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Ramu Nickel Mine

A Triple Bottom Line Failure?

Briefing Paper:

Prepared by Techa Beaumont,
Mineral Policy Institute, Australia
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Contents

This briefing paper is a summary of reports and information available on the MPI website, for further details visit:

http://www.mpi.org.au/regions/pacific/png/ramu/

1. Introduction

The proposed Ramu Nickel mine is a lateritic nickel deposit discovered at Kurumbukari, a site south of the Ramu River in the early 1960's.

In 1997, Highlands Gold, previously involved in the development of the riverine dumping Pogera mine - secured management of the project, and in the same year, Highlands Pacific was established as a new company to manage the Ramu Nickel Project.

The project's proposed footprint extends from the Kurumbukari mine site in the Ramu River Catchment across 100 kilometres of indigenous customary lands to the Rai Coast. A pipeline will carry ore concentrate to be processed at the coast, with the subsequent mine waste to be dumped offshore into Basimuk Bay.

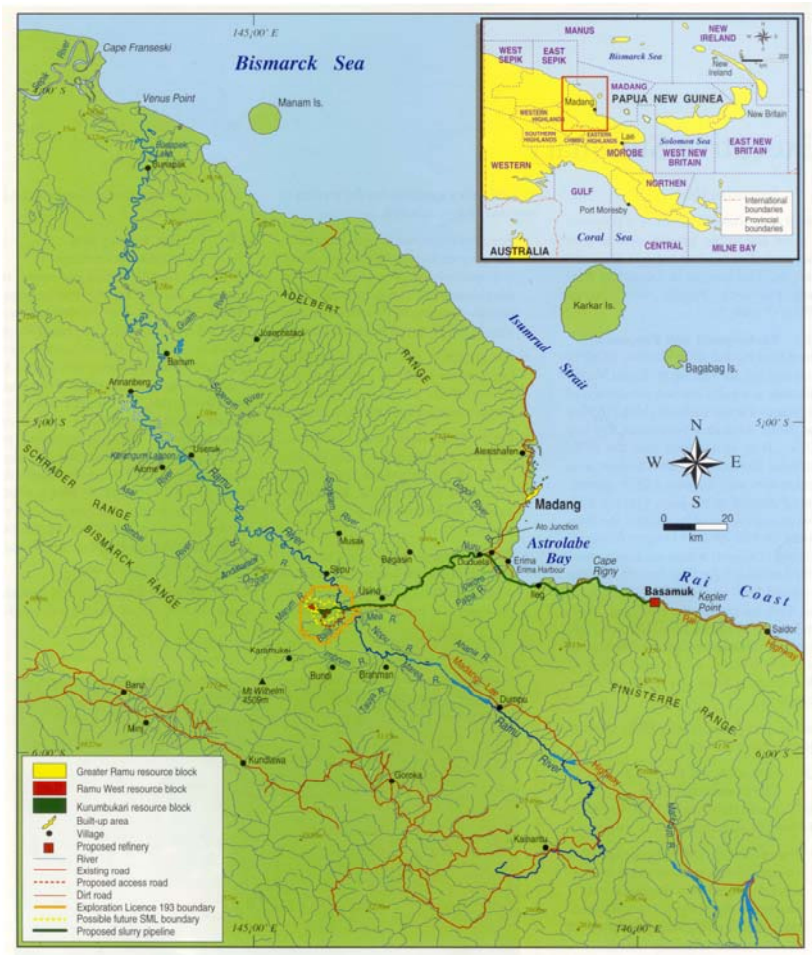
The project poses serious economic, environmental and social risks that are discussed in this paper.

According to industry analysis, capital costs are likely to blow out, and the project specifications make it economically unviable, utilising an unproven processing technology that has been problematic and uneconomical in existing lateritic nickel mines.

Independent studies have indicated that the project impact statement is flawed and risk assessments are inadequate. The project utilizes the internationally discredited practice of submarine tailings disposal.

Experts have also confirmed that the project will undermine the livelihoods of local indigenous peoples threatening rich fishery resources and the pristine environment that makes the region one of the major tourist destinations in PNG.

Growing community opposition over the environmental and social impacts of the project increase the threat of interruptions and conflicts directed at the mine's operations.



2. History of the Project

Since 1998, the Ramu Mine has been the subject of considerable controversy in both Papua New Guinea and internationally, in particular due to concerns that its ocean dumping (submarine tailings disposal or STD) operation will pollute pristine Astrolabe Bay.

In September 1999, Highlands Pacific provided the government of Papua New Guinea with the Ramu Nickel Environmental Plan prepared by Natural Systems Research (NSR) with the aim of securing permits for the project. In March 2001, amid much local and international controversy, and with significant evidence of unacceptable risks associated with the development, the PNG Office of Environment and Conservation (OEC) approved the Ramu Nickel Environmental plan.

The project however failed to attract an investor amongst the major nickel mining companies or international capital markets, believed to be linked to both the problematic economic and technical issues and unpredictable capital costs associated with the exploitation of low grade nickel deposits, as well as the controversy over environmental and social issues surrounding the project.

In 2004, the China Metallurgical Construction Company, a state-owned steel company started negotiations to fully finance the operations, including rights to construct, operate and secure off take arrangements for the proposed Ramu nickel mine. Media reporting outlined that the move was to ease a raw material shortage for stainless-steel makers such as Shanghai Baosteel.

Uncertainty over the environmental and social credentials of the Chinese developer have been raised by local community representatives as well as parliamentarians in the PNG Government. Negative impacts from serious environmental pollution concerns also appear to vastly outway the potential benefits from the mine for local communities and Papuans in general. Community concerns and opposition over the project also pose serious risk for the project.

Basimuk Bay, site of the ocean dumping proposal, ©MPI

3. Serious doubts over predicted economic benefits and unproven technology.

The Ramu mine contains a low-grade nickel deposit, in a 'nickel laterite' ore type, to be exploited by problematic and unproven processing technologies.[1] There is widespread doubt around the HPAL (high pressure acid leaching) technology, which is linked to recent economic and technical failures in Australia, and capital cost overruns at other mines proposing its use.[2]

The exploitation of nickel laterite deposits has been notoriously problematic technically, and has brought economic ruin or severe financial problems to companies experimenting with the HPAL processing technology. Mines developed in Australia have been plagued by technical difficulties and have failed to return profits to their investors.[3] Inco's Goro Nickel project has experienced 45% increase in capital costs.[4] These economic issues led mining giant Western Mining Corporation to pull out of laterite.[5] Analysts also proclaim scepticism over even the largest and highest-grade deposits, and cite delays and enormous increases in capital costs of proposed nickel mines.[6]

Based on experience at mine sites in Australia, and attempts by Inco (a Canadian mining company) to develop a similar deposit in New Caledonia, there is a significant likelihood that the proposed Ramu mine's capital costs have been substantially underestimated. The unresolved technical problems may also prevent the mine operating at expected capacity and within expected budgets.

A lack of financial and technical success at Australian pressure acid leach plants is viewed by industry analysts as inhibiting similar pressure acid leach developments worldwide in all but the largest and highest grade of the laterite deposits, such as the Inco's Goro Project.[7] Some analysts even continue to express doubt over the viability and success of this project.[8]

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[1] Mineral Policy Institute, *In whose Interest? Economic and Technical Considerations in the Development of the Ramu Nickel Project,* p. 3

[2] ibid

[3] 'Nickel soars but laterite still loser', SMH (per AAP) April 15th 2002, www.smh.com.articles/2002/04/14/1018333454155, Anglo's Aussie nickel venture an aimless walkabout, Barry Fitzgerald, Posted 2002/03/21 Mineweb 1997-2004 www.trinity.mips1.net/MGCoal.nsf/0/4225685F0043CE9F42256A150068439A?OpenDocument

[4] Projected capital costs increased from US1.45 billion to US$2billion in 2002, in "Nickel" Bill McCutcheon, Natural Resources Canada at http://www.nrcan.gc.ca/mms/cmy/content/2003/42.pdf (accessed February 23rd 2005)

[5] WMC Nickel- the 'new economy' nickel business (briefing August 2000) http://www.wmc.com/pubpres/aug00nbb/sld117.htm (accessed 18th May 2004)

[6] WMC Nickel- the 'new economy' nickel business (briefing August 2000) http://www.wmc.com/pubpres/aug00nbb/sld117.htm (accessed 18th May 2004)

[7] The Past and the Future of Nickel Laterites', Dr. Ashok D. Dalvi; Dr. W. Gordon Bacon; Mr. Robert C. Osborne, Inco Limited, PDAC 2004 International Convention, Trade Show & Investors Exchange, March 7-10, 2004.

[8] As late as Dec 2003, doubt has been expressed over whether the project will succeed, with a French financial journal, "Les Journes des Finances' writing in "Our advices on the mining groups listed in Paris" (Stock Exchange): ' we are more sceptical on the chances of success of …, the Goro Nickel project, in New Caledonia, which consist in the construction of a hydrometallurgical plant which would allow to exploit laterites, an ore poorer in nickel that garnierites. The total cost of the investment is very high (US $ 1.9 billion) for uncertain chances of success.

RAMU SPECIFICATIONS LOOK UNECONOMICAL FOR NICKEL LATERITE

The Ramu project deposits sits at the lower end of nickel grades for projects currently under consideration, with the analysis of leading nickel producers indicating the project is uneconomical. (The project has nickel grades of around 0.98-1.1%1[9] nickel compared to 1.3-2% nickel for other projects currently considered[10]).

WMC (recently aquired by BHP Billiton), one of the world's largest nickel producers, and globally one of the largest mining companies had refused to invest money in nickel laterite activities, considering it too risky and citing cost overruns with the current producers.[11] While it has investigated more than 15 projects over the last 4 years, none have met their investment criteria.[12]

Analysts and major mining companies such as WMC and Inco have stated that nickel mines utilizing the expensive and problematic technology proposed at Ramu are not economically viable at the nickel grades present at Ramu, at production rates or capital costs proposed.

Existing industry analysis suggests that the specifications of the Ramu Nickel project are not currently economical.[13] Analysis by financial sector and the major nickel mining transnationals presents a general consensus that an successful and economical mine requires:

-A minimum plant size of 45,000 tonnes per annum --
-Minimum plant and infrastructure costs of between US$1.0-1.5billion
-Quality resources in terms of both the grade of the deposit (ie % of nickel in comparison to waste rock) and the size of the deposit, with a minimum grade of 1.3% for economic viability processes involved,
-both technology and experience in nickel laterite to deal with complex processing issues.[14]

The specifications of the Ramu mine fail to meet these criteria on a number of grounds:

-A lower grade than is currently economically viable (around 1% nickel vs 1.3% nickel for economical deposits)
-Lower yearly capacity than is estimated to be economically viable (35,000 tonnes vs. 45,000 tonnes).
-Lower capitals costs than estimated to be economically viable (estimated at US$650million[15] vs. operational estimates of US$1-1.5billion for a viable nickel laterite operation).
–A lack of experience of the Chinese developers in the nickel laterite industry (no prior experience with mining, and in particular no experience of nickel laterites)

[9] See Highlands Pacific website, Ramu Project Information, http://www.highlandspacific.com (accessed May 24th 2004)

[10] The Past and the Future of Nickel Laterites', Dr. Ashok D. Dalvi; Dr. W. Gordon Bacon; Mr. Robert C. Osborne, Inco Limited, PDAC 2004 International Convention, Trade Show & Investors Exchange, March 7-10, 2004 and WMC Nickel- the 'new economy' nickel business (Briefing August 2000) www.wmc.com/pubpres/aug00nbb/sld117.htm (accessed May 13th 2004)

[11] ibid

[12] ibid

[13] Ibid

[14] ibid

[15] Gains 3 months to negotiate USD 6 million Ramu nickel development deal in PNG, at www.interfax.com/com?id+5696989&item_Chinese

4. Community Concern and Landowner Opposition

Community concerns over the development of the Ramu nickel mine first surfaced in 1999-2000 during the process for seeking government approvals. In recent months concerns have grown to outright opposition to the project by landowners both along the Rai Coast and the Ramu River. These were expressed in an advertisement run in major newspapers in PNG in August 2005 (see appendix)

Local indigenous communities' customary rights over land are safeguarded under Papua New Guinean law and are strongly defended by local communities in PNG. Communities along the Ramu River and Rai Coast practice traditional subsistence livelihoods and are hunters, fishers and farmers, whose pristine and fertile environment provides the basis for their economies.

Advertisement run in the post courier on 16th August

Community leaders in the impact zone feel they have not been properly consulted nor informed of the impacts of the mine, and do not support its development due to the negative impacts and significant risks to their economic, social and environmental well-being.

Previous mining projects in Papua New Guinea have been characterised by grave environmental damage and subject both to long drawn out court cases (nearly all the major mining projects in PNG, including the Ok Tedi, Panguna, Pogera and Misima mines have had legal cases brought against them by landowners whose environments have been impacted by the operations.)

Community protests against mining operations are also common in PNG. Bougainville Copper Limited's Panguna mine was forcibly closed by local landowners after the company failed to address the extensive environmental damage the mine was causing, and remains closed to this day. Other mine sites such as Pogera have been subject to property damage, including interference with infrastructure such as electricity that has temporarily closed the mine.

Community Consent:
"Still the mining company has not talked to us of all these things. We hear what is happening from the newspapers and the TV. The company is talking to the politicians and the government but not to the people.

The government goes and signs agreements and does deals with the company and they don't come and talk to the papa graum, to the landowners, they go to China and sign these agreements without our consent. We are not happy about this, they must come here and talk to us before they do that, they must talk to the people whose land it is. It is not ok that they sign these agreements without coming to us and talking to us about what they want to do with out land".
Yongeng clan leader, Damoing village

"We don't want disposal into our sea, and we do not want the pipeline on our land. When our river gets flooded it could break the pipeline and then this waste will destroy our land, our land is our life.

If that pipeline bursts then that is our graveyard. We come to sell our garden products in Madang, we can make around 100K a day to sell our produce, our vegetables and our chickens in town, and if our land is polluted, our economy will be destroyed. If the company comes we will retaliate on our own terms, we will not let the pipe come onto our land".

Erima Village elder

5. Inadequacy of Environmental Impact Assessments:

Independent scientific studies have indicated major flaws in the environmental assessment of the Ramu nickel mine. A range of groups have warned of unacceptable impacts of the proposed Ramu nickel mine, and the flawed and inaccurate predictions of the environmental plan prepared by NSR consultants. The conclusion of independent analysis was that current studies were inadequate, risk assessment incomplete, and that on the basis of significant threats to existing and potential industries and local people's livelihoods, the project as proposed should not proceed.

5a. Utilisation of Submarine Tailings Disposal in Basimuk Bay

"A Review of Risks presented by the Ramu Nickel Project to the ecology of Astrolabe Bay, PNG" prepared by scientists from the James Cook University, Flinders University and the Australian Institute of Marine Science.

The review was commissioned by the Lutheran Church to provide an authoritative analysis of the controversy around the projects mine waste disposal method. Four independent scientists from universities in Australia reviewed the existing impact assessment data and found that the company's environmental plan for waste dumping were 'fatally flawed, and are so inadequate that no realistic assessment of the mine's impact can be made'. They concluded the environmental impacts would be significantly greater than the company has indicated, including the contamination of local reef systems and parts of Astrolabe Bay with mine waste. It concluded that on the basis of the study carried out by the company, the risks to the ecology, fish, animal and plant life in Astrolabe Bay cannot be accurately predicted, but that there would be "significant biological impacts."

Dr Tom Wagner, scientist and ex-Vice Chancellor of University of Papua New Guinea

Dr Wagner reviewed the environmental plan prepared by the company consultants, NSR at the request of the PNG Government's Department of Environment and Conservation. The paper looked at chemical and toxicological aspects of the ocean dumping of tailings and mine wastes, and found that important work needed to be done to properly assess the threats posed by the project to the environment.

Then Vice Chancellor at the University of PNG, Dr Tom Wagner concluded that the Ramu mine should not be allowed because fundamental facts about the impact of tailings are missing. In an interview, Wagner described the work of NSR Consultants as ''sloppy . . . very important points are glossed over''. He found that tailings that were toxic to marine life had inaccurately been classified as non toxic, and that contrary to the suggestion that tailings would be permanently stored on the sea bed, tailings solids will likely release metals and unknown toxins throughout the life of the mine and for many years afterwards.

His report identified serious gaps in the widely circulated reports prepared by NSR Consultants, including the identification of toxins in the tailings, the consequences of depositing tailings solids and associated metals on the seabed, and the effects of ingestion of tailings solids on marine organisms. Wagner disputed Highland Pacific's claims that the tailings are likely to be buried by the sedimentation from the rivers in the area of the Vitiaz Basin. He also raised concerns about biological impacts of tailings, stating that ingested tailings may prove toxic and are an avenue for toxins to be accumulated in the food chain. He also suggested that the threat of volcanic activity must be addressed, since the nickel refinery plant is to be located near the highly active Long Island Volcano.

PNG National Fisheries Authority

The PNG National Fisheries Authority, the government arm that oversees PNG's lucrative fishing industry, concluded that the submarine tailings disposal plan posed a real threat to the tuna fishing industry and other fisheries, and concluded that the national interest in protecting this resource outweighed the value of the Ramu project to the nation. It warned that the proposed deep-sea tailings plan for Ramu is unlikely to work, given the current dynamics of the Vitiaz basin and the existence of upwelling in the region which makes the use of submarine tailings disposal an inappropriate technology. Furthermore, the fisheries resources of the Bismarck Sea were viewed as valuable food security for PNG, as well as a renewable revenue-generating source that may be hurt by the nickel mine project. "These reef and tuna resources of the Bismarck Sea rely on the continuing clean and productive environment of the Bismarck Sea.[16]"

The report also examined the wider context of the mines social, economic and environmental costs and benefits and stated "the Ramu Nickel mine project is an unsustainable project socially, economically and environmentally and cannot be allowed to proceed... mining tailings dumped into Basamuk Bay will gradually create food losses to Papua New Guinea's rich and renewable fisheries resources of the Bismarck Sea".

Coral at Basimuk bay ©Walter

Coral at Basimuk Bay ©Walter

The underwater world where mine waste will be dumped: The biodiversity of Astrolabe Bay has made it one of the major tourist destinations in Papua New Guinea, a site of significant scientific interest for its diverse marine life, and has been identified as an important region for its extremely rich fishery resources.

[16] PNG National Fisheries Authority 'Recommendations on the Ramu Nickel Project Environmental Plan' Marcy 1999

5b: Unresolved environmental risks to Ramu Catchment

The River People
We are river people, my grandparents; my forefathers have been living on this river since time began. We depend very heavily on the river system we drink the river, we wash in the river, we wash our clothes and use the river water to cook, we catch fish from the river and eat, we use the river for transportation and for transportation of goods and materials to build our houses. We benefit from the river, we use it to catch crocodiles and reptiles, prawns, everything. It is our life.

If sediment builds up, or the river is polluted we will be deeply affected.

Our river is very small, it is not very big and I don't think that our river can handle the impacts. My people of my village are very frightened. They have heard about the mining and fear that the mining will be a giant killer, it will destroy the people who live along the Ramu River.

Our concern is our life, we are not crying for money, we do not want this but the only important thing my people are thinking is that the company, the minister for mining, the provincial government must consider our livelihood before they are making their decisions.

The government and company should know that we are from PNG and we have our constitutional rights to say what is bad and what is good for our life.
Community Leader from Middle Ramu

A preliminary assessment of the impacts along the Ramu River system[17] highlights the absence of reliable data or modelling based on the environmental conditions in the region and thus an inability to rely upon the prediction of impacts in the existing environmental plan.

The proposal for the Ramu mine fails to properly model the settling ponds (the primary management strategy for ensuring excessive sediments do not enter the river system) based on conditions during peak rainfall periods[18] and acknowledges that the estimated functioning is not realistic and that ponds will not function as predicted[19]. On this basis it is expected that a much greater proportion of sediments and metals will be carried into the river system. The region has an extensive wet season, and as such this failure represents a major and significant flaw in the environmental management regime.

The NSR report for the Ramu Environmental Plan also stated that further consideration of the impacts of trace metals should be undertaken, but it is unclear whether this has been done.[20] The existence of heavy metals in fish tested in the creeks in close proximity to the mine site area indicates that trace metals present are mobile and will be absorbed into the environment[21], and that bioaccumulation of metals in plants and animals (including humans) poses significant risks[22]. There has also been minimal investigation of the leaching of metals into the groundwater in the region and how this may affect ecosystem functions or the food web.[23] The lack of detailed study into the impacts of these trace metals, and the absence of any management strategy to remove the metals from mine waste rock or water entering the environment poses serious potential risks to both ecosystem and human health of the Ramu Catchment.[24]

It is likely there will be greater than predicted sedimentation and (TSS) Total Suspended Solids in the river system and unpredicted and more extensive impacts upon the river's ecosystem including decreased fish breeding and fish catch rates.[25] Sedimentation will lead to alterations in the river system, including shallowing

[17] Mineral Policy Institute, *Ramu Nickel Mine: a preliminary review of risks facing the Ramu catchment,* at www.mpi.org.au, accessed September 18th 2005

[18] Ramu Nickel Environmental Plan, NSR Consultants, Appendix 4, 2.6 p18

[19] Ramu Nickel Environmental Plan, NSR Consultants, Appendix 4 2.7.1 see p18-25

[20] Ibid Appendix 4, 3.3.2 p 32 "Cadmium, Chromium, Cobalt and Nickel occur in concentrations likely to be disturbed… potential impacts associated with offsite transport of these materials require further consideration"

[21] Ibid, Appendix 4, 3.5, p57

[22] Ramu Nickel Environmental Plan, NSR Consultants, Appendix 4, 4.3.6 states 'subacute or chronic toxicity hazard may eventuate in swamp water environments during the wet season.'

[23] Id, note 16

[24] ibid

[25] *Ibid.*

and braiding, with likely effects of increased flooding in areas along the Ramu River that have not previously experienced flooding, and dieback of vegetation along the river.[26]

Greater than predicted loads of dissolved metals in the hydrology of both the Ramu River system, and in groundwater in the region of the mine is likely with mine sediments and eroded materials deposited along the river system containing high concentrations of trace metals and these will impact both natural ecosystems and cultivation taking place on the floodplains of the river.[27]

The majority of people along the Ramu river are subsistence farmers, fishers and hunters. Banana plantations downstream of the proposed Ramu mine, ©MPI

[26] *Ibid.*
[27] *Ibid.*

Appendix 1: Letters and Statements by Landowners Concerned with the Project:

Post-Courier, Thursday August 18, 2005

Why Is The Ramu Nickel Mine Still Being Discussed?

We the landowners of the Rai Coast and Lower Ramu strongly oppose the Ramu Nickel Mine because of its predicted impact on our land, environment and sustainable livelihood

Why aren't these authoritative voices being listened to?

National Fisheries Authority
Indonesian Government
World Bank
BHP Billiton
Lutheran Church
Dr. Thomas Wagner (UPNG)

The proposed dumping of 100 million tonnes of mine waste (called submarine tailings diposal (STD) in our sea is internationally condemned.

"The Ramu Nickel Mine Project is an unsustainable project socially, economically and environmentally and cannot be allowed to proceed."
[National Fisheries Authority Report 1999]

The Indonesian Government has confirmed its intention to ban STD. they have said they would **"follow the wisdom of countries in North America and Europe and in effect ban miners from using submarine tailings disposal."**
[Financial Times 2 December 2004]

The World Bank says **"STD should be avoided especially in island regions ...... coral reefs ...... or in coastal waters used by coastal peoples and local communities."**
[Extractive Industries Review Dec 2003]

BHP Billiton responsible for the OK Tedi Mine and its massive environmental impacts **"has decided NOT to pursue STD as a potential option for any of its current prospects."**
[BHP Billiton Website www.bhp.com]

The comprehensive Lutheran Church commissioned assessment concluded **"there will be significant biological impacts"** and the environmental plan presented **"a fatally flawed case for the discharge of mine tailings by a submarine pipe into Astrolabe Bay.**
[A REview Of Risks Presented By The Ramu Nickel Project 2001]

Dr. Tom Wagner [Geologist, Pro Vice Chancellor UPNG] : **"How can anyone in their right mind say the company should be given a permit to do this?"**
[Dateline, SBS TV "Polluting Paradise" 27 June 2001]

We are NOT going to sit here and let this mine proceed when people and organizations who know about STD's are clearly warning us.

We know very well the answer to our question in this advertisement – and we say NOT WITH OUR LIVES!

We will NOT allow you to risk our children's future for your profits.

NO RAMU NICKEL MINE!

RALCOAST

Mindere Village
Sonny Katu

Bang Village
Kin Sen
Sod yambuk

Lamtub Village
Francis Aima
Kevin Tokal
Zabin Lahra

Singor Village
Jalmak Abimurs
Kaben Kumar
Ienta Gramlem
Abarum family
Jodika Balmak
Mayak Umen
Kafer Yagus
Naif Nangamur
Alarmngai
Elias Yarom
Erin Daiou
Oruek Nungai
Jarai Noten
Sirai Mayok

Sifs Village
Sarei Yoming
Moya Kolukam
Kaiwaka Manuk
Loisu family

Warai Village
Kurex Bung
Marur family
Wall Yarom

Bilian Village
Gobimis family
Angmui Alen
Areb Alas
Gid Bel
Alsing Tamber family
Tago Kade
Dassy Tangi
Tiki Kadcai
Timnggal Kaimai
Malawing family
Karu Kaimai family
Elli Barus

Teteni Village
Wangom Yacing
Samuel Kaball
Gaberg Babuong
Damien Yagi
Dabu family
Jeffery Nickey
Nass Babunng
Dammgi Lap
Kui family
Philip Wangom
Seg family
Lukas Diuma
Rosard Dau
Kumberrani family
Yawigan Aigali
Charlie Nezi

Mur Village
Albert Dongom
Tibin Dabalgu
Zoltin Dangma

Banga Village
Kaisbom family

Reite Village
Paul Nambo
Peter Attai Nambo (Jr)
Sirik Asip
Katik Pulu
Niru Kolnado
Nakan Mennggwing
Guyap Makoe

Serlaing Village
Joe Luving
Paul Banuk
Pais Tom
Peter Kaywang
Adolf Kelangung
Lucas Kutapas
Nicklos Kamarice
John Timing
Ramu Nalcang

Maibang Village
Paul Kami
Tom Yaugo
James Amos
George Fanawa
Joe Turik
William Malewang
Joe Wingeri
Mathew Buda

Damuding Village
Benny Yalinga
Takate Yai
Vincent Asangai
Mum Tupang
Sinang Tawing
Awariak Kakayan
Andrew Manangguta
Robin Mandapo
Soka Longa
James Yamai

Gurlang Village
Sakai Popapega
Longa Soka
Ser Buwiggi
Henry Aasavir
Yondik Siroy
Arnold Longa

Suri Village
Elias Kilamung family
Bony Jrombi
Justin Yaung
Kenneth Bodi
Kamon Dem
Nosa Dem

Gabumi Village
Lukas Sui
Yawera family
Wiwenga family

Serang Village
Markus Ayula family
Lukas Takia family
Steven Nabong
Mathew Jim family

Pangang / Yori Village
Rita Jubi
Max Jubb
David Kanam
Nirau Sengai
Paul Sengai
Peter Wari
Flavina Wari
Rudy Bayumai
Angelia Bayumai
Sarah Bayumai

Malangai Village
Karop family
Sangan family

LOWER RAMU

Marangis Village
Luke Pessi

Borsi Village
Steven Lambik

Daiden Village
Andrew Gem
Clive Suku

Goiabang 2 Village
Theresia Kapes
Bruno Daser

Nemnem Village
Michael Kanuk
Genevieve Karo

Dongan Village
Wendelin dappe
Mathew Sauna
Michael Dargam
Bill Morong
Joe Mange
Nicholas Samda
Lazarus Dari
Hubert Bonge
Andrew Maser
Melchior Ware

Bosmun Primary School
Francis Arigini

Sanae Village
Willie Bau
Cecilia Bawi

Goiabang 1 Village
Adolph Nambu
Sarah Sambea

Mangai Village
Abraham Siru

Bunapak Village
Otto Koten

Unkanan Village
Emil Andem

Bosmun Health Centre
Rodney Darnuk

Jukin Village
Arnold Marabum
Jack mambum

Bangapela Village
Michael Anum

Kaironn Village
Gabriel Raim

THIS NOTICE IS SUBMITTED BY SIMWARR OF THE RAI COAST ENVIRONMENT FOUNDATION C/- PANGPANG COMMUNITY SCHOOL SAIDOR DISTRICT OFFICE, P O BOX 20 MADANG.

Ramu mine concerns

I AM a Grade 8 student at Bosmun Primary School. I am writing to raise my views regarding the two mines that will be operating upstream of Ramu river. When the mine starts, there will be problems affecting our environment and resources.

We don't want resources to be affected by mining, such as the contamination of water and the destruction of life in the river. Our growing population today and tomorrow depend on the river. The chemicals from the mines will destroy much of our marine life as well as our lives. How would we preserve our resources and environment for our future lives?

Justine Oriru
Madang

"If the mine comes many things will change, and our environment will be threatened, destroyed, social problems such as alcoholism, diseases and health problems may arise. We could have problems with our water, now it is clean and fresh.

We have medicinal creeks which we use for traditional medicine, the creeks come out of the limestone are very clear and pure. The limestone we use in our traditional medicine and we us it as a traditional paint. It has cultural values for us. My ground, my land is very good and fertile. We grow many things, many cash crops and food crops.

We don't want the mine to come, we don't want it to take the limestone from our place.

Last Sunday (first week August) I have been speaking to my people of the mine that is proposed, we have had community meetings about the mine coming to our area. We compared the good things that the mine might bring with the bad things that could happen and altogether we are of the same heart, we do not want to risk our way of life, we don't want mining in our place.

In all the villages in our area, in Ymai, Malangai, Yori, Suri, Sereng, Gabumi, Ayawang and Sibok we have been concerned about this and have been talking about mining. We tribes from this area, the Samang and the Naying agree in this.

We don't want the destruction that the mining would bring, and we will not let the company onto our land to take our limestone."

Wiwai clan elder, Pangpang village