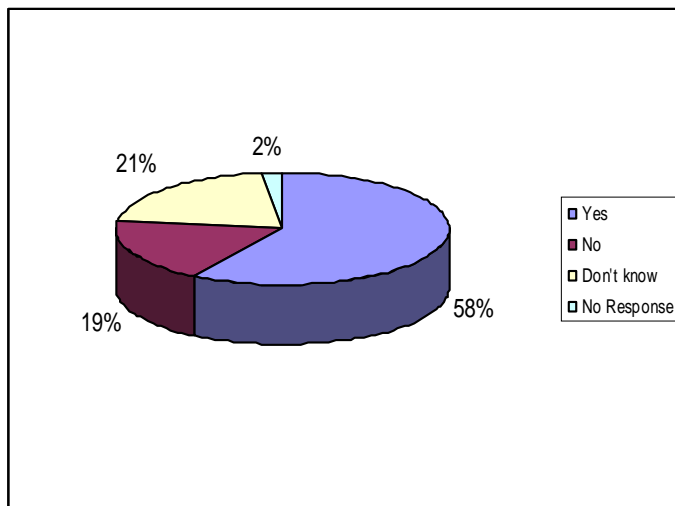
Kasprus writes about these mortar and pestle figures found throughout the Ramu Valley, and we cite from him in full here to demonstrate some of the variety of their meaning to these communities (Ibid:157-9):

The Ramu natives ascribe to mortars some kind of mysterious powers and even consider them as the habitation of spirits and bestow upon them a kind of lower cult. A few specimens of mortars have been found in several areas of the Ramu Valley. I put here the emphasis on the word "found", because the indigenous population of those localities wherein the mortars have been found know nothing of their provenance. Hence, we may aptly call these stone mortars "prehistoric." They are all believed to be sources of powerful magical efficiency and receive food gifts. Barren women, in particular those who have been made sterile by the bad spell of a sorcerer or by being given the Pygmies' cinnamon bark, do try to propitiate the mortar spirits to become free from their barrenness. Such stone mortars have been discovered at some locations in the bush of the Atemble, Rafe and Rao tribes. One that came first to my attention was located on the road from the Rafe area to Atemble. It was claimed by the Rafe natives as the Anor-units' teacher of agriculture and dispenser of tuberous crops. Another stone mortar in the Atemble bush was in the locality of Susanken. Many of the Atemble women used to bring their fertility-offerings to this spirit, as well as to drink the water out of the mortar bowl, in order to get rid of their sterility. Most of the Atemble women were rendered sterile by being prostituted. It has to be noted that Atemble was a crossroad from the coast of Bogia and Madang for all the gold fossickers and recruiters with the crew of coastal boys who freely spread venereal disease. The Ikinam people on the other side of the Atemble brought their gifts to the mortar spirit of Torkum. A third Mortar was mentioned as lying on the place of Okambi. The latter was a casual of the Atemble station. His place was a few miles from Atemble towards Angawa. The war years made it impossible to visit these localities. Hence, I did not see these mortars. Before I am going to describe the mortar spirits of the Rao side, I should like to describe the mortar on the Rafe-Atemble road, near a place called Guam near Tangu wepu. ...Two of the stone mortars which I saw were huge granite blocks. The mortar of Guam, which henceforth will be referred to as the Atemble mortar, was a granite block with a rounded hole of about 20 inches in diameter and 2 feet in height, with an external diameter of 26 inches. The external surface was not perfectly curved, but up where the moon-like figures end only roughly chiseled. The face-like figure on the outside represents, perhaps, the moon. A series of regular knobs surrounds its periphery on either side of the mask. The natives believe them to be the spirit's breasts. There is usually some rain water in the deep hemispherical bowl. The water is supposed to impart magically procreative energy to plants and animals and, through its use, barren women will have many offspring. A further use of this water is its application for fertility rites in garden magic. An additional faculty of this mortar spirit is its self-rotating power, indicating while turning towards the Anor tribe the end of the rainy season. A stone (basalt conglomerate), as large as a man's fist, was found lying beside the mortar, and hence, it is considered as the spirit's child. The fact that there are no stones but sand and gravel in the immediate surroundings explains why such a common stone was given such importance. A copy of the

Atemble mortar, but of larger dimensions and of more distinct designs, has been found in the Vrimse(bo), a hamlet 5 miles from the Ramu River bank well into the bush. It is also 25 miles downstream from Atemble to the opposite side. There is not the slightest linguistic connection between the finding-places, because Vrisebo is separated from Atemble by the Anor-Rafe on the Annaberg side and the Ayome-Wamen on the opposite side. The mortar of Vrimse has no child! Another mortar has been found at Rorito(bo), about 2 miles in the same chain of foothills in which Vrimse is situated. The latter is much smaller and rather a flat mortar of 18 inches external diameter and a height of only 5 inches. It was just a plain mortar without any ornamentation. This mortar spirit had a “child” in the form of a diskshaped and rayed stone club with a regularly biconically polished hole. It was treated with awe by the natives as it punished transgressors of taboos. These two spirits had a place of honour in the men’s house. In Rorito, a place just mentioned, the men of the clubhouse showed me a stone club, shaped exactly like a man’s penis. Its size might have been formed after a penis sheath. The latter was unknown to all the tribes of this area. It was found by their ancestors in the river bed of the Urum river, an affluent of the Keram headwaters. It was taken by them as the real membrum virile of their local ndaro; they treated this membrum as a token from their ndaro. On the occasion of their initiations and at the usual pork-eating festivities they painted it red and hung all kinds of ornaments on it. On this occasion I observed the custom of food being thrown around ion the clubhouse, as an invitation to the mortar spirits to partake, as an offering.

### Survey data

Graph 2.1 represents the sacred sites known



The survey asked villagers whether they still has specific sacred sites, and stories attached to them—and whether these were important for their identity. Of the 160 informants, 94 said yes, 30 said no, and 33 didn’t know if such places still existed. (Three did not respond to the question).

In the past, the people of Ramu revered spirits believed to live in the Ramu River. Men sang songs and

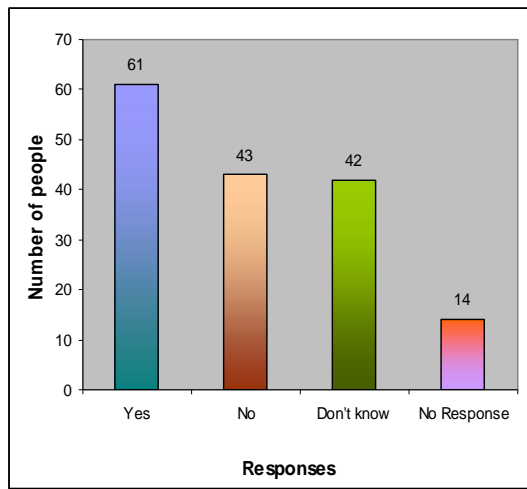
danced during ‘singsings’ in reverence for the spirits. According to our informants Christianity was responsible for the nearly-complete end of these practices.

We inquired to know if some still believed in spirits and whether there were sites they knew where spirits lived (today). Their responses were (of the 160): more than a third (38%) believed in spirits, 27% did not believed in spirits, 26% didn’t know if spirits existed and a remaining 9% didn’t respond to the question (see graph 2.2a).

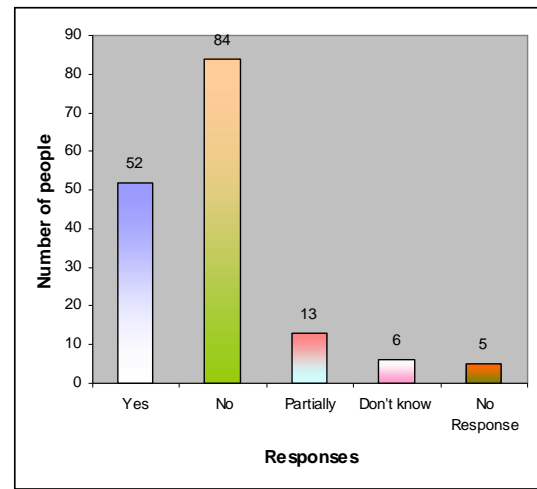
We also gauged their responses for believing in spirits. 33% said they did; 52% said they did not believe in spirits; 8% believed partly in spirits; 4% were not sure if they believed in spirits; and 3% did not respond to the question (see graph 2.2b).

This is interesting data because it is far more sceptical of spirits than we would expect from a remote region. In the nearby Almami LLG of Bogia, our company's own research tells us that spirits are still a vital part of everyday existence and responsible for everything from a toothache to a 'virgin' birth (Sullivan et al 2003).

Graph 2.2a. Knowledge of spirits existing today



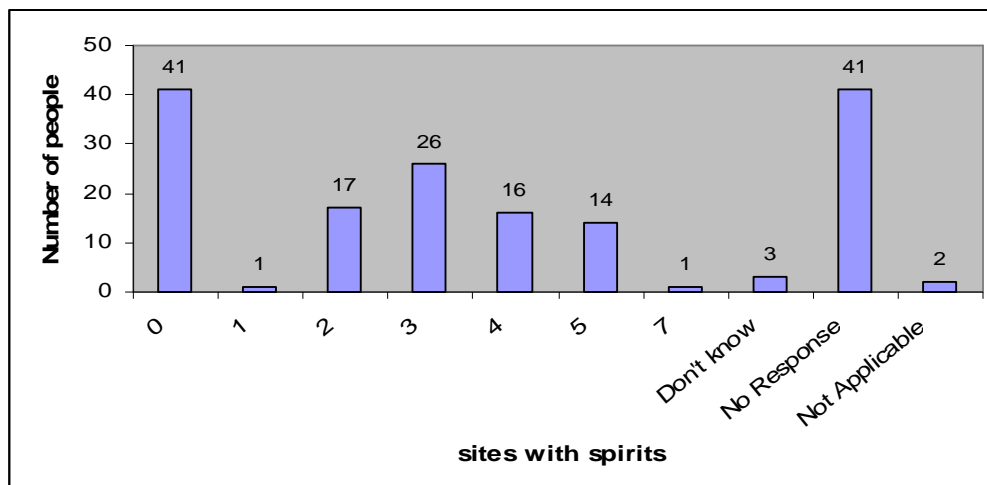
Graph 2.2b. Believe in Spirits



We also

asked if they knew sites where spirits did live (today). A quarter of the responded they had no knowledge of such places. Interestingly, another 25% didn't respond. Puzzled by this, we explored why this was so and found that many simply repudiate the existence of spirits because of their Christian faith. Christianity has radically affected the spiritual world of these Ramu societies.

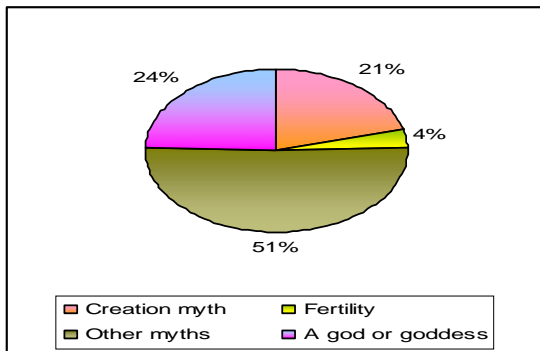
Graph. 2.2c Knowledge of sites with spirits



Above note that 16% knew 3 sites for spirits, 10% knew 4 sites and 9% knew five sites.

Overall, forty seven percent knew sacred sites associated with spirits whilst 53% did not (they could not respond, simply didn't know, were not in a position to answer or denied such places existed).

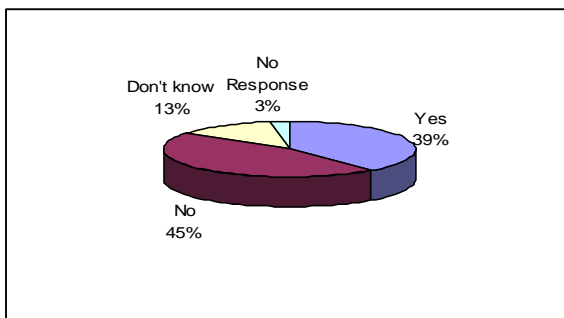
For the 82 who admitted believing in spirits, 21% based their belief on creation, 24% believed the spirits were some kind of gods, 4% believed in the spirit for being responsible for fertility, including procreation, gardening, animal husbandry, and most all living a productive life. Finally, a slim majority (of 51%) based their beliefs on myths taught to them by the elders.



Graph 2.3 Shows bases of beliefs in spirits

Christianity had great influence on the people's beliefs in spirits. Most of the 50% who did not believe in spirits claimed to be Christians. Although they did not believe in spirits they did recognize sacred sites perhaps as culturally and historically significant. .

Graph 2.4 Shows origins of Ramu River peoples



More than a third (39% of the 160 interviewed) identified their clan or tribal origin within the Ramu River. These creation myths stand apart from Biblical origin stories, and because they connect people directly to their land may be valued and conserved more than other spirit myths. Forty five percent mentioned they did not originate from the Ramu River; 13%

didn't know if their origin was from the river; whilst 3% didn't respond to the question. Many of these people have migrated from the hinterlands to live along the Ramu River during the time of missionaries and kiaps to access services., so there are many communities that hold migration stories over stories of local origin. This does not impair the people's assertions of land ownership or their compelling association with the land they live on and garden.

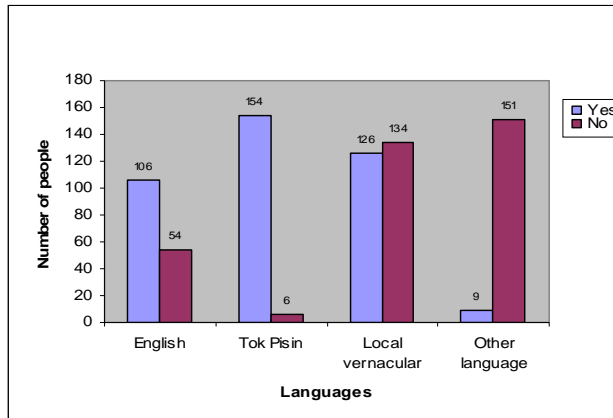


## **SURVEY RESULTS**

### **Education and literacy**

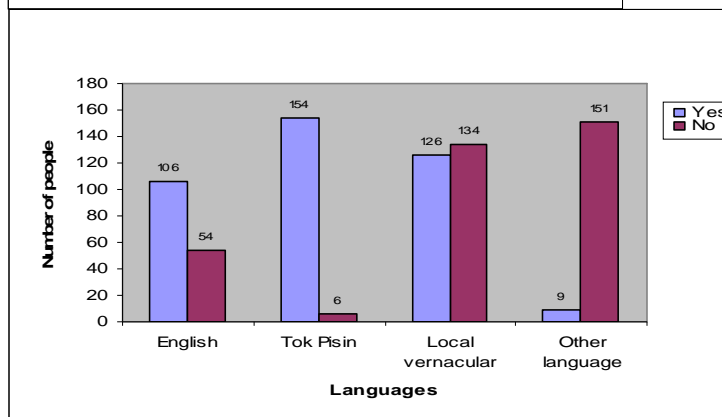
Of our informants, more than half have attained Lower Primary education (59.4%); 15% have had some secondary or high school education; only few have attended universities or colleges (2.5%); and 10% have never been to school. The majority (69.4%) have only received basic primary education. (See table 1.1).

Graph 1.1 Graphs showing languages Ramu people speak



The responses were that 66.3% spoke English; 96.3% spoke Tok Pisin; 78.8% spoken their mother tongue; and 5.6% could speak other languages.

We also found that 68.8% read English; 88.1% read Tok Pisin; 60% read local vernacular; and only 5% read other another language. The exceptional literacy rates of those along the Middle and



Lower Ramu reflect the quality of primary education they have received, which itself may reflect the number and quality of mission stations along this section of the river.

Graph 1.2 Graphs shows languages Ramu people read

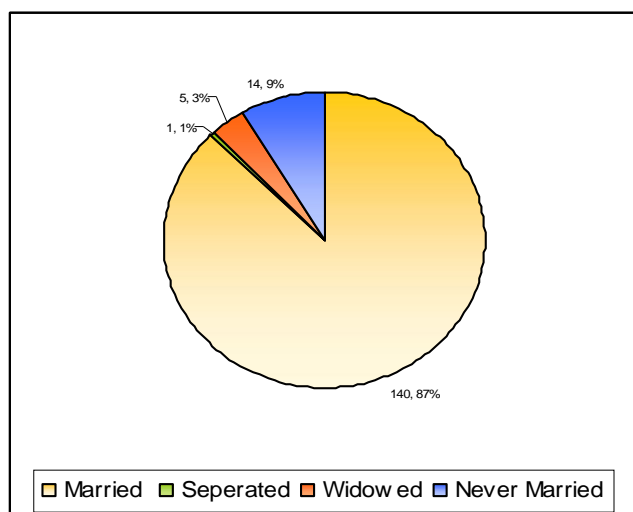
### **Marriage and family**

Most marriages in Ramu are monogamous. Extended families provide sufficient support and resources like food, transport, and shelter at times of need, especially when one is building a new home. Children grow old and get married and then support their ageing parents. Nevertheless we observed that the most common family unit was a strict nuclear one, of father, mother and their children, although there was a high average of 6 persons per household.

To understand the family life of Ramu River villages, we asked how many children over 18 and not married were living with their parents. The numbers varied for individual family. More than half (55%) of the informants stated they had children or siblings over 18 living with their parents.

Table 1.2 Statistics showing family units of Ramu River Villagers

<i>N=160</i>	<i>Children over 18</i>	<i>Children under 18</i>	<i>Children married</i>	<i>Children not married</i>	<i>Number of household members</i>
<b>Mean</b>	1.73	2.81	0.82	2.08	6.21
<b>Median</b>	1.00	3.00	0.00	0.00	6.00
<b>Mode</b>	0	0	0	0	7
<b>Range</b>	9	7	8	10	17
<b>Minimum</b>	0	0	0	10	0
<b>Maximum</b>	9	7	8		17



In this study, we recruited the sample randomly. We recorded marital status for the 160 informants and the results when analysed were, married – 87.5%, separated – 0.6%, Widowed – 3.1%, and never married – 8.8%.

The majority of the people interviewed lived in the village for all their life. Many also have lived for more than 10 years. Only 12.5% of the informants (160) have lived in the village for less than 10 years. The highest

years lived recorded in the study was 65 years and the lowest was 2.

## Churches

Virutally everyone in our survey reported to be Christian. 53.8% were Catholics. Other mainline churches constitute about a fifth of the studied population. Seven Day Adventist had the majority with 19.4% whilst both United Church and Lutheran had 0.6% respectively. There are five Pentecostal churches also in the area: Four Square (1.3%), Assemblies Of God (5.1%), Revival (1.3%), Churches of Christ (13.8%) and Christ Ambassadors (3.8%).

A recent email from William Butler of Pioneer Bible Translation and Summer Institute of Linguistics (Personal Correspondence, 31 December 2009) corroborates our data:

PBT [Pioneer Bible Translation] has had three teams allocated within that section of river. One has completed the NT [New Testament] and gone finish; the other two have also gone finish. So I don't think we could provide much up to date info. However, I can tell you that at both the upper and lower ends of that section the main evangelical church group is the Churches of Christ [Full name is Melanesian Evangelical Churches of Christ.] The Catholic is scattered along most of that area too with more adherents from Annaberg upriver to Aiome and around Kwanga which is in the upper middle section. There are a fair number of Catholics at the lower end of the Ramu too. There is scattered SDA influence also about the lower third of that stretch, at least from Akurai downriver.

## **Present uses of Ramu River**

Table 2.1 How people use Ramu River

<i>N=160</i>					
<i>Different types of use</i>	<i>Yes</i>		<i>No</i>		
	<i>Percent</i>	<i>No. of people</i>	<i>Percent</i>	<i>No. of people</i>	
<i>Washing</i>	95	152	5	8	
<i>Drinking</i>	93	149	7	11	
<i>Cooking</i>	88	141	12	19	
<i>Fishing</i>	90	144	10	16	
<i>Laundry</i>	84	135	16	25	
<i>Washing clothes/eating utensils</i>	74	119	26	41	
<i>Healing</i>	7.5	12	148	92.5	
<i>Initiation</i>	11	18	89	142	
<i>Worship</i>	8	13	92	147	
<i>Making sago</i>	65	104	35	56	
<i>Leisure (swim)</i>	10	16	90	144	
<i>Transport</i>	72	115	28	45	
<i>Other purposes</i>	9	15	91	145	

The canoe is the common mode of transport for the people of Ramu. Responding to the question of who had a canoe, 75% said yes and 25% said they didn't have one. Even those who didn't have a canoe borrowed and use a relatives or friends canoe. The most common use of canoe is going fishing with 93% use rate.

Table 2.2 Show how people use canoe

<i>N=160</i>				
<i>Canoes usage</i>	<i>Yes</i>		<i>No</i>	
	<i>Percent</i>	<i>No. of people</i>	<i>Percent</i>	<i>No. of people</i>
<i>Go to the garden</i>	86	137	14	23
<i>Go fishing</i>	93	149	7	11
<i>Go to the clinic</i>	65	104	35	56
<i>Go to the local market</i>	69	110	31	50
<i>Making sago</i>	50	80	50	80
<i>Visiting friends/relatives</i>	69	110	31	50
<i>Other purposes</i>	11	17	89	143

## **ECONOMY OF RAMU RIVER VILLAGES**

Ramu River is the engine of the Ramu economy. The people rely on the river for trade, agriculture, transport and fishing.

## **Trade**

The river served as trade route for Ramu people and the Manam Islanders. One particular trade, infamous to the outside world yet commonly practiced was the mortuary trade. In this trade, the Ramu people took baskets and sago to the Manam Island and exchange for Galip nuts. Also along the river, their inter villager or tribal exchanges of gifts or goods. This practice still exists today. It is called ‘senis basket’ (literally means exchange baskets).

## **Agriculture**

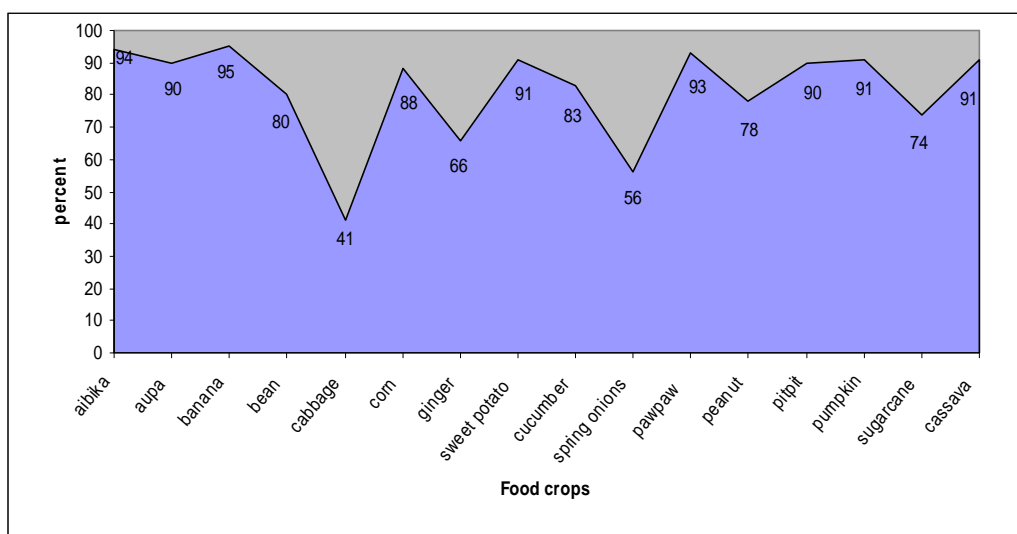
According to the informants, the seasons of planting and harvesting are no longer uniform. Weather patterns have become more and more unpredictable recently hence, there are no longer fixed times of planting and harvesting.

During dry seasons, gardens were made on banks which during rainy season would be submerged under water. The people planted crops that would be harvested in time before the start of wet season. However, today, gardens are no longer made on these places. Gardens along the River banks are made in places where the river will not be reached by floods during rainy periods. These are revealing adverse effects of climate change at the local scale.

Given this situation we were not able to create any complete calendar for seasons of planting and harvesting for food crops grown by Ramu River villages. However, crops grown in these villages can be classified into two main groups: the seasonal and the non-seasonal.

Non-seasonal crops are commonly grown at any time of the year for a shorter period and harvested when they are ready. Most common crops planted in the gardens in Ramu are banana, aibika, pawpaw, sweet potato, cassava and aupa. All these crops have 90% or more planting rate. The only food crops which had lower than 50% cultivating rate was cabbage. These crops are mostly grown in the gardens close to the river.

Graph 3.1 Common food crops in Ramu River gardens



Graph 3.2. Shows seasonal and other crops grown by Ramu River villages

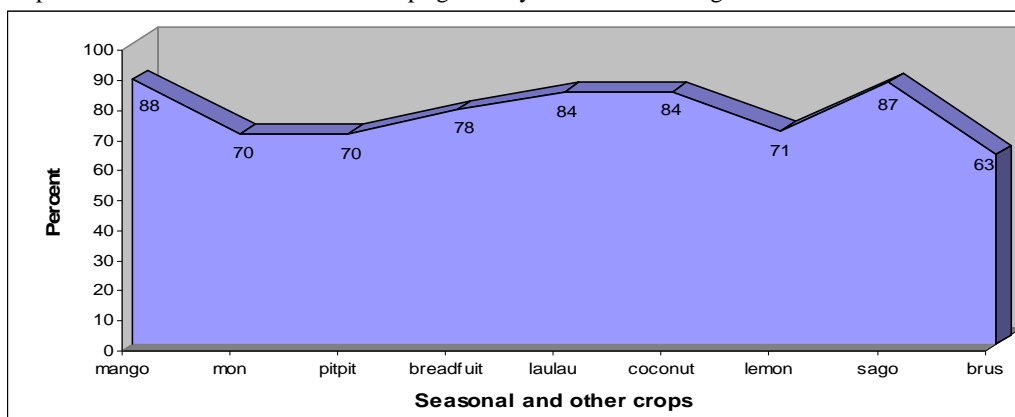


Table 3.1. Shows location of garden from the Ramu River

N=160 Location of Gardens from the River							
Number of gardens	Along the river			Further away from the river			Gardens on the foothills
	No. of people	Percent		No. of people	Percent		No. of people
0	38	23.8		62	38.8		145
1	39	24.4		54	33.8		7
2	41	25.6		32	20.0		4
3	25	15.6		5	3.1		2
4	6	3.8		4	2.5		2
5	9	5.6		0	0.0		0
6	0	0.0		1	0.6		0
7	1	0.6		0	0.0		0
8	1	0.6		0	0.0		0
9	0	0.0		1	0.6		0
10	0	0.0		0	0.0		0
11	0	0.0		1	0.6		0

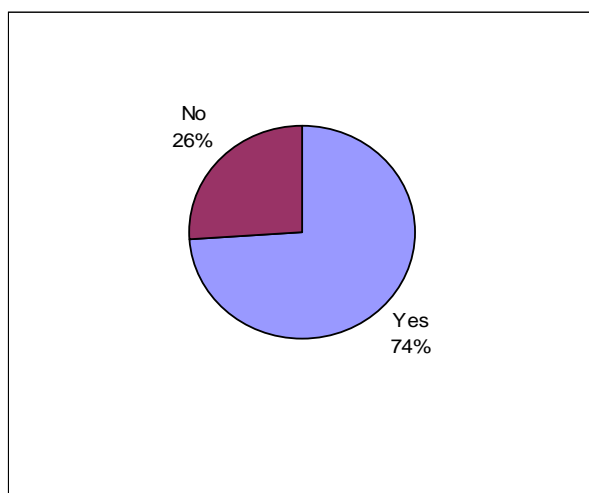
The perennial crops are mainly breadfruit, mango and 'mon'. These are planted only occasionally. Other other cultivated perennials include lemon, coconut, sago and 'brus.' Mango was said to be planted by 88% of our respondents, and sago by 87%.

In the table above (3.1), combining all the gardens, we can see that most people make their gardens along the river (68%) or further away from the river on flat land (59%), whether that is elevated or not. Only 9% make their garden on the foothills or in intermediate areas. These areas are generally reserved for residential structures. Making gardens along the river has been the tradition of Ramu River people. Only in the recent years, due to unpredictable flooding, have people moved further away from the river to do their gardening.

### Marketing

The food crops grown are mainly for food but surpluses are sold at the local markets. Marketing of local garden produce is not as lucrative as in town. We found that of the 160 participants, majority (74%) did some marketing whilst twenty-six percent did not market.

Graph 3.3. Percentage of people who market



Although seventy-four percent of the informants did some marketing, the percentage of people selling any single food items mentioned did not exceed more than fifty percent. The most common food sold was banana, however; only thirty-eight percent sold it. Galip nuts and cabbage were not common food items sold.

The most common unit price for all food items sold were less than 50 toea. Selling at this price, the income generated was very low.

The common income earned was less than K5 for every food item per sale (see table 3.2).

Table 3.2. Food sold at the local markets

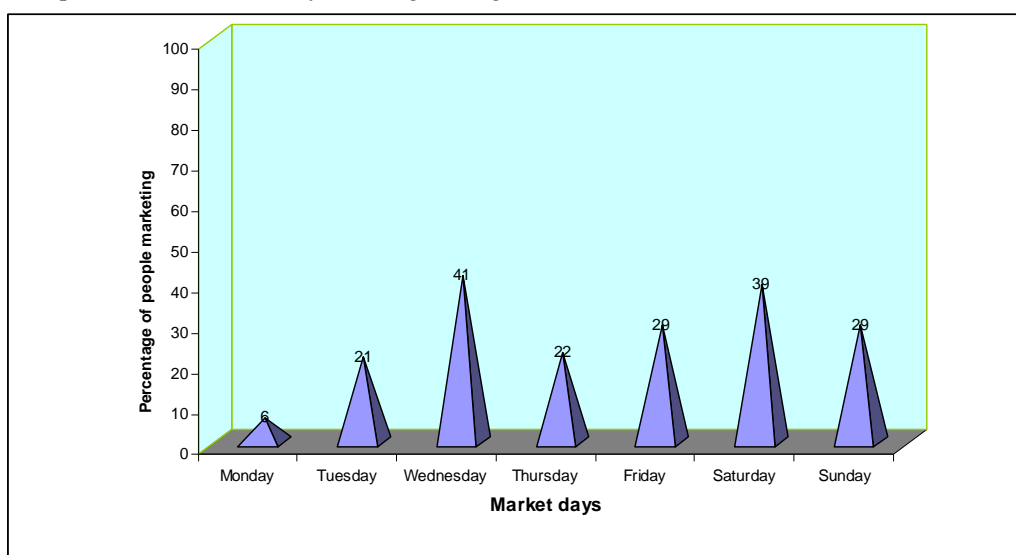
Food sold at market					
	No. of people	Common Unit price at local market		Common income per sale	
		Amount	Percent	Amount	Percent
Aibika	58	<50 toea	97	<K5.00	84
Aupa	48	<50 toea	98	<K5.00	84
Banana	60	<50 toea	92	<K5.00	63
Bean	46	<50 toea	98	<K5.00	82
Cabbage	9	<50 toea	100	<K5.00	100
Corn	35	<50 toea	100	<K5.00	83
Casava	32	<50 toea	100	<K5.00	88
Galip	3	<50 toea	100	<K5.00	67
Pumpkin	29	<50 toea	93	<K5.00	86
Sago	49	<50 toea	46	<K5.00	56
sugarcane	38	<50 toea	95	<K5.00	95
Taro Kongkong	36	<50 toea	89	<K5.00	78
Native Taro	32	<50 toea	100	<K5.00	81
Tomato	27	<50 toea	100	<K5.00	93
Tulip	43	<50 toea	96	<K5.00	96
Watermelon	36	<50 toea	75	<K5.00	83
Yam	49	<50 toea	39	<K5.00	64

Note: Unit in the table above refers to a heap, bundle, bunch and piece. Prices in the villages are very cheap. For instance, an equivalent bundle of Aibika sold for 20t in the village is sold for K1 in Madang town market.

Marketing days varied from village to village. According our finding people along Ramu River did their marketing on schedule village market days. Marketing was done mostly in the morning hours and by noon only very few people remained. Only on Sunday, market was done in the afternoon especially after church service. The graph

below demonstrates that people along Ramu River market every day of the week. Wednesdays and Saturdays are days when many people did their marketing.

Graph 3.4. Shows market days of villages along Ramu River



## Fishing

Fish is the major protein source of the Ramu River villages. All the fish comes from Ramu or its immediate tributaries. People along Ramu River fish every day. We found that 144 of the 160 participants fished in Ramu River. This constitutes ninety percent of the total participants. This also represents a high dependency on the River by its people for fish. The fish caught are primarily for household consumption and only surplus fish are sold at the local market.

Table 3.3 Shows Fish caught in Ramu River

Fish from Ramu River						
	No. of people caught fish	No. of people market fish	Common unit price at local market		Common income per sale	
			Amount	Percent	Amount	Percent
Tarpon	115	55	<50 toea	56	<K5	38
Catfish	131	69	<50 toea	51	<K5	46
Eel	109	47	<50 toea	42	<K5	42
Herring	137	77	<50 toea	46	<K5	44
Java Carp	140	82	<50 toea	51	<K5	38
Mullet	73	31	<50 toea	60	<K5	67
Shell fish	54	34	<50 toea	76	<K5	36
Small prawns	130	56	<50 toea	64	<K5	51
Talapia	121	65	<50 toea	56	<K5	32
Moon fish	74	43	<50 toea	60	<K5	43
Blow fish???	88	54	<50 toea	64	<K5	49
Rabamaus	126	82	<50 toea	42	<K5	31



Red Bel	36	13	<50 toea	68	<K5	50
* Shark	38	20	<50 toea	65	<K5/ K16-K20	45

Note: Unit in the table above refers to single fish or piece of a fish. Bigger fish are cut into pieces and sold. However, the prices are of fish sold at local market are very cheap.

Introduced fish such Rabamaus, Java Carp and Talapia are popular catches. Moon fish, Mullet and Shark are not as popular. This could mean that the introduced species are reproducing faster than native species.

Both man and women fish, but men are considered better netters, and women better in hooking. Poison roots are not encouraged in the present day although it was a common traditional fishing method, especially during dry seasons.

### **Cash crops**

In the modern cash economy, the rich floodplains of Ramu have been exploited for coconut and cocoa plantation. Coconut plantations (mainly small holders) were plantation during the pre-independence era. It was the predominant cash crops for the Ramu River villagers until recently when the cocoa was introduced in the area. Coconut yields are very high however low prices for the produce have discouraged production. Very high fuel prices created an unfriendly environment for transporting copra at economically value. Realising that their efforts in producing and transporting was burden instead of benefit, they discarded producing copra. For example, the people of Marangis village sourced their household income from copra have now abandoned it.

Commercial potential of these rich plains are huge. However limited development help to the area in terms of money, knowledge and skills transfer, and lack of community engagement in agriculture activities left most of the land is undeveloped.

### **Cocoa**

The floodplains of Ramu River have great potential in growing and producing high quality cocoa. There are hectares of land that are excellent for growing cocoa, but the communities in general lack adequate knowledge and skills to produce it. There has been little or no training on cocoa production. Many people just plant cocoa and leave the trees to grow on their own with out proper attention. Our observation was that many of the cocoa trees have grown wild.

The productivity rate for the cocoa trees growing in unattended cocoa blocks are two to six (2-6) pods per trees. About half the pods can produce wet beans to be fermented while the other pods are too poor quality. Most of the harvested and extracted cocoa beans are sold wet to local cocoa buyers. Local buyers are mainly people who own and operate cocoa fermentation sheds (fermentaries). The wet beans are weighed for sale and the current rate along the river ranges from K1.00 per kilo to K1.20 per kilo for them (wet). From one hectare of cocoa block, people are able to produce no more than 40 kilograms of wet beans. This is because of the lack of skills and knowledge. It means that most people are earning only about K40 per harvest in cocoa.

## Copra

There are copra plantations in many villages, starting from the lower to the upper part of the river. The yield of coconuts is high in most of the villages. However, there are no markets accessible and prices of copra have declined. People in Marangis village once earned their household income from copra, but that has changed and now the hard work and effort put into copra cannot be compensated by the financial return.

### Household consumption of processed foods

Modern materials and processed goods are used daily in the villages. Plates, spoon and cups are utensils used every day for meals. Salt is never absent during meals. Rice is a popular supplement for sago, banana, kaukau or yam. In the table below, an overwhelming ninety-one percent of households buy rice. Rice is also recorded as the biggest buy compared with all the other processed goods. In addition, basic household consumables like cooking oil, flour, gas lighter, kerosene, noodles, salt, sugar, tinned mackerel, tinned tuna have high consumption rates here.

Table 3.4. Processed goods consumption

Item	No. of people purchase	Common no. of pieces purchase	No. of people who purchase < three pieces	Common amount of money spent at last purchase	No. of people who spend this money
Cooking Oil	126	Less than 3	112	K5.00	65
Corned Beef	43	Less than 3	41	K5.00	27
*File	55	Less than 3	53	K5.00	30
Flour	123	Less than 3	104	K5.00	57
Gas Lighter	127	Less than 3	122	K1.00	75
Grass Knife	52	Less than 3	48	K5.00	29
Kerosine	140	500ml	47	K5.00	37
*Clothes/Laplap	81	Less than 3	54	K5.00	22
Matches	30	Less than 3	30	K0.50	24
Milo	55	Less than 3	49	K3.00	15
Noodles	143	Less than 3	123	K1.50	34
Ox & Palm	50	Less than 3	46	K5.00	33
Rice	146	1kg	77	K5.00	82
Salt	129	1kg	60	K3.00	45
Sugar	124	1kg	103	K5.00	95
Sunshine Milk	62	Less than 3	55	K3.00	29
Tea	79	Less than 3	70	K3.00	20

		3			
Tinned Mackerel	115	Less than 3	108	K5.00	105
Tinned Tuna	110	Less than 3	106	K5.00	97
Twisties	71	Less than 3	51	K1.50	21

	Total fish incomes for 16 participants in each village										
N=160	Marangis	Wukibu	Dongon	Akurai	Jukin	Bangapela	Tzumbar	Missingi	Grangabu	Watabu	Total
	K	K	K	K	K	K	K	K	K	K	K
Bowfish	135.50	35.00	30.00	99.00	33.00	133.00	20.00	3.00	24.00	14.00	526.50
Catfish	191.00	43.00	70.50	111.00	46.50	262.00	23.00	30.00	58.00	24.00	859.00
Crocodile	758.00	164.50	49.00	101.50	156.00	12.00	121.50	93.50	32.00	3.00	1,491.00
Eel	72.00	32.00	61.00	35.00	50.00	27.00	14.00	0.00	29.00	13.00	333.00
Herring	206.50	56.00	137.50	153.50	83.50	64.00	27.00	46.00	55.00	29.00	858.00
Javanese carp	313.00	106.50	226.50	111.00	89.50	190.00	36.00	112.55	63.00	19.00	1,267.05
Moonfish	97.50	35.00	45.00	136.50	125.00	82.50	17.00	0.00	96.50	41.00	676.00
Mullet	66.00	16.00	6.00	31.00	71.50	6.00	6.00	6.00	26.00	0.00	234.50
Rabamaus	87.00	71.50	166.50	157.00	140.50	686.50	67.00	146.50	128.50	31.00	1,682.00
Red bel	95.00	14.00	18.00	8.00	65.50	0.00	22.00	6.00	0.00	0.00	228.50
Shark	195.50	3.00	0.00	36.00	8.00	21.00	6.00	0.00	18.00	0.00	287.50
Shell fish	275.00	16.00	375.50	0.00	26.00	24.00	11.00	0.00	3.00	0.00	730.50
Small prawns	107.50	38.00	84.00	35.00	59.50	178.50	20.00	3.00	27.00	14.00	566.50
Talapia	211.00	38.00	78.00	156.50	56.50	96.00	19.00	58.00	52.00	23.00	788.00
Tarpon	217.50	16.00	39.00	159.50	45.00	54.00	22.00	53.00	84.00	6.00	696.00
Tortoise	96.50	287.50	15.00	13.00	64.50	17.00	48.00	8.00	69.50	3.00	622.00
<b>Total</b>	<b>3,124.50</b>	<b>972.00</b>	<b>1,401.50</b>	<b>1,343.50</b>	<b>1,120.50</b>	<b>1,853.50</b>	<b>479.50</b>	<b>565.55</b>	<b>765.50</b>	<b>220.00</b>	

	Total crop income for 16 participants in each village										
N=160	Marangis	Wukibu	Dongon	Akurai	Jukin	Bangapela	Tzumbar	Missingi	Grangabu	Watabu	Total
	K	K	K	K	K	K	K	K	K	K	K
Aibika	26.00	24.00	0.00	23.00	18.00	49.00	15.00	42.00	25.00	21.00	243.00
Aupa	18.00	18.00	0.00	23.00	12.00	28.00	15.00	11.00	32.00	18.00	175.00
Banana	23.00	31.00	99.50	23.00	48.00	214.50	12.00	14.00	43.00	26.00	534.00
Bean	33.00	21.00	3.00	20.00	17.00	9.00	15.00	11.00	32.00	18.00	179.00
Brus	67.50	28.00	0.00	3.00	90.50	224.50	28.00	17.00	3.00	23.00	484.50
Cabbage	0.00	6.00	0.00	6.00	0.00	3.00	6.00	6.00	0.00	0.00	27.00
Corn	20.00	18.00	8.00	15.00	17.00	11.00	9.00	11.00	6.00	15.00	130.00
Galip	3.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00
Pumpkin	25.00	24.00	0.00	12.00	16.00	3.00	11.00	3.00	9.00	9.00	112.00
Sago	12.00	81.50	0.00	153.00	102.50	322.00	387.50	3.00	690.50	183.50	1,935.50
Sugarcane	12.00	24.00	3.00	12.00	24.00	14.00	9.00	3.00	12.00	21.00	134.00
Tapiok	25.00	15.00	0.00	41.00	6.00	6.00	6.00	6.00	6.00	12.00	123.00
Taro											
Kongkong	22.00	18.00	3.00	30.00	11.00	46.50	9.00	21.00	24.00	21.00	205.50
Taro Singapo	9.00	18.00	0.00	35.00	36.00	3.00	9.00	2.00	24.00	21.00	157.00
Tomato	28.00	21.00	0.00	9.00	6.00	11.00	6.00	3.00	9.00	3.00	96.00

Tulip	15.00	21.00	0.00	31.00	12.00	9.00	9.00	1.00	20.00	27.00	<b>145.00</b>
Watermelon	12.00	26.00	0.00	14.00	9.00	16.00	9.00	1.00	22.00	42.00	<b>151.00</b>
Yam	6.00	18.00	0.00	38.00	23.00	111.50	17.00	52.00	65.00	36.00	<b>366.50</b>
<b>Total</b>	<b>356.50</b>	<b>415.50</b>	<b>116.50</b>	<b>488.00</b>	<b>448.00</b>	<b>1,081.00</b>	<b>572.50</b>	<b>207.00</b>	<b>1,022.50</b>	<b>496.50</b>	

## ANALYSIS:

These Middle Ramu villages make the majority of the cash from selling betelnut, copra, sago and cocoa. With the exception of sago, all these crops are grown away from the river's edge and therefore remain somewhat resistant to river level changes. Sago is less resistant, but it withstands flooding and becomes a staple crop when gardens are destroyed. Our task here has been to assess the cash incomes generated from riverside crops and river fish, so as to gauge the potential income loss should the river become disturbed.

Our tables here refer to 16 respondents surveyed in each village, and so the totals do not reflect the total incomes of each village but the total of all 16 in each. These are divided by 16 to get an average income per sale item for each household.

We are also interested in the outlay of money by household for store goods, how much they buy to feed themselves. What we wish to measure is how much these households will be able to afford if their income drops, and what long term effects this will have on their wellbeing. Here again, our numbers refer to 16 interviewees in each location, and averages gained from their totals.

Fish is the staple protein for these villages, as well as an important source of income. The average total income from fish is double the total income from vegetables and other crops sold (69% to 31%).

Marangis village had highest total income from fish (including crocodile) than the other villages; Watabu had the lowest. But Watabu village made more money from selling garden produce than Marangis.

Dongon village made good income from fish, but did poorly in garden and other land produce. The same is true for Marangis, Akurai and Junkin villages. Overall, the majority of the villages made more money from fish than garden produce. Only two villages (Watabu and Tzumbar) earned more money from selling garden produce than their river catch.

Sago income is interesting. In general, it is higher than all producer, but compete only with the costliest fish, Javanese carp. But sago varies in the extreme by village, and Dongon, for example, has no sago sales, while Grangabu can make as much as K43 per household per month.

Income from crocodile in Marangis village is almost a quarter (24%) of revenue generated from total fish sales. Crocodile is also main earner for Wukibu, Tzumbar, Missingi, Junkin and Akurai villages. For the village of Wakibu tortoise constitutes 30% of its total fish sales income.

<b>Average income for fish and vegetables per household in each village</b>		
<b>Village</b>	<b>Fish/Water produce</b>	<b>Vegetables/Land produce</b>
Marangis	195.28	22.28
Wukibu	60.75	25.97
Dongon	87.59	7.28
Akurai	83.97	30.5
Junkin	70.03	30.5
Bangapela	115.84	67.56
Tzumbar	29.99	35.78
Missingi	35.35	12.94
Grangabu	47.84	63.91
Watabu	13.75	31.03
<b>Total</b>	<b>740.39</b>	<b>327.75</b>

There is income along the river from copra, betelnut and cocoa, as noted, and this varies according to location. Expenditures per household vary as well, and to some extent these correlate with villages where smallhold crops must be brought to distant markets. In riverine communities across Papua New Guinea, the cost of transport is overwhelmingly higher than the cost of education, health and customary exchanges.

Along the Middle Ramu petrol zoom can range from K20 to K25 per gallon, and depending upon the distance to Bosmun and the Madang highway, this can mean a cost of K1000 for a boat to bring the village's seasonal copra, betelnut or cocoa to market. Generally speaking, however, villages run smallhold crop businesses as independent from other income sources, so that the money made from a bag of betelnut is the net sale minus the cost charged for transport. People take the costs of transport out of their earnings for smallhold crops. Household and monthly costs and expenditures generally run parallel to these.

In other words, for our purposes, we have not included the costs of or income from these plantation crops in our household income calculations because we see them as relatively separate. Instead, we compare the income from regular fish and produce sales with the regular shopping expenditures for household goods.

Table 4 shows the total expenditures per item of 16 respondents in each of the villages we visited. These totals are then divided by 16 to arrive at an average expenditure for each household in the village. Bangapela Village makes the second-most on fish and the most on crops each month, and appropriately spends the most per household on store goods.

Total monthly expenditures for 16 respondents in each village											
	Marangis	Wukibu	Dongon	Akurai	Jukin	Bangapela	Tzumbar	Missingi	Grangbu	Watabu	Total
	K	K	K	K	K	K	K	K	K	K	K
Cooking oil	55.10	37.00	47.40	62.30	99.90	52.00	82.60	51.80	41.30	101.50	<b>630.90</b>
Corned Beef	12.40	37.40	19.20	9.60	36.20	89.90	19.20	7.60	8.60	22.60	<b>262.70</b>
Flour	115.40	57.20	63.90	113.30	215.80	75.70	116.00	150.40	106.40	232.50	<b>1,246.60</b>
Kerosine	34.70	83.70	78.60	84.10	110.50	156.00	139.50	160.60	248.40	121.10	<b>1,217.20</b>
Clothes/Laplap	116.60	234.00	127.40	379.00	157.60	254.20	238.30	362.60	247.60	131.10	<b>2,248.40</b>
Noodles	36.60	21.50	36.10	73.80	75.40	121.70	37.80	30.30	6.00	19.10	<b>458.30</b>
Ox & Palm	15.00	38.40	12.60	40.80	45.80	130.50	64.30	14.40	9.60	13.40	<b>384.80</b>
Rice	123.20	158.30	276.80	272.20	285.20	184.50	185.80	50.80	104.40	115.90	<b>1,757.10</b>
Salt	85.30	43.00	32.50	75.70	101.00	43.20	66.60	35.30	34.50	68.40	<b>585.50</b>
Biscuit	52.25	26.70	32.40	57.70	71.30	76.63	30.90	30.80	22.80	23.50	<b>424.98</b>
Coffee	41.00	12.70	58.60	32.70	32.70	88.70	46.40	32.00	28.90	23.10	<b>396.80</b>
Cold drinks	9.70	6.80	11.40	16.70	26.20	23.80	25.00	12.70	7.60	7.10	<b>147.00</b>
<b>Total</b>	<b>697.25</b>	<b>756.70</b>	<b>796.90</b>	<b>1,217.90</b>	<b>1,257.60</b>	<b>1,296.83</b>	<b>1,052.40</b>	<b>939.30</b>	<b>866.10</b>	<b>879.30</b>	

Note that the highest earning village, Marangis, is also the village with the most profit after expenditures. While Bangapela spends less than it earns, and brings about K9 profit to each household a month, Marangis is the most economically successful of these villages. Each household earns roughly K174 a month on their crops and fish, after household expenses.

By contrast, Missingi and Watabu run in the red for their market and household expenditures. These figures are balanced, no doubt, by income from cash crops.

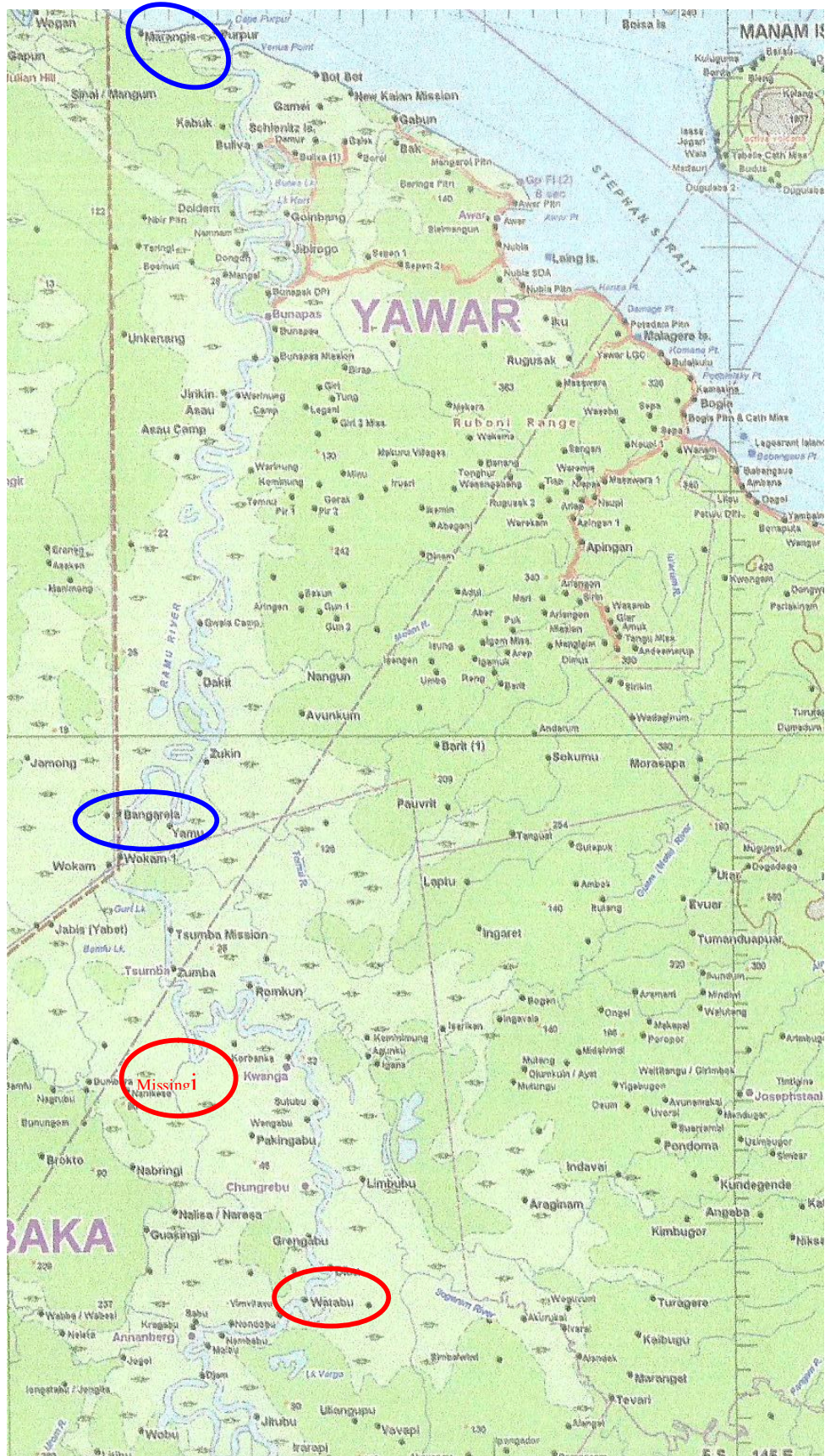
These are rapid assessment statistics and reflect only a portion of the village incomes, but they do provide a means of projecting the losses to each village should the river be flooded, its course change, or the crops planted by the riverside compromised in some way.

If we look at the map below we can also compare the locations of each of the ‘most succesful’ and the ‘least successful’ of these villages. Marangis is at the coast, and therefore has far less transport costs for their smallhold crops. Compare this to Bangapela, which has by far greater costs to market for cocoa and betelnut (copra is no longer profitable in this area). It may be that by making more in market produce and fish sales their costs to market can be realized.

But perhaps most interesting is the fact that the two least successful villages are very close together in the upper reaches of the Middle Ramu, at great length from the coast and the highway, and with less likelihood that their income from smallhold crops can counterbalance their losses from market sales locally. These villages reflect how very marginal the upper end of the Middle Ramu subsistence is, and how much more vulnerable these people are to fluctuations in river levels or the viability of their riverside gardens.

Average monthly income and expenses as total of 16 respondents in each village			
Village	Income	Expenses	Balance
	K	K	K
Marangis	3481.00	697.25	2783.75
Wukibu	1387.50	756.70	630.80
Dongon	1518.00	796.90	721.10
Akurai	1831.50	1217.90	613.60
Jukin	1568.50	1257.60	310.90
Bangapela	2934.50	1296.83	1637.67
Tzumbar	1952.00	1052.40	899.60
Missingi	772.55	939.30	-166.75
Grangabu	1788.00	866.10	921.90
Watabu	716.00	879.30	-163.30
<i>Total</i>	<i>17949.55</i>	<i>9760.28</i>	<i>8189.27</i>







## **CONCLUSION**



The river is important to the survival of Ramu River communities, physically and ideologically. It is their past, present and future. The greatest fear of the Ramu people is that if Ramu is polluted by activities from mining or agriculture upstream they will pay the price in many ways. It would seriously affect their resources like water, food, and even land. Moreover, they have nowhere else to go. While they are all migrants from surrounding regions,

none of these regions continue to recognize any land rights for these people. Today these connections exist in the form of trade partners, basket exchange systems, pottery and sister exchange routes. But strong ties would be hard to reclaim. Because the riverside communities have been generous in their residency patterns---allowing virilocal settlement for male and female offspring---there are pressures on the land already, and this will not be relieved by rising water levels or riverbank erosion. It is also unlikely that better education or employment opportunities in Madang or Wewak will remedy pressures on the land.



It is also important to remember that these people are all ideologically connected to this water source. Their origin stories, while related to the larger myth cycles of the Madang coastal region, are unique to the very landscape they live within. These people are so successfully missionized, in part, because they had few expansive beliefs and instead, like most Melanesians, have highly particularized notions of how they originated as a language group, a clan or even a family line. On the one hand, this has made them easily subsumed by broad Christian concepts of God and humankind. On the other, it ties them inextricably to a particular place, much like the Dreamings of Aboriginal Australians. Wherever the ndaro water spirit resides, wherever the masalais of their distant past evolved into half-human forms, and then human ancestors, is a sacred site, a culturally significant location.

But even if the course of social change uproots these people from their landscape, and the details of their cosmological past, there remains a more universal significance to this particular section of the Ramu River. So little archaeological research has been conducted as yet in this area surrounding the 6000 year old inland sea, that the danger of changing this landscape is that we may lose critical evidence about the peopling of northern New Guinea and the course of human history more generally. The mortar and pestle relics that have been found around this area are almost certainly of archeological significance, and have yet to be dated or catalogued. The pottery in this region is also worthy of intensive study as a means of understanding when Lapita influences made their way into the Ramu Valley: was it as early as 6000 years ago, or did they enter the area from the Keram and the north coast in different waves?

Nancy Sullivan and Associates are currently working on a cave art project in the Upper Karawari and Upper Arafundi River regions of the nearby East Sepik, and it is not

improbably that the history of settlement in these areas is related. What we know of the cave system is provocative, if inconclusive: similar cave stencils to that which we have found are dated to 20,000 years ago in Borneo and Western Australia. Lapita pottery and shell valuables from the coast have also been discovered in these cave sites. If this can be said to imply the areas north of the Shrader Range have been peopled as early as 20,000 years ago, then the Middle Ramu region is definitely important in our understanding of PNG history. We have yet to thoroughly understand, for example, when people first moved from the highlands to the north coast, and with what coastal migrations they became blended, over time. The history of these Middle Ramu people, coming from the northeast and the northwest, in the Keram River area, as well as from the Shrader mountains below, is still a big piece of the puzzle.

But there are practical concerns for today's populations, too. When we contacted William Butler of Pioneer Bible Translation and Summer Institute of Linguistics regarding this study, asking him about mission stations along the Middle Ramu, his email response expressed concern about the potential of rising water levels along this section of the river. "I am more interested," he wrote (Personal Correspondence, 31 December 2009),

in the thought that the mine is going to cause flooding. I would like to know the mechanism that is supposed to cause that to happen. If there really will be flooding, will it be worse than a normal wet season? If so, there are a lot more people who would have vested interest in this than just the people along the river, for example the people inland from Akurai and that general area because that is really just a big swamp. Also the Keram river people would have a lot to say because the barrier between the Ramu and the Keram is tenuous at best. I have actually gone by boat between the two rivers in a baret that used to exist. But there was great concern/fear that keeping the baret open and in use would allow the Ramu to spill over into the Keram and perhaps even change course completely (and I don't think it was totally just wild speculation that that could happen). As a result about 25 years ago the local people cut several trees across the baret and started blocking it in any way they could so that that would not happen.

The Ramu River is the artery of all life for the people who live along it. These communities rely on it for basic needs such as drinking, cooking, fishing, bathing, washing laundry, washing cooking utensils and getting around. Ramu is an important part of their transport system. There is simply no other way to conduct social or economic affairs in this region than by canoe along the river and through the barets that intersect it. As with any river system, those people along the lower sections are entirely dependent upon the behaviours and sense of responsibility of the people above them. When taboos are not observed and, for example, animals foul the water or landslips block the water course, people are obliged to repair the damage out of a generalised sense of social responsibility to everyone along the river. The cost of not doing so can range from sorcery fears to outright warfare. The obligation of upriver people is to assuage the concerns of those downstream, especially as they generally enjoy the cleanest and most salubrious sections of the watercourse. Those downstream, as in the Middle and Lower Ramu, are at a disadvantage regarding their neighbours, but are also less likely to be the objects of sorcery and ill will than the latter.

We did hear complaints from the people of river being contaminated by activities of mining upstream, especially the Ramu Nickel mine. They also blamed Yonki Dam and agricultural activities of Ramu Agro Industries and feared Marengo would also contribute adversely to their lives. The main concerns involved increased soil content in the river and the change to a brownish colour of the water.

## **REFERENCES**

- Blackwood, B. 1940. 'Crafts of a Stone Age People in Central New Guinea' in *Man*, vol 40, p. 11.
- \_\_\_\_\_. 1941. 'Some Arts and Industries of New Guinea and New Britain' in *Man*, vol. 41, p. 88
- \_\_\_\_\_. 1939. 'Folk-Stories of a Stone Age People in New Guinea' in *Folklore*, vol. 50, no. 3, pp. 209-242
- Blong, Russell. 1981. The Time of Darkness legends and Volcanic Eruptions in Papua New Guinea, in *Oral Traditions in Melanesia*, eds Donald Denoon and Roderic Lacey, Port Moresby: University of Papua New Guinea and IPNGS, pp 141-150.
- Bulmer, R.N.H. 1982. Traditional Conservation Practices in Papua New Guinea. In L. Morauta, J. Pernetta, W. Heaney, eds. *Traditional Conservation in Papua New Guinea: Implications for Today*. Boroko: IASER, pp. 59-78.
- Bulmer, S. 1973. Notes on 1972 Wanlek excavations. University of Auckland, Department of Anthropology Working Paper in Archaeology 29.
- \_\_\_\_\_. 1982. Human ecology and cultural variation in prehistoric New Guinea. *Monographiae Biologicae*, 42: 169-206.
- Burridge, Kenneth O.L. 1957. Disputing in Tangu. *American Anthropologist* 59:673-780.
- \_\_\_\_\_. 1960. *Mambu: A Melanesian Millenium*. London: Methuen Press.
- \_\_\_\_\_. 1969a. *New Heaven, New Earth: A Study of Millenarian Activities*. Oxford: Blackwell.
- \_\_\_\_\_. 1969b. *Tangu Traditions: A Study of the way of life, mythology and developing experience of a New Guinea people*. Oxford: Clarendon Press.
- Caven, Richard et al. 1990. Rapid rural appraisal of the Upper Ramu District, Madang Province, Papua New Guinea. (April-May 1989). Konedobu: Department of Agriculture and Livestock.
- Christensen, Rosalie et al. 1979. Useful Madang plants and crafts: report on study done between January and June 1979 in Madang Province. Typescript copy held in the New Guinea Collection.
- Clarke, William Carey. 1980. At the tail of the snake. In *Of Time and Place: Essays in Honor of OHK Spate*, ed. J.N. Jennings and G.J.R. Linge. Canberra: ANU Press, pp. 173-192.
- \_\_\_\_\_. 1990. Learning from the Past: Traditional Knowledge and Sustainable Development. *The Contemporary Pacific*, Vol 2, No 2, Fall 1990, pp. 233-253.
- Counts, David R., Thomas G. Harding and Alice Pomponio, eds. 1994. *Pacific Studies, Special Issue: Children of Kilibob; Creation, Cosmos and Culture in Northeast New Guinea*. Vol 17, No 4.
- Counts, Dorothy Ayers. 1994. Snakes, Adulterers, and the Loss of Paradise in Kaliai. In Counts, David R., Thomas G. Harding and Alice Pomponio, eds. 1994. *Pacific Studies, Special Issue: Children of Kilibob; Creation, Cosmos and Culture in Northeast New Guinea*. Vol 17, No 4. pp 109-152.

- Darrouzat, Christopher Patrick. 1990. Sorcery, Salvation and the politics of death in a lowland New Guinea society: a case study of a modernizing culture and consciousness. PhD.thesis. University of North Carolina.
- . 1982. Drinking: a sign of things to come in Bogia, Madang Province. *Through a Glass Darkly: Beer and Modernisation in Papua New Guinea*. Ed. M. Marshall. Boroko: Institute of Applied Social and Economic Research Monograph 18, pp. 289-304.
- De'ath, Colin. 1983. Pots, power and progress in the Trans-Gogol of Papua New Guinea. In *Art and Artists of Oceania*, ed. Sidney M. Mead and Bernie Kernot. Palmerston, North, New Zealand: Dunmore Press. Pp. 105-113.
- Driscoll, Peter V. 1984. Effects of logging on bird populations in lowland New Guinea rainforest.
- Fahey, Stephanie. 1985. Producers or consumers? : Women's entry into the cash economy in Madang, Papua New Guinea. In *Women in Development in the South Pacific*, Canberra: Australian National University Development Studies Centre Conference Papers, pp. 137-155.
- Fairbairn, A. and P. Swadling, 2005. Re-Dating Mid-Holocene betelnut (*Areca Catechu* L.) and Other Plant Use at Dongan, Papua New Guinea, Unpublished paper, Department of Archaeology and Natural History, Research School of Pacific and Asian Studies, the ANU.
- Flannery, Tim. 1995. *Mammals of New Guinea*. Chatsworth, NSW: Reed Books.
- Foley, William A. 2005. Linguistic prehistory in the Sepik-Ramu basin. In In A. Pawley, R. Attenborough, J. Golson and R. Hide, eds., *Papuan Pasts: cultural, linguistic and biological histories of Papuan-speaking peoples*. Canberra: RSPAS, the ANU, pp.110-144.
- Gillison, Gillian. 1993. *Between Culture and Fantasy: A New Guinea Highlands Mythology*. Chicago: University of Chicago Press.
- Gorecki, P., M. Mabin and J. Campbell. 1991. Archaeology and geomorphology of the Vaimo coast, Papua New Guinea: preliminary results. *Archaeology in Oceania*, 26: 119-22.
- Harding, Thomas G. et al, Introduction, In Counts, David R., Thomas G. Harding and Alice Pomponio, eds. 1994. *Pacific Studies, Special Issue: Children of Kilibob; Creation, Cosmos and Culture in Northeast New Guinea*. Vol 17, No 4. Pp 1-10.
- Harding, Thomas G. and Stephen A. Clark. The Sio Story of Male. In Counts, David R., Thomas G. Harding and Alice Pomponio, eds. 1994. *Pacific Studies, Special Issue: Children of Kilibob; Creation, Cosmos and Culture in Northeast New Guinea*. Vol 17, No 4. Pp 29-52.
- Holtker, G. 1965. Topferei und irdene Spielpuppen bei den Bosmun in Nordist-Neuguinea. *Jarbuch des Museums fur Volkerkunde zu Leipzig* 21.
- Inselmann, Rev. Rudolf. 1996. *Letub: the cult of secrets of wealth*. Madang: Kristen Press, Lutheran Mission Classics, Papua New Guinea Series no.3.
- Johnson, Patricia Lyons. 1981. When Dying is Better than Living: Female suicide among the Gainj of Papua New Guinea. *Ethnology* 20: 235-334.

- Kasprus, A. 1973. The Tribes of the Middle Ramu and the Upper Keram Rivers. *Anthropos* 17.
- . 1942. The Languages of the Mugil District, NE-New Guinea. *Anthropos*. 37-40: 711-778.
- Keil, D.E. 1978. Pottery of the Northern Province of the Benebena Census Division, Eastern Highlands Province and of the Nahu-Rawa Census Division, Madang Province, with a note on pottery manufacture in the middle Ramu Vallery, Madang Province. *Oral History* 6 (10): 52-67.
- Lawrence, Peter. 1982. Madang and Beyond. in *Melanesia: Beyond Diversity*, Volume 1, ed. R.J. May and H. Nelson. Canberra: research School of Pacific Studies, ANU, pp. 57-72.
- Lipset, David. n.d. Two Brothers: Geography, Male Agency and Austronesian Hegemony in North Coast Cosmology. Paper presented at the Annual Meeting of the American Anthropological Association, Chicago, 1991.
- Lutkehaus, Nancy C. 1995a. Gender Metaphors: Female Rituals as Cultural Models in Manam, in *Gender Rituals: Female Initiation in Melanesia*, ed. Nancy C. Lutkehaus and Paul B. Roscoe. New York: Routledge, pp. 183-204.
- . 1995b. Zaria's Fire: Engendered Moments in Manam Ethnography. Durham, N.C.:Carolina Academic Press.
- Maburau, Anthony. 1985. Irakau of Manam. In *New Religious Movements in Melanesia*, ed. Garry Trompf and Carl Loeliger. Waigani and Suva: UPNG and USP, Institute of PNG Studies, pp. 2-17.
- Mackay, R.D. 1991. Additions to the Avifauna of the Adalbert Range. *Muruk* 5(10): 12-18.
- Majnep, Ian Saem. 1982. On the importance of conserving traditional knowledge of wildlife and hunting. In *Traditional Conservation in Papua New Guinea: Implications for Today*, ed. Louise Morauta. Boroko: Institute of Applied Social and Economic Research Monograph no.16.
- Mangai, Pita et al. 1980. Kominimung of the Madang Province. Boroko: National Cultural Council Bathurst, NSW: Robert Brown and Associates.
- May, Jean and Eunice Loeweke. 1985. A recommended alphabet for Maiani, Miani, Mala and Maia—four languages of the Kaukambaran language family In John M. Clifton, ed., *Five Phonological Studies*, 1-25. Workpapers in Papua New Guinea Languages, 31. Ukarumpa: Summer Institute of Linguistics.
- May, P. and M. Tuckson, 1982. *The Traditional Pottery of Papua New Guinea*. Honolulu: University of Hawaii Press.
- McPherson, Naomi M. 1994. The Legacy of More the Snake-man in Bariai. In Counts, David R., Thomas G. Harding and Alice Pomponio, eds. *Pacific Studies, Special Issue: Children of Kilibob; Creation, Cosmos and Culture in Northeast New Guinea*. Vol 17, No 4. pp. 153-182.
- McSwain, Romola. Kulbob and Manub: Past and Future Creator Deities of Karkar island. In Counts, David R., Thomas G. Harding and Alice Pomponio, eds. *Pacific Studies, Special Issue: Children of Kilibob; Creation, Cosmos and Culture in Northeast New Guinea*. Vol 17, No 4. pp.11-28.



- Mennis, Mary. 1979. Kilibob and Manup myth found on the north coast of Papua New Guinea. *Oral History* 7 (4): 88-101.
- \_\_\_\_\_. 1980. Oral testimonies from coastal Madang: Part 1. *Oral History* 8 (10): 1-118.
- \_\_\_\_\_. 1981a. Oral testimonies from coastal Madang: Part 2. *Oral History* 9 (1): 1-107.
- \_\_\_\_\_. 1981b. Oral testimonies from coastal Madang: Part 3. *Oral History* 9 (2): 1-99.
- O'Shea, Mark. 1990. *Reptiles of Madang Province*. Madang: Christensen Research Institute.
- Pakek, N. 1976. Wooden plates of Madang. *Oral History* 4(2): 85-88.
- Ploeg, Anton. 1994. Mala among the Kowai . In Counts, David R., Thomas G. Harding and Alice Pomponio, eds. *Pacific Studies, Special Issue: Children of Kilibob; Creation, Cosmos and Culture in Northeast New Guinea*. Vol 17, No 4. Pp. 93-108.
- Pomponio, Alice. 1994. Namor's Odyssey: Mythical Metaphors and History in Siassi. In Counts, David R., Thomas G. Harding and Alice Pomponio, eds. *Pacific Studies, Special Issue: Children of Kilibob; Creation, Cosmos and Culture in Northeast New Guinea*. Vol 17, No 4. Pp. 53-92.
- Rainer, Hermann. 1986. Beginning in Madang: The Rhenish Mission. In *The Lutheran Church in Papua New Guinea, the First Hundred Years, 1886-1986*, ed. Herwig Wagner and Hermann Rainer. Adelaide: Lutheran Publishing House, pp. 99-140.
- Riebe, Inge. 1991. Do we believe in witchcraft? In *Man and a half: Essays in Pacific Anthropology and Ethnobiology in Honor of Ralph Bulmer*, ed. A. Pawley. Auckland: Polynesian Society Memoir no. 48, pp. 317-326.
- Roscoe, Paul. 2005 Foraging, ethnographic analogy, and Papuan pasts: contemporary models for the Sepik-Ramu past. In A. Pawley, R. Attenborough, J. Golson and R. Hide, eds., *Papuan Pasts: cultural, linguistic and biological histories of Papuan-speaking peoples*. Canberra: RSPAS, the ANU, pp. 555-584.
- Saulei, Simon. 1997. Forest Exploitation in Papua New Guinea. *The Contemporary Pacific*, Vol 9, No 1, Spring 1997, pp 25-38.
- Scaglione, Richard. 1996. Chiefly Models in Papua New Guinea. *The Contemporary Pacific*. Vol 8, No 1, Spring 1996, pp. 1-31.
- Seia, N. 1981. How the hills were formed in Madang. *Oral History* 9(1-4):25-27.
- Slone, Thomas H. 2003. Geographic and linguistic distribution of folktale motifs in Papua New Guinea. Berkeley, CA: Unpublished manuscript.
- \_\_\_\_\_, trans., ed., 2001. *One Thousand and One Papua New Guinea Nights: Folktales from Wantok Newspaper*, Vols 1 and 2, Oakland California: Masalai Press.
- Smidt, Dirk 1990. Symbolic meanings in Kominimung masks, in N. Lutkehaus, C. Kaufmann, W.E. Mitchell, D. Newton, L. Osmundsen and M. Schuster, eds., *Sepik Heritage: Tradition and Change in Papua New Guinea*. Durham: Carolina Academic Press, pp.511-522.
- Smidt, Dirk and Soroi Marepo Eoe, ed by Barry Craig, Bernie Kernot and Christopher Anderson, 1999. *Art and Performance in Oceania*. Sydney (?): Crawford House.
- Souter, Gavin 1963. *New Guinea: The Last Unknown*. London: Angus & Robertson.

- Spriggs, M.. 1996 What is Southeast Asian About Lapita? In T. Akazawa and E. Szathmary, eds., *Prehistoric Mongoloid Dispersals*, pp. 324-348. Oxford: Oxford Univ Press.
- \_\_\_\_\_. 2001. Who Cares What Time It is? The Importance of Chronology in Pacific Archaeology. In Anderson, A., I. Lilley and S. O'Connor, eds., *Histories Of Old Ages: Essays in honour of Rhys Jones*. Canberra: Pandanus Books, The ANU.
- Stanhope, John M. 1969. Competing systems of medicine among the Rao-Breere, Lower Ramu River, New Guinea. *Oceania* 19:137-145.
- Stewart, Pamela J. Stewart and Andrew Strathern. 2002. *Gender, Song, and Sensibility: Folktales and Folksongs in the Highlands of New Guinea*. Westport, Conn.: Praeger.
- Strathern, Andrew. 1988. Self-regulation: an interpretation of Peter's Lawrence's writing on social control in Papua New Guinea. *Oceania* 59(1):3-6.
- Sullivan, Nancy, Francis Akuani, Moses Angasa, Jennifer Kunoko, Jpseph Ranbubu, Daniel Tira, Thom,as Warr amd Christian Dominic. 2003 *An ethnographic survey of the Kenege, Araka, Yagovat and Ivorab people within The Nature Conservancy's project zone of the Almami Local Level Government, Bogia District, Madang Province*. The Nature Conservancy, Port Moresby; 2003.
- Swadling, Pamela. 1984. Sepik Prehistory (unpublished paper) , presented at the Wenner-Gren Foundation for Anthropological Research International Symposium, Basel, Switzerland.
- \_\_\_\_\_. 1990. Sepik prehistory. In *Sepik Heritage: Tradition and Change in Papua New Guinea*, ed. N. Lutkehaus. Durham: Carolina Academic Press, pp. 71-86.
- \_\_\_\_\_. 1997. Changing Shorelines and Cultural Orientations in the Sepik-Ramu, Papua New Guinea: Implications for Pacific Prehistory. *World Archaeology*, 29 (1), Riverine Archaeology: 1-14.
- Swadling, Pamela and Nick Araho. 1986. Sepik-Ramu fieldwork report, 21 September-19 October, 1986. Waigani: National Museum and Art Gallery.
- Swadling, P., J. Chappell, G. Francis, N. Araho, and B. Ivuyo. 1989. A late quaternary island sea and early pottery in Papua New Guinea. *Archaeology in Oceania*, 24:106-9.
- Swadling, Pamela, Brigitta Hauser Schaublin, Paul Gorecki and Frank Tiesler, 1988. *The Sepik-Ramu: An Introduction*, Port Moresby: PNG National Museum
- Swadling, Pamela and Robin Hides, 2005. Changing landscape and social interaction: looking at agricultural history from a Sepik-Ramu perspective. In A. Pawley, R. Attenborough, J. Golson and R. Hide, eds., *Papuan Pasts: cultural, linguistic and biological histories of Papuan-speaking peoples*. Canberra: RSPAS, the ANU, pp. 289-328.
- Terrell, John. 1986. *Prehistory of the Pacific Islands*. Cambridge: Cambridge University Press.
- Thomas, Benside and Hughes, Philip J. 1995. *Rapid environmental appraisal of the Adalbert Ranges, Madang Province, Papua New Guinea*. Port Moresby: UPNG, Faculty of Science.

- Thurston, William R. 1994. The Legend of Titikolo: An Anem Genesis. In Counts, David R., Thomas G. Harding and Alice Pomponio, eds. *Pacific Studies, Special Issue: Children of Kilibob; Creation, Cosmos and Culture in Northeast New Guinea*. Vol 17, No 4. Pp.
- Tuzin, Donalf. 1977. Reflections of being in Arapesh water symbolism. *Ethnos* 5: 195-223.
- Wabei, Turuk. 1970. Kilibob. In *Two Plays from New Guinea*, ed, P. Healy. South Yarra, Melbourne: Heinemann Educational Australia.
- Walsh, R.J. 1970. Preliminary survey of the fungi of the Madang area, Papua New Guinea. In Scripps Institution of Oceanography, La Jolla, R/V Alpha Helix New Guinea expedition, May through November 1969 Field Reports.
- Wedgewood, Camilla H. 1934. Report on Research in Manam island, Mandated Territory of New Guinea. *Oceania* 4(4): 373-403.
- Worsley, Peter Maurice. 1957. *The Trumpet Shall Sound. A study of 'cargo cults' in Melanesia*. New York: Schocken Books.
- Wurm, S. A. 1975 *New Guinea Area Languages and Language Study*. Volume 1. Papuan Languages and the New Guinea Linguistic Scene. Pacific Linguistics. Series C. Volume 38. Canberra: Australian National University.
- Z'Graggen, John Anton. 1970. Languages of the Western Madang District. In *Pacific Linguistic Studies in Honor of Arthur Capell*, ed. S.A. Wurm and D.C. Laycock. Canberra: ANU RSPS Department of Linguistics, Pacific Linguistic Series c no. 13, pp, 1271-1292.
- \_\_\_\_\_. 1983. Topics of New Guinea Legends. *Asian Folklore Studies*, Vol 42: 263-288.
- \_\_\_\_\_. 1987. Myth and origin of language in the Madang Province, Papua New Guinea. In *A World of Language*, ed. D.C. Laycock and W. Winter, pp. 745-750.
- Zimmer-Tamakoshi, L. 1997a. Everyone [or No One] a Winner: Gende Compensation Ethics and Practices. In *Compensation for Resource Development in Papua New Guinea*, ed. Susan Toft, pp 66-83. Papua New Guinea Law Reform Commission Monograph No 6, Port Moresby: Law Reform Commission and Resource Management in Asia and Pacific. Canberra: RSPAS, the ANU.
- \_\_\_\_\_. 1997b. Moga-Omoi's Daughters. *South Pacific Journal of Philosophy and Culture* 1:1-20.
- \_\_\_\_\_. 1997c. The Last Big Man: Development and Men's Discontents in the Papua New Guinea Highlands. *Oceania* 68(2):107-22.
- \_\_\_\_\_. 1997d. When Land Has a Price: Ancestral Gerrymandering and the Resolution of Land Conflicts at Kurumbukare. In *Rights to Land and Resources in Papua New Guinea: Changing and Conflicting Views*. Special Issue, ed by Paula Brown and Anton Ploeg, *Anthropological Forum* 7(4):649-66.
- \_\_\_\_\_. 2006. Uncertain Futures, Uncertain Pasts. Unpublished paper presented at a working session entitled Mine Closure in the Pacific: Past Experiences and Anticipated Futures,' organized by Dan Jorgensen and Glenn Banks, at the ASAO annual meeting February, San Diego, CA.

## **APPENDICES**

### **Village Assessments**



#### **1. MARANGIS Village**

Marangis is located at the river mouth of the Ramu River and stretches along the coastline towards the east where it meets the East Sepik coast.

Geographically, the people of Marangis survive on the river and also from the ocean in terms of food and income opportunities. Fish supply in the area is of great number because they catch fresh water as well as salt water fish. For their gardens, they go inland to do their gardens or make sago. Cash crops like cocoa, vanilla, buai and cococnut also grown inland in fear being destroyed by natural disasters and also the soil near the coastline is not that fertile.

##### **· Main sources of income:**

- A. Buai-sold mainly to the highlanders. The price for each bunch is K5 to K20 depending on the size. A bag is sold on K25 to K70 per bag.
- B. Cocoa- sold to buyers in town. More people are in the village are growing cocoa since the price is good. There are two types of cocoa grown in the village the types are; a)-hybrid cocoa and b) German pod. There are three fermenteries in the village. People who own the fermenteries are normally the local buyers. The current price for wet beans bought by local buyers is K1.60 per kilo.
- C. Copra-depending on price, the produce is sold to buyers in town. Because of the enormous physical exertion involve in the production there are not many people doing copra in the village.
- D. Fish-mainly sold in Bogia and sometimes sold to buyers from town (Madang).
- E. Vanilla-there is no market thus people are being discouraged to cultivate and produce
- F. Shark fins-the fins are sold according to their grades. The grades depend on the types of fins. There are prices for side fins, top fins and tail fins. The fins are normally sold at K300 per kilo.
- G. Crocodile skins and live crocodiles- the crocodiles are also sold according to their grades. The two grades are Fresh water crocodiles (B grade) and Salt water Crocodile (A grade). The salt water crocodile is more expensive than the fresh water crocodile.

##### **Services**

- The only school in Marangis is a upper primary school located at Mangarong. Mangarong was formally the hunting and gardening ground for the Marangis people until in 1987 when there was big earthquake which caused a big land slide at the river mouth and people moved inland in fear of their lives to make a new settlement in Mangarong.

- There are number of trade stores in the village that people can buy store goods
- For people to travel to town they will have to paddle their outrigger canoes crossing the river mouth and walk for an hour or so on the sandy beach to via Bodbod to Kaiyan village and then get a PMV to town. Though the journey sounds exciting on the sandy beach but it will be very tiring when you are carrying loads. Kaiyan village is where the national highway to Bogia ends so people from villages further after Kaiyan have to take their own risk to access PMV in Kaiyan.
- Sacred Sites- there are sacred sites at the river mouth as well as along the river. One significant site is at the river mouth where there is a huge masalai snake.

Interviewee: Ester Suku  
22/08/ Magarong Village (Marangis)

### **Social, cultural and spiritual use of the river**

- There are spirits living at the river mouth, there are two male spirits and a female spirit living there. Religious influences have made people lost beliefs in those spirits.
- During dry season is good for fishing. When there is back tide from the sea into the river there are more fish.
- During the times of the fathers and grandfathers there were songs and dances about those spirits of the river but today there are none because of Christianity.
- Ramu is very helpful, because it provides fish, food and building materials.
- When there is flood there is shortage of fish but there are crabs that we got to eat. There is not much shortage in the supply sago and other garden produce. During folding it is easy to catch pigs. Flooding also destroy gardens.
- Cultural and traditional practices are slowly losing their values in the village. Especially young people of today are losing interest in cultural and traditional practices.

### **Economic and agricultural use**

- Things sold at the market are fish and sago
- There is also the practise of **Senis Basket** where we trade with people from other villages. There is also exchange within the community. We do **mortuary trade with the Manam Islanders**. *‘Manam em taim bilong dai, mipla ksim saksak I go daun na senis wantaim galip’*. Sago and baskets are exchanged for galip nuts.
- Transport is a big problem when doing business. Fuel cost of outboard motor has gone up making hard to get garden produce and other things to sell in bigger markets like Bogia market of to Madang town.
- There is proper market in Bogia where most of the catch and garden produced are taken there and sold.
- Transportation is a difficulty for us in terms of bringing dried cocoa beans to sell in town. Many people in the village sell only wet cocoa beans to local buyers who are mainly the owners of cocoa fermentaries. The price of wet beans varies from K1.40 to K1.60 per kilograms.

### **Services**

Health services are accessed in Bogia

### Use of river

- The river is important for transportation
- Used for washing and laundry
- They don't drink from the river. "*Long dring em nogat, mipela save digim ol hul wara long graun na kisim wara long dring*". Drinking water is fetched from wells.

Interviewee: Ester Suku (38 yrs old female), Marangis village. 22/08/09

- We have spirits in the river especially at the river mouth where there are two main spirits living there. Today because of the influence of Christianity the power of these spirits are reduced.
- During dry season the sea flows into the Ramu bringing more fish to the river mouth and that we make catches.
- The river helps us in many ways, it provides fish, we access our gardens by using the river, we bring building material via the river and many other good things it provides.
- Main source of family income; fish, sago, buai and daka, basket sell these things in Bogia market
- Barter system; trade sago for galip with Manam Islanders. This trade is done mainly during death ceremonies.
- We have a up top up school in the village. For health services we go to Bogia station.
- *Mipela usim ramu long waswas na wasim ol samting long dring na cook em nogat. Mipela save ol hul mipela dikim long ol graun insait.* We use the river for washing and laundry. For cooking and drinking we get water from dug up wells in land.
- Sources of household income; cocoa, fish, buai and daka and copra. Fish and cocoa are the two main sources for most households.
- Cocoa wet beans were K1.40 per kilo has risen to K1.60 and buyers are very soon looking at buying at K2 per kilo.
- *Krai insait long bel bilong mi em long gavaman mas stopim ol mining I wok long kamap long het bilong Ramu bikos em bai bagarapim mipela ol lain long tambolo. Ino bilong mipela tasol mi tingting ol pikinini bilong mipela bihain taim.*

## 2. TZUMBAR village

The people of Tzumbar are believed to have migrated from the swampy inland of the East Sepik (Keram) and settled along the Ramu River. People from the same wave of migration are believed to have also settled in other places further upstream along the Ramu. The people of Anaberg (Wukibu and Watabu) Grengabu and Nodobu are of that migration. They speak the same vernacular despite being geographically separated from each other. And these people have a very close family relations with the Keram people. There has not been any school in the village for 62 years. The only school in the village is the Integrated Christian School (ICS) which started in 1997 and is an AOG church run school. The school integrates the learning curriculum from England.

### Social and Cultural

There are nine clans in the village. Clans are referred to as business. Clans have their allies and rivals. For example, the tulip clan and the pig clan are two allies and are referred to as 'Poro' clans. The restriction is that there is no intermarriage in the two clans. Tulip and tarangau are enemies and they do exchange marriage among themselves.

The local vernacular is called *Bakindi* and is spoken by other villages like; Banem (Sogeram), Sungribu, Koitobu, Gengabu, Dibu, Watabu, Batobu, Moibu, Nodobu, Chabu, Krangabu, Nanabang, Wukibu, Jam and Jutibu.

### **Economic**

There is a form of exchange called the **Poro Exchange** in the village. This is not ordinary exchange but a form of exchange done purposely to raise money. For instance, if a women group in the village who has financial need for something then they would ask another women group to do the exchange with them.

There is normally an exchange fee for the exchange which each member of both group engaged should pay during the exchange. The exchange fee charged depends on the nature of the fund raising drive. If the fund raising is for a big project or to build a church or anything of such nature then the fee will put at K50 to K100 per person. If the fund raiser is for something minor then fees can be charged at K10 to K20 per women.

Women from each group will choose a partner from the other group as her exchange partner. On the marked day of the exchange, each woman will bring cooked food and exchange with the friend they have chosen. Not only food but other items are also exchanged during the ceremony. The money that are being paid as exchange fees by each woman are put into a basket and given to the group who has called on the exchange. The exchange can be done until the required amount is raised. The exchange itself is a reciprocal process done within the village and also with people from other villages. This is a very fast way of raising money.

### **Sources of Income:**

- Cocoa-dry beans are sold at K320 per bag (60.5 kg). There is great potential for high production of cocoa but due to the inadequate knowledge and skills in growing and producing cocoa, the production is done at low rate.
- Buai- mainly sold to highlanders. This trade has also changed the life of people in the village. Due to the heavy cash flow generated from the sales of buai to the highlanders, people are buying expensive material assets like outboard motors, generators, hi-fi stereos, TV screens, solar panels, modern cooking utensils and other expensive items. Since people have money they shifted from consuming garden food and sago to relying on store goods like rice, tinned food, coffee, sugar, salt, noodles and other store goods that are normally on supper menu for people in town. The consumption of alcohol in the village has also risen. Drugs like marijuana are now common in the village as a result of highlanders flocking to Ramu to buy buai.

### **General concerns**

Anthon Gai- village recorder



- “I gat sampela senis I kamap long Ramu. Long bipo olsem long 1960’s na 1970’s wara em I bin gutpela long dring, kuk na waswas long em. Long nau sapos yu waswas bai yu pilim bodi bilong yu pen”

Mr. Harry-headmaster IC School.

- “If the government does stop the mining activities upstream then we will be the victims without any benefits”

Interviewee: Albert Maina (57 yrs old male) Ward councilor WRD 16-Arabaka LLG, M/Ramu District. Tzumbar village, 26/08/09

- The two main sources of income for most of us are buai and cocoa. We are getting good money from these two cash crops. Highlanders come and buy buai and we have local cocoa buyers in the village.
- Outside influences have changed the integrity of the village. Young people are using drugs like marijuana and consuming alcohol and are doing nuisance and disturbing other people. Such behaviors are not accepted in our society. Our fathers until my time we never had people behaviors, it is the young people today who are doing those things because of outside influences.
- No proper basic services in the village though I have fought for a school since 2002.
- *Ramu mi lukim ol senis em pis I dai, skin solap taim yu waswas na kala I senis.* These changes started around 2006 when fish were dying and floating the river. Until today there are more fish that are dying in the river.
- The land that we are settling on is traditionally owned by the Wakam people on one side and the Romakin people on the other side. When our fore fathers first came here they made asked those people and where given over the land through some form of agreement.
- There is fewer catch of today compared to 20 years ago, “*bipo taim Ramu I save kam pis I save bagarap*”
- Many cultural practices have lost their values in the society.
- Before the mining company can start with its operation it should help us people downstream by providing us with other supply sources. If it cannot do that then we want the company to stop operation. *Mipela I pretim ol chemicals bilong mine long kam daun long wara na bagarapim mipela.*



### 3. WUKIBU village

Basic services like health and education are accessed in Aiome and Anaberg.

To access town service or sell cash produce like cocoa, people travel for two days to Boko Bridge in Aiome. The boat fare is K70 per head and the PMV fare to town from Aiome is K15 per person no age category. Though, travelling via Aiome is very expensive and lengthy people consider this route as the safe and convenient way. The other route is via base camp in Bosmun but due to nuisance by people especially the young men, most people fear their lives and properties, thus preferring the Aiome route. The three main religious affiliations are Roman Catholic, SDA and COC (Church Of Christ).

#### **Social and Cultural**

People prefer drinking and cooking from Ramu because it tastes good. People also believe that drinking from Ramu can also heal sicknesses. Alex Jamkuri (32 years old male) said, *“Bipo taim mi dring Ramu em I save swit na mi save pulap na tu taim mi gat sick na mi dring mi save orait”*.

#### **Economic**

There is a school market in Anaberg on Mondays, Wednesdays, Thursdays and Saturdays and another village market on Tuesdays and Fridays. These markets enable people to sell fish, sago and other surplus garden produce to generate income for their family.

There are four trade stores in the village which people access to buy store goods.

There is one fermentary in the village which the entire community takes turns through their clans to process their cocoa for selling. The produce are mainly taken to Boko bridge in Aiome and then taken to town on hire vehicles. This exercise is very expensive.

#### **General concerns**

- Limon Mosa (45 years old male) - leader of a women group in the village and also a community leader. *“Bipo i no gat planti waisani I save kamap namel long wara olsem long nau”*. Today there are sand banks occurring at places where there weren't before. These have moreover made people spend extra on fuel when travelling on outboard motors to Aiome or Base Camp (Bosmun) to go to town. *“Dispela I mekim na mipela isave lusim bikpela moni long baim fuel long taim mipela ron long motor igo long base camp or Aiome”*
- Betty (35 years old female)-a mother of four, *“Mipela I lukim ol kainkain ol strongpela sick, sua na grille I kamap long ol pikinini bilong mipela we bipo I nogat”*
- Bob Keto (50 years old male), *“Laip bilong mipela long ples I sanis bikpela tru, planti man long ples I wok long kaikai long ol samting bilong stua bikos climate I change na affectim ol season bilong planim kaikai long ol garden so ol kaikai I no kamap gut”* Life have changed dramatically in the village. a lot people are now depending on store goods rather than garden produce because our gardens are not producing enough due to the changes in the planting and harvesting seasons.

Interviewee: Joe Guzali (59 years old) 28/08/09, Wukibu LLG Ward: 6

- People from Wukibu originated from the mountains of Aiome in the Upper Ramu District. Their ancestors moved down from the mountains following the river and settled in the villages now known as Wukibu and Kregabu. Some moved inland to settle in place now know as Keram, which is in the East Sepik Province. Some of the people who have settled in Keram later decided to migrate back and married those who have settled outside the river in order to access services by river and make business. Thus, the people of Wukibu and Kregabu are closely related to the people of Keram in the East Sepik Province because they share the common origin and ancestors.
- The German missionaries first settle in Anaberg in 1938. During that time the river was not wide as it is today and people build bridges and walk across to Anaberg Station, which is on the other of the river to Wukibu. Today the river has naturally changed and has widened the size.
- Drinking water does not taste good like before which has a good taste when drinking.
- Young women when having menstruation for the first time are not allowed to wash in the river. Mothers will collect water from the river using limbum containers and take them to a marked place where the women would wash. This is done simply to preserve the purity of the water that people depend entirely on for daily survival.

Xavier Winata (71411271) from Kwanga Village, tells us that the Sogaran Wara and Guam River are also more sedimented now than before. They use well water along the

Ramu river to drink, but when it floods they can only use the river for drinking , which is important . From Kurumbukara run off. The river color is changing.

### **Social, cultural and spiritual use of Ramu River**

Ramu River has a special connection to its inhabitants especially the people. The river is used for drinking, cooking, doing laundry, washing cooking and eating utensils, washing sago, Leisure and most importantly as a mode of transportation.

The river is only mode of transportation for the people. Through the river they access health services, schools and other basic services which are vital for survival. People use the river to access their gardens on daily basis. People go to town to sell their agricultural produces, cash crops or buying store goods for household consumption or trade stores by river.

The river also has a huge impact on the cultural setting of the people. For instance, the Bosmun people in the Lower Ramu, and the people of Missingi and Kwanga in the Middle Ramu were believed to have been the original settlers of the Ramu since pre-historic times. Therefore most of their cultural practices, traditional song and dances, artifacts, legends, stories, myths, norms and taboos have significant connections with the river.

Apart from any other village in the lower or middle part of Ramu, the Bosmun people have claimed themselves to have created and were put on that land right from the start.

Initiation practices include boys going into the haus man to become men and woman staying in haus meri when they have their first menstruation.

### **4. WATABU village**

The village has a total population of 879 people. Out of the total, 360 are eligible votes. The first Catholic missionary to the village was Fr. Lambrok in 1909. During his encounter with the people he destroyed main sacred items that were of great value to the people.

### **Social and Cultural**

- Simon Kunabe (28 years old male), “*wara em bikipela samting tru long mipela na sapos em I bagarap mipela bai kisim bikipela bagarap*”. *Mipela save dring, kuk kaikai na was was long em*. The river is very important to us and if it flawed we will suffer greatly.
- Derrick Brian (32 years old male) Community manager

### **Main sources of household income**

- Sago-the village is known for its large yield of sago year around. This is so because the village is situated near large swamp areas.
- Cocoa-

- Buai- a seasonal cash crop.
- Village/local marketing- women access these markets to sell cooked store goods like flour and rice and also surplus garden produce like yam, ripe banana, packed sago and others.

Fishing is done mainly for household consumption. Only when there is surplus, they are being sold at the village market or exchange with other people for sago or other garden produce like her garden produce like yam, taro or banana.

## **5. GRENGABU Village**

About forty years ago the Grengabu people lived further inland towards Keram River (ESP). They then moved outward to settle in where they are today. The main reason for them to migrate outward to Ramu is for them to access the river and make business or access services in Madang since Wewak is very difficult accesses from Keram. This is not only for these people but is the same reason for other villages like, Wukibu, Watabu, Tzumbar and Akurai villages who have migrate out to Ramu from the same area.

Rangade Govi (40 yrs male) & Samuel Baira (30 yrs male) tell us:

Before there were more times of very high floods which bring more supply of fish, tortoise, eels (maleo) from the swamp in the bush outwards to Ramu and there is a lot of catch. But today there are no high tides. The last high tide happened some 20 years ago. Today there are more sandbanks occurring at places where before the water was flowing with strong current. Young children haven't witness those high tides which brought the huge supply of fish. During those years there was no shortage of fish in Ramu like we experience today.

The original water has dried out and sand banks have formed stretch about 100 meters from the village. Previously the village was very close to the river. Women walk about 100 to 200 meters on the stretched sandbanks to collect water for drinking and cooking because the river has dried out and extend further out.

Health services are accessed in Kwanga and Anaberg health centers which is about 3 hours on foot. The only aid post in the village has ceased operation since 1998. Schools are accessed in Chungribu.

### **Sources of household income**

- Buai- a seasonal cash crop. The price range from K150 to K200 per bag (50 kg)
- Cocoa- household sell wet beans to fermentary owners to earn some money.
- Sago

When there is shortage of fish in the village people buy at K2 to K5 per fish from Watabu village. There is no shortage of sago in the village because there are stretches of swamp close to the village.

There are concerns about new skin disease children are getting from wash in the river. Tony Qundi (43 yrs old male) *“ol pikinini bilong mipela I wok long kisim ol niupela sik long skin we bipo inogat.”*



## 6. MISSINGI Village

- Children are having rapid diarrhea as result from drinking water from Ramu. Health workers from Kwanga health Centre have confirmed the cause. Advice given by the health workers is to restrain from drinking Ramu
- There is a big health centre and a upper primary which provide adequate service to the people.
- There is village court in the village responsible to settle any disputes or conflict and lawless behaviors in the community.

### Interview

Missingi Ward-15/Middle Ramu

Taitus Brodmo (39 yrs) - school committee- Kwanga

- *Ramu I bin gutpela tru long bipo. I nogat planti basis na wara I bin deep.*
- *I bin gat planti masalai we ino gat tude.*
- There are cultural practices like boys going to the *haus man* and other traditional ceremonies that we get things from the river to stage those activities. When there is high tide or flood we get abus from the forest and fish in the river. Just at the beginning of the year 140 boys just returned from their initiation from the *haus man*.

- Fish and turtles have special customs that we do when the boys are in the *haus man*. There are particular species of fish for the customs which we hardly find them today because our water has changed due to developments like mining, Ramu sugar, Ramu oil palm, Ramu beef and the Sogeram logging RH.
- The lives and cultural practices of the people depend entirely on the river.
- Soil along the river has lost its fertility so gardens are not producing expected yields per harvest.
- There are customs involve on planting certain food crops like yam. *Bipo ol tumbuna save wokim custom na planim yam long liklik graun na planti kamap. Nau mipela bihainim ol dispela custom na planim yam long bikipela hap tasol I no save kamp gut na palti osem bipo. Dispela I mekim na mipela ino moa bilip long ol dispela customs.*
- *Ol merit aim ol I lukim period blong ol, ol I no save go long ramu long wanew ol I prët long masalai nogut bai em igivim sik long ol.* Women seeing their menstruation period do not go to the river because they are afraid of spirits in the river. This sprits can give them sicknesses. Today there is abuse of such practices.
- In terms of business, the river is very important. “*Wara blong mipela em rot bilong mipla na nau wara I wok long drai em I asua ya*”

Interview at Missingi Ward-15/Middle Ramu

Christopher Mutara (37 yrs old male) -Village Recorder

- The total population of Missinigi is 1051 people. 700 are eligible voters. (updated figures)
- The people of Missingi migrated down from the Aiome.
- There are 10 clans in the village
- The patterns of bilums which women weave are one way that the different clans are distinguished. The position of the feather of bird of paradise on headdress of men during singsings distinguished the position of the individual in the clan.
- During dry seasons it the best time for people to fish. The dry season starts from June and ends in December
- The high tide starts on December and ends on March. This is not good time for fishing.
- Gardening: May-cutting down of bushes, burning and preparing the land
  - Jun-July-planting of crops starts
  - November-harvesting starts with crops like vegetables, greens and other fast growing crops.
- Main source of income: buai and cocoa
- *Taim mipela waswas long wara mipela save pilim skin hot and skin sikirap.*
- *Pekpek wara I kamap bikipela long ples.*
- *Bipo wara em I taste gud na em i deep na tu wara nau em I senis kala na kala I luk dirty tumas*
- More sand banks are occurring in the river causing people to spend more monering in the river causing people to spend more money on fuel when travelling.

- There was a high flood in 2007. The flood destroyed food gardens and cash crops like cocoa. There were 3 people killed during that time, two of which were small girls.
- If there is no Ramu we won't be able to survive because there is no other source of water apart from Ramu. "*Sapos inogat Ramu mipela ino inap stap bikos ino gat narapela rot bilong kisim wara.*"

Interviewee: Titus Broto (45 yrs male)

Place: Missingi village-WRD 15-Arabaka LLG, Middle Ramu Dist.

- My ancestors migrated a long time ago from the highlands of Aiome and came settle here along the Ramu.
- *Bipo long taim bilong ol papa na taim bilong mi tu Ramu em I bin gutpela tru. I bin I gat planti basis na wara I bin deep stret.*
- There were cultural practices that involve something from the river. For instance, the fish Kondong and turtles are specially used for rituals done during the initiations in the haus man when boys are being from boys to young men.

## **7. BANGAPELA Village**

The community consists of people from many ethnic groups. There are people from the floodplains of the Sepik who have migrated and lived there for many years. As a result the cultural setting of the village is not compact. It is also one of the biggest villages along the Ramu in terms of its population density. From the impression, the life of the people has shifted from traditional subsistence way of living to a modern economic society. The population of the village is over one thousand people. The local vernacular is would one form of the people has lost its value. Only a handful older people are speaking the vernacular while the younger generations are communicating in Tok Pisin.

- There are lot business activities in the village. There are more trade stores in the village compared to other villages.
- The village has cocoa corporative society in which they buy cocoa from local growers process the beans export direct overseas. The business owner is a local by the name of David Wara.

## **8. JUKIN Village**

- The village was first settled by an old man named Mambura (the chief) in 1962. He migrated from the foothills of the mountains of Bogia. The reason for the settlement was for him to do business using the river. In 1965 after three years more people started out from the inland and settle along the river and formed the village today known as Jukin.
- The school in the village was established in the 1970's.

### **Sources of household income**

- Cocoa



- Buai has generated a lot of money in the community. This has obviously changed the life style of people. Many people have now owned expensive material assets. Daniel Mambura (40 yrs old male-former government worker and now a local businessman) says, “the River has helped our fathers in making business and making. Today the river is still of great importance to us in terms of business. I make around thirteen to fifteen thousand kina in a month during buai seasons”.
- Motor hire business-since there are more business activities in the village, people are putting their outboard motor for hire by other villagers and highlanders who goes there regularly to buy buai.

Interviewee: Joseph Mambura (48 yrs old male)-village chief

- Jukin has a population of over 2000 people, men, women and children.
- There is a sub-health centre and a top up school in Kaiyoma which is an area covering Jukin. The school started in 1978 by the government but today it is managed and run by the community itself without any support from the government. The health centre has been in existence for 20 years now.
- There are six clans in Jukin. Most of the clans still exist today. Most do not own portion of the river because we are all migrated settlers.
- There are cultural practices in the village. Young boys still go to *haus man* today.
- There are cultural practices for growing children, spiritual practices for hunting, gardening and fishing. There are magical spells done and given to people for hunting and also are given to the hunting dogs. “*Mipela igat ol malira bilong painim abus o givim long old dok na bilong wok garden tu.*”
- There are things in the river that we used for certain practices like *haus man*. *Ol bikpela kindam, maleo na mit bilong pukpuk mipela save usim long cook na givim long ol mangi tai mol I stap long haus man bilong givim strong na growim bodi bilong ol.*
- There are traditional songs and dances that are still being practiced today. But when men are preparing for the traditional singsing occasion, they are not allowed to sleep with their women and children or eat food which their wives have prepared. Rather they will spend time in the *haus man* preparing until the day. If they break this taboo the singsing will not be performed well.
- There is a renowned traditional song in the village. The song is called *Juangam* in the local dialect and it originates from the river. The song is sacred and not sung unnecessarily, only on special occasions. They are taboos that men follow when preparing to perform this song. After completing the time in the *haus man* in preparation of the singsing, the final step is for the men to go and wash in Ramu. The interviewee gave an account of the origin of the song.

*Long taim bilong ol tumbuna igat wanpela masalai I stap long Ramu na I save tanim kamap olsem man tru na kam prenim ol meri taim ol I go umben long pis long wara. Taim em I lukim ol meri I kam long wara em I save tanim kamap man na wokim dispela singsing Juangam na bai olgeta meri I laikim em na em bai lainim olgeta na prenim long wanpela taim tasol.*

*Masalai Isave wokim olsem long ol meri bilong ples long olgeta de. Em I wokim i go wanpela taim wanpela meri bin karim pikinini bilong em I gat*

*kain olsem 5pela krimas tu igo long umben. em putim pikinini long bilum na hagamapim long wanpela diwai na I go joinim ol narapela meri na umben long pis istap. Taim dispela masalai lukim ol meri, em I kam tanim olsem man pinis wokim singsing Juangam. Taim ol meri I harim dispela singsing na masali danis olgeta I dai stret long em. Orait masalai I kisim olgeta dispela meri I go lainim ol long waisan na prenim ol. Masalai I bisi long ol meri na em I no lukim pikinini I hangamap long diwai na lukluk I stap*

*Taim masalai I pinis na I go bek, meri kam kisim pikinini na I go bek long ples tasol em ting olsem pikinini I no lukim wanem samting I kamap. tasol pikinini ya em bikpela na inap long toktok olsem na taim ol I kamap long ples pikinini I stori long papa bilong em long wanem samting masalai I wokim long mama wantaim ol narapela meri. Papa I belhat na go bungim ol narapela man blong ples na ol I wokim plan bilong kilim dispela masalai. Ol I kamap wantaim plan pinis na narapela dei ol igo long kilim masalai.*

*O man I salim ol meri I go long umbenim pis olsem olgeta de ol I save wokim na ol man I hait na weit I stap. I no long taim ol I lukim masalai I kam tanim kamap man wokim singsing na I redi long prenim ol meri blong ol. Orait ol man I kwik taim go holim pasim em pasim lek han bilong em na kisim em I go long kilim em. Tasol bipo long ol I kilim em, masalai I tokim ol man bilong ples olsem em bai lanim ol long wanpela singsing.*

*Orait nau masalai I lanim ol man bilong ples long singsing Juangam na em I tokim ol long ol tu lo bilong singsing na ol tambu bilong en. Laspela samting em tokim ole m olsem dispela singsing em bilong kisim ol meri olsem na ol meri I noken save long dispela singsing.*

- The powers of the spirits of the river were very strong and obvious until after 1962. It was after the influence of missionaries that people were made to believe that those practices and beliefs were evil and wrong. When people started believing Christianity, many lost their connection with the spirits of their surroundings.
- During dry seasons we get fish from the main river and after high tides we also get fish in swampy ponds and lagoons in the inner lands which have been brought in by the high tides.
- The high tides also bring fertile soils on the river banks to the inland which are good for gardening and growing cash crops like coconut, cocoa and buai.
- *Ramu em laip blong mi. every day stap blong mi long ramu mi kaikai long em na mi stap. sapos Ramu bagarap em laip bilong mi Ramu man em bai pinis. Mi bai go long coffin.*
- *Ramu em natural highway bilong mipela we God I putim bilong helpim mipela long salim ol cash crops bilong mipela na wokim moni bilong helpim laip bilong mipela.*
- Today there is a change in our traditional calendar for planting and harvesting (gardening), fishing and hunting. The season are not in time as it was in the past according to our calendar. *Nau dry season I stat late na pinis late na high wara save kam hariap na pinis late.*

According to the traditional calendar, Dry season is from June to July and its time making gardens. From September to October is the best time for fishing. When it comes to November, high tide or wet season starts. These have changed greatly today which also people's livelihood. People are confuse on when to make gardens because when comes Jun and July there is still rain. Then the dry season starts early in the mid September and goes to December which many caused suckers, stems, seeds and other planting materials to decay.

- *Taim mi liklik mangi na papa kisim mi kam mi lukim kainkain pis na ol I bikpela tru. Dispela ol kain pis mi save lukim nau.* During my childhood days, there were variety of fish types and where huge in size which unfortunately, is not the case today. There were big moon fish, sharks, huge saw fish and giant crocodiles. It was until late 1990's that those fish where being caught in smaller size. By the year 2000 and onwards some of species like sharks and saw fish and other tumbuna (indigenous) species have extinct from our waters. Today fish catch have also dropped in number. The expected amount of daily catch by people have reduced. For instance, if someone's daily rate is 15 fish per day then it is being reduced to 7 or 8 fish per day.
- Even though the local MP Mr. John Hickey gave 4 water tanks to the village, it is not enough to support the population of two thousand people in a longer period and some of the tanks have become insolvent by natural cause and are useless.

## **9. AKURAI Village**

- People have migrated from the floodplains of the Sepik, in the Porapora area of Angoram District. This is one of the latest migration waves in 1969. After migrating to the Ramu they were still under the constituency of Angoram until 1973 when the court of law decided that Askurai should go under Bogia district.
- When it floods water brings new fertile soil inland and is good for growing garden crops. Flooding also assist people to bring building materials like big posts and other materials which are difficult to carry in canoes. However, today there have not been any high tides or floods happening. The last flood was about 10 years ago. Johny Ekwar (45 yrs old male).

## **10. BOSMUN (Dongan and Nemnem) Villages**

Bosmun is one of the oldest villages in Ramu. They have myths and legends that send their history back to the creation era. Archeological sites in Dongan village have proven that people have lived there during the times of the inland seas. These sites were dug by Dr. Pamela Swadling, the archaeologist, while she was at the National Museum.

The people of Bosmun are closely related to the river. They have fishing, hunting and gardening rituals that signify this relationship. There are still sacred sites along their section of the river which remain honoured by the Bosmun. In the past, the Bosmun were fearless warriors who ruled the Middle and Lower Ramu. Indeed, archaeological evidence tells us that 6000 years ago Bosmun was an island in the Sepik-Ramu Basin, which confirms its precedence over any other Lower Ramu village.

- There are four main clans in Bosmun
  - a) Dongan
  - b) Goinbang
  - c) Mange
  - d) Rom

#### Source of household income

- Fish- is a main source of family income as there are more species of in Bosmun than other places.
- Cocoa
- Kina shell sales- Bosmun is considered as the major supplier of kina shells. People make a lot of money from selling kina shells to other villages and in Bogia

According to Pioneer Bible missionaries Kyle and Kathy Harris ([www.flyingfox.org](http://www.flyingfox.org)),

The Bosmun, numbering about 1300, live in an area up the Ramu river and to the west of the Mbore. Traditionally the Bosmun were the most feared people in the area. Their war canoes ranged up and down the river as their warriors attacked neighboring language groups. Typically a village would be destroyed, the men killed, and the women and children taken captive.



Image from [www.flyingfox.com](http://www.flyingfox.com)

These practices ended around the time of the Second World War and today the Bosmun are a proud and peaceful people. The Bosmun live in five main villages, the center of which is the village of Dongan. Dongan is located along a small tributary of the Ramu and it is here that the medical clinic, community school, and Catholic mission station are located. The Catholics established a work here early on and for a number of years a parish priest lived there. Like most of the groups in this area, however, many of the Bosmun people still cling to traditional religious practices. For them the gospel has had little or no impact on their lives.

The Bosmun people rely on their gardens and the jungle for their food and their living. Their main cash crop is cocoa but vanilla has also been recently started in the area.

**STRICTLY CONFIDENTIAL**  
**NUMBER:** [ ][ ][ ]

**QUESTIONNAIRE SERIAL**

**RAMU RIVER COMMUNITY INCOME SURVEY**

**SELECTION CRITERIA**

- [ ] Live in the village for more than 2 years
- [ ] Must be between the age of 18 and 50
- [ ] Able to understand and speak pidgin

**INFORMED CONSENT**

NSA is conducting a research on the subsistence patters of Ramu River villages, including the agricultural and fishing yields for each community. The objective is to establish a baseline of subsistence income for these villages to measure any potential changes as a result of changes in the river.

All information gathered will be confidential so you need not fear telling the truth or expressing your views. You can refuse to answer a question if you feel uncomfortable. You can also stop at any time of the study should you feel you do not want to continue. I hope you fully understand (if not explain further in your own words, also give opportunity for informant to ask questions for clarity).

I completely understand the nature of this study and agree to participate. I take full responsibility for disclosing the information I provide here for this study.

Signature of participant: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of researcher: \_\_\_\_\_ Date: \_\_\_\_\_

**STRICTLY CONFIDENTIAL**  
**NUMBER:** [ ][ ][ ]

**QUESTIONNAIRE SERIAL**

INDIVIDUAL QUESTIONNAIRE  
(For adults, male and female)

Q001. Village \_\_\_\_\_  
\_\_\_\_\_

Q002. Ward No. \_\_\_\_\_

Q003. LLG name \_\_\_\_\_

Q004. District \_\_\_\_\_

Result codes:

Completed	1
Partially completed	2
Refused to continue (at any part of the interview)	3
Other (specify)	88

INTERVIEWER: Code [\_\_\_\_|\_\_\_\_]

DATE INTERVIEW: \_\_\_\_ / \_\_\_\_ / 09

CHECKED BY SUPERVISOR:

Date: \_\_\_\_ / \_\_\_\_ / 09

Signature \_\_\_\_\_

**Section 1: Background**

No.	Question and Filters	Coding categories
-----	----------------------	-------------------

Q01	Circle the gender of respondent	Male [1] Female [2]
Q02	What is your age?	Write the age in the space [____] Don't know [98]
Q03	What is your highest level of education?	Elementary [1] Primary [2] Secondary [3] PETT [4] College/University [5] Never been to school [9] Other (specify:____)[8]
Q04	Which of these languages do you speak?  (Circle all that apply)	English [1] Tok pisin [2] Local vernacular [3] Other (specify)_____
Q05	Which of these languages can you read?	English [1] Tok pisin [2] Local vernacular [3] Other (specify) _____
Q06	What is your marital status?	Married [1] Divorced [2] Separated [3] Widow /Widower [4] Never Married [5]
Q07	Where were you born?	<i>Write name of the place, town, village, settlement in the space below</i>  [_____]

No.	Question and Filters	Coding categories
Q08	How long have you lived here in (name of Village)?	<p>Years [ ][ ]</p> <p>Months [ ][ ]</p>
Q09	What is the income of your household per fortnight?	<p>&lt;K25 [1]</p> <p>K25 – K50 [2]</p> <p>K51 – K75 [3]</p> <p>K76 – K100 [4]</p> <p>K101- K200 [5]</p> <p>&gt;K200 [6]</p> <p>Other (specify) _____ [8]</p> <p>Don't know [98]</p> <p>No response [99]</p>
Q10	What is your religious affiliation?	<p>Write the name of church in the space below</p> <p>_____</p>
Q11	How many people are in your household?	[ ]
Q12	How many children do you have, who live with you are?	<p>Under 18 [ ]      Over 18</p> <p>[ ]</p> <p>Married [ ]      Not Married</p> <p>[ ]</p>

## Section Two: Agriculture

No.	Question and	Coding categories
-----	--------------	-------------------



Filters																																																																																																																																																																																																													
Q13	Do you garden?	Yes [1]	No [2]																																																																																																																																																																																																										
		<b>If no, skip to Q21</b>																																																																																																																																																																																																											
Q14	If yes, how many gardens are located	(a) Along the river/near the river _____ (b) Further away from the river _____ (c) In the mountains/foothills _____																																																																																																																																																																																																											
Q15	15.1. What types of food plants do you grow: (Tick in the appropriate box)  a) Along the river  b) Further away from the river  c) In the mountains/foothills  15.2. When do you plant and harvest them?  d) Month for planting  e) Month harvesting begins (use month codes)  * (for <b>d</b> and <b>e</b> to write their codes: use calendar year for codes)  * crops planted all year round write 1-12	<table border="1"> <thead> <tr> <th>Types of crops grown</th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> </tr> </thead> <tbody> <tr><td>Aibika</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Aupa</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Bananas</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Beans</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Brus</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Buai</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Cabbage</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Carrots</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Corn</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Daka</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Galip</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Ginger</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Kambang</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Kapiak</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Kaukau</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Kokamba</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Kokonas</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Kumu gras</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Laulau</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Mango</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Marita</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Mon</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Muli</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Onion leaf (spring onions)</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Onions (round)</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Pawpaw</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Peanuts</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Pitpit</td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <th>Types of crops grown</th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> </tr> <tr><td>Potato</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Pumpkin</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Pumpkin tops</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>						Types of crops grown	a	b	c	d	e	Aibika						Aupa						Bananas						Beans						Brus						Buai						Cabbage						Carrots						Corn						Daka						Galip						Ginger						Kambang						Kapiak						Kaukau						Kokamba						Kokonas						Kumu gras						Laulau						Mango						Marita						Mon						Muli						Onion leaf (spring onions)						Onions (round)						Pawpaw						Peanuts						Pitpit						Types of crops grown	a	b	c	d	e	Potato						Pumpkin						Pumpkin tops					
Types of crops grown	a	b	c	d	e																																																																																																																																																																																																								
Aibika																																																																																																																																																																																																													
Aupa																																																																																																																																																																																																													
Bananas																																																																																																																																																																																																													
Beans																																																																																																																																																																																																													
Brus																																																																																																																																																																																																													
Buai																																																																																																																																																																																																													
Cabbage																																																																																																																																																																																																													
Carrots																																																																																																																																																																																																													
Corn																																																																																																																																																																																																													
Daka																																																																																																																																																																																																													
Galip																																																																																																																																																																																																													
Ginger																																																																																																																																																																																																													
Kambang																																																																																																																																																																																																													
Kapiak																																																																																																																																																																																																													
Kaukau																																																																																																																																																																																																													
Kokamba																																																																																																																																																																																																													
Kokonas																																																																																																																																																																																																													
Kumu gras																																																																																																																																																																																																													
Laulau																																																																																																																																																																																																													
Mango																																																																																																																																																																																																													
Marita																																																																																																																																																																																																													
Mon																																																																																																																																																																																																													
Muli																																																																																																																																																																																																													
Onion leaf (spring onions)																																																																																																																																																																																																													
Onions (round)																																																																																																																																																																																																													
Pawpaw																																																																																																																																																																																																													
Peanuts																																																																																																																																																																																																													
Pitpit																																																																																																																																																																																																													
Types of crops grown	a	b	c	d	e																																																																																																																																																																																																								
Potato																																																																																																																																																																																																													
Pumpkin																																																																																																																																																																																																													
Pumpkin tops																																																																																																																																																																																																													

		<table border="1"> <tr><td>Saksak</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Salt kumu</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Sugar cane</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Tapioc</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Taro kongkong</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Taro singapo</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Tomatoes</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Tulip</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Watermelon</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Yams</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Others (list)</td><td></td><td></td><td></td><td></td><td></td></tr> </table>	Saksak						Salt kumu						Sugar cane						Tapioc						Taro kongkong						Taro singapo						Tomatoes						Tulip						Watermelon						Yams						Others (list)					
Saksak																																																																				
Salt kumu																																																																				
Sugar cane																																																																				
Tapioc																																																																				
Taro kongkong																																																																				
Taro singapo																																																																				
Tomatoes																																																																				
Tulip																																																																				
Watermelon																																																																				
Yams																																																																				
Others (list)																																																																				
Q16	Which food crop is the largest yield per year?	<p>List in order</p> <table border="0"> <tr> <td>Name of crop</td> <td>Kilos (kg)</td> </tr> <tr> <td>1. _____</td> <td>_____</td> </tr> <tr> <td>2. _____</td> <td>_____</td> </tr> <tr> <td>3. _____</td> <td>_____</td> </tr> </table>	Name of crop	Kilos (kg)	1. _____	_____	2. _____	_____	3. _____	_____																																																										
Name of crop	Kilos (kg)																																																																			
1. _____	_____																																																																			
2. _____	_____																																																																			
3. _____	_____																																																																			
Q17	<p>a. What food crops are planted by men only?</p> <p>b. What plants do food crops are planted by women only?</p> <p>c. What months are these crops planted?</p> <p>d. Why?</p>	<table border="0"> <tr> <td><b>a. Men</b></td> <td><b>b. Women</b></td> <td><b>c. Month</b></td> <td><b>d. Reason</b></td> </tr> </table>	<b>a. Men</b>	<b>b. Women</b>	<b>c. Month</b>	<b>d. Reason</b>																																																														
<b>a. Men</b>	<b>b. Women</b>	<b>c. Month</b>	<b>d. Reason</b>																																																																	
<b>No.</b>	<b>Question and Filters</b>	<b>Coding categories</b>																																																																		
Q18	Does the village have a market?	<table border="0"> <tr> <td>Yes [1]</td> <td>No [2]</td> </tr> </table>	Yes [1]	No [2]																																																																
Yes [1]	No [2]																																																																			

	If not, where do you market food crops [another village]?	Name of market/place _____				
Q19	<p>a. Which foods do you sell? (tick yes or no)</p> <p>b. How many kilos of each per week?</p> <p>c. What is the price for each food at the market here?</p>	<b>a. Sell at the market</b>	<b>Yes</b>	<b>No</b>	<b>b. Kg/week</b>	<b>c. Market price</b>
		Yams				
		Kaukau				
		Tapioc				
		Bananas				
		Pumpkin				
		Pumpkin tops				
		Cabbage				
		Ginger				
		Kapiak				
		Kokonas				
		Corn				
		Kokamba				
		Pitpit				
		Laulau				
		Mango				
		Marita				
		Galip				
		Taro singapo				
		Taro kongkong				
		Watermelon				
		Mon				
		Saksak				
		Potato				
		Salt kumu				
		Kumu gras				
		aupa				
		Carrots				
		Tomatoes				
		Tulip				
		Aibika				
		Onions (round)				
		Onion leaf (spring onions)				
		<b>a. Sell at the market</b>	<b>Yes</b>	<b>No</b>	<b>b. Kg/week</b>	<b>c. Market price</b>
Beans						

		Sugar cane					
		Pineapple					
		Muli					
		Pawpaw					
		Peanuts					
		Buai					
		Brus					
		Kambang					
		Others (list)					
Q20							

### Section Three: Fishing

No.	Question and Filters	Coding categories									
Q21	Do you fish?	Yes [1]				No [2]					
If no skip to Q23											
Q22	Tick one option for Question <b>a</b> and <b>b</b> . Questions <b>c</b> , <b>d</b> and <b>e</b> will require money amounts.										
a. If so, which fish do you catch?											
b. Which do you sell at market?											
c. How much do you sell of each?											
d. How much money do you get for each kind of fish?											
e. What is the market price for these fish?											
Fish Species		a. Which fish do you catch?		b. Sell at market		c. Price of each fish		d. Total income per sale for each fish species		e. Market price for each fish species	
		Yes	No	Yes	No						
Barramundi											
Bikmaus—											
groper											
Bikpela											
kindam											
Bikpela											
maleo-											
Moray											

	Bikpela trausel Breach salmon Brook trout Bun pis— tarpon Catfish— mausgras pis Eel—Maleo Flagtail  Gam sel Garfish Goby							
	<b>Fish species</b>	<b>a. Which fish do you catch</b>		<b>b. Which fish for sell</b>		<b>c. Cost of each fish sold</b>	<b>d. Total income on fish</b>	<b>e. Market price for each fish</b>
		<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>No</b>			
	Herring— kol pis Japakap Jewfish Karua— mullet Kina sel Kindam-- Crayfish Kuka—crab Long maus pis—garfish Makau— tilapia Mangrove jack Mogurnda Moonfish Mosquito fish Mudskipper Mullet Nil pis— blowfish Perch							

	Perchlet Pipefish Raba Maus Red Bel Shad shark Snapper Speartooth Speartooth shark Sprat Tandan	
Q23	What other foods are sold at your market? For example: wild fruits, pork, eggs etc (List)	

#### Section Four: Economic

No.	Question and Filters	Coding categories																																																																
Q24	<div>a. Which foods do you buy with money?</div> <div>b. How much of each food do you buy <b>per fortnight</b>?</div> <div>c. How much do you spend per item per fortnight?</div>	<div>Indicate <b>1 for Yes</b> or <b>2 for No</b> as answers for Question <b>a</b>. Question <b>b</b> requires weights in kg. Question <b>c</b>. write the cost (K).</div> <table><thead><tr><th>List of Items purchased</th><th>a. Foods bought at the store <i>Yes / No</i></th><th>b. Kg/fortnight and or Quantity</th><th>c. How much you Spend/fortnight? (K)</th></tr></thead><tbody><tr><td>Biscuit</td><td></td><td></td><td></td></tr><tr><td>Bush knife</td><td></td><td></td><td></td></tr><tr><td>Chewing gum</td><td></td><td></td><td></td></tr><tr><td>Coffee</td><td></td><td></td><td></td></tr><tr><td>Cold drinks</td><td></td><td></td><td></td></tr><tr><td>Cooking Oil</td><td></td><td></td><td></td></tr><tr><td>Corned beef</td><td></td><td></td><td></td></tr><tr><td>File</td><td></td><td></td><td></td></tr><tr><td>Flour</td><td></td><td></td><td></td></tr><tr><td>Gas lighter</td><td></td><td></td><td></td></tr><tr><td>Grass knife</td><td></td><td></td><td></td></tr><tr><td>Kerosene</td><td></td><td></td><td></td></tr><tr><td>Laplap/</td><td></td><td></td><td></td></tr><tr><td>Clothes</td><td></td><td></td><td></td></tr><tr><td>Matches</td><td></td><td></td><td></td></tr></tbody></table>	List of Items purchased	a. Foods bought at the store <i>Yes / No</i>	b. Kg/fortnight and or Quantity	c. How much you Spend/fortnight? (K)	Biscuit				Bush knife				Chewing gum				Coffee				Cold drinks				Cooking Oil				Corned beef				File				Flour				Gas lighter				Grass knife				Kerosene				Laplap/				Clothes				Matches			
List of Items purchased	a. Foods bought at the store <i>Yes / No</i>	b. Kg/fortnight and or Quantity	c. How much you Spend/fortnight? (K)																																																															
Biscuit																																																																		
Bush knife																																																																		
Chewing gum																																																																		
Coffee																																																																		
Cold drinks																																																																		
Cooking Oil																																																																		
Corned beef																																																																		
File																																																																		
Flour																																																																		
Gas lighter																																																																		
Grass knife																																																																		
Kerosene																																																																		
Laplap/																																																																		
Clothes																																																																		
Matches																																																																		

		Milo Noodles Ox and palm Rice Salt SP Sugar Sunshine Tea Tinned mackerel Tinned tuna Twisties Others:
--	--	----------------------------------------------------------------------------------------------------------------------------------------------

No.	Question and Filters	Coding categories
Q25	How useful is Ramu River to you?	Very useful [1] Useful [2] Fairly useful [3] Not useful [4] Don't know (98)
Q26	What do you use Ramu River for (Circle all that apply)	Washing (I) Drinking (II) Cooking(III) Fishing (IV) Laundry (V) Wash cooking/eating utensils (VI) Transport (VII) Healing (VIII) Initiation (IX) Worship (X) Washing sago (XI) Leisure (XII) Other (specify) _____

## Section 5: Cultural/Spiritual Aspect of the River

No.	Question and Filters	Coding categories
Q27	Are there sacred sites along the river?	Yes [1] [99]      No [2]      Don't know [98]      No response
Q28	How many do you know?	Write the number in the space [_____]
Q29	Do spirits live there?	Yes [1] [99]      No [2]      Don't know [98]      No response
Q30	Describe all sacred sites that you know? (e.g. Initiation, clan origin, home of god/goddess, dangerous monster, etc)  (Write the answers in the space)	
No.	Question and Filters	Coding categories
Q31	Do river spirits (masalai) exist today?	Yes [1] [99]      No [2]      Don't know [98]      No response
Q32	Do you believe in them?	Yes [1] No [2] Partially [3] Don't know [98] No response [99]
Q33	What's your belief based on? (circle all that apply)	Creation myth [1] Fertility [2] Protection [3] Other myths [4] A god or goddess [5]  Others (specify) _____
Q34	Did your clan originate from the river?	Yes [1] No [2] Don't know [98] No response [99]



Below please note the **original survey constructed by Nancy Sullivan & Assoc** before BRG amendments:

**STRICTLY CONFIDENTIAL**  
[ ][ ]

**QUESTIONNAIRE SERIAL NUMBER:**

## **RAMU RIVER COMMUNITY INCOME SURVEY**

### **INFORMED CONSENT**

NSA is conducting a research on the subsistence patters of Ramu River villages, including the agricultural and fishing yields for each community. The objective is to establish a baseline of subsistence income for these villages to measure any potential changes as a result of changes in the river.

All information gathered will be confidential so you need not fear telling the truth or expressing your views. You can refuse to answer a question if you feel uncomfortable. You can also stop at any time of the study should you feel you do not want to continue. I hope you fully understand (if not explain further in your own words, also give opportunity for informant to ask questions for clarity).

I completely understand the nature of this study and agree to participate. I take full responsibility for disclosing the information I provide here for this study.

Signature of participant: \_\_\_\_\_ Date: \_\_\_\_\_  
\_\_\_\_\_

Signature of researcher: \_\_\_\_\_ Date: \_\_\_\_\_  
\_\_\_\_\_

**STRICTLY CONFIDENTIAL**  
[ ][ ]

**QUESTIONNAIRE SERIAL NUMBER:**

**INDIVIDUAL QUESTIONNAIRE**  
(For adults, male and female)

Q003. Town/Place\_\_\_\_\_ [\_\_\_\_]

Result codes:

Completed	1
Partially completed	2
Refused to continue (at any part of the interview)	3
Other (specify)	8

INTERVIEWER: Code [\_\_\_\_|\_\_\_\_]

DATE INTERVIEW: \_\_\_\_ / \_\_\_\_ / 08 / 09

CHECKED BY SUPERVISOR:   Signature \_\_\_\_\_ Date: \_\_\_\_ / \_\_\_\_ / 09

## Section 1: Background

No.	Question and Filters	Coding categories
Q01	Circle the gender of respondent	Male [1] Female [2]
Q02	What is your age?	Write the age in the space [____] Don't know [88]
Q03	What is your highest level of education?	Elementary [1] Primary [2] Secondary [3] PETT [4] College/University [5] Never been to school [9] Other (specify: _____) [8] No response [99]
Q04	Which of these languages do you speak?  (Circle all that apply)	English [1] Tok pisin [2] Local vernacular [3] Other (specify) _____
Q05	Which of these languages can you read?	English [1] Tok pisin [2] Local vernacular [3] Other (specify) _____
Q06	What is your status?	Married [1] Divorced [2] Separated [3] Widow /Widower [4] Never Married [5]
Q07	Where were you born?	<i>Write name of the place, town, village, settlement in the space below</i>  [_____]
Q08	How long have you lived here in (name of Village)?	Years [ ][ ] Months [ ][ ]
Q10	What is the income of your household per fortnight?	<K25 [1] K25 – K50 [2] K50 – K75 [3]

		K75 – K100 [4] K100- K200 [5] >K200 [6] Other (specify) _____ [8] Don't know [88] No response [99]
Q11	What is your religious affiliation?	Write the name of church in the space _____
Q12	How many people in your household?	[_____]
Q13	How many children do you have?	Under 18 [_____]      Over 18 [_____]

## Section Two: Subsistence

Q14	Do you garden?	Yes [1]      No [2]
		<b>If no, skip to Q26</b>
Q15	What types of food plants do you grow? (circle all that apply)	Yams _____ 1 Kaukau _____ 2 Tapioc _____ 3 Bananas _____ 4 Pumpkin _____ 5 Pumpkin tops _____ 6 Cabbage _____ 7 Ginger _____ 8 Kapiak _____ 9 Kokonas _____ 10 Corn _____ 11 Kokamba _____ 12 Pitpit _____ 13 Laulau _____ 14 Mango _____ 15 Marita _____ 16 Galip _____ 17 Taro singapo _____ 18 Taro kongkong _____ 19 Watermelon _____ 20 Mon _____ 21 Saksak _____ 22 Potato _____ 23 Salt kumu _____ 24

		Kumu gras _____ 25 aupa _____ 26 Carrots _____ 27 Tomatoes _____ 28 Tulip _____ 29 Aibika _____ 30 Onions (round) _____ 31 Onion leaf (spring onions) _____ 32 Beans _____ 33 Sugar cane _____ 34 Pineapple _____ 35 Muli _____ 36 Pawpaw _____ 37 Peanuts _____ 38 Buai _____ 39 Daka _____ 40 Brus _____ 41 Kambang _____ 42 Others (list) _____ 43																																																
Q16	Which food plants is the largest yield per year?	List in order Name of crop                      Kilos 4. _____ 5. _____ 6. _____																																																
Q17	Does the village have a market?	Yes [1] No [2]																																																
	If not, where do you market your food crops [another village]?	Name of market/place _____																																																
Q23	Which foods do you sell? <i>Circle those that are mentioned.</i>  How many kilos of each per week?	<table border="0"> <thead> <tr> <th></th> <th></th> <th>Kilos/week</th> </tr> <tr> <th></th> <th></th> <th>Kilograms</th> </tr> </thead> <tbody> <tr><td><b>Vegetables</b></td><td></td><td></td></tr> <tr><td>Yams</td><td>_____</td><td>_____ 1</td></tr> <tr><td>Kaukau</td><td>_____</td><td>_____ 2</td></tr> <tr><td>Tapioc</td><td>_____</td><td>_____ 3</td></tr> <tr><td>Bananas</td><td>_____</td><td>_____ 4</td></tr> <tr><td>Saksak</td><td>_____</td><td>_____ 5</td></tr> <tr><td>Potato</td><td>_____</td><td>_____ 6</td></tr> <tr><td>Pumpkin</td><td>_____</td><td>_____ 7</td></tr> <tr><td>Cabbage</td><td>_____</td><td>_____ 8</td></tr> <tr><td>Ginger</td><td>_____</td><td>_____ 9</td></tr> <tr><td>Kokonas</td><td>_____</td><td>_____ 10</td></tr> <tr><td>Corn</td><td>_____</td><td>_____ 11</td></tr> <tr><td>Taro singapo</td><td>_____</td><td>_____ 12</td></tr> <tr><td>Taro kongkong</td><td>_____</td><td>_____ 13</td></tr> </tbody> </table>			Kilos/week			Kilograms	<b>Vegetables</b>			Yams	_____	_____ 1	Kaukau	_____	_____ 2	Tapioc	_____	_____ 3	Bananas	_____	_____ 4	Saksak	_____	_____ 5	Potato	_____	_____ 6	Pumpkin	_____	_____ 7	Cabbage	_____	_____ 8	Ginger	_____	_____ 9	Kokonas	_____	_____ 10	Corn	_____	_____ 11	Taro singapo	_____	_____ 12	Taro kongkong	_____	_____ 13
		Kilos/week																																																
		Kilograms																																																
<b>Vegetables</b>																																																		
Yams	_____	_____ 1																																																
Kaukau	_____	_____ 2																																																
Tapioc	_____	_____ 3																																																
Bananas	_____	_____ 4																																																
Saksak	_____	_____ 5																																																
Potato	_____	_____ 6																																																
Pumpkin	_____	_____ 7																																																
Cabbage	_____	_____ 8																																																
Ginger	_____	_____ 9																																																
Kokonas	_____	_____ 10																																																
Corn	_____	_____ 11																																																
Taro singapo	_____	_____ 12																																																
Taro kongkong	_____	_____ 13																																																

		Pitpit _____ 14  <b>Fruits</b> Kapiak _____ 15 Kokamba _____ 16 Laulau _____ 17 Mango _____ 18 Marita _____ 19 Galip _____ 20 Watermelon _____ 21 Suga _____ 22 Pineapple _____ 23 Muli _____ 26 Pawpaw _____ 27 Peanuts _____ 28 Mon _____ 29  <b>Greens</b> Salt kumu _____ 30 Kumu gras _____ 31 aupa _____ 32 Pumpkin tops _____ 33 Carrots _____ 34 Tomatoes _____ 35 Tulip _____ 36 Aibika _____ 37 Onions (round) _____ 38 Onion leaf (spring onions) _____ 39 Beans _____ 40 Buai _____ 41 Daka _____ 42 Brus _____ 43 Kambang _____ 44 Others (list) _____ 45
Q24	What is the price for each food at the market here?	Yams K_: _____ 1 Kaukau K_: _____ 2 Tapioc K_: _____ 3 Bananas K_: _____ 4 Pumpkin K_: _____ 5 Pumpkin tops K_: _____ 6 Cabbage K_: _____ 7 Ginger K_: _____ 8 Kapiak K_: _____ 9 Kokonas K_: _____ 10 Corn K_: _____ 11 Kokamba K_: _____ 12 Pitpit K_: _____ 13 Laulau K_: _____ 14 Mango K_: _____ 15 Marita K_: _____ 16

		Galip K_: 17 Taro singapo K_: 18 Taro kongkong K_: 19 Watermelon K_: 20 Mon K_: 21 Saksak K_: 22 Potato K_: 23 Salt kumu K_: 24 Kumu gras K_: 25 aupa K_: 26 Carrots K_: 27 Tomatoes K_: 28 Tulip K_: 29 Aibika K_: 30 Onions (round) K_: 31 Onion leaf (spring onions) K_: 32 Beans K_: 33 Suga K_: 34 Pineapple K_: 35 Muli K_: 36 Pawpaw K_: 37 Peanuts K_: 38 Buai K_: 39 Daka K_: 40 Brus K_: 41 Kambang K_: 42 Others (list) K_: 43
Q25	Which foods do your plant for your household only?	List:
Q26	Do you fish?	Yes [1] No [2]
Q27	If so, which fish do you catch?	Check fish species in box below
Q28	Do you sell fish at market?	List
Q29	How much do you sell of each?	
Q30	How much money do you get for each kind of fish?	
Q31	What is the market price for these fish?	

Q32	What other foods are sold at your market? (List)	
Q33	Which foods do you buy with money?	Sugar _____ Rice _____ Tea _____ Coffee _____ Sunshine _____ Salt _____ Noodles _____ Tinned mackerel _____ Tinned tuna _____ Corned beef _____ Ox and palm _____ Biscuits _____ Oil _____ Flour _____ Other _____
Q34	How much of each food do you buy per fortnight?	Sugar _____ Rice _____ Tea _____ Coffee _____ Sunshine _____ Salt _____ Noodles _____ Tinned mackerel _____ Tinned tuna _____ Corned beef _____ Ox and palm _____ Biscuits _____ Oil _____ Flour _____ Milo _____



		Gas lighter	_____	
		Kerosene	_____	
		Bus naif	_____	
		Gras naif	_____	
		File	_____	
		Matches	_____	
		Laplap	_____	
		PK	_____	
		Twisties	_____	
		SP	_____	
		Cold drink	_____	
		Other	_____	

		New Guinea blue-eye	Jewfish	Mangrove jack
Speartooth	Garfish	Mudskipper	Shad	Breach salmon
shark	Bikpela trausel	Bikpela kindam	Mogurnda	Barramundi
Pipefish Barramundi	Brook trout	Tandan	Snapper	Pipefish
Speartooth shark	Flagtail	Goby	Mosquitofish	Sprat
Moonfish		Mullet	Catfish— mausgras pis	Herring—kol pis
Eel--Maleo	Perchlet	Perch	Red Bel	Raba Maus
Japakap	Kindam-- Crayfish	Kuka--crab	Nil pis-- blowfish	Kina sel
Gam sel	Long maus pis- -garfish	Bikmaus-- groper	Makau--tilapia	Karua--mullet
Bun pis--tarpon	Bikpela maleo- Moray -			

## **QUALITATIVE COMPONENT**

Interview prompts/lead questions

### **Physical**

1. How long have you been living here?
2. How often do you use the River? And for what purposes?
3. Describe the normal color of Ramu when it floods and when it is not?
4. How do you feel when you wash in the river?
5. What do you use the river for?
6. When it floods, what do you do?
7. Explain how flooding affects your life? When was the last flood? What were the major damages?
8. Where do you get your clean drinking water? How far from the River?

### **Social and Cultural**

1. What does Ramu River mean to you?
2. How do you relate to the river? Explain and provide examples.
3. Describe all sacred sites that you know? (E.g. Initiation, clan origin, home of god/goddess, dangerous monster, etc
4. Explain how Ramu River affects your life during different seasons? Dry and Wet?
5. What beliefs do you have regarding the Ramu River?
6. Do you have any folklores relating to the Ramu River? Can you tell me?
7. How has your cultural beliefs changed due to the impact of the River

### **Economic and Agriculture**

1. Without the river, tell us how you would survive?
2. How has the River support you in terms of day to day survival?
3. What is the specific period/season for fishing in your area/village? Do you see any changes to that season in this current time?
4. What is the specific period/season for gardening in your village?
5. How important is the Ramu River to you and your family? Why is it that important?
6. How much problem has the River caused due to problems with changes in the season, if any is stated?
7. How has the River hindered you from making business?

## **RAMU RIVER STORIES**

**Manup and Kilibob: The founding brothers of north coast New Guinea: a myth cycle that runs from Wewak through the Huon Peninsula, out to Siassi islands and inland Bogia, Adelbert, Madang town and Rai Coast regions.**

The Manup-Kilibob myth is one of PNG's most geographically expansive legends, and it has virtually tens of variants.. Both characters go by different names and/or transmute into Manup and Kilibob from other culture heroes along the margins of the myth's circulation. As two men, brothers or father and son, they stand in for Christ and God, Abel and Cain, and numerous other pop or Biblical characters; not unlike Shiva and Krishna, on one hand, for their picaresque adventures (and the scores of 'birthplace' claims for them), they are also founding fathers, a concept that covers far more Melanesian territory than the Manup-Kilibob myth itself.

The most popular version of the story comes from Karkar island, and is synopsized by McSwain (1994:15-17) as follows:

Kulbob came into being on Mt. Kanagioi. He and Manub lived at either end of Kulbob Bay on Takia's southeastern coast. Kulbob's house was at Urit on the northeastern point and Manub's at Bangpat at the southwestern end. A fine hunter and carver, Kulbob was tall and fair in contrast to Manub, an industrious fisherman of stocky build and dark complexion. Kulbob precipitated a crisis when Manub's wife cajoled him into carving his signatory pattern on her thighs in return for his missing arrow, carved in the same design. Another Takia version has Kulbob saving Manub's two wives from an unpleasant trap their husband had set for them, after they beat him for his deception in secretly consuming his entire day's catch of (P1 6) fish alone. Kulbob caused them to become beautiful young women again, drawing them, with their fingers holding the petals of a flower in his hand, from their place of concealment in his house, before publicly presenting them to the chagrined Manub.

According to northern Waskia villagers, Kulbob climbed a tree and threw leaves on women's breasts when they came to the stream for water, thus making them pregnant. In all cases, the obvious message was adultery. Angered, Manub swore revenge. Repeatedly, Kulbob's powers of disguise and nimble wits saved him and humiliated his enemies, for by now followers of both deities were grouped against each other. Increasingly violent quarrels culminated in Kulbob's escaping up a *ngaul* tree in the form of a lizard, a creature also associated with spirits in the Siassi Islands (A. Pomponio, pers. com., 1990). Manub's men chopped away at the tree by day, only to find Kulbob renewing it by night. Only when they burned the wood chips to prevent their reuse were they able to fell the tree, with Kulbob in it, into the waters of Kulbob Bay. Then Kulbob established his superiority once and for all. Either he escaped along a subterranean passage to Mt. Kanagioi, where his mother, Dabanget, awaited him, or he set to work under the waters of the bay. In any case, he built a great canoe from the fallen *ngaul* and a flotilla of smaller ones from its branches and leaves. When Manub tried to follow his example, his canoes sank and their crews drowned. One version of the myth claims that small pinnacles emerged from beneath the water, followed by a large ship with a funnel and stocked with European goods. Whatever the situation, Kulbob filled the large vessel with the finest artifacts, animals, and food plants. When he broke open bamboo containers of his mother's blood, out poured beautiful young people to accompany him. Then the sky became dark, rain fell, the earth shook, smoke poured from Mt. Kanagioi, and Kulbob separated night from day and sea from land. In the midst of this confusion, he sailed away. Reaching Badulu on Bagabag Island, Kulbob quarreled with his wife Magirpain. Some claim that he had two wives with him and that he tricked them into cooking food while he went, in all his finery, to a

singsing. Telltale signs of red paint near his eyes on his return angered them. Thereupon, he returned alone to Karkar and then, taking his sister Kamgi, set off again, calling at Muluk, on the central eastern coast. Here, a “wild man,” Buroi, called out to him, “Hello friend! Where are you going with your wife?” Pleased with this polite reference to his sister, Kulbob rewarded him with gifts of food plants, house and canoe-building plans, and cooking instructions, since Buroi had lived under a giant leaf, eating only stone scrapings, until then.

Back on Bagabag, Kulbob’s incestuous relationship with Kamgi angered the islanders. Defiantly, he turned his wife Magirpain into a stone. Then he and Kamgi traveled either to Siassi via Arop or to Sek and other mainland (P 1 7) places first. Manub went to Waskia, where he gave the people their non-Austronesian language and distinctive personal characteristics. Langlang people there relate how he sailed away in a canoe with his little daughter. But the wind blew away her simple dress, and it was lost on the waves. They managed to pick up a piece of flying fox to fasten about her waist. On they went toward the Sepik River, where she married and gave the people her language and the custom of wearing a waist cloth, which Sepik women practice to this day.

On Kulbob’s arrival at Sek, he found Manub already established there. When the latter tried to steal his “sea cows,” or dugong, Kulbob ordered him to leave and to distribute those cultural items and skills peculiar to himself along the coast toward Aitape. He himself sailed eastward, forming islands and reefs as he went and bestowing his Austronesian language, his people, goods, techniques, certain ceremonial dances and songs, and the secret cult, Barag. At various named places, he caused springs and other physical features to emerge. In this way, the cultural and linguistic characteristics of the north coast of New Guinea came into being. After stopping at Malai, Mandok, and Tuam in the Siassi Islands, at the Tami Islands, and at nearby Bukaua, Kulbob probably went to New Britain before sailing south. Perhaps he pulled his canoe up onto a high mountain in Australia, where he now lives with his people and goods, or he may have returned to live on Mt. Kanagioi.

Compare Alice Pomponio’s discussion of the Siassi peoples’ myth cycle, where she explains,

The story of Manup and Kilibob from the Rai Coast is the first of six episodes of the Legend of Namor as it occurs in the Siassi small islands off the northeast coast of New Guinea. Mandok tellers divided the epic narrative into six episodes, each of which charts discrete geographical areas. The version presented here is a combination of a five-episode version of the Legend of Namor, and a one-episode version of the Legend of Las, Nagur and Sup, told by Gabriel Aipake. (Pomponio 1994:53)

Her version of the Namor legend is as follows (Ibid:62-64):

*Episode 1: Siliv’uzi ve iza . . .* [T]here were three brothers living in Madang. One day the oldest, Mandip, went fishing with his younger *runai* (patrilineal group) brothers, and left the youngest, Kilibob, at home. Kilibob went bird hunting with his bow and arrow. He shot an arrow high into the sky. It missed its target and fell into the center of the village. Mandip’s wife, who had been sweeping the area around her house, saw the arrow fall and retrieved it. She recognized the beautiful design carved into the arrow’s shaft, and she hid it. In his search for the lost arrow, Kilibob came upon his sister-in-law. When he asked her about it, she admitted hiding the arrow, but rather than give it to him, she seduced him into tattooing the arrow’s design on her groin. He agreed, and the two had sex together. Afterward, he tattooed her groin with the arrow’s design, just as she asked. When he finished, he took a *benben* leaf and wiped away the blood. After he applied soot to the wound, he threw the leaves into the river. The leaves were swept out to sea, and soon many birds came and circled over them. Mandip saw the circling

birds and thought it might be a great school of fish. He ordered his brothers to paddle toward them. When they reached the spot, he saw the bloody leaves and sensed instantly that something was amiss. So as not to arouse suspicion, he feigned illness so that the expedition would return to the village. The tide was high, so they floated the canoe offshore a bit and called out to those standing on the shore to help beach it. Mandip's wife, assigned to the outrigger, was in waist-deep water. She protested that the waves were cresting too high, but her husband scolded her, so she waded to the outrigger. As she did so, a wave came and pulled away her grass skirt, revealing the tattoo. Mandip saw this and thought, "Aha! Now I've got her number!" After the canoe was ashore and the women had collected their respective shares of the day's catch, he confronted his wife about the new tattoo.

She tried to deny it, but he had already seen it. She let him look, fearing that if she disobeyed him, he might beat her. He examined it and recognized instantly his own family's design. With this, he got very angry, and started fighting with Kilibob. They fought viciously for days. Finally, Kilibob suggested to his mother that they leave. The next day, they gathered their belongings and loaded the canoe with some sand, dark soil, some wood from the beach, many indigenous plants, and other supplies. They launched at nightfall, paddling toward New Britain. New Britain is a long way off. When they reached Arop, Kilibob estimated that they were about halfway there, so he decided to stop. He anchored the canoe offshore and began his work. He dropped some stones and beach sand. The beach started extending out to sea until it met the canoe. Then he took more stones, sand, and cane, and constructed a hearth. Next, he spread the dark soil and planted the many plants and trees he had brought. The two of them settled there; they worked hard creating many things. One day, he told his mother he was lonely. With this, he got an idea. He started carving a chunk of wood into a drum. As he carved, his mother asked him why he was doing all of this work, since they were alone on the island. He just shrugged and kept on carving. Next, he constructed a dancing frame for the feast dance called Sia. He made several. His mother kept asking him why he was making all of these things for nothing, since there were only the two of them. But he answered confidently that he wanted to get everything ready. Each time his mother questioned, he shrugged her off and kept carving. When all of the dancing accoutrements were completed to his satisfaction, he started shaping the sand into paired figures--one male, one female, a male, a female, and so on, until there were many couples. He created these things just as today we understand God's work. As soon as he finished molding the sand, he took some lime, just like the lime we use for chewing betelnut (areca palm nut), and blew it into the sand models' noses. They started to breathe, and finally they came to life. Just as God blew his own breath into man, our story says it a bit differently--he blew lime into their noses, and they came to life. Soon they were all alive. He returned to his mother and instructed her to make a stone oven for the taro, sweet potato, and manioc, declaring that the next day there would be a great feast. His mother protested that there was no one beside themselves to eat all the food. He shrugged her off again and told her people were coming from a nearby village. So they prepared for the feast. When the food was ready, he went into his men's house (*rumai*) and started beating the drum. Instantly a man and woman appeared. He kept on beating it. More and more people came, until the place was crowded. He instructed his mother to take them to their houses. As people arrived from different directions, he allocated to them houses in the direction from which they came. If they came from the west, for example, their house lay to the west of the village, and so on. He had already made many things in anticipation of their arrival. He built them houses and created the dancing feast called Sia. (The dance called Sia is famous throughout PNG as a characteristically Siassi dance. It was imported originally from Arop.) He created the dancing frame carried by the main dancer, even the headdresses, the drums, grass skirts for clothing, and so on. After they danced the complete Sia and ate all the food, the visitors settled there. Eventually he married one of the women.

Now, women are like this--they are always angry and jealous. So of course one day Kilibob's wife got angry with him. He decided that he would leave and find another home. This was his personality. He saw Umboi Island and decided to go there. As he was leaving rop, he noticed a group of women who were bathing near the trunk of a fallen tree. The tree's trunk lay on the beach, and the top lay out to sea. The women had spread their grass skirts on the log to dry. One woman in particular caught his fancy. He took her grass skirt and hung it on one of the outer branches. When the women finished bathing, each put on her grass skirt for the return to the village. But Gainor could not find her skirt. Finally she spotted it hanging on the outer branch. She waded out into the deep water and climbed up onto the trunk to retrieve it. As she climbed up, Kilibob hopped onto it, and the log shot out into the sea, heading for Umboi Island and Siassi.

Note the similarity to a story recorded by John A. Z'graggen (1992:64-66) from Salumbu Village, in the Lilau language, up the coast toward Bogia:

I want to talk about the sea. The origin of the sea is this child in Siriwa. A child used to go to the forest to hunt with the big men. While the men stood watch at the trail of a pig, this child used to make magic to entice pigs to come to him. The big men always waited in vain for the pigs to come to them; the pigs always went to this child. That upset the men; they thought about it and said: 'What will we do with this child?' One day the same happened again. But this time the men shot dead the child. They dug up the nest of a wild fowl, buried the child in the nest, covered it up again and returned to their village. The mother waited for the child to return, but the child did not come. Then the mother asked: 'Where is the child?' The men said: 'The child went ahead of us; we came behind.' The mother said: 'No, the child hasn't arrived.' The mother waited for the child until late at night and then went to sleep. At daybreak she set out in search of her child. A bird with green tail feathers was digging up the cover of the grave in which they had buried the child. The bird pecked and pecked at the nest; its beak was stained red with blood. the mother had seen the bird, but the bird quickly jumped up and flew away. Mother has a close look at the place where the bird had been and flown away from. There the mother found her dead child. Mother took the body out of the nest, put it in her string bag and carried it to her village. The mother wanted to bury the child in her own village. But nobody wanted to do that, because the corpse was stinking already. Mother carried the child from village to village for burial, but nobody would agree to that. As the mother walked, she wept and threw the mucus of her nose along her path. That turned into salt; there are now spots with salt water. None of the villages wanted to bury her child. They all said: 'The child stinks; we don't want to bury the child.' Finally she arrived at Salumbu. There two of our ancestors took the child and buried the child. The two ancestors were Libobo, the older brother, and Monumbo, the younger brother. the two brothers chopped down the trees for a new garden. The younger brother got vegetables to cook food for the workers who turned earth for a new garden. The older brother went to the grave of the child, took off the cover and shot some fish, but only small ones and not the big ones. That he did for a long time. Then Monumbo asked his older brother, Libobo: 'Brother, what do you cook with? Everyone loves your food, but my food, they don't want.' The older brother said: 'I take all kinds of vegetables and cook them, and that they eat.' But the younger brother said: 'No, I cook just that, but they don't like that food.' That is what the younger brother said. One day Libobo said to Monumbo, his younger brother: 'All right, while we work in the garden, you go down, open the cover of the grave and have a look. Have first a good look, but then shoot only small fish.' Monumbo went down, but he did not do what his older brother had told him. he opened the cover and watched in amazement the many fish rushing around; he got excited. A big fish came close, swimming around, and the younger brother shot just that big fish. The fish felt the impact of the shot and hit with his tail at the wall of the grave, breaking it up. The earth

became loose and the sea started to flow out. The younger brother called out to his older brother, telling him: 'Oh brother, the sea is breaking out and flooding down!' The older brother said: 'What did I tell you? I told you not to shoot a big fish; I told you to shoot only small fish. You did the wrong thing!' The older brother came running down. The two brothers cut sticks to hold back the sea. But they did not succeed. The sea flowed out, flowed, became large, and they let the sea lie there [where the sea is now]. Then the two brothers did some additional work on the sea. First they took charcoal from the fire and threw it into the sea, and the sea became dark blue. Then they killed a snake. That they did because the sea did not swell and had no waves, but just lay there calm and still. For this reason they looked for a snake, killed it and threw it into the sea. Now the sea swelled up and down, with waves breaking. They watched to sea and said: 'What else shall we do?' They walked around in search of a cockatoo. The cockatoo watched the two brothers walking around; disturbed, the bird got up, calling out. The brothers killed this cockatoo with white feathers, brought it down and threw the corpse into the sea. White waves of the sea began to break at the shore and surf was created. The two brothers looked at it and said: 'That's it, and it will be like that.' The brothers returned to their place.

Compare the Tangu (just east of the Lower Ramu region, west of the Adelbert Mountains) story of Dumban recorded by BurrIDGE (1969: 355-59):

Dumban was in the stream, rippling the surface....One day, wife went down to the stream to wash and catch some fish. Hours later she returned to the village, cooked the fish she had caught, ate it with husband, and retired to sleep. Next morning, husband went hunting. He took some game, returned to the village, and gave it to wife to cook. They ate together, then slept. The following morning wife went fishing. Afterwards she went to the garden to help husband dig out some tubers. In the evening husband and wife returned to the village, cooked some tubers and fish, supped, then retired to their pallets. Next day, at dawn, wife went down to the stream with all the other women of the village. They cast their nets, started to fish. Dumban emerged....Dumban came all-shining out of the stream towards them. Wife and all those other women who were with her loosed their skirts and lay down in two lines as Dumban took his pleasure with them, satisfying each in her turn, first one line then the other, until the last was content. Then Dumban returned to his home in the stream, and the women returned to their village. Next morning all the wives stayed in the village while their husbands went hunting, taking their dogs. On their return they gave their wives the game they had taken. And for their part the women went down to the stream to fish. They cast their nets--and there! Dumban emerged....As before, so now the women took off their skirts, lay down in two lines and awaited their pleasure with Dumban, first one line then the other, until each had been favoured. Now, having spent their time thus, when the women returned to the village they had no fish to bring with them. 'No fish? Why haven't you caught any fish?' the husbands demanded. 'There were no fish in the stream today,' the wives replied. Next day the husbands went hunting. They took pig, cassowary, bush-rats, possums, and wallabies--and all this meat they gave to their wives to cook. They supped very well that night, each eating his fill. And afterwards, husbands with wives, they retired to their huts to sleep. At dawn the following day, as the women prepared to go down to the stream to fish, father took his son Borkei by the shoulder. 'Yesterday there were no fish in the stream,' he started. 'Yet there have always been fish there before....You go with your mother today, hide in her string bag, keep a sharp look-out---see what's going on down there!'

So it was that when mother and the other women went down to the stream that day, Borkei was in her string bag, pretending to sleep. Arrived at the stream, mother cut a sapling, pointed one end, thrust the stake firmly into the ground, and slung Borkei in his cradle from a notch she had made for the purpose. Borkei could see all that went on.

Dumban emerged....He came from the stream, muscles rippling under the glistening skin, face painted red and white, streamers fluttering from arms and knees, woven cane-work vivid and bright....'I am Dumban, Dumban who comes to you out of the stream!'

Immediately all the women took off their skirts and lay down in two lines. And he enjoyed each one in her turn, first one line then the other. Later that evening, after the women had returned to the village, cooked for their husbands, and eaten, Borkei went to the garamb, where he knew his father awaited him.

'Well? What happened? What did your mother do?'

'I lay in my string-bag cradle pretending to sleep, but keeping a watch,' son replied. 'A large and handsome man, strong and powerfully built---with superb decorations---came out of the stream. "I am Dumban!" he said "I am Dumban who comes to you out of the stream!" Then mother and all the other women took off their skirts, lay down in two lines, and waited while Dumban pleased them in turn, first one line, then the other, each one.'

Father's mein was grim. Taking a bunch of areca-nuts, he distributed them to each in the garamb. Something would have to be done. Next morning, therefore, as the women filed down to the stream, the husbands took up their spears--slipping like shadows through the forest as they followed their wives to the stream. Hiding in the undergrowth, they surrounded the fishing place and waited to see what would happen. As they watched they saw the women loosen their girdles, throw off their skirts, and start singing for Dumban to come to them. He came. He came from the stream, skin shining and sparkling, the water cascading down his shoulders. the women lay down in two lines to enjoy him. From their hiding-places in the forest the men watched Dumban in his pleasure, watched him until he had done, until he had satisfied each of the women lying there in the foreshore. Then they came storming from the bushes--each thrusting his spear into Dumban as the women stood naked on the beach, trembling, full of fear at the sight of Dumban lying on the sand, bleeding from so many spear thrusts. Even so, the men were scarcely content. Not until they had chopped Dumban into scores of little pieces did they feel satisfied that their work was done. Then they shouldered their spears and returned to the village. Not so the women. They waited in sumb silence until the last man had gone. Then they seized Dumban's huge fellow--slicing it small, each taking a portion and putting it into her quim. When the women got back to the village, they sat down, inert and silent. 'Why are you not cooking our suppers?' the husbands demanded angrily. 'What is the matter with you?'

The women said nothing. The husbands leapt to their feet, enraged. Each one took hold of his wife, jerked her to her feet and thumped her hard on the buttocks. the pieces of Dumban's big fellow fell from their quims. Now all those little pieces came together in the village, joined, and flew off to Ariangon, coming to rest at a place where women draw water from the stream. There the huge fellow, mended and whole, mewed and cried like a baby. It happened that two maids of Ariangon, friends, heard the babyish cries as they drew water from the stream. So, searching the shrubbery to find out the cause, they found Dumban's huge fellow. they put it into a string bag and took it home with them, hiding it in the yam bin. That night, after the maidens had finished their cooking, supped, rested, and laid themselves down on their pallets to sleep, Dumban's huge fellow came out of the yam bin and rejoiced them in turn, first one then the other, until dawn. Next morning the two maidens took the huge fellow outside the hut and flung it away towards Dimuk. It fell at a place where women come to draw water, and there, behind a bush, it whimpered and grizzled like a baby. Two maidens, who had come to the stream to fish, heard the cries and went to investigate. 'Aha!' they



exclaimed when they saw Dumban's huge fellow. 'Here is a little son for us! Here is a little son who will work for us in our gardens!'

The two maidens took the fellow home with them, hid it in the yam bin, cooked food, ate, and retired to their pallets. During the night Dumban pleased each of them in turn, first one then the other, all the night through. In the morning the two maidens took the fellow outside and threw it over towards Wasamb. It landed at a place where women come to draw water, and there it began to snivel and chuckle like a baby. Two maidens who had come down to the stream found the fellow. They took it home with them and hid it in the yam bin. And when the two maidens lay down to sleep Dumban pleased them both, each in turn, all the night through. From Wasamb, Dumban's big fellow came to Mariap; and from Mariap it was thrown over to Pariakenam. And from Pariakenam it came at last to a pool in the neighbourhood. There Dumban started to sing--

I am Dumban  
Dumban who comes from the stream!  
Dumban the handsome,  
The great one, the strong one!  
Li-la-o! Maria-la! Li-la-o!

A small boy heard Dumban singing in the pool, and he and other little boys--who were wont to use the pool as a bathing-place--came to listen and to learn the song. When Dumban had finished, the boys returned to their village and practised the song Dumban had taught them. Day after day he taught them his songs and his dances---Juangam, Maridar, Rak'mba, Birituk--and many others which the boys kept to themselves, learning them and practising them secretly. One day the boys came into the village to sing. Their parents were astounded. 'Where did you learn all those songs?' they demanded. 'Who taught you those dances? Who showed you how to decorate yourselves so?'

'No one taught us,' a little boy piped. 'We thought of them on our own, then we taught ourselves.'

The parents cried out in alarm and disbelief. They stopped the dancing immediately. They chased the boys out of the village and into the forest where, cornered, the boys admitted that it was Dumban who had taught them all that they knew. So, that was the way of it. Through their children who got them from Dumban, men and women came to know the songs and dances of our people. And though Dumban had said that his home was in the pool, the day came---during dance Rak'mba, which is danced in the sunlight--when he strode from the pool, handsome, powerful, resplendent, to feast in the village. All that day Dumban danced with the villagers. And it chanced that as he was dancing two plumes from his bird of paradise headdress fell to the ground, and two maidens picked them from the dust. They were comely, and Dumban smiled on them as they returned his feathers to him. So it came about that Dumban decided to stay in the village, taking the two maidens as wives.

John A. Z'graggen traces the parameters of the myth in its strict Manup-Kilibob form (1992). In his opinion,

The myth of the two brothers, Manup and Kulbob (Kilibob) is very common but not as widespread as some scholars assume. Based on my materials, I can distinguish three areas where the two brothers performed. These are (1) MadangTown area from Bilbil, Karkar Island, to Korak in the west; (2) the Schouten Islands and the opposite mainland of the East Sepik Province, and (3) the Saidor area in the eastern Madang Province. In

the area between Korak and the Murik Lakes this myth is unknown or known only as a fragment and said to belong to the Madang Town area, or it is found added to other legends. The published material does not give a full account of this myth, because no variants have been collected in some of the most important areas. The myth itself is of a very complex nature. The first problem is the names of the brothers, and this problem contributes to another, the naming of the myth itself. The names change from area to area. In the Schouten Islands area the brothers themselves change their names as they move toward the east. In the Madang Town area the names are interchanged with no reason given. Most likely the name of the older brother should be Manup, and that of the younger brother Kulbob. It is also said that the people interchanged the names of the two brothers to deceive the Europeans.

Two brothers are also the main actors in other legends. At present it seems to me best to call the myth "The two brother culture makers." Names are easily replaced and knowing them adds little to our understanding of the legend, unless we understand their meanings. But for the old people the names are the essence of the myth, and are loaded with supernatural power. Some of the names were entrusted to me out of friendship, whispered in a safe place. Some did not want to recite the myth because they could not remember the names. Many of the old people die with the secret names in their heart. Some of them want their children to follow Christian names and thought and - for this reason they do not hand over their old, traditional names. The names of the two culture makers are different and uncertain but the life cycle, function and characteristics of each of them are basically the same in the variants. Their life cycle is divided into two phases. Phase A begins with their births. The older brother is born in the village and the younger in the bush in an unnatural way, either by the same mother or a second wife. The older brother is married, the younger one is single. Then trouble starts because of the wife of the older brother. On a hunting trip the younger brother's arrow misses a bird and flies to the wife of the older brother in the garden. She likes the design of the arrow and wants it tattooed on her body, either her upper legs or private parts. Reluctantly the younger brother does this, and sometimes it is mentioned that he has intercourse with her. The older brother discovers the tattoo and gets angry at his younger brother. He makes three attempts to kill the trouble maker: the first attempt takes place in the hole of the main post of the house, the second in war and the third by cutting down the tree in which the younger brother lives. Before falling, the younger brother swings the tree in all directions and then plunges with all the branches, leaves and roots of the tree into water, so that no trace is left. After the younger brother's disappearance phase B begins. The younger brother is no longer a refugee, but a self-assured, powerful "maker." In the water he makes a canoe or ship from his tree, but after this the variants disagree considerably as to what he makes. He contacts his older brother in a dream and tells him to go to a certain place. The older brother goes there and the younger appears in his canoe, complete with outrigger and mast, or in a ship. The older brother, seeing his mighty younger brother, wants to shake hands with him, but the younger one condemns him to gardening, to raising pigs, to be sick, to hard work, etc. Or, the younger brother gives the elder a chance to select between New Guinean and European goods. In his stupidity the elder brother takes the New Guinean objects, i.e., a bow and arrow instead of a shotgun, a canoe instead of a dinghy, taro and yam instead of rice and canned food. Some variants say that the younger brother was keeping both domesticated animals and people with white skin in some bamboo, and that at a certain time, he broke the bamboo open and they came out. The younger brother leaves the older one. He makes a passage to reach the open sea. As he moves on, he breaks islands from the mainland with his arrow or rudder of the canoe. Then he has an accident. His canoe turns over and the capsized canoe becomes Karkar Island and the outrigger the nearby Bagbag Island. In other variants he makes a ship and goes to the land of the white man, taking all the good things with him, leaving only the bad things with much work in New Guinea. The older brother is regarded as the founder of New Guinea culture and the

younger of the European: The older brother is more a preserver of an existing culture than a maker or innovator. He is not born in an unnatural way and for this reason not endowed with supernatural power, as his activities in both phases show. He is warned in a supernatural way that something happened in his village but he has to find out what happened and who did it. He is helped by ordinary human beings and not, like his younger brother, by animals, symbols of the supernatural. Still, he is regarded as the founding father of New Guinea culture. The younger brother is a refugee in phase A, but one with supernatural power. He knows of his older brother's intentions in advance, and animals come to his help. In phase B he becomes a culture maker. The variants disagree as to what he made, but it is always something superior to the existing culture and living conditions. This myth is greatly affected by contact with Europeans, with items of European culture replacing older ones. The question is what these items have replaced. Pre-European items are the making of a canoe, making access to the sea and the islands, creating a new population or giving the existing one a new language. The making of human beings and animals in the bamboo is probably an accidental addition, because no variant tells exactly how he went about making them. His activities always represent a cultural advancement. If the existing culture had no canoe, he makes a canoe for the river. If it had a canoe, he makes a sea-going canoe with outrigger and mast, which is replaced by a ship with engine. The ship is usually made later at another location. What is replaced by the shotgun is unknown to me. (Z'graggen 1992: 270-73).

He also draws the connections to Lower Ramu stories, which pertain to the study at hand:

A good example of a spirit myth is the Moumbera myth in the lower Ramu River area. In phase A Moumbera or Zendam is born to a mother pig west of the lower Sepik area. He moves east. On his way he kills men to obtain their livers but also helps them in killing the hawk killer, who lives in a tall tree on the Sepik River. In Awar he has bad luck and loses his magic stone. To get the stone back he enters a woman and is reborn. Nothing unusual is reported in his youth. At the end of his initiation, however, instead of only licking at the stone like the other young men, he swallows it and is once again in possession of it. He now goes far inland to the Goam River area and phase B begins. He lives by himself in a tree, dancing and yelling day and night. Finally people discover him there and cut down the tree. Fish cut him a passage (the present day Goam River) so he can float down the Ramu River on the tree. He breaks branches of the tree and throws them at certain places. They are now the spirits of those places. One variant mentions that he threw away useful plants, but this might be an accidental addition. In Botbot, west of Kaian, he goes ashore and inland. He makes the people there cut off the heads of slain enemies and put the skulls in his house. Then, in a very special way that indicates the importance of the act, he brings in the colors for painting his house. He then moves in ceremoniously and has a permanent home. He still lives there and people protect him carefully from curious tourists. His house survived World War II. At present it is decaying, and rumours circulate that it will be rebuilt sometime. It is worthwhile to compare the life cycle of the spirit Mourrtbera with that of culture maker Kulbob (see I. 4.11.) In phase A, both are born in an unnatural way and live in conflict with the human beings. But Kulbob is passive in Phase A and a refugee, while Moumbera is active and a warrior. Phase B begins in both myths with the departure from the area in which Phase A occurred. The culture maker Kulbob improves the living conditions of human beings. The spirit Moumbera has things done by others for himself in order to have a stay among his people, i.e., to become their spirit. The only exception is that he also gives them other spirits. (Ibid: 278-9)

**Legends of the Lower Ramu, from T.H. Slone (2001) One Thousand and One Papua New Guinea Nights**

(Slone 2001, Vol 2: 919)

Crocodiles and Lizards Came from the Ramu River

Wantok 1113, October 26, 1995 p 21

Long, long ago, in the Ramu River, there were no crocodiles or lizards. Everyone lived well there. In a village called Nodubu [Nodabu], there lives a man, his wife and their two sons [Nokopo People, Madang Province]. The boys' names were Nronari and Mambokuri. One time, a big famine arose on the Ramu and everyone was hungry. Nronari and Mambokuri's parents thought hard. They thought that it would be bad if the two children died from hunger. One day, the boys' parents decided to put them inside baskets to sleep and drift along the Ramu River. While the boys were playing outside the house, their parents carefully arranged their sleeping baskets so that the water would not enter. Late at night, when everyone in the village was asleep, the parents took the boys and their baskets. They went down to the Ramu River and put them in the water. The water carried the boys downstream. In the morning, the boys' baskets stuck to a tree by the river. Nronari felt very cold, so he awoke. He went out of the basket and saw that Mambokuri's basket was nearby. He awakened his little brother. They then followed the tree and went up by the side of the water. Mambokuri asked Nronari, "Where are we now?" Nronari replied, "I don't know, but I think that Papa and Mama did this to us." The little boys sat by the side of the water for a long time, until the sun rose completely. Later, Mambokuri said, "Hey Nronari, go back down and get [your] rattan sleeping basket." He fetched it and came up. Then he rubbed it in the middle of a tree and fire arose. Mambokuri took some wood and they made a big fire. Later, Nronari climbed a breadfruit tree. He gathered many breadfruits. He brought them down, and then they cooked and ate them. Many breadfruits were ripe, so they did not finish eating them. The two boys began play fighting, shooting each other with the breadfruits. Nronari jumped down to the Ramu River and Mambokuri stayed up by the side of the water. They played at shooting each other, and then their bodies began to change. Nronari's legs became like that of a crocodile. His buttocks lengthened and became like that of a crocodile's tail. The same thing also happened to Mambokuri. His legs and buttocks became like the legs and tail of the lizard used for hand drums. After they had shot each other with all of the ripe breadfruits, Nronari told Mambokuri, "That's good. You can stay up there and I'll stay in the water."

Mambokuri replied, "That's alright. You can watch from the river and I can watch from the trees." After they finished speaking, their bodies changed completely and they became crocodiles and lizards that are used for hand drums in the Ramu River. This is because they come from these two brothers Nronari and Mambokuri. Jimbegim of Viutobua Village, by the Ramu River, told this story to me. (Signed Otto G. Ume).

(Slone 2001, Vol: 45-6):

The Conch that Scared the Masalai

Wantok 122, August 6, 1975, pp 5-6

Long ago, there was a boy and his sister who lived in a small house near a river. One time when their firewood was depleted, the sister said, "let's go and cut some firewood." So they took a knife and axe, then put them in their canoe. They fetched their oar and paddled off. They went toward the shore of an island. The boy wanted to pull the canoe up and tie it to a tree, then toss out the water. However, his sister got up and hit him with the paddle. The boy left the oar in the canoe and he swam to this island. He went ashore and saw his sister paddling. His sister went ashore and tied up the rattan mooring of the canoe. However, she did not see her brother hiding behind a tree looking at her. Before long, a masalai heard the chopping sound. The masalai saw the woman chopping firewood, then approached her and tied her up with the vines. When the little brother saw this, he cried softly. The bad masalai heard him and tied him up just like his

sister. The masalai carried the woman off. Her brother tried to hide for when the masalai would return. Later, the masalai came to his village and told the men, "We will have a big celebration for this woman." The little brother went someplace. After a week he departed. He arrived at the masalai village, then he turned into a lizard and went into the house to look for his sister. His sister told him, "Why have you come? It would be bad if they killed you." The brother said, "I'm hungry and I've come!" So his sister gave him a plate of food. He ate the food and asked his sister, "What day are they going to kill and eat you?" The sister said, "They will kill me Thursday." Her brother left and went to sit at the base of the tree where he played a conch trumpet. After he played the trumpet, he went to sleep on a ridge of the tree. Dawn came and he tried to play his trumpet, but it became dark again. The masalais woke up, and they danced and sang. They hung some betel nuts on a tree. The boy flew like a bird and sat on the tree. He chewed on the betel nuts and spat down upon the masalai men. Dawn came and the little boy flew to the tree with the conch trumpet. He watched for the time that they would kill his sister. He saw them getting their spears, axes and knives, preparing to cut his sister's neck. One masalai carried the woman and put her on the ground. They untied some of her ropes and then prepared to cut her neck. However, the brother got up and blew the trumpet. An earthquake occurred. This caused the masalais to run off into the forest. The brother ran to her and held her hand. Then they raced back to their village. (Signed Anton Waino, Ramu River).

(Slone 2001, Vol 1: p 143):  
The Story of the Ramu River  
Wantok 262 April 14 1979 p 25

Long ago, the men of Ramu lived well and were very happy together. However, one time, there was a big festival in a village. This village was fairly far away, and a young woman lived there. The men competed at singing, dancing and hitting their hand drums to get her attention. Two young men with their mother were quite late. An old woman was sitting on the trail. Mucus fell from her and she had ringworm. The fould old woman asked the two young men and their mother, "Children, are you coming to the festival? I have some taros and sweet potatoes in my net bag. Do you want to eat it or not?" The old woman had asked many young men but they spat at her and ridiculed her. However, these two men and their mother said, "Old mother, we want to go to the festival, but we're famished. We'll eat. After we regain our strength, we'll go to the festival." So, the old woman divulged a secret. "When you go to the festival, stay on your own side. Let the other men sing and dance inside while you two and your mother sing and dance on one side. The beautiful woman will tremble and come to you two. Many men will have thought that she trembled at them, but they will lose and the woman will come directly to you and your mother." So, they sang and danced excellently, and all of the other men lost and were very troubled. The two young men with their mother and the beautiful young woman went home. The old woman threw away her stick, and a heavy rain fell. The river rose and rushed towards the sea. Many people tried very hard to make a bridge across the river, but the water was too strong and carried the logs away. Everyone stayed on one side of the river, they could not get to the other side. The two young men with their mother and the [young] woman stayed on the other side. So now, this is called the Ramu River. Before, the Ramu River did not flow. This story comes from where the Ramu River is near Madang Province.

(Signed, Joseph Dua, Upper Chimbu)

## **Two myth-types from the Lower Ramu recounted by Z'Graggen (1983: 263-288):**

**Female culture maker.** Phase A of the Dzari myth is performed in the Mlurik Lakes area in the East Sepik Province. A snake mother gives birth to the female child Dzari. The girl lives with her mother in a hole, but comes out to play with the other children in the moonlight. They do not know who her parents are or where she lives. One day they capture her and give her a husband. She gives birth to a child. While the mother is away, her own snake mother visits her

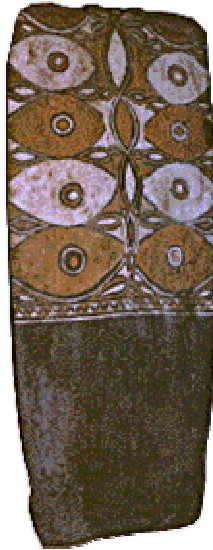
grandchild in the net bag. The father sees the snake, and kills and cooks it. Dzari, his wife, is very disturbed about it and takes revenge. While her husband is away, she pulls her own child apart and cooks it with vegetables in a saucepan. This she prepares for her returning husband. Her husband discovers the body of his child in the soup. She flees, and he is unable to follow her because she has punched holes in all the canoes except her own. Dzari departs from her place of origin and becomes creative in phase B. She moves eastwards. In Kaup she teaches the women how to deliver babies so they will no longer have to cut the baby out of the mother and thus cause her death. In Kaian she cuts passages to allow the inland water to flow into the sea and tells the water to make high and low tides. In Awar she finds the man Kamadong. She gives him the proper food, fire, house and also puts male genitals on him. Two fish women seduce him to Manam Island. Finally he escapes the two women and returns safely to Awar. But Dzari leaves him now, goes to Monumbo and finally disappears somewhere in the east.

**Spirits.** A good example of a spirit myth is the Moumbera myth in the lower Ramu River area. In phase A Moumbera or Zendam is born to a mother pig west of the lower Sepik area. He moves east. On his way he kills men to obtain their livers but also helps them in killing the hawk killer, who lives in a tall tree on the Sepik River. In Awar he has bad luck and loses his magic stone. To get the stone back he enters a woman and is reborn. Nothing unusual is reported in his youth. At the end of his initiation, however, instead of only licking at the stone like the other young men, he swallows it and is once again in possession of it. He now goes far inland to the Goam River area and phase B begins. He lives by himself in a tree, dancing and yelling day and night. Finally people discover him there and cut down the tree. Fish cut him a passage (the present day Goam River) so he can float down the Ramu River on the tree. He breaks branches of the tree and throws them at certain places. They are now the spirits of those places. One variant mentions that he threw away useful plants, but this might be an accidental addition. In Botbot, west of Kaian, he goes ashore and inland. He makes the people there cut off the heads of slain enemies and put the skulls in his house. Then, in a very special way that indicates the importance of the act, he brings in the colors for painting his house. He then moves in ceremoniously and has a permanent home. He still lives there and people protect him carefully from curious tourists. His house survived World War I. At present it is decaying, and rumours circulate that it will be rebuilt sometime. It is worthwhile to compare the life cycle of the spirit Moumbera with that of culture maker Kulbob. In phase A, both are born in an unnatural way and live in conflict with the human beings. But Kulbob is passive in Phase A and a refugee, while Moumbera is active and a warrior. Phase B begins in both myths with the departure from the area in which Phase A occurred. The culture maker Kulbob improves the living conditions of human beings. The spirit Moumbera has things done by others for himself in order to have a stay among his people, i.e., to become their spirit. The only exception is that he also gives them other spirits.

## Ramu River material culture: shields



The Ramu River basin in Madang Province parallels the larger Sepik River basin. During the rainy season, the two form a single flood plain. The population density is much lower on this smaller river and the villages farther apart.



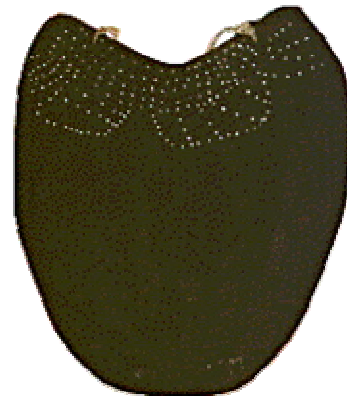
The first two shields are from the Rao language group. In **The Seized Collections**, work by A. Kasprus (1973, *The Tribes of the Middle Ramu and the Upper Keram Rivers*) is quoted:

According to Kasprus, all Rao shields have basically the same design, symbolizing the mask of the Ndaro. Ndaro is the name of a powerful supernatural being who occupies a central place in Rao religion. Shields are usually pierced near the rim for attachment of a carrying strap. Rao shields are used as a defence weapon in combination with bow and arrows. The Rao do not manufacture spears. Although they barter spears from the neighboring Breri, they do not seem to use them as fighting weapons but

hold them "as trophies or showpieces."

The first shield is unusual in that the basketry weaving is still intact on the lower part of the shield. The addition of the bas-relief figure is not common. The second shield is more typical, including the fact that it has lost its woven basketwork.

The third shield is a breastplate shield from Usino Village at the top of the Ramu River, near the Markham Valley. The dot design is accentuated with white lime pigment.



Photographs, text and maps copyright © [Carolyn Leigh](#), 1996-2009. All rights reserved.

<http://www.art-pacific.com/artifacts/nuginea/shields/ramu.htm>



## Lower Ramu River carvings

**Figure 1:** Mask from the lower Ramu River. Red and blue enamel paint with traces of white lime pigment dots. Eyes are shell.

Lower Ramu artifacts have similarities to carvings from the Lower Sepik River and adjacent coastal areas. Masks and slit-gong drums from the Lower Ramu are traded along the coast as far as the Murik Lakes and out to Manam Island and the Schouten Islands in the Bismark Sea.

This mask is used in ceremonial dances. The mask is not worn directly on the face, but is part of a towering cane dance framework (**tumbuan**) covered with thousands of feathers.

We saw 6 frames being constructed in 1986 at Banis Pig near Bosmun. A large area (**banis**) had been fenced off with high woven mats (**blind**) in front of the men's house. Only initiated men worked in this banis. Each frame was about 12 feet (4 meters) tall and quite narrow like a bulbous spire. Brilliant red, yellow, white and black feathers were applied in flat, over-lapping layers with the same density that flowers are put on a Rose Bowl Parade float. Photos of similar tumbuans from this area show fan and cone shapes.

The tumbuans were to dance at the next full moon, about two weeks away, if they were finished. Otherwise, they would appear the following moon. The men didn't mind if we watched them work, but no photos were allowed. During the ceremony, colorful leaves, flowers, fruits and massive displays of white shell jewelry are added to each costume. A long, full grass skirt is tied along the lower edge of the cane to conceal the dancer inside.

**Figure 2:** Old slit gong drum (**garamut** in Pisin English) under a Men's Haus in Damar, behind Buliva off the Lower Ramu River.



This garamut and others in the area are gazetted by the Papua New Guinea National Museum and may not be exported. Some of the men were cranky about this. They felt it was their garamut and if the Museum wanted it, they should buy it. Otherwise, the villagers should be free to sell it if they wanted to.

This garamut is almost identical to one pictured in **The Seized Collections**, pp 57-59. The following information is from Dirk Smidt's description in that catalog except for the notes in ().



The garamut was collected from the village of Kayan (Kaian) near the mouth of the Ramu River which is a center of slit gong drum manufacture. From there slit gongs are traded to neighboring areas. The openwork beneath the human figure on the end lug represents an upside down animal, possibly a possum. The incised designs on the side were interpreted as animals or parts of animals. (On a similar drum collected by Peter Hallinan, the designs were said to represent human faces.)

Garamuts are kept in ceremonial houses and only men are allowed to play them. They are used for music during ceremonies and for signaling. (Sometimes when we come into a village unannounced, an old man will go and beat on the garamut to signal the people to come in from their gardens if they have artifacts to sell. The deep, resonating voice of the slit gong drum carries for miles along the river and hills.) Garamuts are considered to have a spirit and they have names. They are powerful like masks and figures. They can kill people or make them sick. A garamut may take on other forms and walk at night. Garamuts are used in initiation ceremonies.

**Figure 3:** Detail of the end lug of the Damar drum showing ancestor/clan figure, possibly a possum underneath and a small bird on the right.



**Figure 4:** Detail of lug from another slit gong drum. This type of figure is typical of the Lower Ramu River and is often used to decorate canoe prows. It may represent a half-human/half-sea eagle ancestor from this area. The Wokam Village and Keram River figures with similar elongated, beak-like noses from the Middle Ramu may also represent a similar ancestor spirit who is part human and part eagle.



#### Diary entry, 1986: Lower Ramu Masks

- **When not in use, the masks are the responsibility of the village Big Men.** Ron was allowed to look at one group of masks which was stored in a small shelf high up in the peak of the Haus Tambaran. In another village, all the Big Men were away and the masks were left in the keeping of young initiates. They were quite serious, but also excited to have this responsibility. We were taken along a narrow track to a small bush house beyond the village gardens. The masks were on a similar shelf, but at eye level as we parted the hanging thatch.
- **Masks are said to have the power to kill people** and may be thrown away or sold if they are thought to be harming the village. In a third village, one clan had recently converted to a fundamentalist Christian mission. They wanted to get rid of their masks but were afraid of their power.

**When we showed up, we were seen as a good solution.** We would not only buy the masks for cash money, but also take them very far away where any anger they might have towards the clan would be ineffective. The masks were brought out to us carefully wrapped in burlap rice bags as we walked on the two hour trek back to our canoes. The men were very nervous and we were not allowed to take the masks out of the bags. We just felt the shapes to see how many there were.

- **There is very little published on the Ramu cultures and most of the people collecting the oral tradition in the field are Christian linguists.** An American family was working with one language group near Buliva when we were there. They had three little girls and were concerned because they had discovered that their youngest, who was about 3, didn't understand English. All her friends and caretakers were local people and they spoke to her in **Pisin** or **Tok Ples**. The middle girl spoke all three and she acted as the **turnim talk** for her little sister so she hadn't needed to learn English to speak to her parents.

**The toilets in this part of the Ramu** were only rickety open cane frameworks built out over the river at the downstream end of the village. The linguists invited us for an excellent dinner, but the most memorable thing was that they had a proper sit-down, flush toilet complete with seat.

- **We were staying in a Men's Haus bossed by an older Big Man.** The linguists said that he was a very powerful sorcerer who had people killed. The Haus was a simple one, but in the peak was a beautiful disk that represented the sun.

Photographs, text and maps copyright © [Carolyn Leigh](http://www.art-pacific.com/artifacts/nuginea/ramu/riverlow.htm), 1996-2009. All rights reserved.  
<http://www.art-pacific.com/artifacts/nuginea/ramu/riverlow.htm>

# Middle Ramu hit by flooding

By ROSALYN EVARA

MANY villagers are now displaced and a food shortage is imminent as heavy rains and flooding continue in the Middle Ramu District of Madang Province.

Following reports received from the district of an outbreak of waterborne diseases as a result of the flooding of the Ramu River, MP and Minister for Fisheries Ben Semri made a visit yesterday to assess the situation.

Mr Semri was accompanied by the acting district administrator Suckling Gi, president of Josephstaal local level government Flavian Kasingai, president of Arabaka local level government Joe Maira, community leader Mark Bongade and this reporter.

The district is isolated and inaccessible by road so the Minister and his entourage flew into the area.

From the air it was visible that the villages hardest hit so far were in the Upper Ramu area and some parts of Middle Ramu including Mr Semri's village of Djam, plus Anaberg, Jitimbu, and Wakibu.

Houses were seen completely submerged while food gardens were destroyed by the water from the river which had made in-roads into these villages.

While not much flooding was seen at places such as Keram, Sogeram and Kwanga the *Post-Courier* was told it would worsen if the rains continued.

At Anaberg station Theresita Walgam a community health worker at the Catholic Health Centre at Anaberg said since the rains started almost a month ago pneumonia and diarrhoea cases were becoming common.

She said she was seeing at least 10 cases a day.

She said children in particular from the station and nearby villages had also developed sores

on their legs as a result of being in contact with water.

She said the area was also experiencing an outbreak of whooping cough but this was before the floods.

Also at Anaberg station the Minister was told that gardens had been destroyed and that sago had become their main diet.

At Kuanga Mr Semri heard that while the area had not been affected, flooding was expected.

The headmaster of a primary school Wenceslaus Wamba said teachers had resumed for the 2010 academic year but this depended on the weather.

He said if the weather did not improve classes would have to be suspended. Mr Wamba said this was for several reasons like hygiene as it was likely the toilets would flood. He also feared that some children from neighbouring villages attending the school would have to cross rivers, which were flooded and risk their safety.