

THE SUKUNDIMI WALKS BEFORE ME

SIX REASONS WHY THE FRIEDA RIVER MINE MUST BE REJECTED



About this report

This is a publication of the Jubilee Australia Research Centre and Project Sepik

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Published 14 March 2021

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Project Sepik

Project Sepik is a not-for-profit organisation based in Papua New Guinea that has been working in the Sepik region since 2016. Project Sepik advocates for the vision of a local environment with a sustained balance of life via the promotion of environmentally sustainable practices and holding to account those that are exploiting the environment.

Jubilee Australia Research Centre

Jubilee Australia Research Centre engages in research and advocacy to promote economic justice for communities in the Asia-Pacific region and accountability for Australian corporations and government agencies operating there.

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Acknowledgments

Thanks to our colleagues at CELCOR, especially Mr Peter Bosip and Evelyn Wohuinangu for their comments on drafts. Thank you to Rainforest Foundation Norway for generously supporting this project.

Cover image: Local village people along the Sepik River



**SAVE THE
SEPIK**

THE SAVE THE SEPIK CAMPAIGN

The Save the Sepik campaign is fighting to protect the Sepik River from the Frieda River Mine. It is a collaboration between Project Sepik and Jubilee Australia Research Centre.

For more information, visit www.savethesepik.org

Follow the campaign on Instagram, Facebook and Twitter:
@SaveTheSepik



We also want the world to see and feel the interconnectedness. This must be a World river. This must be a World Heritage. We still have it here in Papua New Guinea!

We need to bring this message out to the world: That, this is not only Papua New Guinea's river and rainforests, but Papua New Guineans are custodians of something that must belong to the world.

- EMMANUEL PENI, PROJECT SEPIK

I went into the Haus Tambaran as a boy, I came out of the Haus Tambaran a man bearing the markings of the Pukpuk. I know the history of my people, I learned the intricate and complex cultures and traditions of my people, I am a Sukundimi tribesman. I am the protector of the river and my people.

The river is the gateway to the afterlife. Where the Supreme Sukundimi glides through the water, fish multiply in numbers. Where the Supreme walks on the banks, the sago palms spring forth. I am one with the river, she takes care of me and I take care of her.

- DUNCAN GABI, PROJECT SEPIK



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EXECUTIVE SUMMARY

The Frieda River mine and associated infrastructure poses the greatest threat to the Sepik region in its history.

The Frieda River mine is proposed to be the largest ever mine in the history of Papua New Guinea, and among the largest mines in the world.

The Frieda River is a tributary of the mighty Sepik River, the longest river in PNG, which is 1,126 kilometres long. The Sepik winds in serpentine fashion like the Amazon, and is renowned for the rich connection of its people to their environment, and its outstanding biodiversity.

The mine and its associated infrastructure have been proposed to be built across East and West Sepik (or Sandaun) Provinces, in an area that has been Tentatively Listed for World Heritage Status by the Government of Papua New Guinea for both environmental and cultural reasons.

The company proposing the mine, Frieda River Limited, is a wholly owned subsidiary of PanAust Limited, an Australian incorporated company. PanAust is wholly owned by a Chinese state-owned company, Guangdong Rising Assets Management (GRAM).

As at time of writing, the mine is currently being assessed by PNG's environmental authority, Conservation and Environment Protection Authority (CEPA) and by the Mineral Resources Authority (MRA).

THE SEPIK RIVER IN ITS GLORY



The plan for the mine, which would last 30 or 45 years or even longer, includes a huge tailings dam, which would be located in the headwaters of the Frieda River. According to the EIS formally submitted for project approval, the dam would be required to hold all waste (waste rock and tailings) from the mine, in an area that is prone to earthquakes and extremely heavy rainfall.

The Project would include one of the largest dams in the world which would be required to safely store toxic tailings for the duration of the mine, and forever afterwards. The dam will be constructed in a seismically active area and **if the dam collapsed it would be catastrophic**, leading not only to serious loss of life but untold damage to the health of the Sepik River.

We know from PNG's history, what the potential damage to the Sepik River could look like.

If the tailings dam, which is proposed to be built in a region prone to earthquakes and high rainfall, were to fail or collapse, thousands of kilometres along the Sepik River would be destroyed, leading to destroyed forests, destroyed food gardens, flooding, inundated villages, wastelands of inarable land and chemical contamination. Lives would inevitably be lost. The river itself would be choked with mud, tailings and waste rock that could never be removed, that leaches chemicals into the surrounding environment through the process of acid rock drainage.

This would have devastating impacts on more than 400,000 people of the Sepik, who are spiritually connected to the river, and depend entirely upon it for their livelihood.

The Sepik – its wild environment, which is rich in biodiversity, and the vibrant culture of the Sepik people – is under threat.

This report outlines six key reasons why the Frieda River mine should not go ahead:

- The environment and culture of the Sepik are irreplaceable.
- The EIS is completely inadequate
- The tailings dam will not be safe
- Deep Sea Tailings Disposal is not an alternative
- Communities does not consent
- We've been here before: Catastrophic damage from the Ok Tedi and Panguna mines shows how the Sepik could end up if the mine were to go ahead.

RECOMMENDATIONS

This report recommends that the Frieda River mine should be rejected by PNG's CEPA and MRA. We submit that it would be more appropriate for the Government of Papua New Guinea to instead take the next steps required to formally nominate the Upper Sepik River Basin for World Heritage Status.

The Sepik – its wild environment, which is rich in biodiversity, and the vibrant culture of the Sepik people – is under threat.

INTRODUCTION

The Frieda River mine is proposed to be the largest ever mine in the history of Papua New Guinea, and among the largest mines in the world.¹ The project would be 'one of the most isolated and remotely located mines in the region', and 'one of the most technically challenging mine sites in the world'.² The mine would be located in the northern foothills of the New Guinea Highlands (Central Range) in West Sepik province, and its associated infrastructure would span across both East and West Sepik provinces.³

The company proposing the mine, Frieda River Limited, is a wholly owned subsidiary of PanAust Limited, an Australian incorporated company. PanAust is wholly owned by a Chinese state-owned company, Guangdong Rising Assets Management (GRAM).⁴

Associated infrastructure for the mine includes the Frieda River hydroelectric project, the Sepik infrastructure project, and the Sepik power grid project.⁵

The Frieda River copper and gold mine would be a large scale, open pit mine, 16,000 hectares in size.⁶ It has been proposed to initially run for 33 years, and possibly extended to last longer than 45 years.⁷ Six main deposits have been identified at the Frieda River copper and gold mine: Horse, Ivaal, Truki, Nena, Koki and Ekwai. The mine area also contains several other unexplored deposits.⁸ The Frieda River mine would be based on extracting the Horse-Ivaal-Trukai-Ekwai-Koki (HITEK) porphyry copper-gold deposit. Frieda River Limited estimates that this contains 12 million tonnes of copper and 19 million ounces of gold, which would represent one of the largest undeveloped copper resources in the world.⁹

By reserve, this places the Frieda River deposit among other major copper mines: Escondida, Chile (>32 Mt); Cananea, Mexico (26.874 Mt); Collahuasi, Chile (25.875 Mt); Andina, Chile (18.8 Mt); Toquepala, Peru (17.65 Mt); El Teniente, Chile (15.2 Mt); Cerro Verde, Peru (12.9 Mt).

Frieda River is also ranked among the world's largest gold mines, for example (South Deep, South Africa (32.8 Moz); Grasberg, Indonesia (30.2 Moz); Olimpiada, Russia (26 Moz); Lihir, PNG (24 Moz); Carlin Trend, USA (12.46 Moz); Boddington, Australia (12.35 Moz). Note that the estimated annual production rate at Frieda River (230,000 oz) is far lower than most of its counterparts.¹⁰

Concentrate slurry will be piped to Vanimo where it will be dewatered prior to export in ocean freighters with feed rates between 41-46 Mt per annum.¹¹ Buried pipelines will run for approximately 325 kilometres between the mine area and the port of Vanimo, through rainforest and wetlands.¹²

The Frieda River mine's construction phase, which could take approximately seven years, would (according to the EIS) involve freight being barged up and downstream along the Sepik River, prior to roads being completed between Vanimo, Green River and the Frieda River hydroelectric project.¹³ This would include a pipeline, spoil dumps and incinerators all carrying, storing or burning toxic waste materials, and could involve the discharge of toxic material into the Frieda River.¹⁴

The amount of copper and gold estimated proposed to be available for extraction at Frieda River has varied. Frieda River Limited estimates that the average annual metal in concentrate production from the mine will be 175,000t copper and 230,000 oz gold, although other estimates are slightly lower.¹⁵

Frieda River's annual production amounts appear low when they are compared with other major copper and gold mines around the world with similar reserves. For example, the mines gold production would be less than one quarter that of the Carlin Trend gold mine in the USA, and less than half that annual production of the Cerro Verde copper mine in Peru and the Raomiro Topic copper mine in Chile.¹⁶

The Frieda River mine is proposed to be the largest ever mine in the history of Papua New Guinea, and among the largest mines in the world.

THE HYDROELECTRIC PROJECT AND TAILINGS DAM

The Frieda River hydroelectric project would be located 'approximately 16 km downstream of the mine, on the Frieda River in West Sepik province'.¹⁷ This facility would generate hydroelectric power for the mine. The hydroelectric project would comprise 'a large reservoir and embankment, a spillway, a power generation system and associated support infrastructure'.¹⁸ It would be both a water retaining dam and a hydroelectric facility. The location would be remote, approximately 200 kilometres from the northern coast.

The hydroelectric project would include a 12,400 hectare reservoir within the Frieda River catchment, which would also act as an integrated storage facility (ISF) or tailings dam.¹⁹ This ISF would be required to permanently contain, underwater, the tailings waste and mine waste rock from the mine.²⁰ The ISF would purportedly hold a total water storage capacity of 9.6 billion cubic metres at its maximum operating level, and a maximum storage capacity of approximately 4.6 billion tonnes of waste rock and tailings.²¹ The embankment for the reservoir will be located approximately 40km upstream of the Sepik River, and would be 187 metres high.²²

The catchment area for the ISF would cover 1,033 square kilometres, incorporating the 'Frieda, Nena, and Niar river valleys in the northern foothills of the New Guinea Highlands (Central Range) in Sandaun Province and East Sepik Province'.²³ This tailings/hydroelectric dam area would be over twice the size of Sydney Harbour (in square kilometres).

Construction activities associated with the hydroelectric project would cover 127 square kilometres of land,²⁴ much of which is currently

untouched rainforest, wetlands and river systems, that are tentatively listed for World Heritage. The proponent company states that the hydroelectric project would provide clean, sustainable energy for more than 100 years and that it would provide 'enduring positive socio-economic benefits for Papua New Guinea'.²⁵

The company further states that the ISF would have an operating life of 'greater than 100 years'.²⁶ However, beyond the project's closure, it is unclear who would be responsible for the ongoing management and maintenance of the tailings dam, or how it will be funded.

The company has proposed that excess electricity from the hydroelectric project would be provided to Papua New Guinean consumers in the north-west, through the 'Sepik power grid project'. However, in reality, there is no guarantee that excess electricity will be available, or that consumers will gain access to electricity.

The company also plans a Sepik infrastructure project to be focused on increasing transport to the mine. It includes:

- o building five major and 16 minor bridges over watercourses;
- o upgrading roads between Vanimo and Green River;
- o a new road built from Green River to Telefomin via Hotmin;
- o upgrading the Green River Airport and establishing fibre optic cable and mobile phone services;
- o the redevelopment of the port of Vanimo.²⁷

The road from Vanimo to Hotmin will involve more than 280 kilometres of roads being upgraded, or built through pristine environments and areas of significant cultural heritage.²⁸

THE FRIEDA RIVER MINE

Proponent: Frieda River Ltd

Minerals: Copper and gold

Size of mine: 1600 square km

Mine life: 33 years to > 45 years

Estimated reserves: 12 Mt copper, 19 Moz gold

Average grade: 0.44% copper and 0.23 g/tonne gold

Estimated waste: 2.9 billion tonnes, 50% tailings, 50% waste rock

Size of tailings dam: 124 square km

Maximum storage capacity of tailings dam:

9.6 billion cubic metres water; 4.6 billion tonnes of waste rock and tailings

Average annual rainfall: > 8 metres

Number of villages estimated requiring relocation: 4

Number of villages to be potentially affected by a catastrophic event: 30

**THE INTEGRATED STORAGE
FACILITY WOULD BE AROUND
2 TIMES THE SIZE OF
SYDNEY HARBOUR.**

**IT WOULD BE REQUIRED TO
PERMANENTLY STORE TAILINGS
WASTE AND MINE WASTE ROCK
FROM THE MINE UNDERWATER.**



WHERE IS IT UP TO?

In November 2018, PanAust prepared an Environmental Impact Statement (EIS) regarding the proposed project and provided it to the CEPA.²⁹ PanAust Ltd then lodged a proposal for developing the Frieda River project, and an amended Special Mine Lease (SML) application, with MRA in December 2018.³⁰

In June 2020, Pan Aust told *The National* that the MRA had completed its preliminary assessment of the proposal for development, except for the Frieda River hydroelectric project, which includes the tailings dam.³¹ It was further reported that the Government of PNG had assigned Snowy Mountains Engineering Corporation (SMEC) as consultants to 'assess the integrity of the dam and also provide remedial measures in the event of failure or an alternate remedy'.³²

According to Pan Aust, CEPA advised the MRA that it had completed its preliminary assessment of the Environmental Impact Statement. However, they noted that CEPA's public consultation program with communities along the Sepik River corridor had not been completed 'due to stiff opposition from the River communities and staff safety concerns'.³³

In the meantime, significant controversies surrounding the EIS have emerged in recent months. These are discussed at length in the sections below.

At the time of writing, CEPA has not publicly released any information or announcement about the status of the EIS or its intentions to approve or deny the EIS.

A CANOE ON THE SEPIK RIVER



REASON 1: THE CULTURE AND ENVIRONMENT OF THE SEPIK ARE IRREPLACEABLE

The River is not ours, it belongs to the future. We are only vessels of the Sepik Spirit that dwells to celebrate and protect it. We will guard it with our life.

- EMMANUEL PENI, PROJECT SEPIK

This Project poses unacceptable risks to our ancestors, ourselves and that of our unborn children. It risks the spirit of all plants and animals of the river, the lakes, the tributaries and streams.

- EMMANUEL PENI, PROJECT SEPIK

The mighty Sepik River is one of the great rivers of the world. With its 1,126 kilometres, it is the longest river in Papua New Guinea, and the third largest by volume.

It has been described as the 'soul of Papua New Guinea' and is often compared with the Amazon.³⁴ It is the largest unpolluted freshwater system in New Guinea and among the largest and most intact freshwater basins in the Asia Pacific.³⁵ Its biodiversity is incredible and globally significant.

THE SEPIK ENVIRONMENT

The Upper Sepik is the heart of one of the least modified landscapes in the Asia Pacific. A major river runs free without dams, weirs or industrial developments. A band of unbroken rainforest extends for hundreds of kilometres. There are few places left in earth in this condition... There are few places in Melanesia where cultural heritage is as diverse, dramatically displayed or proudly protected.

- GOVERNMENT OF PAPUA NEW GUINEA SUBMISSION TO UNESCO³⁶

The Sepik is part of the world's third largest contiguous rainforest after the Amazon and the Congo Basin rainforests, and the last untouched wetland in Asia Oceania.³⁷ The Sepik River itself

is the 'second most biodiverse' in Papua New Guinea, home to 57 species of freshwater fish and both Saltwater and New Guinea crocodiles. The river basin also has a vibrant tropical rainforest in its middle and upper regions and a widespread system of wetlands and lakes in its lower areas³⁸

The Sepik Basin's diverse habitats are rated globally significant on several biodiversity indices. The Sepik contains two eco-regions that featured on the World Wildlife Fund's (WWF's) Global 200 List – regions noted by scientists to be the Earth's most biologically outstanding habitats, that harbour 'exceptional biodiversity and are representative of the world's ecosystems'.³⁹ At altitudes from 0 to 3800 metres above sea level, vegetation types include mangrove forest, herb swamps, tall lowland rainforest, cloud forest, and alpine heaths.

The Upper Sepik River Basin also includes the Hunstein Range Wildlife Management Area (WMA), an area of more than 2,200 square kilometres, which was declared by local landowners in 1998 to protect the area's wildlife and environment from logging.⁴⁰ Adjacent to the Hunstein Range WMA, lie two adjoining WMAs, Uma WMA and Me'ha WMA, which create 'the country's largest lowland-rainforest protected area' in the lower catchment of a tributary of the Sepik, the Nisek River.⁴¹

The region is significant to PNG, as 21 of PNG's 24 largest lakes are found at elevations of 40 metres or less, and many of these are associated with the Sepik River.⁴²

The diversity of mammals in the region is significant. The Telefomin region is said to contain the greatest marsupial diversity in the world, and West Sepik is reputed to hold 'the richest mammalian diversity in Australasia, with as many as 120 species identified'. The region is also a hotspot for reptile and amphibian species, with 61 species of lizard found in the Sepik-Ramu basin and 44 species of frog.⁴³



THE SEPIK IS HOME TO THE VICTORIA CROWNED PIGEON, OF WHICH THERE ARE LESS THAN 20,000 LEFT IN THE WORLD.

The Sepik is also home to threatened species, such as the Northern Cassowary and the Victoria Crowned Pigeon, of which there are less than 20,000 left in the world.⁴⁴ The company's EIS found that there are between 8 and 16 Critically Endangered⁴⁵ or Endangered species in the project area, and the first section of the infrastructure corridor and Bewani region. Another 26 to 53 species are Vulnerable or Near-Threatened.⁴⁶

'This is a lot of threatened species for an area of this size; similar to the highest densities of threatened species anywhere in Australia,' observes Diana Fisher of the University of Queensland. 'This demonstrates the importance of this site as a refuge for species that have been heavily hunted elsewhere, that has relatively low human population density, and high-quality intact forest.'

Most of the highly threatened species in the area are mammals. These include the 'Critically Endangered Long-beaked Echidna,⁴⁷ black-spotted cuscus, Telefomin cuscus,⁴⁸ Bulmer's Fruit Bat,⁴⁹ and the Endangered Goodfellow's Tree Kangaroo. These species are at very high risk of extinction because they have been hunted out in most of their world-wide range.'⁵⁰

It is suggested that an extremely rare animal, the Critically Endangered Black-spotted Cuscus survives in the area.⁵¹ Critically endangered and endangered plants and insects are also found in the region and 'important waterbird and crocodile populations are supported by the 1,500 lakes and other wetlands associated with the basin.'⁵²

'This area is valuable not only to reduce the chance of extinction of threatened species and to protect poorly-known species new to science, but it is also important as an intact tropical forest landscape,' says Fisher. 'Intact biodiversity is itself a globally "rare natural resource". There are areas of particular importance here, due to their high biodiversity together with this intactness.'⁵³

The Upper Sepik was already highlighted by scientists as an area needing urgent conservation action because of its many endemic, distinctive and threatened species, intactness, and scientific value. Surveys of the Sepik region undertaken for the purpose of the EIS found as many as 85 species that were probably new to science, including 26 new frogs, five new reptiles, 17 new dragonflies, nine new butterflies, two new mammals and possibly several bats.⁵⁴

THE SEPIK PEOPLE AND THEIR DEPENDENCE ON THE RIVER

The Sepik catchment area is one of the least developed areas in PNG. It encompasses more than 78,000 square kilometres. It is home to more than 400,000 people, who depend almost entirely on the river and forests for their livelihood. More than 70,000 people live along the Sepik River floodplain alone, and their village, environment, culture and identity stand to be threatened by the Frieda River mine. This is perhaps the most linguistically and culturally diverse area on the planet with over 300 languages in an area the size of France.⁵⁵

The Sepik River is a source of practical life for the Sepik people. Communities living on the Sepik rely on the river for food, for drinking water, for washing, and for transport.⁵⁶ The river forms a 'virtual waterway "highway"'⁵⁷. It 'has always been the main highway of the Sepik people and in many places is 300 metres wide'.⁵⁸ It is also used to transport goods: this includes the 'seasonal shifting of heavy logs and materials for house construction, floating lengths of sago palm into the village as a food reserve'.⁵⁹

The local economy is built on the sale of sago, fish, freshwater prawn, eels, turtles, and crocodile eggs. Crocodiles are also harvested for their skins and teeth. The riverbanks are also an important part of the local economy during the dry seasons; the fertile banks are an important site for vegetable and fruit gardens, local tobacco and for some sago cultivation – although much of this happens inland from the river.⁶⁰

THE SPIRITUALITY AND CULTURE OF THE SEPIK

For us growing up along the river, and people belonging to the river, the river is a spirit that is living. So we have languages and songs and stories that say it could wake up and it talks to you, it dreams - those kinds of stories that my mum tells me. All those life forms, plants and animals are connected to us, and that's really important, that's my identity, and it's going to be killed.

– EMMANUEL PENI, PROJECT SEPIK

We may have cultural totems as the birds or parts of trees or the sky, or the lake, but all of that connects back to the river, it's the main vein or the backbone that holds together all of those beliefs, ideas, expressed as cultural totems or expressions. If it wasn't for those cultural expressions, we'll be just people, fishing eating sleeping, like a lesser wholeness of a person.

– EMMANUEL PENI, PROJECT SEPIK

The Sepik River is also a sustaining source of the Sepik people's spirituality, culture and identity. The Sepik people have lived there for many thousands of years, potentially up to 50,000 years.

The people of the Sepik live with a deep abiding spiritual connection to the river, waterways, forests, animals, and plants. The people see themselves as the guardians of the river, and in turn see the river as the life of the Sepik region. The Sepik River people's cultural connection with the environment involves 'common, yet distinct ways of ritualising the landscape'.⁶¹ This includes 'sacred flutes, sculptures combining human and animal forms, carved masks and shields (to bring success in warfare and hunting), bark paintings, and spirit houses'.⁶² Subtle differences are apparent across the region, in both style and cultural practices. These correspond to the areas along the river from which people come.⁶³

As recognised by the PNG Government, this is perhaps one of the most linguistically and culturally diverse areas on the planet with over 300 languages in an area the size of France.⁶⁴ Each kinship group within a village 'takes an emblematic name, or totem, from the birds and animals of the Sepik River region'.⁶⁵ Crocodiles also feature strongly in the stories and rites of passage among Sepik villagers.⁶⁶ The Sepik region is also famous for its male initiation, which involves tattoos that imitate a crocodile's skin.

The region is famous for its architectural masterpieces, *haus tambarans*, or 'spirit houses'. *Haus tambarans* have been the parliament houses of each village since before colonisation. *Haus tambarans* also house the practices of traditional ancestral reverence and honour in the East Sepik region of PNG.⁶⁷

Some of these impressive structures reach to 25 metres high. The national cultural importance of the *haus tambarans* is evidenced by the fact that the front entrance of the modern National Parliament building in Port Moresby is modelled on traditional *Haus Tambaran* architecture. The National Parliament building is also depicted on Papua New Guinea's 50 Kina note.

The people of the Sepik are renowned artisans, famous for their intricate wood carvings. The art of the Sepik has been showcased in galleries worldwide: from Paris to Basel, Canberra to Vancouver, and New York to San Francisco. 'Sepik peoples maintain their cultural integrity proudly and have influenced styles across the nation'.⁶⁸

Finally, the Sepik region is also home to the Karawari Caves—a group of more than 200

caves that are possibly 'the greatest example of rock art in the whole of Melanesia' and perhaps the largest complex of cave art in the southern hemisphere.⁶⁹ The caves are located within and stretching across the boundary of the Tentatively Listed area of the Upper Sepik River Basin. The caves include 'stencils and positive art images along the walls from both prehistoric and recent periods'.⁷⁰ The rock paintings of the Karawari Caves are 'part of a continuous culture of representation that may date back to the first people to settle in these hills perhaps more than 20,000 years ago'. The Karawari Caves were first systematically documented in 1987 by archaeologists,⁷¹ and only further explored and identified relatively recently.

HAUS TAMBARAN (SPIRIT HOUSE), KANGANAMAN, PAGUI, SEPIK RIVER, EAST SEPIK,



SUKUNDIMI TRIBESMAN: GUARDIAN OF THE MIGHTY SEPIK RIVER

By Duncan Gabi

The mighty Sepik River has existed since the dawn of time, twisting and turning, forming a wide belt of active meanders and fish populated great lakes, depositing vast amounts of fresh water into the ocean. The banks of the river are adorned with lianas, sago palms, and pandanus.

Who put it there, I do not have the faintest clue, all I know is that the river was placed there for my survival.

My father navigated this great river before me, and his father before him. I was brought into this magnificent world on the banks of the river, nature welcomed me with open arms for the river was calm that night, my first bath was in the mighty Sepik. I cried when I was dipped into the river, my father held me and called for the spirits to protect me. He called upon the Sukundimi to watch over me so that no evil may befall me.

My early childhood and teenage years were spent on the river, like every young Sepik boy, I learned from the great men of Sepik to fish and hunt on the river, to revere the river, not only because it provides for me but for it is also a living entity. The river has sustained and ensured the survival of my people for centuries. They say the river holds memories, the history of my people is not written in ink on pages, the river is my history, the river holds the centuries-old history of my people. I read the river like the scrolls. Our culture and history is intertwined with the mighty river. The river and the river God gave us our unique culture and identity.

They gave my ancestors the inspiration to paint, to carve, and to build.

I went into the Haus Tambaran as a boy, I came out of the Haus Tambaran a man bearing the markings of the Pukpuk. I know the history of my people, I learned the intricate and complex cultures and traditions of my people, I am a Sukundimi tribesman. I am the protector of the river and my people.

Of Gods and men, the river is the link between the spiritual and physical world. The river is the gateway to the afterlife.

Where the Supreme Sukundimi glides through the water, fish multiply in numbers. Where the Supreme walks on the banks, the sago palms spring forth. I am one with the river, she takes care of me and I take care of her.

But now, I see the foreigner with his foreign ways and lifestyle on the banks of the river, he wants me to forsake the Gods of my fathers, to forsake the practices of my people.

Now I see the foreigner coming to look for minerals buried deep in the earth, he wants to dig it up and take it away.

He wants to dig at the head of the river. I know the destruction they will bring, I see my people living their simple lives unaware of the demise that awaits them.

What do I do?

I am the Sukundimi tribesman, I will protect the river. I will fight to ensure the survival of my river and the survival of my people, I know I do not fight alone, the Sukundimi walks before me. I have his strength. I have his razor sharp teeth, I will tear the flesh of my enemies. He is me and I am he.

I will fight with the spirit of my ancestors beside me. I have their knowledge and wisdom.

I will fight with my people behind me, they look to me for protection. I look to them for guidance.

REASON 2: THE EIS IS COMPLETELY INADEQUATE

In November 2018, PanAust prepared an Environmental Impact Statement (EIS) regarding the proposed project and provided it to the Conservation and Environment Protection Authority (CEPA).⁷²

In March 2020, PNG's Centre for Environmental Law and Community Rights Inc. (CELCOR) and Project Sepik provided ten expert reports to CEPA about the Sepik Development Infrastructure Project, including the Frieda River Mine. The independent expert reports found several insufficiencies in the EIS, most seriously with respect to a lack of evidence about the reliability of the proposed tailings dam. The reports also found that the EIS underestimated the risks associated with the contamination of groundwater, of surface waters such as lakes and rivers, and of the surrounding environment.

MISSING CRITICAL INFORMATION

According to the independent experts, the EIS is missing critical reports and information that would typically be necessary for any comprehensive assessment. These included:

- o crucial underlying reports relating to the tailings dam and seismic reports;
- o basic information about the operation and closure of the mine;
- o a resettlement plan for four villages who would need to be relocated to make way for the project, or whether these villagers had consented to the project and their relocation; and
- o a dam break analysis – which is one of the most critical reports necessary for understanding the EIS;
- o assessment of the proposed airport; and
- o a cost-benefit analysis.⁷³

Perhaps the most critical piece of missing information is the dam break analysis. As CELCOR and Project Sepik have explained:

We have not been provided with all critical information about the tailings dam,

especially regarding the probability and consequences of a dam break. Critically, what is referred to as the 'dam break analysis' is discussed in the EIS, however, has not been included in the EIS for public review. One of our experts, Michael Main, has said that the dam break analysis is probably the most important report in the whole EIS.⁷⁴

The implications of a tailings dam failure are so important that they are discussed in greater detail in the next section.

SUMMARY OF OTHER FINDINGS OF THE EXPERT REPORTS

RELOCATION OF VILLAGES

The company's EIS did not identify any resettlement plan for the four villages who would need to be relocated to make way for the project. The EIS also did not adequately discuss whether consent for the project from these villagers had been given, or the social impacts of the relocation.⁷⁵

CONTAMINATION

The company's EIS likely underestimated the amount of contamination in groundwater, surface waters and the surrounding environment. The expert reports considered that the impacts are likely to be greater than those predicted.⁷⁶

INCREASED RISK OF MALARIA

The tailings dam 'will bring a large number of villages into contact with a large stagnant reservoir of water', which could increase their risk of contracting malaria by up to a factor of 20. PanAust's EIS did not adequately discuss or mitigate this risk.⁷⁷

SOCIAL IMPACTS

One of the expert reports noted that 'at the time of the publication of the Social Impact

Assessment (SIA), negotiations with the four villages subject to relocation were not complete. To that extent, the SIA is also incomplete.⁷⁸ Another found the SIA be inadequate for a project of such size and complexity.⁷⁹

Looking at the scale of the proposed project and its impacts as described in the SIA, they are so big that, in my opinion, the whole of Sepik society will be affected. The list of effects and impacts, threats and risks has sixty items, listed under headings of "livelihoods", "culture" and "personal and community well-being". These kinds of impacts go to the core of life.

It is my opinion that the process employed by the proponents is not adequate to the task of assessing social impacts of this magnitude. The basic proposition that the social effects of a project of this enormous scale and complexity can be known and mitigated by good planning and social programs is false.

– RICHARD BARCHAM⁸⁰

IMPACTS ON DOWNSTREAM COMMUNITIES

It is likely that downstream communities would suffer ongoing impacts of the project, many of which had not been quantified. These included loss of floodplain areas for agricultural activities and the potential accumulation of contaminants in the environment.⁸¹

LOSS OF BIODIVERSITY

A summary of the expert reports concluded that the risks posed to biodiversity and endemic species or species new to science were 'inappropriately assessed, not backed by scientific evidence and highly optimistic'. The expert reports considered that loss of

biodiversity should be 'considered a certainty from this project'.⁸²

IMPACT OF OTHER PROJECT INFRASTRUCTURE

The EIS focuses on the tailings dam and its impacts, but fails to adequately detail or assess the risks and impacts of other project infrastructure. This includes the construction and operation of other facets of the project, such as a 325 kilometre pipeline, an airport, five major and 16 smaller bridges and roads.⁸³

For example, buried pipelines will run for approximately 325 kilometres between the mine area and the port of Vanimo, through rainforest and wetlands. Yet, 'the risk of leakage along difficult terrain as well as important wetlands and habitats has not been assessed'.⁸⁴

RESPONSES TO THE EXPERT REPORTS

On receiving these independent reviews, Emmanuel Peni reacted the following way:

*We have long said that this mine could not be built safely, and now these ten expert reports prove it.*⁸⁵

East Sepik Governor Allan Bird also raised concerns regarding CEPA's ability to assess the company's EIS in public statements made in September 2020, saying:

*I am not confident that CEPA has the capacity or the capability to properly and professionally review the EIS. The responsibility for the safety of the Sepik River rests with the ESPG and the Sepik people. It is our responsibility and we take that responsibility very seriously.*⁸⁶

'We have long said that this mine could not be built safely, and now these ten expert reports prove it.'

- SEMMANUEL PENI, PROJECT SEPIK

REASON 3: THE TAILINGS DAM WILL NOT BE SAFE

Open pit mines tend to have low-grade minerals and very high waste-to-product ratios. This trend has been exacerbated in recent years as high-grade ore mining deposits become less and less common. Lower-grade ore deposits produce much more waste and also produce waste that is more toxic, as they tend to be made up of sulphide mineral ores.⁸⁷

The Frieda River mine is no exception to this trend. The quality of the minerals to be mined at Frieda River is low. The World Gold Council states that a low grade of gold is 0 - 0.5 gold grams per tonne.⁸⁸ At Frieda River, the average grade is 0.23 grams per tonne of gold and 0.44 per cent copper.⁸⁹

This means that there will be very high waste-to-product ratios, and that enormous quantities of waste will be generated from the mine, including waste rock and tailings. A Frieda river mine would therefore generate vast amounts of both waste rock and tailings. In fact, Frieda River Limited's EIS states that over the mine's estimated lifespan of 33 years, 'approximately 2.9 billion tonnes (Bt) of mine waste will be produced; approximately 50 per cent as tailings and 50 per cent as waste rock'.⁹⁰ It is the challenge of managing both, particularly the tailings, that presents enormous challenges in an environment like the Frieda River location.

As mentioned in the introduction, the EIS proposes to manage the tailings through a 12,400 hectare reservoir within the Frieda River catchment, which would also act as an integrated storage facility (ISF) or tailings dam.⁹¹ The tailings would be required to be permanently stored underwater to limit the potential for generation of acid and metalliferous drainage.⁹²

The dam would purportedly hold a total water storage capacity of 9.6 billion cubic metres at its maximum operating level, and a maximum storage capacity of approximately 4.6 billion tonnes of waste rock and tailings.⁹³

The embankment for the reservoir will be located approximately 40km upstream of the

Sepik River, and would be 187 metres high.⁹⁴ The catchment area for the dam would cover 1,033 square kilometres, incorporating the 'Frieda, Nena, and Niar river valleys in the northern foothills of the New Guinea Highlands (Central Range) in Sandaun Province and East Sepik Province'.⁹⁵

THE RISK OF DAM FAILURE

In March 2020, PNG's Centre for Environmental Law and Community Rights Inc. (CELCOR) and Project Sepik provided ten expert reports to CEPA about the Frieda River Mine EIS. The EIS states that the likelihood of dam failure occurring is "very unlikely" due to having "appropriate controls in place, primarily relating to the application of conservative design standards and criteria and a specific ISF stewardship program incorporating a dam safety program, management oversight and an independent external review".⁹⁶

The experts commissioned by CELCOR, on behalf of Project Sepik, to look at the dam stability concluded differently. The risk of tailings dam failure comes from four sources:

1. The extremely large amount of mine waste and tailings that will be produced
2. The terrain is rugged, and has an extremely high annual rainfall
3. The mine is in a seismically active area
4. The tailings storage facility is also expected to double as a hydroelectric facility.

Indeed the mine area's average annual rainfall between 7,700 mm and 8,600 mm (i.e. around 8 metres per year).⁹⁷ Moreover, between 2010 and 2017, there were five earthquakes with magnitudes greater than 6.0 (Richter scale) within a 200-km radius of the mine area and infrastructure corridor.⁹⁸

One analyst concluded that the ISF posed a 'significant risk of failure'. Up to 30 villages would be directly affected by a catastrophic event resulting in the dam breaking, with substantial loss of life expected.⁹⁹

Another concluded that the current design of the ISF meant that it would require inspection and maintenance not just for the life of the mine, but for the rest of human history. He further stated that the dam break analysis was 'unquestionably the most important component of the EIS' and yet was not included in it.¹⁰⁰

The company states that the tailings dam would have an operating life of 'greater than 100 years'.¹⁰¹ However, beyond the closure of the project, it is unclear who would be responsible for the ongoing management and maintenance of the tailings dam, or how it will be funded.

Experts analysing the EIS also found that the EIS does not adequately detail who is responsible for the ongoing management and maintenance of the tailings dam, or how it will be funded. The EIS only plans for the initial 33 years of the mine life, plus 50 years of water treatment.¹⁰² Moreover, the project's post-closure phase is a 'significant issue of concern'. It was also questioned as to whether the emergency response plan post-closure could be realistically implemented and effective.¹⁰³

These concerns about a tailings dam failure were shared by the East Sepik Provincial Government, which prepared its own analysis of the EIS. On 13 August, in response to the analysis, the East Sepik Provincial Government voted not to approve the EIS.¹⁰⁴ Subsequently, on 12 October 2020, the Governor of East Sepik province, Allan Bird, said that his province would lodge a legal challenge if the proposal for the Frieda River mine is approved in its current form.¹⁰⁵

Governor Bird said that a team of experts hired by the province had raised concerns about the storage facility for tailings from the mine. 'So, if they decide to go ahead with Frieda as it is, without taking into consideration our very serious and justifiable concerns... then obviously we would go to court to enforce a unanimous decision made by the assembly.'¹⁰⁶

OTHER TAILINGS DAM FAILURES

The failing of tailings dams can and do have devastating consequences. Between 1915 and 2010, there were 226 tailings-dam accidents worldwide.¹⁰⁷ Three of the world's 3,500 tailings dams fail every year.¹⁰⁸ Between 2011 and 2020 alone, there have been five 'very serious' tailings-dam failures – which are defined as releasing 'at least 1 million cubic metres of tailings, travelling more than 20 kilometres or causing multiple deaths'.¹⁰⁹

Researchers in 2019 concluded that 'keeping the tailings pond safe and stable is the most challenging task in the entire mining process'.¹¹⁰

Scientists say that 'the typical culprit for tailings accidents is too much water, which can cause earthen dams to liquefy'.¹¹¹ At Frieda River, annual rainfall is more than 8,000 millimetres, or 8 metres, a year.

Major environmental disasters have occurred as a result of the failure of tailings dams. In November 2015, a huge tailings dam collapsed at the Samarco mine in Brazil, causing the worst environmental disaster in Brazilian history, and generating a humanitarian crisis. The Samarco mine was a joint venture between mining giants Vale and BHP Billiton. The height of a 30-storey building, the dam was the largest structure of its kind ever to give way.¹¹² A tidal wave of 32 to 40 million cubic meters of mining waste washed across the entire Rio Doce river basin,¹¹³ polluting 668 km of watercourses from the Doce River to the Atlantic Ocean,¹¹⁴ and devastating the Brazilian countryside of beautiful green valleys, villages and farmland. Seventeen districts and 36 municipalities were directly affected by the mud wave.¹¹⁵

Nearly one year later, the Gualaxo do Norte river in Brazil's south-eastern state of Minas Gerais, continued to run red.¹¹⁶ The waste – a liquid mix of water, sands and clays – killed 19 people, destroyed villages, left hundreds homeless, and killed fish and aquatic life as it flowed on down the bigger River Doce to the

“We left with the clothes on our backs,” said villagers. “For us, the river died.”

sea more than 600km away.¹¹⁷ "We left with the clothes on our backs," said villagers.¹¹⁸ "For us, the river died."¹¹⁹

We have no home, no money or any means to pay for what they did to the river, what they did to us. If we could choose anything in this world, we would want the river back,

- LEONIR BOKA, 31.¹²⁰

The scale of damage can be seen in the initial plans for socioeconomic and environmental recovery – the recovery of 5,000 streams along the River Doce, reforestation of 10,000 hectares and restoration of another 30,000 hectares. These initial plans were estimated at the cost of 20 billion reais (approximately AUD\$4.97 billion) over 15 years.¹²¹ An investigation by Brazil's federal police subsequently concluded that the company knew the dam was at risk before it collapsed, that drainage was a problem and that the dam was not properly monitored.¹²²

In January 2019, another of Vale's Brazilian mines,

Córrego do Feijão, an iron ore mine, suffered a catastrophic failure. The Brumadinho dam disaster was one of Brazil's worst environmental disasters,¹²³ and killed 270 people.¹²⁴

The worst tailings dam disaster in Canadian history occurred in August 2014 when Imperial Metals' Mount Polley mine spilled 25 million cubic meters of toxic tailings, polluting surrounding water systems, destroying salmon-spawning areas and jeopardizing livelihoods of Indigenous communities and small businesses.¹²⁵ Yet this took place at a copper mine that was 'in full compliance with local regulations.'¹²⁶

The Frieda River EIS has done nothing to reassure experts from the fact that there is no secure way of storing the massive amount of mine waste (tailings) safely without damaging the river. The Project is being developed in a seismically active area of PNG which is also subject to extreme rainfall. The likelihood of the tailings dam breaking at some point in time, and causing catastrophic damage, is almost inevitable.

AERIAL VIEW OF THE BENTO RODRIGUES DISTRICT AFTER THE SAMARCO DAM DISASTER © GUSTAVO BASSO





TOP AND BOTTOM: MINERAL TAILINGS MUD AFTER THE BRUMADHINO DAM DISASTER IN 2019. IT WAS ONE OF BRAZIL'S WORST ENVIRONMENTAL DISASTERS.

© CHRISTYAM DE LIMA

REASON 4: DEEP SEA TAILINGS DISPOSAL IS NOT AN ALTERNATIVE

Recently, there are reports that given the controversy surrounding a tailings dam on the Frieda River, and alternative arrangement for disposal of the tailings is being hatched. This plan would see that tailings would use a Deep Sea Tailings Placement (DSTP) to dispose of the tailings directly into the sea at Vanimo or Aitape, in West Sepik Province.

The East Sepik and the West Sepik Provincial Governments have apparently rejected the current EIS based on the risks of the tailings dam. *The National* also reported that the head of the Mineral Resources Authority (MRA), Jerry Garry, had ruled out a tailings dam.¹²⁷

West Sepik Province Administrator Conrad Tilau's comments in the same article implied that the West Sepik Provincial Government had already given its approval in principle to an alternative, to use DSTP to dispose of the tailings.

We have rejected the developer's environment plan and so they have to opt for another tailings disposal proposal such as deep sea tailings placement (DSTP).

- CONRAD TILAU

As yet, Pan Aust has not made any formal statement indicating its intention to abandon its plans for disposal in the tailings dam and opting for DSTP.

Given this, we need to reckon with the possibility that DSTP may soon be officially adopted as the way forward for Frieda River Mine. So, what would it mean for the Sepik communities were the Frieda River Mine proponents to DSTP? To answer this question, we need to look at the facts of DSTP in PNG and elsewhere.

IMPACTS OF DSTP ON THE MARINE ENVIRONMENT

DSTP is the discharge of waste rock and tailings, usually from mining projects, directly

into the ocean. DSTP is often referred to by other names, such as Submarine Tailings Disposal (STD) or Marine Mine Waste Disposal. DSTP has been in use in the 1970s, but it is currently only in operation in a few countries: the Philippines, Indonesia Turkey (the Black Sea), and PNG. DSTP is currently in use in the Lihir gold mine, in operation since 1997 and the Simberi gold mine, operating since 2007. DSTP was also used in the Misima gold and silver mine for 15 years until the operations closed in 2004.¹²⁸

The Ramu mine in Madang Province has also used submarine tailings disposal since 2012. Locals fought a year-long but ultimately unsuccessful legal battle to prevent the company from dumping five million tonnes a year of mine waste.¹²⁹ The project releases tailings just 450m from shore at a depth of only 150 metres.¹³⁰ In August 2019, a pipeline saw a reported 200,000 litres of toxic slurry intended for DSTP being released into Basamuk Bay.¹³¹

There are several environmental risks of DSTP beyond the risks of leakage failures such as that seen in the Ramu case. First, there is the risk of the mine waste smothering of organisms as it settles down on the seabed. Indeed, recent research has shown that Misima disposal site had not recovered to pre-disturbance abundance and species diversity over 10 years after cessation of disposal.

Second, the risks that sulphide mineral ores present in the tailings will create chemical reactions that release toxic metals into the ocean ecosystem. These metals can build up in the food chain and cause harm to larger organisms such as fish and, eventually, people. This risk is largely unknown as there is little research that quantifies what toxicity deep sea organisms can safely endure. In addition, there is little research on how these toxins might be bioaccumulated up the food chain and into fisheries resources utilised by local coastal communities.

Finally, there is the risk of alteration of the physical environment at the location where the tailings are deposited. In essence, tailings plumes can upwell back into shallow water; contaminating inshore marine environments that locals rely on for subsistence and livelihoods.¹³²

IMPACTS OF DSTP ON LOCAL COMMUNITIES

These are not just theoretical dangers. Locals on Lihir island started reporting alterations to their marine environment—an important source of their livelihood—not long after the Lihir mine began operating in 1997.

In 2002 there were reports of a plume of sediment extending from the coast two kilometres into the Pacific Ocean. A local Lihir resident Regina Asiad explained at the time that before the mine, dugout canoes would return daily, 'overflowing with fish. "Now you might get five or six fish in a boat, or nothing. Strange things happen that we never encountered before. We find dead fish, and sometimes fish we catch taste strange—so people won't eat it. A lot of pigs died after eating stuff on the beach."¹³³

Other Lihir residents, such as Father Clement Taulam of the Lihir Catholic Church also reported in 2002 on the devastation of the community's fish stocks and the community's

ongoing concerns about whether it was safe to consume the fish that were caught.¹³⁴

These are the types of problems that West Sepik Province coastal communities can expect to face should the Frieda River pipeline be given the go ahead. This is, even more, the case when it is considered that even under the best of circumstances, the environmental challenges of DSTP when it comes to Frieda River would be substantial. The Frieda River Mine falls short of many of those 'best practice criteria' that have been identified as sympathetic to the DSTP (see table below).

Others argue that, given the current uncertainty, DSTP should not be approved until more data is gathered about its impacts. Mining expert Simon Judd concludes that the impacts of DSTP 'are likely to be no less profound than those already witnessed in the terrestrial environment, just less visible.'¹³⁵

Given that the Provincial Administrator, Tilau has provisionally recommended for DSTP, there has not been any consultation with the locals and everyone who has interest in this issue. Project Sepik has reported on the basis of a number of field visits that not only have the people along the Sepik River not been consulted about DSTP, nor have the people of Aitape in West Sepik Province where the proposed DSTP infrastructure would likely be built.





THE MINING COMPANY TITANIA DUMPED MINE TAILINGS IN JØSSINGFJORDEN IN NORWAY IN THE 1960-80S. 35 YEARS AFTER, THERE IS LITTLE SIGN OF LIFE. THE UNDERWATER PHOTOGRAPHER SAYS THAT HE HAS NEVER SEEN A FJORD AS DAMAGED AS THIS.

© ERLING SVENSEN, UNDERWATER PHOTOGRAPHER

BEST PRACTICE CRITERIA ¹³⁶	FRIEDA MINE CONTEXT
<i>Accessible to the coast</i>	<p>The Frieda mine would require tailings to be piped over 300km to the coast before being piped out to sea. The terrain over which this pipe would be laid is mountainous and seismically active.</p> <p>All the issues surrounding the tailings dam would be transposed to this pipeline. Any seismic activity would be likely to rupture this pipeline, causing tailings to be released into a large and varied number of habitats and villages. The maintenance required to ensure the pipe did not break would be costly and difficult.</p> <p>Ramu NiCo mine has had two significant pipe leaks in the last 5 years alone, which is considerably closer to the coast than Frieda mine would be. These incidents were attributed to poor maintenance and poor training of staff. This mine is comparable to Frieda, as it is also owned a Chinese State-owned company and highlights the high risk of failure this option presents.</p>
<i>Suitable bathymetry and physical oceanography</i>	<p>The current "proposal" is to place the tailings in a "deep sea trench between Aitape and Vanimo". There does not appear to be any publicly available research about this deep sea trench to determine whether it would meet these requirements.</p> <p>Considerable baseline environmental monitoring would be necessary, followed by complex modelling exercises to determine whether this is a suitable site for such an operation.</p>
<i>Pipeline discharge depth</i>	<p>The current research suggests that it is preferable, and considerably less risky if tailings are deposited below 1000m.</p> <p>Unknown whether this is possible at the location being proposed.</p>
<i>Absence of upwelling or seasonal overturning</i>	<p>Unknown at this time. This would need to be determined via comprehensive oceanographic modelling.</p>
<i>Low energy environment</i>	<p>Whether this is the case for the deep sea trench, would need to be determined via oceanographic modelling.</p> <p>However, for the pipeline from Frieda Mine to Vanimo Port, this is not a low energy environment. It is documented to be a high seismic area, and also extremely high rainfall that could result in landslides. These factors increase the risks associated with the pipe breaking. The likelihood of a pipe breaking as a result of either of these factors is much higher than the risk of the dam breaking catastrophically, but the environmental risks to the impacted landscape would be comparable. The only thing that would be avoided is likely the loss of life associated with a dam of the size of the ISF catastrophically breaking.</p>
<i>Soft bottom</i>	<p>Currently unknown. Comprehensive baseline studies and modelling are necessary.</p>
<i>Low productivity environment</i>	<p>The waters surrounding PNG are not a low productivity environment. They are considerably productive and relied upon by most coastal communities for both their subsistence living and their economic livelihoods. Other environmental leaks from these types of operation have had significant impacts on the inshore marine environment.</p>

REASON 5: THE COMMUNITY DOES NOT CONSENT

We call for a total ban on the Frieda River mine.

- SUPREME SUKUNDIMI DECLARATION, MAY 2020

't is our innate role to guard the River from exploitation and destruction by outsiders. Our future is in peril from this proposed Mine and therefore, we gather together as Guardians of the River to stand firm as one. We have the ultimate support from our ancestors who live with us in many forms.

- SUPREME SUKUNDIMI DECLARATION, MAY 2020

Neither the Social Impact Assessment, nor any other chapters of the EIS, deal with procedures for affected people's consent or for how to gauge social licence among Sepik communities.'

- RICHARD BARCHAM¹³⁷

All the villages along the Sepik River stated that: the Frieda Mine haven't got consent from us.

- EMMANUEL PENI, PROJECT SEPIK

The Sepik people do not consent to the mine. This position is one that they have now held for many years.

Community members were concerned about the impact that the mine would have on the

health of the river, the source of their livelihood. As far back as October 2018, communities on the Sepik felt that their legitimate concerns about the impact of the mine on their river were not seriously considered.¹³⁸

In 2019, a report investigating the project's environmental and social impacts and the local communities' views regarding the mine was released: *The River Is Not Ours*. The report, which included findings of an October 2018 awareness tour with 23 villages, found that all of the villages visited were opposed to the Frieda River mine going ahead.¹³⁹

In May 2020, a total ban on the mine was unanimously proclaimed by the traditional clan leaders of 28 Haus Tambarans along more than 1,000 kilometres of the Sepik River. The Haus Tambarans issued the *Supreme Sukundimi Declaration*, a powerful document that is a first-ever in PNG. The *Supreme Sukundimi* represent approximately 78,000 people across 25 villages from Swagap in Upper Sepik near the Frieda River to Kopar at the Sepik River's mouth.¹⁴⁰

While the company seeking to operate the Frieda River mine claims to have consulted with communities, including along the Project's proposed Vanimo to Frieda River proposed road corridor and the Sepik River,¹⁴¹ these consultations have not been genuine and tokenistic at best. Communities have been frustrated by previous consultations that have taken place, stating that their concerns, fears and needs were not responded to.¹⁴²

“It is our innate role to guard the River from exploitation and destruction by outsiders. Our future is in peril from this proposed Mine and therefore, we gather together as Guardians of the River to stand firm as one. We have the ultimate support from our ancestors who live with us in many forms.”

- SUPREME SUKUNDIMI DECLARATION, MAY 2020

Since 2018, the company has sponsored consultation meetings, some of which have involved the East and West Sepik provincial governments. However, while several parties were invited, Project Sepik not invited to these consultations. It is unknown whether other civil society groups were invited, but the security at these meetings was said to be tight.

PanAust argues that the communities living by the mine site have given their consent to the project. They have asserted that 'due diligence indicates that landowners in the Project region are generally supportive of the Frieda River Project; approximately 3,000 people in 12 villages within 50km of the Project'.¹⁴³

However, Project Sepik says that this is potentially an exaggerated figure. Project Sepik explains that within the main project area, there are approximately seven villages. These villages are located in the bush, mountains and lakes, and do not represent villages along the Sepik River, who will be the most impacted by the project.

In August 2020, Project Sepik engaged with some landowners of the largest gold deposit site at Nena. These landowners said that they do not consent to the mine. They also expressed that they were concerned about

what would happen to them when they move away and that they do not know where they would be relocated to.

We, the collective voice of the Haus Tambaran of Sepik River, under the powers of the Supreme Sukundimi, the River God, assert to the following:

We call for a total ban on the Frieda River mine.

We have called on all spirits to dwell with us and take up arms to protect our Sepik Way of Life.

We have not been consulted by the Government and the company with objective and truthful information about the mine.

- SUPREME SUKUNDIMI DECLARATION, MAY 2020

It is imperative that a full and proper public consultation process be followed to allow public scrutiny of the proposal and ensure that environmental and community values will be protected without any shadow of doubt.

- GAVIN MUDD, ASSOCIATE PROFESSOR, RMIT UNIVERSITY¹⁴⁴

LOCAL VILLAGE PEOPLE ALONG THE SEPIK RIVER



ADVOCACY AGAINST THE MINE GROWS

The [Frieda River] Project poses unacceptable risks to our ancestors, ourselves and that of our unborn children. It risks the spirit of all plants and animals of the river, the lakes, the tributaries and streams... We say in the strongest terms, the Sepik Development Project, like Ok Tedi (which is in close proximity), is a disaster waiting to happen. The Sepik River and its people will be destroyed if the Project is approved.

- PROJECT SEPIK, URGENT COMMUNICATION ON THE PROPOSED FRIEDA RIVER MINE TO THE UN SPECIAL RAPPOREUR ON TOXIC WASTES¹⁴⁵

Domestic and international focus on the Frieda River mine continues to grow.

In October 2019, Emmanuel Peni of Project Sepik, along with representatives of Jubilee Australia Research Centre and Aid/Watch Australia, met with executives of PanAust and the company's office in Brisbane, Australia. Speaking as a representative of the communities living on the Sepik River, Mr Peni explained that the proposed Frieda River mine project did not have the consent of the river communities. Therefore that Pan Aust should discontinue its efforts to pursue the project.

In March 2020, the international Save the Sepik campaign launched a website, www.savethesepik.org and an associated petition.

In April 2020, 2,477 people from 40 nations signed a petition to PNG's environmental authority, Conservation and Environment Protection Authority (CEPA), seeking that the Frieda River project be rejected.¹⁴⁶

In May 2020, Project Sepik and CELCOR made an urgent appeal to the UN Special Rapporteur on Toxic Waste, seeking a request for assistance in our struggle against the Frieda River project and asking the UN Special Rapporteur on Toxic Waste to investigate.¹⁴⁷

In July 2020, in an unprecedented step in PNG, ten UN Special Rapporteurs, along with the Chair of the UN Working Group on Human Rights and Transnational Corporations, wrote to the Governments of PNG, Australia, Canada, China and to PanAust to raise their concerns about the proposed Frieda River mine and the risk of failure of its proposed tailings dam.¹⁴⁸ This was subsequently covered widely in PNG media, including EMTV, the *Post-Courier* and *The National*, and ABC Radio Australia.¹⁴⁹

THE RISK OF CONFLICT

The Frieda River project's potential to result in a damaging social conflict and unrest is real and must be taken seriously.¹⁵⁰

If the government approves the environmental permit and mining license, it has been reported that there will be a '100 per cent chance' of violence along the Sepik River and in Wewak town, and that this will lead to individuals across the entire province taking up arms.

This risk of violence is very high if the license or approval is given. Project Sepik cite three reasons for concern about violence.

According to the Project Sepik, police stations are also being built along the route for the pipeline. Communities and interested parties have not been consulted about these police stations. The only brief explanation was that the police station was for the safety of the people. This demonstrates the extent of militarisation that is already happening in the area.

The abundance of high-powered weapons in the area is another reason for concern about the potential for violence.

The third piece of evidence is the level of combative talk on social media about the project. Given the connection of resource extraction and conflict in the history of PNG, this sort of talk is obviously of real concern.

This risk of violence is very high if the license or approval is given.



VILLAGERS IN A CANOE ON THE KOROGU LAKE, MIDDLE SEPIK

REASON 6: WE'VE BEEN HERE BEFORE

The poor record of corporate behaviour, environmental degradation, and the bad social effects of industrial projects in Papua New Guinea must be a caution sign for Sepik communities. There is no reason to think that the Sepik Development Project will be any better or different to other projects that have had disastrous consequences.

- DR RICHARD BARCHAM¹⁵¹

The two biggest environmental catastrophes in PNG's history at Panguna and Ok Tedi, are also copper-gold mines located in inaccessible mountainous terrains. Both projects saw catastrophic failures in connection with tailings management.

The comparisons between the problems that led to the failures at Panguna and Ok Tedi, and what could happen at Frieda River, are chilling.

PANGUNA MINE, AUTONOMOUS REGION OF BOUGAINVILLE

The Panguna mine was once the world's largest open-pit copper and gold mine. It was open for only 17 years, from 1972 to 1989.¹⁵² The Panguna mine was the centre of significant bloodshed, with a 10-year civil war, and more than 10,000 people killed. However, its toxic legacy to the environment and the many communities living close to the mine continues today. During the mine's operation, tailings waste was ultimately disposed of into the nearby Jaba-Kawerong river – 'over 1 billion tonnes in total over the life of the mine'.¹⁵³

In March 2020, the Human Rights Law Centre found that thousands of people in Bougainville across 38 villages are still living with the ongoing impacts of the mine: contaminated water sources, land and crops flooded by toxic mud and health problems ranging from skin diseases and respiratory problems to pregnancy complications.¹⁵⁴

'Panguna continues to gape like an open wound,' the Human Rights Law Centre Report observed. 'Polluted water from the mine puts flows unabated into local rivers, turning the riverbed

and surrounding rocks an unnatural blue. The Jaba-Kawerong river valley downstream of the mine resembles a moonscape, with vast mounds of grey tailings waste and rock stretching almost 40km downstream to the coast.¹⁵⁵

The Panguna mine devastated our communities physically and culturally and we are still living with the consequences. Our land is destroyed and our rivers are poisoned. Kids are drinking and bathing in the polluted water and getting sick. New areas of land are still being flooded with the waste from the mine.

- THEONILA ROKA MATBOB, COMMUNITY MEMBER¹⁵⁶

However, the scope of damage that could be caused by the Frieda River mine is much higher. An estimated 12,000 to 14,000 people live downstream of the Panguna mine along the Jaba-Kawerong river valley.¹⁵⁷ By contrast, hundreds of thousands of people could stand to be impacted by the Frieda River mine. And while the Panguna mine was open for only 17 years, by contrast, the Frieda River mine could be open more than twice that length of time – more than 45 years.

To the men and women fighting to stop the Frieda mine, this is what you are defending. It is not just the environment, it is your life. I took these pictures in the very same area between years 2015 and 2019. Though Panguna mine has been closed for 30 years, the movement of tonnes of sands continue to destroy newer areas. And this is just one area in Kobalu 1, Kuneka. The problems that come with it will be felt for many many years to come. I am horrified that such pristine environment can be devastated within a short time. For the people here, it was not in their prerogative to make the decision about their environment, yet they're suffering the consequences of someone else's decision. My urge to my brothers and sisters of Sepik, remain steadfast in your fight and see to it right to the end.

- NATHAN MATBOB¹⁵⁸

BEFORE

KONAWIRU WETLANDS, KUNEKA BOUGAINVILLE, 2015.

© NATHAN MATBOB



AFTER

KONAWIRU WETLANDS, KUNEKA, BOUGAINVILLE, 2019. THE WETLANDS WERE DESTROYED BY TAILINGS SLUDGE IN JANUARY 2019, 30 YEARS AFTER THE PANGUNA MINE WAS OPERATIONAL.

© DINA RUI

OK TEDI MINE, WESTERN PROVINCE

However, when comparing the Frieda River mine to other mines in PNG, the Ok Tedi mine, located near the headwaters of the Ok Tedi River in Western Province, shares the most similarities with the Frieda River mine.

Experts have described the damage done by the Ok Tedi mine during the BHP era as 'one of the worst environmental disasters in the history of mining'.¹⁵⁹

While originally a tailings dam was planned for the Ok Tedi mine, a landslide during construction meant that the dam did not go ahead.

Subsequently, the mine operators sought to continue operations without building a tailings dam, meaning that mining waste was dumped directly into the Ok Tedi/Fly River system.

WWF reports that up to 80,000 tonnes of waste rock and 120,000 tonnes of tailings are disgorged from the Ok Tedi/Fly River system - every day.¹⁶⁰

'When the Ok Tedi mine was first developed in Papua New Guinea, little consideration was given to the people who lived along the banks of the Fly River. The river was their life. It was their food. Sago grew well in the swampy terrain and was a staple.

Over the life of the mine, the food, especially sago, became scarce as miles and miles of vegetation along the river died. The chemicals from the mine were carried further and further into the swamps every time there was a flood.

There was dead vegetation as far as the eye could see. Food crops - greens, watermelons, yams, swamp taro, breadfruit, tubers, cassava - all disappeared. Building materials for houses died with them. Along the banks of the river, erosion washed tons of mud into the main river, depositing it further downstream and polluting clean waterways making the water water poisonous and undrinkable.

As a Sepik I shed tears thinking of what would happen if ever a mine was allowed to operate upstream along my Sepik River.

– SAUSIA WAGUN¹⁶¹

Environmental similarities between Ok Tedi and Frieda River include:

- incredible biodiversity values and ecological heartland;
- high seismic activity;
- high rainfall;
- remoteness; and
- the size of the river.

At Ok Tedi, people living along the river could no longer drink the river water, wash their clothes or swim in the river. Rivers that once ran clear were 'transformed into muddy torrents the colour of coffee with milk'. Their gardens and plantations were destroyed. Sago stands along the river and creeks were choked with mud. The beautiful green landscape along the river corridor turned into a 'moonscape of grey tailings'. Two thousand square kilometres of rain forest and savannah along the river have been affected – an area larger than London and Paris combined.¹⁶²

On a cultural level, at both Ok Tedi and Frieda River, communities' livelihoods are intertwined and dependent on the river; and possess culturally and spiritually significant ties to the environment. Yet while approximately 30,000 people lived downstream of the Ok Tedi mine, the number of people that stand to be impacted by the Frieda River mine is again much higher. Yet the Frieda River mine is estimated significantly larger than Ok Tedi in size, and in the amount of waste that would be produced. This means that the scope of damage to be wreaked by the Frieda River mine far outstrips that of Ok Tedi.

The sediment released into the Ok Tedi River has turned it into a sewer that runs for 200 kilometres. The water is supersaturated with tailings. Pyrite glitters in the sun on top of once-white sand banks where turtles previously came to lay their eggs. Many of these sand banks are blocked off from the river by ten and twenty metre long stretches of knee-deep mud. After a heavy rain in the mountains, the Ok Tedi River overflows its banks, depositing tailings along the river floodplain.

– STUART KIRSCH, ANTHROPOLOGIST¹⁶³

SIMILARITY	OK TEDI	FRIEDA RIVER
ENVIRONMENTAL		
<i>Biodiverse</i>	The Ok Tedi mine is based in the cloud forests of the Star Mountains, which are rich in biodiversity. The Fly River system previously held one of the largest surviving rainforests in the world.	The diverse habitats of the Upper Sepik River Basin are globally significant for biodiversity. The area contains two Global 200 eco-regions, three endemic bird areas and three centres of plant diversity.
<i>Ecological heartland</i>	Largest wetland system in PNG.	Tentatively listed for World Heritage Status.
<i>Remote</i>	When construction began, Ok Tedi was one of the least accessible areas of PNG.	Frieda River mine site is only accessible by aeroplane.
<i>High rainfall</i>	Ok Tedi was one of the wettest areas of the world, which was a critical factor in the erosion of waste rock and overburden into the river system.	Extreme annual rainfall of 8 metres per year (8,000mm).
SOCIAL AND CULTURAL		
<i>Communities' livelihoods are intertwined and dependent on the river</i>	Home to approximately 30,000 people downstream. The surrounding communities lived in subsistence to the river, hunting, fishing and harvesting sago. Their livelihoods depended on their access to natural resources.	Home to approximately 430,000 people who depend almost entirely on products from the rivers and forests for their livelihoods. Communities rely on the river for food, drinking water, washing and transport. During dry season, the fertile banks of the river become filled with fruit and vegetable gardens, and sago and tobacco plantations.
<i>Cultural significance</i>		The people of the Sepik have lived there for many thousands of years, have totemic connection with the crocodiles that live in the river, and interconnected spiritual relationships with the surrounding environment. The region is also host to the Karawari caves, more than 200 caves showcasing art that could be more than 20,000 years old.
TYPE OF MINE		
<i>Minerals</i>	Copper and gold	Copper and gold
<i>Long term project</i>	The Ok Tedi mine was originally expected to last only 15 years, however it is anticipated the mine may now last until 2025. This would mean that the mine would operate from 1984 – 2025 – or 41 years.	Expected to last 33 years, with possible extension.
<i>Form of tailings and waste rock disposal</i>	Riverine disposal.	Safe storage required forever in an integrated storage facility.



THE PANGUNA MINE PIT IN BOUGAINVILLE
©DINA RUI

THE WAY FORWARD: SECURING THE SEPIK

WORLD HERITAGE STATUS

The Upper Sepik River Basin was Tentatively Listed for World Heritage Status due to its environmental and cultural heritage by the PNG Government in 2006. Yet, the Frieda River mine, and its associated infrastructure – roads, pipelines, airstrip and dam infrastructure – are almost all located within the area Tentatively Listed for World Heritage Status.¹⁶⁴ This is the first time that an area in PNG that has been Tentatively Listed for World Heritage Status has become the proposed site of a major copper/gold mine.¹⁶⁵ As of 2015, nothing had been done to formally nominate the Sepik or any of the other six sites tentatively listed for World Heritage Status in PNG.¹⁶⁶

One protected area is established in the area – the Hunstein Range Wildlife Management Area (220,000 ha). Proposals for two adjacent Wildlife Management Areas (WMAs) totalling approx. 48,000 ha have been submitted to the Government of PNG (GoPNG) in October 2005, and several further WMAs are being prepared. Plans exist to include these PAs on the Ramsar list. The Sepik Wetlands Management Initiative addresses crocodile habitat retention and invasive species removal across the Middle and Upper Sepik River and adjacent lakes. A catchment management programme, led by WWF with a range of stakeholders, aims to establish coherent management of this region.¹⁶⁷

In January 2015, Peter Hitchcock and Jennifer Gabriel released a report: *World Heritage Tentative Listed Sites In Papua New Guinea: Report On A Review Of The Sites*, which reviewed the seven sites Tentatively Listed for World Heritage Status in Papua New Guinea. The review found the Sepik to be one of the world's greatest wetland ecosystems, complemented by tracts of primary forest of outstanding conservation value. It noted that the Sepik Tentative Listed area incorporated: 'Papua New Guinea's largest freshwater wetland, outstanding intact forest and an outstanding suite of cultural features... [and] potentially

one of the premier conservation areas of the world'.¹⁶⁸ Since the site was nominated in 2006, 'outstanding new cultural attributes have been researched and documented' that 'substantially enhanced' its cultural heritage values.¹⁶⁹

The 2015 Review noted that the Karawari Caves also comprise a site of 'definite national significance and likely global significance that urgently requires protection'.¹⁷⁰ It found that since the 2006 nomination of Upper Sepik River Basin as a Tentatively Listed site, the Karawari project has contributed major new cultural attributes to the Tentative Listed site, values which were little known or ignored at the time of nomination. The review further noted that 'mining in this precinct could be devastating to the cultural heritage values that only survive because of their relative remoteness'.¹⁷¹

The review further noted that 'the conservation values of the Sepik will only survive if there is an urgent and concerted effort to address threats and seek appropriate levels of protection'.¹⁷² It emphasised the Frieda River mine: 'obviously represents a serious conflict between the aspirations of the mine owners and the aspirations of establishing the Sepik as a World Heritage Site'.¹⁷³ It would 'undoubtedly have significant impacts on the heritage values of the Upper Sepik River Basin Tentative List area'.¹⁷⁴

The review was also concerned about the ongoing risk of invasive aquatic species being introduced deliberately or inadvertently into the Sepik.¹⁷⁵ It noted that the development of a large mine in the headwaters could be a high risk source of new invasive weed species.¹⁷⁶

The 2015 Review recommended that the PNG World Heritage Secretariat/Committee 'actively promote awareness of the Upper Sepik River Basin Tentative List area and its heritage attributes', and 'the need for the PNG Government to establish a process to address and reconcile known and potential conflicts between protection of globally significant

heritage values, natural and cultural.¹⁷⁷ The review further recommended that the PNG World Heritage Secretariat/Committee 'seek to nominate the Sepik Wetlands as a Ramsar Wetland of International Significance as an important interim recognition of the global significance of the wetlands'.¹⁷⁸

PERSONHOOD

Elsewhere, major rivers have been recognised as having a legal identity in their own right. This has been the case in the Ganges and Yamuna Rivers in India,¹⁷⁹ along with 'their glaciers, lakes, air, meadows, dales, jungles, forests, wetlands, grasslands, springs and waterfalls'.¹⁸⁰

In New Zealand, the connection between the Whanganui River and its people has been recognised in legislation. In March 2017, in a world-first, legislation in New Zealand

acknowledged the Whanganui River as an 'indivisible and living whole'¹⁸¹, and a legal person, Te Awa Tupua, with 'all the rights, powers, duties, and liabilities of a legal person'¹⁸².

In July 2019, a ruling by Bangladesh's Supreme Court recognised that rivers had the legal status of living entities.¹⁸³

Given the nature of the Sepik's environmental riches, and the Sepik people's inalienable connection and guardianship responsibilities to it, it seems possible if not likely that the Sepik could one day follow these other rivers on the path to receiving legal personhood. This would be a huge win for Papua New Guinea and a statement to the world about the values that the PNG people place on their environment and their culture.

BOATS ON SEPIK RIVER NEAR AMBUNTI IN THE MIDDLE OF PAPUA NEW GUINEA



CONCLUSION

We will not only kill a river but people with unique cultures. Perhaps we are willing to sacrifice our people for money that will not directly benefit them.

I do not think it is worth it.

– SAUSIA WAGUN¹⁸⁴

Papua New Guinea is host to some of the most pristine, wild and beautiful landscapes, forests and waterways on earth.

The Sepik River is one of those places, one of the treasures of the world, a jewel in the crown of Papua New Guinea's biodiversity and rich culture.

The Frieda River mine is a crossroads for the nation. For the first time, a major copper and gold mine – and the largest mine in PNG history – has been proposed to dig up a Tentatively Listed World Heritage Site, and destroy it forever.

The tailings dam, which is proposed to host more than 2.9 billion tonnes of waste, could cause catastrophic damage to more than 30 villages in the event of a dam disaster.

The damage that could be wrought by the Frieda River mine dwarfs other tailings dams disasters across the world - such as the Samarco and Bruminho dam disasters in Brazil, and the Mount Polley disaster in Canada – which were among the worst environmental disasters in their nations' histories.

There is only one Sepik, the soul of Papua New Guinea, a deeply spiritual place of spirit, energy, wildness, bravery, diverse life, ancient history and rich tradition. It is irreplaceable.

If the Sepik can become the target of mining, then where will the line be drawn?

Copper and gold are metals. But the treasure of the Sepik is worth far more than copper, silver or gold. It is a national and global heritage that must be protected for future generations. Once gone, it will be lost forever. It can never be replaced.

PROJECT SEPIK VOLUNTEERS SPEAKING TO THE COMMUNITY AT INIOK VILLAGE, LOCATED AT THE EMBOUCHURE OF FRIEDA RIVER © DUNCAN GABI



TIMELINE OF EVENTS

DATE	EVENT
1987	First systematic documentation of the Kalwari Caves rock art by archaeologists Paul Gorecki and Rhys Jones.
2006	Upper Sepik River Basin was tentatively listed for World Heritage Status by the Government of PNG.
2006	Xstrata Frieda River Limited was incorporated.
2010	Former owners of Frieda River mine, Xstrata, published their Environmental Inception Report.
2010	Emmanuel Peni was shot at by gunmen in broad daylight in front of the Police station in Angoram in 2010. This was believed to be due to his political stance regarding the mine.
December 2012	Xstrata Copper delivered a Feasibility Study and 2012 Study Program Report.
August 2014	Xstrata Frieda River Limited changed its name to Frieda River Limited. Shares transferred from Mount Isa Mines to PanAust SPV1.
January 2015	Report on a Review of the Sites Tentatively Listed for World Heritage Status in PNG released.
October 2017	In Baku, a woman organised other women to stop large tugboats going upstream because their waves destroyed their nets and interfered with their catch.
2017	Youth leader from Oum 2 village led a group of young men to attack a tugboat and pontoon with homemade wire sling shots.
1 October 2018	In Pagwi, men from the Niaura Area (language that defines 7 large villages in the middle river area) approached a vessel containing employees of the project and Government officials and physically and verbally threatened them.
October 2018	Consultations with communities downstream from the mine occurred which were shunned by communities as 'tokenistic at best'. Previously raised concerns, fears and needs were not responded to.
19 October 2018	People of Inlok village blocked the Frieda River with a banner saying 'Ban Chinese Frieda Mine – Do not enter'.
June 2019	The report <i>The River Is Not Ours</i> was released by Project Sepik and Jubilee Australia Research Centre.
October 2019	Frieda River Limited released the Environmental Impact Statement.
October 2019	Project Sepik's Emmanuel Peni met with PanAust in Brisbane to discuss concerns regarding the project and lack of community consent, along with representatives of Aid/Watch and Jubilee Australia Research Centre.
March 2020	10 expert reports were provided to CEPA by Project Sepik, with assistance from CELCOR.
April 2020	Petition of 2,477 people opposing the Frieda River project provided to CEPA.
29 May 2020	The <i>Supreme Sukundimi Declaration</i> was announced and published in Post Courier. The Declaration represents 28 <i>Haus Tambarans</i> along more than 1,000km of the Sepik River, and approximately 78,000 people from 25 villages.
August 2020	The East Sepik Provincial Government and the West Sepik Provincial Government voted to reject the Environmental Impact Statement.
October 2020	Ten UN Special Rapporteurs and the Chair of the UN Working Group on Human Rights and Transnational Corporations wrote to the PNG Government and Australian Government, highlighting their concerns regarding the Frieda River mine.
12 October 2020	Governor of East Sepik province, Allan Bird, says East Sepik province will lodge a legal challenge if the Frieda River mine is approved in its current form.

APPENDIX 1: ABOUT THE PROJECT'S PROPONENTS

The Frieda River mine has been proposed by Frieda River Limited, a wholly owned subsidiary of PanAust.¹⁸⁵

Exploration rights for the Frieda River project were originally acquired by Xstrata.

In May 2013, Glencore completed a merger with Xstrata. In May 2014, Glencore Xstrata formally changed its name to Glencore plc. Glencore is an 'Anglo-Swiss multinational commodity trading and mining company with headquarters in Baar, Switzerland'.¹⁸⁶

In August 2014, Glencore sold its 80 per cent stake in the Frieda River project to PanAust.¹⁸⁷

1.1 FRIEDA RIVER LIMITED

The corporate structure of Frieda River Limited is complex.

The shares of Frieda River Limited are owned by a Singaporean-registered arm of PanAust, PanAust SPV1 Pte. Ltd, which in turn are owned by Singaporean-registered PanAust Holdings Pte. Ltd. PanAust Limited, an Australian registered company, subsequently owns all the shares in PanAust Holdings Pte. Ltd.

Australian company PanAust Limited also retains further connections to Frieda River Limited as three members of its executive management team, two of whom are Australian, serve as directors of Frieda River Limited.

1.2 PANAUST LIMITED – AN AUSTRALIAN COMPANY

PanAust Limited is 'a copper and gold producer in Laos with pre-development opportunities in Laos, Papua New Guinea (PNG), Myanmar and Chile'.¹⁸⁸

PanAust Limited is an Australian public company, limited by shares, first registered in August 1990. Its registered office is in Fortitude Valley, Queensland.¹⁸⁹ Its former names include Pan Australian Resources Limited, Pan Australian Resources N.L, and Bruce Resources N.L.¹⁹⁰

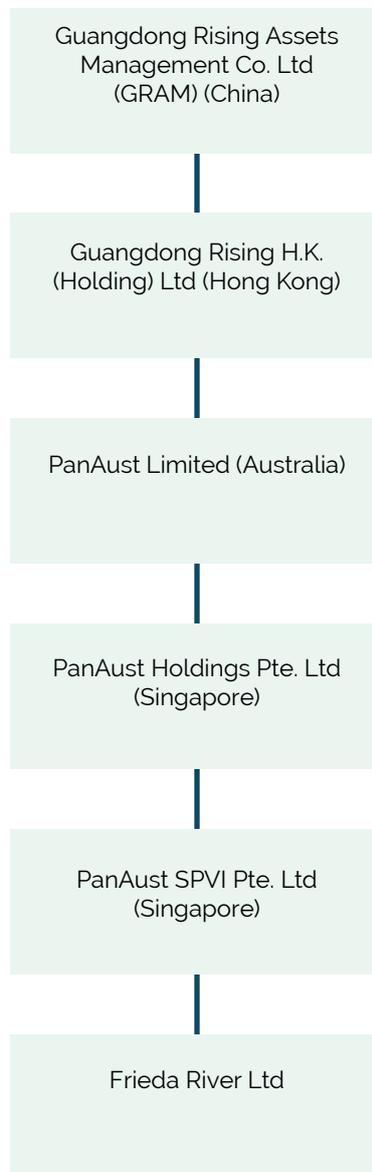
In 2015, Hong Kong registered company Guangdong Rising H.K. (Holding) Limited acquired over 90 per cent of PanAust's ordinary shares on issue, and subsequently compulsorily acquired PanAust's remaining shares.

Guangdong Rising H.K. (Holding) Limited is a wholly owned subsidiary of Guangdong Rising Assets Management Co. Ltd (GRAM).¹⁹¹ GRAM is a 'Chinese state-owned company regulated under the State-owned Assets Supervision and Administration Commission, the People's Government of Guangdong Province in China'.¹⁹²

In an announcement on its website, PanAust clarified the details regarding the takeover offer of PanAust issued by Guangdong Rising Assets Management (GRAM).¹⁹³

The mine was previously a joint venture between Australian company PanAust (80 per cent) and Highlands Pacific Limited (20 per cent) (and Highlands Pacific was previously 30 per cent owned by the PNG Government¹⁹⁴). However, following arbitration in 2018, and a takeover of Highlands Pacific Limited by Canadian company, Cobalt 27 (now Conic Metals) in 2019, Highland Pacific Limited's 20 per cent share in the venture was transferred to PanAust.¹⁹⁵

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