SEPIK RIVER COMMUNITY SOCIO ECONOMIC BASELINE SURVEY REPORT.

ABSTRACT

The envisaged Xstrata Frieda Copper-gold mine project has a high potential to seriously affect the Sepik River Flora and Fauna. The Sepik river system is the life line to many for generations and no price can be tagged on for commercial purposes. To represent the uninformed and the voiceless community formally, the community opted to form an association to serve its purpose to:

- Address the environmental, social, cultural and economic impacts of the mine
- Negotiate for the Highest & Best Benefit Stream for the affect Community

To seek the consensus of the community a survey team of 3 resource personals, boat skipper, and an assistant were engaged to conduct the interview and collected the data from the 13th to the 16th April 2012. Due to limitation of the financial resource, only 14 villages were sampled of which the statistics are presented in this report.

Our gratitude and acknowledgement to our Canadian partner, World Association for Christian Communications (WACC) for the financial assistance, the Pacific Peoples’ Partnership (PPP) for guidance, and Leonard Vincent Kasa, for the vision, leadership and technical advice. Without all your support this would not have been possible.

Thank you from the AAA Team! (Refer Appendix 6)
1.1 Introduction

The Frieda River Copper Gold prospect was discovered in 1967 and has had numerous exploration programs conducted to date. With the onset of the final feasibility study on the project, there is a serious and growing concern by the Sepik River Communities on the Environmental, Social, Cultural and Economical consequences from the impending mining operation as evident by other mines in PNG, particularly the Ok tedi Copper-gold mine.

Arguably, all of these mines in PNG have not fully met the Environmental, Social and Economic obligations set by the Government of Papua New Guinea (GoPNG) and as expected by the people. All indicators demonstrated a gross negligence by both parties, (GoPNG & the Developers), and moreover with poor tracking and monitoring system, resulting in our affected people not gaining the equitable share of benefits which they deserved in return of the extraction of their resources from their land.

The upcoming Frieda Copper-Gold mine project is no exception, as demonstrated by the GoPNG on its lack of adequate community consultations, past experiences of ill-conceived agreements that compromise the environment and the benefits which prompted us to conduct this Survey to gauge consensus from the SILENT and VOICELESS Sepik River Community to Road Map our destiny in relations to this imminent mining project. With sincerity, our Good Friends” WACC” made this all possible.

Furthermore, this survey was conducted to determine the most likely mine impact on the Biophysical & social environmental, cultural and economic aspects for comparative assessment purpose on “before and after” construction and operation phases of the mining project and press for BEST PRACTICE and BENEFITS through a formal representative Association of the Sepik River Community.

The random sampling survey was confined to the 14 Upper and the Middle Sepik River Villages only. These villages were; Kamanjaw, Ambunti, Savanaut, Korogu, Suatmeri, Indabu, Yentchen, Kanganamun, Tigawi, Kararau, Kamanimbit, Indingai, Aibom, and Kandinge. All together it has an estimated population of 10,000 people.

They were selected only for the following reasons;

- Presence of the Ward Member in the village
- Easier and faster to collect the information with high questionnaire return.
- Due to cost & time limitation.
1.2 Background information

Ninety three Percent of the sample villages indicated no proper awareness’s done on the mine impact while 7% indicated Xstrata’s presence at the villages but awareness’s done on the global Xstrata’s success rather than the potential mine impact on the community.

This proved our hypothesis of lack of proper awareness done by the Xstrata, (as the developer).

The above scenario is probably a serious evident of lack of proper Business Plan for the Mine. GoPNG has no right to compromise the Sepik River that sustains the life of many people without close consultation with the people.

An acceptable Mining Business plan should have the following important attributes; Environmental, Social, Cultural and Economic considerations with the community involvements from the start for a proper alignment and the foundation for continuous improvements for a win-win solution between the developer & the impacted communities.

The subsistence supply driven approach is not the rule of the game in the current global economy. It must be demand driven which means;

- **Sepik River, (Avisat)**, as a Product. The Sepik River is an international “ICON” of PNG in the Tourist industries with its unique and undisturbed primitive quality arts, traditions & culture that creates curiosity in the minds of the tourist far abroad to come, as well as the undisturbed self renewing supply of fresh water products that sustains the livelihood of those that calls him/herself “SEPIK”.

  Additionally, The Sepik River Community (Avisat) has yet to document a lot of its sacred traditional rituals and arts that makes it special.

  All these are of great concern and threats due to the Commissioning of the Frieda Copper gold Mine Operation.

- **Maximum Economic Return.** The operation of the current feed stage of the Mine is greatly affecting the “Avisat” due to the fast build up of the sediment at the river bed and the diversion of currents into Tributaries and the Lakes is a serious concern to the river communities which no price can be tagged on.

  There is apparently very little “Before and After” impact assessment on the Biophysical environment, of the river community prior the Feasibility Study stage. This could demonstrated a gross negligence by the GoPNG and the developer, (Xstrata).

  This has been the practice in all the operating mines like OTML, Hidden Valley and the recently commissioned Ramu Nickel mine.

  There is no provision of discounts and credit offered to the communities prior any commencement of any mine activities of the affected communities in PNG to date.
Question # 20 of the questionnaire calls for that social infrastructure services that the rivers communities had been denied off by the Government for the last 38 years since independence to be in placed prior the commissioning of the Frieda Mine.

Additionally, in question# 20 the total sample population called for a permanent relocation to higher ground and expressed great concern due to the;
- rapid sediment build up on the Main Sepik River bed causing over flooding and
- Diversion of main current to the tributaries and lakes causing water pollution and sedimentation as evident at the big Chambri Lake.

Further, Question # 23 reflects the community consensus of the “commercial approach “that is to be taken upon the commissioning of the Frieda Cooper Mine in return for the free usage of the Sepik River and to compensate for the negative Environmental, Social, Culture and economic impact of the mine.

The four level 3 businesses ideas are proposed by the population sample were Shipping, Dredging& Waste Management, Environmental monitoring and Airline.

It is envisage that the profit generated from the mega businesses will assist service the social infrastructures conditioned by the community for the lack of service deliver for the last 38 years, referred in question 20.

The costing and pricing of the benefit stream to the communities have to be calculated at the “Highest & Best” rate. From the bad experiences in PNG mining history, the Avisat is not prepared to Trade off.

Meaning that the growth rate of the living standard of the affected Sepik River Community- “Avisat” has to be PROPORTIONAL to the rate of the ;
- a. Extraction of the Minerals and the
- b. Negative impact on the Biophysical, Social, Cultural and Economic aspect affecting the communities as the result of the mining activities.

- Sepik River as the Trade centre / Location for Business:
The need to bring the business closer to the customers for easy reach and distribution of Goods and service is paramount important for the Frieda River copper gold mine.

The choice to use Free Sepik River as mode of transport for the benefit of Supply Chain Management is obvious for cost efficiency purposes compared to other options.

Question # 23 reflects river community’s willingness to negotiate commercial arrangements which Xstrata as the developer must take into consideration seriously.

- Community consultation & Involvement Promotion
The designed survey sample questionnaires were distributed to prove our hypothesis of the lack of proper awareness of the activities of the Xstrata Mine Developer was evident by the series of questions raised by the villagers.
The lack of proper information dissemination and community involvement from the start is a gross negligence and is a serious concern by the affected river community.

1.2 Literature Survey

Among the villages sampled in the Upper, Middle and Lower Sepik River area, the copies of designed questionnaires were selectively issued to Ward members or at their absence to the village elders.

With the assistance of the survey team members, questionaries were read out, interpretate and documented accordingly for better understanding quick questionnaire return.

This opinion survey / Data Collection questionnaires had five categories;

Category A: Biophysical Environment
- Sepik River – Waterways, Lakes and the Wetlands
- Source of Food & Income: Fish and Other Marine products
- Barter System
- Water & Fish: (Polluted & Contaminated)
- Willingness for Change
- For Positive change, (as an Individual contribution / participation).
- For Positive Change, (as a Group/ Community contribution /Participation

Category B: Social Environment
- Life Style (Normal way of Life)
- Migration (moving out – for job search)
- Immigration (moving in – from employment)
- Social Values
- Family
- Education & Health Facilities
- STI & HIV AIDS
- Increase of STI / HIV AIDS
Category C: Economic Benefits / Options

- Employment Opportunity
- Education Level (for employment)
- Income (from Mine)
- Sub Contract (for G & S to the Mine)
- Types of Infrastructure assistances to the region
- Ownership of Mega Businesses
- Types of Mega Businesses

Category D: Cultural Shocks

- Interference (of the mine....)
- Sepik River as Cultural icon: Culture Extinction
- Culture heritage
- Vernaculars. Traditional rites, ceremonies and dances, (loss of....)
- Money (cause of loss of cultural & intrinsic values)

Category E: Formation of the Association

- Formation
- Purpose
- Name

All these variables were considered and the information relevant to them were researched and recorded to assist in the survey report. Moreover, the data was used to determine the consensus from the people to form an association to address the mine impacts, (Biophysical & Social Environment, Cultural Shocks and Economic Benefits), in the Sepik River Community.

1.4 Problem Statement

The problem statement which forms the basis of the awareness Survey / data collection is: “Xstrata Mine will cause a serious Biophysical & Social environmental, Cultural and Economical Impacts on the voice Less Sepik River Communities that has no formal
representative entity to address them upon the mining project’s construction and production.”

1.5 Theoretical framework

The primary objective of this research was to investigate and identify the potential mine impact on the Biophysical, Social, Cultural and Economic aspects of the Voice Less Sepik River Communities and accordingly form an Association to address them individually and summarily.

Variables divided into five parts were used to determine the individuals/groups’ opinions of the sample villages at the Upper, Middle & Lower Sepik areas to prove if the variables can play a significant role in the mine impact of the Xstrata operation of the Frieda Mine Project.

From the experiences of the six mines to date in PNG, it was fully accepted that the Xstrata operation of the Frieda copper-gold mine will have serious Biophysical, Environmental, Social, Cultural and Economic consequences on the Sepik River Communities in the short and long term.

The Sepik River, Wetlands, & Lakes are the Life Lines to thousands of People that have been living there for generations. Apart from the total lack of basic services: Health, Education, Clean Water, and Electricity, the last priceless asset for the community to lose is the Sepik River which the communities can not compromise with.

There is a growing fear that Acid Rock Drainage, (ARD) from the tailing and Sedimentation from the Mine operation into the river system will affect the whole eco system, thus trickling down to the food chain and the loss of traditional values, cultural settings, barter system, immigration, Spread of STI & Aids and so on. The indication is that they will be worse off if they are to trade off here.

Ownership of Mega Businesses such as Shipping, Catering, Fuel Supply, Waste Management, and Environmental monitoring and should be reserved to the Sepik River Communities in lieu of the free usage of Sepik River as service provider to the mine for them to realise the “highest and best” economic return.

2 METHODOLOGY

2.1 Population Sample

There are 30 potential Xstrata mine impact villages within the Upper, Middle and Lower Sepik River areas, starting from Prugunawui to Tambunum village which the survey team intended to cover.
However, due to time and financial constraints, the research was limited to 14 potential mine impact villages that formed the population sampling. The population for the study comprised 14 participants / interviewees, (preferably Ward Members), of which each questionnaire containing 30 questions were handed out to each village representatives present at the villages visited for interviewing and data collection purpose.

### 2.2 Sample Characteristics

The population sample was comprised of 14 percent Upper Sepik villages, 72 percent Middle Sepik villages, 14 percent Lower Sepik villages. 78% of the villages were located along the river bank while 22% were located in the Chambri Lake.

Of the 22% inlet / Lake Villages, 60% were from the Niaura tribe while 20% from the Parimbe Tribe and other 20% from the Chambri Tribe.

The Break up by tribe was as follows;

- Niaura = 39.5 %
- Parimbe = 39.5 %
- Chambri = 7 %
- Wariakui = 14 %

Seventy nine (79) percent (%) of the respondents were male forks and 14% were in group representatives while 7% were women participants.

### 3 HYPOTHESIS SECTION

From the theoretical framework discussed, four hypotheses were developed for this research.

**Hypothesis One:**

- There is a lack of proper Awareness on the Mine Impact on the Sepik River Communities by the operator of Frieda River Copper-gold mine –Xstrata Ltd

**Hypothesis Two:**

- There is a great fear and serious concern that upon commissioning of the operation of the mine, there will be a serious negative Biophysical, social, cultural and economic consequences on the Sepik River Communities.
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

Hypothesis Three:

- Mega businesses associated with the River system such as Shipping, Catering, Fuel Supply & Waste Management, and Environmental monitoring should be Restricted to the Sepik River Communities in lieu of the free usage of the Sepik River as the mode of transport servicing the mine.

Hypothesis Four:

- The effective way of addressing the mine impact will be the Formation of an Association representing the silent communities to serve its purpose.

4 RESULT / DATA ANALYSIS

4.1 Demographic Section

The demographic section of the Questionnaire, (Names of Villages, Population, and Name of interviewee & Status in the Community), the respondents were 80% ward members 10 % village elders/ group as respondents and 10% by women respondents.

Refer appendix # 4 Data base of Resource Personals. This section is not weighted in our analysis as it is not part of the questionnaire designed but inserted to track our record of our visits to the sample villages and maintaining a data base of resource personals in each village.

4.2 Questionnaire Design

The questionnaire contained 30 questions seeking various information of which;

i) 7 questions required Biophysical Environment impact information,

ii) 8 on the negative Social impacts,

iii) 5 on the Culture Impacts

iv) 7 on the Economic Benefits / Opportunities and

v) 3 questions on the Formation of the Association.

4.3 Biophysical Environment

The serious negative impact on the biophysical environment was deduced as follows;

4.3.1 The effect of the Frieda River Copper Gold Mine on the Sepik River – Waterways, Lakes and the Wetlands

Response: 100%. Agreed and viewed that the Frieda River Copper-gold Mine will contaminate water system, with Sedimentation causing diebacks on the main Sepik River forest and vegetation, the water
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

ways, lakes and wetlands resulting in a completely dry up during dry season killing the total ecosystem.

4.3.2 Source of Food & Income: Fish and Other Freshwater products

Response: 100% agreed that the mine waste will poison the fish and all other fresh water product causing serious food security problem and cash flow problem as well as affecting the health of people.

4.3.3 The Extinction of the Barter System

Response: 100% agreed that the barter system that they enjoy with their neighbouring tribes will gradually extinct weakening the bilateral relationship and the cultural strength due to lack of trade items for exchange.

4.3.4 Water & Fish: (Polluted & Contaminated)

Response: 100 % Agreed: People will get sick by drinking the polluted water and eating the contaminated fish

4.3.5 Willingness For Positive Change

Response: 100% For: Would like to change the situation described in Qt # 1, Qt # 2, Qt # 3 & Qt # 4 for better.

4.3.6 For Positive change, (as an Individual contribution / participation)

Response: 100% For: As concerned individual all agree to express oneself to raise concern with others around them educating them for the consequences of the mine operation.

4.3.7 For Positive Change, (as a Group/ Community contribution /Participation

Response: 100% For: As community to stand as one to form an association to road map the community’s destiny and voice through the formal association for the Best Environmental, social, Cultural and economical destiny for the affected Sepik River Communities.

4.4 Social Environment

Of the population sample, 100% acknowledged the social benefits expected from the mine, at the same time cautioned the out weighing of the social problems from the benefits as detailed below;

4.4.1 Life Style (Normal way of Life)
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

Response: 100% viewed that when the mine comes on stream, the normal way of social life will be affected. Meaning that the social structure will collapse and with growth of more micro family units then the macro families, Less time spend on our bigger clans and tribes matters and the gradual Loss of Tradition & cultural heritage

4.4.2 Youth Migration from the village (moving out – for job search)
Response: 100% viewed that the youths will leave the village to go and look for job in the mine with or without suitable and appropriate qualifications.

4.4.3 Immigration (moving in – from employment) lead to social disorder
Response: 100%, All feared the immigration of people from outside in will create social disorder.

4.4.4 Social Values
Response: 100%, All viewed that the money earned from the mine will be used largely on alcohol and other activities that may destroy social values.

4.4.5 Family
Response: 100%; Agreed: There is an ongoing threat as to the breakdown of family foundation and structure.

4.4.6 Education & Health Facilities
Response: 100%: Are optimistic about the mine to help build better education and health facilities in their area.

4.4.7 STI& HIV AIDS
Response: 100%, All agreed that the mine would mean a serious concern and a threat to the community with regards to STIs and HIV AIDS cases in their areas.

4.4.7 Growth of Sex Related Epidemics (STIs & HIV AIDS)
Response: 100%. All agreed there will be a significant increase and spread of the Sexually Transmitted Infection (STI) and HIV AIDS

4.5 Economic Benefits/Opportunities
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

4.5.1 Opportunity for employment

Responses: 30% of the respondents indicated that they may find unskilled job with the mine while 70% responded that they may not get skilled jobs.

4.5.2 Education qualification for employment

Response: 80% responded favourably to get a job with the right qualification while 20% responded negatively due to other reasons.

4.5.3 Cash Derived as income

Responses: 100%, agreed that the cash derived as income from the mine will help Sustain their needs like health, education and processed food.

4.5.4 Subcontract from the mine

Responses: 100%, responded that with the right qualification and track record, Subcontracting to the mine should not be a problem.

4.5.5 What would you want to see the mine developer do to help the people of the region?

Response: All, (100%), responded that the neglected basic social services – Education, Health, Clean water, Electricity and Relocation must be achieved within agreed timeframe from the reaching of the various Agreements.

4.5.6 Ownership of Big Businesses

Responses: All , (100% ), are in for the idea for the ownership of Big businesses by the River community that are associated with the River system such as:

- Shipping,
- Catering,
- Fuel Supply,
- Waste Management; and
- Environment Monitoring.

4.6 Cultural Impact (Shocks)

100% of the population sample acknowledged cultural interference and loss of cultural heritage as the result of money earned from wages, salaries, business spin-off etc. from the mining operation.

4.6.1 Opinion: What do you think the mine would mean to your culture?
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

Response: All responded that a total interference and real threat of its existence.

4.6.2 Sepik River as the cultural icon that any outside interference on a large scale would contribute to the ‘killing’ of the vibrant culture

Response: 100% of the respondents viewed this will happen due to the influence of the mine.

4.6.3 Preservation of cultural heritage before it dies away

Response: All agreed for the preservation before it’s extinction.

4.6.4 The influence of the mine can mean loss of vernaculars, traditional rites and ceremonies and dances.

Response: 100% Agreed that will be the scenario in the near future.

4.6.5 Money as the major factor driving the young people to forego their cultural and intrinsic values.

Response: 100% are in the view that money will be the major cause.

4.7 Formation of the Association

4.7.1 Representation by an association to address all concerns.

Response: 100% strongly want the formation of the association as the “Best Option” forward.

4.7.2 Association serving its purpose

Response: 100% total confident of association serving its purpose.

4.7.3 Name of the Association

Response: 100% opted for the name “Avisat” as the Local Vernacular

5 HYPOTHESIS TESTING
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

5.1 Hypothesis One:

Ho: There is a lack of proper awareness of the mine impact along the Sepik River Community by the Developer – Xstrata and the Government of Papua New Guinea.

Ha: There is sufficient awareness of the mine impact along the Sepik river Community done by the developer - Xstrata.

This hypothesis was found to be true as proven by results that the entire sample population raised serious concerns by all the villages visited, that the developer is not doing sufficient Awareness on the Mine impact along the Sepik River Community.

5.2 Hypothesis Two:

Ho: There is a great fear and serious concern that upon approval and construction of the mine and its supporting infrastructure, there will be a serious Biophysical, social, cultural and economic consequences on the Sepik River Communities.

Ha: There is no need for the fear and concerns upon the approval and construction of the mine and its supporting infrastructures of the mine as there won't be any serious Biophysical, social, cultural and economic consequences on the Sepik river Communities.

This hypothesis was also proven to be true feeling of the people as indicated by the results showed, (refer question # 1, 2, 3 & 4). Furthermore, (refer question # 5), it has proven that their willingness to mobilise together by educating each other for positive change. Thus, this hypothesis is substantiated.

5.3 Hypothesis Three:

Ha: Mega businesses associated with the River system such as Shipping, Waste Management, Environment monitoring and should be Restricted to the Sepik River Community in lieu of the mine impacts and the free usage of the Sepik River as mode of transport servicing the mine.

Ho: Mega businesses associated with the River system such as shipping, waste Management, Environment monitoring and should not be restricted to Sepik River Community.

This hypothesis was also proven to be collectively endorsed by the population sample and is substantiated.

5.4 Hypothesis Four:

Ha: The effective modes of addressing the mine impact will be the Formation of an Association representing silent communities.

Ho: The formation of the Association representing the silent communities is not the effective mode of addressing the mine impact.

This hypothesis has 100% endorsement of the sample total population as the best option to voice the voiceless communities for the “Highest & Best” economic returns and the call for environmental, social, cultural and economical standard of practice in the operation of Xstrata Mine for the minimum disturbance as possible.

6 DISCUSSION

6.1 Approach taken

This study was undertaken to determine the potential mine impact on the Sepik river Community’s Biophysical Environment, Social, Cultural and Economic aspects by seeking consensus from the community to incorporate a formal representative association to address them appropriately.

6.2 Sample population

The survey was confined to three population samples of the Upper and the Middle Sepik River region done on a random basis because of easier & faster data collection & analysis due to high cost and time limitation. A total of 14 questionnaires were handed to the respondents of the 14 villages visited. The Patrol Team supervised with the interpretation and the documentation of the questionaries. From the 14 returned questionnaires, the data was tabulated and analysed to form this report.

6.3 Data analysis

From the tabulation and analysis, the potential mine impacted villages of the Sepik River are yet to be made aware of the significance of mine impact on the communities. Form experience of the 5 operating & 2 decommissioned mines in PNG, uninformed impacted communities are worsted off. The lose of acceptable biophysical environment, social and cultural heritage, the traditional arts & rituals and the economic loss resulting in a high poverty life after the mine closer is the largest threat to the entire Sepik River Community.

6.4 Biophysical environment

Biophysical environment is the single most important factor that sets the foundation and connects the lives of the people. Any effect on it will not affect the food chain but all others factors that compliments and supplements the river community socially, economically and
culturally. As indicated in Qt # 1, 2,3 & 4) , every single individual wants to stand as one to address the mine impact.

6.5 Social environment

As evident in the analysis of the data, the community will be worsted off socially due the outside influences of the mine. Apart from the benefits of the social infrastructure such as Aid Post and schools, alcohol, drug and wide spread of STIS & HIV AIDS cases are the major threats to the River community.

6.6 Economic impact

Positive economic impacts expected from the mine will be employment and spin offs. Not all will be employed due to lack of education and experiences. As the result community opted to owning mega businesses such as Shipping, Fuel Supply, Catering, waste Management and monitoring associated with the Sepik River system as alternate, ( Qt # 22), in return for the free usage of the Sepik River and the envisaged/potential environmental damages. (Referred in Qt # 1, 2,3 & Qt # 4 )

6.7 Cultural shock

Data analysis indicated there is also a serious threat of the loss of Cultural heritage, traditions and customs. This substantiated the call for institutionalisation. Referred Qt # 23 &24.

6.8 Formation of Association

Data analysis indicated that the formation of the representative legal entity to voice the silent communities for the common goals and objectives is paramount. The river communities are envisaging the BEST economic, social, cultural and environmental options. It is not prepared to compromise any sub standard practice.

6.9 Hypothesis

From the theoretical framework, the following four hypotheses were developed;

- There is a lack of proper Awareness’s of the Mine Impact along the Sepik River Community by the Developer – Xstrata

- There is a great fear and serious concern that upon commissioning of the operation of the mine, there will be a serious Biophysical, social, cultural and economic consequences on the Sepik River Communities.

- Mega businesses associated with the River system such as Shipping, Catering, Fuel Supply & Waste Management, Environment monitoring should be Restricted to the Sepik River Communities in lieu of the free usage of the Sepik River as mode of transport servicing the mine.
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

- The effective modes of addressing the mine impact will be the Formation of a formal Association representing the silent communities to serve its purpose.

All of them were tested and proven to be true views to substantiate our discussion for the mine developer (Xstrata), to consider changing its development strategies for the advantage of the Frieda Copper Mine.

7 CONCLUSION

The information gathered expressed the serious concern and the fear on the Sepik River as the Icon in business and cultural heritage which no price can be tag on which is treasured by the voiceless community along and within the river system.

It is hope that this data will educate the developer to take an HOLISTIC approach in the development of the mine from that start that should be environmentally, socially, culturally and economically viable for all.

8 RECOMMENDATION

- Xstrata to conduct proper awareness’ to the affected communities.
- Formation of the Association incorporating three sub associations for the Upper, Middle and Lower Sepik River communities: Awareness to all communities & formalities to vote representatives.
- Institutionalisation of Cultural Heritage.
- Social Infrastructures Services must be in place prior commissioning of the mine.
- All mega Business – Shipping, Catering, Fuel Supply and Waste Management must be restricted to the Sepik river people in return for the free River usage and the environment, social, cultural impact as the result of Frieda copper-gold mine.
- Further similar survey on the lower sepik ending at Kopar the mouth.
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

9 APENDICES

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>2</td>
<td>Variable</td>
</tr>
<tr>
<td>3</td>
<td>Tabulation of the Questionnaire Responses</td>
</tr>
<tr>
<td>4</td>
<td>List of Resource Personals/ Respondents</td>
</tr>
<tr>
<td>5</td>
<td>AAA Survey Team</td>
</tr>
<tr>
<td>6</td>
<td>Each Sample Population / Village Visited</td>
</tr>
<tr>
<td>7</td>
<td>Biodiversity – Environment &amp; Cultural</td>
</tr>
</tbody>
</table>
**Appendix # 1 – Questionnaire**

*(All responses will be treated with strict confidentiality)*

**CATEGORY OF QUESTIONS FOR THE**

**SOCIO ECONOMIC BASELINE STUDY OF THE SEPIK RIVER COMMUNITY REGARDING THE IMPENDING EXTRATA MINE PROJECT.**

*Name of Village: ____________________________*

*Population: ________________________________*

*Name of Interviewee: ____________________________ (Position) ____________________________*

---

**Category A:  BIOPHYSICAL ENVIRONMENT**

**Guiding Questions**

1) What do you think the Frieda River Copper Mine would do to your Sepik River, Waterways, Lakes and Wetlands?
   - a. It will contaminate water system
   - b. Sedimentation will fill the river bed causing diebacks
   - c. Our rivers, waterways, lakes and wetlands will dry up completely during dry season killing the eco system
   - d. All of the above

2) If the Sepik River, Waterways, Lakes and Wetlands are affected by the waste from the mine, what do you think will happen to the fish and other fresh water products that you catch for meal and cash?
   - a. They will all die out.
   - b. There will be serious food shortage and cash flow problem to sustain the normal life.
   - c. There will be widespread health related problems associated with the water & food poisoning, (fish).
   - d. All of the above

3) What would that mean to the barter system that you enjoy with your neighbouring tribe?
   - a. This will kill the Barter system
   - b. There will be no surplus for cash income
   - c. Bilateral relationship with the neighbouring tribe will be weak.
   - d. All of the above.

---

*SRC – Awareness / data Collection Report – 17th April 2012. By, Jerry Wana, Cletus Yambon & Martin Dangi – For WACC*
4) Do you think the people will get sick by drinking the polluted water and eating the contaminated fish?
   a. Yes
   b. No

5) Would you like to change the situation you’ve described in Qt # 1, Qt # 2, Qt # 3 & Qt # 4?
   a. Yes
   b. No

6) What can you do as an individual?
   a. Express yourself,
   b. raise concern with others,
   c. educate others of the consequences of the mine impact
   d. All of the above

7) What can you and others do in your community to change the situation?
   a. Stand as one
   b. form an association
   c. Road map the community’s destiny
   d. Voice through the formal organisation for the Best Environmental, social, Cultural and economical Development for our affected Sepik River Community from the Mine.
   e. All of the above.

Category B: SOCIAL ENVIRONMENT

Guiding Questions

8) What do you think will happen to your normal way of life that you experience now when the mine comes on stream?
   a. Social structure will collapse
   b. There will be a change in the life style towards a micro family units rather than Macro family.
   c. Less time spend on our bigger clans and tribes matters
   d. Loss of Tradition & cultural heritage
   e. All of the above.

9) Would you think young men and women would leave the village to go and look for job in the mine?
   a. Yes
   b. No
10) Do you fear the immigration of people from outside into your area that could leave to social disorder?
   a. Yes
   b. No

11) Would you think the money earned from the mine be used largely on alcohol and other activities that may destroy social values?
   a. Yes
   b. No

12) Would you think there is an ongoing threat as to the breakdown of family foundation and structure?
   a. Yes
   b. No

13) Do you think the mine will help to build better education and health facilities in your area?
   a. Yes
   b. No

14) What do you think the mine would mean to STDs and HIV AIDS cases in your area?
   a. A Real concern
   b. A threat
   c. Will complement the growth and wide spread of the cases
   d. All of the above

15) Would the STDs & HIV AIDS cases increase as a result of outsiders and more money?
   a. Yes
   b. No

Category C: ECONOMICAL BENEFITS

Guiding Questions

16) Would you have the chance to find an employment at the mine?
   a. Yes
   b. No

17) Would your education level allow you to easily land a job in the mine?
   a. Yes
   b. No

18) Would you think the cash derived as income from the mine help sustain your needs like health, education and processed food?
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

a. Yes
b. No

19) Do you intend to secure a sub contract to provide goods and services to the project?
   a. Yes
   b. No

20) What would you want to see the mine developer do to help the people of the region?
   a. Education for all
   b. Health for all
   c. Clean Water for all
   d. Electricity for all
   e. Relocation for all
   f. All of the above

21) Do you think the people of the Sepik river region must have some kind of big business with the mine?
   a. Yes
   b. No

22) If so what kind of big business would you want to have/see?
   a. Shipping
   b. Dredging
   c. Environmental monitoring
   d. Airline company
   e. All of the above.

Category D: CULTURAL IMPACT

Guiding Questions

23) What do you think the mine would mean to your culture?
   a. Total interference
   b. A real threat of its existence
   c. Both of the above.

24) Do you see the Sepik River as the cultural icon that any outside interference on a large scale would contribute to ‘killing’ the vibrant culture?
   a. Yes
   b. No

25) Do you think we must preserve our cultural heritage before it dies away?
   a. Yes
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

b. No

26) The influence of the mine can mean loss of vernaculars, traditional rites and ceremonies and dances. Would you see that happening in the near future?
   a. Yes
   b. No

27) Would you see money as the major factor driving the young people to forego their cultural and intrinsic values?
   a. Yes
   b. No

Category E: FORMATION OF ASSOCIATION

Guiding Questions

28) How do you see you being represented by an association that would address all your above concerns?
   a. Best Option
   b. Not a Good idea

29) Would the association serve its purpose?
   a. Yes
   b. No

30) What do you want the association to be named?
   a. Sepik River Community Association
Appendix # 2   VARIABLES

Category A: BIOPHISCAL ENVIRONMENT

1. Sepik River – Waterways, Lakes and the Wetlands
2. Source of Food & Income: Fish and Other Marine products
3. Barter System
4. Water & Fish: (Polluted & Contaminated)
5. Willingness For Positive Change
6. For Positive change, (as an Individual contribution / participation)
7. For Positive Change, ( as a Group/ Community contribution /Participation

Category B: SOCIAL ENVIRONMENT

8. Life Style (Normal way of Life)
9. Youth Migration from the village (moving out – for job search)
10. Immigration (moving in – from employment) lead to social disorder
11. Social Values
12. Family
13. Education & Health Facilities
14. STD & HIV AIDS
15. Significance of the increase (STDs & HIV AIDS)

Category C: ECONOMICAL BENEFITS

16. Employment Opportunity
17. Education Level (for employment)
18. Income (from the Mine)
19. Sub Contract (for the G & S to Mine)
20. Types of Infrastructure assistances to the region
21. Ownership of Mega Businesses
22. Types of Mega Business
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

Category D: CULTURAL IMPACTS

23. Interference (of the mine....)

24. Sepik River as Cultural icon: Culture Extinction

25. Culture heritage

26. Vernaculars. Traditional rites, ceremonies and dances, (loss of....)

27. Money (cause of loss of cultural & intrinsic values)

Category E: FORMATION OF THE ASSOCIATION

28. Formation

29. Purpose

30. Name

The table in the next page, (Appendix # 3), summarizes the responses in percentages using the above variables. For example, the percentage for variable fifteen is 7 and 7 out of 14 responses. Therefore, the percentage of Yes is 50% while No is 50%.

The AAA Survey TEAM – 17th April 2012 @ Korogu Village (Sepik River)
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

Appendix # 3  Tabulation of the Questionnaire Responses

<table>
<thead>
<tr>
<th>Question #</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td>30%</td>
<td>70%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td>80%</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td>80%</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td>20%</td>
<td>80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>23</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td></td>
<td></td>
<td>100%( Best Option)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td>40%</td>
<td>60%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix # 4   List of Respondents (in the Villages)

<table>
<thead>
<tr>
<th>#</th>
<th>Village</th>
<th>Population</th>
<th>Name</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kamanjau</td>
<td>200+</td>
<td><strong>Alphones Mava Singe</strong></td>
<td>73637325 / 76649949</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Vice President Sepik Wetland)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ambunti Station</td>
<td>400+</td>
<td><strong>Henick Anska</strong></td>
<td>72238253</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(President Ambunti womens Association)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Watameri</td>
<td>400+</td>
<td>James Yesinduma (Ward Member)</td>
<td>n/a</td>
</tr>
<tr>
<td>4</td>
<td>Indavu &amp; Kumbuivu</td>
<td>150+</td>
<td>Daniel Simba (Ward Member)</td>
<td>72962718</td>
</tr>
<tr>
<td>5</td>
<td>Yentchen</td>
<td>300+</td>
<td>Alphonse Niamini (WM)</td>
<td>N/a</td>
</tr>
<tr>
<td>6</td>
<td>Kanganamun</td>
<td>400+</td>
<td>Cyril Kapi (WM)</td>
<td>n/a</td>
</tr>
<tr>
<td>7</td>
<td>Tikawii</td>
<td>50+</td>
<td>Ali Yambai (WM)</td>
<td>n/a</td>
</tr>
<tr>
<td>8</td>
<td>Kararau</td>
<td>600+</td>
<td>Luke Naua (WM) former</td>
<td>72353543</td>
</tr>
<tr>
<td>9</td>
<td>Kamanibit</td>
<td>762</td>
<td>Cyril Tara (village Committee)</td>
<td>72371790</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Email: <a href="mailto:sepikarts@yahoo.com.au">sepikarts@yahoo.com.au</a></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Indingai</td>
<td>262</td>
<td>Lawrence Kram (WM) Former</td>
<td>73663324</td>
</tr>
<tr>
<td>11</td>
<td>Aibom</td>
<td>700+</td>
<td>Peter Nokondi</td>
<td>73865503 71376911 73567041</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>George Tounokuan (<a href="mailto:grtounokon@gmail.com">grtounokon@gmail.com</a>)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Charles Mandali</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Kandinge</td>
<td>869</td>
<td>Godfried Saun (Ward Member)</td>
<td>73648389</td>
</tr>
<tr>
<td>13</td>
<td>Savanaut</td>
<td>560</td>
<td>Lemech Kembi (Ward Member)</td>
<td>73648425</td>
</tr>
<tr>
<td>14</td>
<td>Korogu</td>
<td>797</td>
<td>Cletus Yambon (Ward Member)</td>
<td>73824538</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Email: <a href="mailto:cyambon@gmail.com">cyambon@gmail.com</a></td>
<td></td>
</tr>
</tbody>
</table>
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

Appendix #5: AAA Survey Team

Group members: Jerry Wana, Boat Skipper, Cletus Yambon, Calos Solomon, White Pukpuk, (Baby) & Martin Dangi, Korogu Village - 15th April 2012.

Jerry Wana, (Sepik Wetlands Management Initiative) Cletus Yambun, (Ward Member – Korogu Village) & Martin Dangi - Business Consultant - (BTLM & BCMA, PNGUT), Dip Eco Policy Analysis, (NRI), MMS (Vudal Uni)
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

Sangra Guest House Pagwi 17th April 2012- Home for the Tourist

Appendix # 6: Evidence of Each Sample Village Visited

A. Upper Sepik Villages:

Kamanjaw Village - 14th April 2012

Ambunti Station (women's President) April 15th 2012

B. Middle Sepik Villages
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

Indavu Village- Ward Member 15th April 2012

Suatmeri Village - 15th April 2012.

Korogu Village – 17th April 2012.

Yentchen Village 15th April 2012

Kanganamun Village – 16th April 2012 Cyril Kapi-W/ Member – 1st on the Left

Tikawie Village – 16th April 2012. Mr. Ali Yambai, (Ward Member, 4th from the Left).
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

C. Lake Villages

Aibom 16th April 2012

Indingai – Chambri - 16th April 2012

Aibom Village -16th April 2012.

Kandinge Village 16th April 2012
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

D. Lower Sepik Villages

Kararau Village – 16th April 2012

Dangimat / Kararau Village 16th April 2012.

Kamanimbit Village 16th April 2012

Kamanimbit Village -16th April 2012
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.

Appendix # 7: Biophysical & Cultural Diversity (Primitive Virgin)

Undisturbed Biophysical Environment (Upper Sepik) Crocodile breeding Land

Ambunti Carving

Yentchen Village – Traditional Fish Trap, (Nami)

Indingai Village Chambri – Landmark
Problem statement: Xstrata Mine will have a serious environmental, Social, Cultural and Economical Impact on our Voice Less Sepik River Community.


Martin’s Son, 15th April 2012

Haus Tambaran – Korogu Village 16th April 2012

Background is Chambri Island – Chambri Lakes