

**Press review:  
Mining in the South Pacific**

**Vol. 9, No. 6, November – December 2017, 96 pages**

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**Abbreviations in common use:**

BCL: Bougainville Copper Limited

LNG: Liquid Natural Gas

PIR: Pacific Islands Report

PNG: Papua New Guinea

**Websites:**

Radio New Zealand: <http://www.radionz.co.nz/international>

PNG Post-Courier: <http://postcourier.com.pg/>

PNG National: <http://www.thenational.com.pg/>

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**Fiji Miner Invests Over \$40M To Dig Deeper: Dinny Laufenboeck, Corporate Services  
Manager** Charles Chambers Lautoka, Fiji Sun, December 30, 2017



Chinese engineers at the control centre at the new power house at Vatukoula Gold Mines. Photo: Karalaini Tavi

Vatukoula Gold Mines Limited has invested over \$40 million to allow workers to dig deeper and further away from the existing infrastructure. “The richest parts which are closest to surface have been mined out in the last 18 years,” Dinny Laufenboeck, the company’s Corporate Services Manager and Special Advisor to the General Manager said. “So we have to go deeper and further away from the existing infrastructure.” “That is a huge cost and while doing all this we have to keep the mine dry by pumping water out, have it ventilated and provide lighting.” The areas that have been producing the best ore and veins have diminished. Over the past 75 years, the mine has produced over seven million ounces of gold.

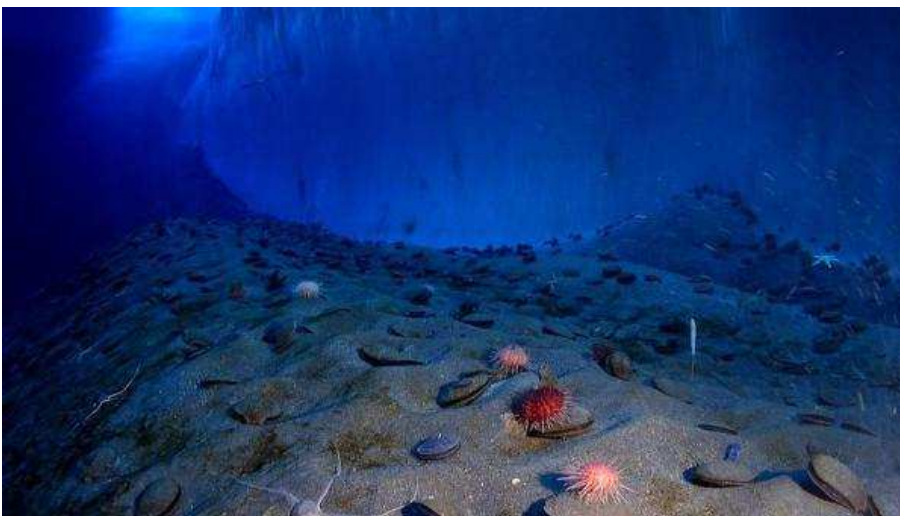
“I keep stressing this is an old gold mine and everybody knows that,” Ms Laufenboeck said. Gold was reportedly discovered in Vatukoula in 1932 or 85 years ago from November 2017. A man by the name of Bill Borthwick discovered gold with work actually being done to build the gold mines starting from 1935 to 1936. Now, Zhongrun International Mining, a Chinese company with controlling shareholders, took over in 2014 and prioritised cutting expenditure and improving efficiency as the major work to be done. Perhaps one of their major costs is the continuing pumping of water out of the mines because before they can start mining they have to pump the water out. Dinny Laufenboeck said: “they recognised the cost involved and had to decide to either walk away from it or bite the bullet and develop more to reduce costs.”

### **Here’s What They Have Done:**

The new \$30 million power house has already been built and is being tested. A new ventilation and hoisting shaft, which is to cost around \$10 million is being done at an area called Dolphin at the old Wren Shaft. The idea is to sink a new shaft which would improve working conditions with better ventilation and open up new areas in Philip’s Shaft. The upgrading of the Vatukoula Treatment Plant and Trailings Retreatment. The company has also installed four state of the art air quality monitoring stations valued at approximately \$120,000 around Vatukoula to monitor all emissions. They are regarded as the most advanced available in Fiji. The investment in new pumps for the de-watering of underground operations. A joint venture with a Canadian based exploration company. The training of local miners in steep structure mining by Chinese experts.

### **Locals fear for their environment despite promises of riches**

Luke Hunt, The Diplomat, December 27, 2017



Underwater life

Deep-sea mining is about to take an enormous step into the future. Off the coast of Papua New Guinea, in the Bismark Sea, the extraction of rich gold and copper deposits by a multinational group is promising high returns and they insist they are doing their best to allay environmental concerns.

But not everyone is convinced. Court action has been launched amid claims the PNG government is withholding information about the multi-billion dollar project, Solwara 1 field, operated by Nautilus Minerals Inc, a Canadian-based company backed by Russian and Omani mining firms. The Centre for Environmental Law and Community Rights in Port Moresby says there are serious issues with the mining operation and deployment of state-of-the-art heavy digging equipment about 1.6 kilometres below the surface. Locals say have not been consulted properly. Renowned environmentalist and journalist David Attenborough has also opposed the project because thermal vents, where the deposits are often found, are a key source for the earliest signs of life on Earth. He fears they will be damaged and insists they should be protected.

In 2009, Nautilus was granted an environmental permit for the Solwara 1 field – a volcanic area between the islands of New Britain and New Ireland – after the initial finds were made by Australian-based CSIRO in 1996. A mining license was granted two years later. Seabed mining – which Nautilus described as the next big disruptive technology – is normally focused on areas around metallic nodules, also known as active or extinct hydrothermal vents, which carry valuable metal deposits. The deposits are excavated and drawn to the surface in a slurry, the water is removed and the rock transferred and broken down for minerals like gold, copper and tellurium while the extracted water is discharged on the sea floor. Tellurium is a key metal used in the making of high performance solar panels and its grades are up to 50,000 times more concentrated when dug from the sea-bed.

Its supporters also say that deep sea mining is an effective alternative to traditional mining on-land, which has proved destructive to the natural environment around the world. “It makes sense to explore this untapped potential in an environmentally sustainable way, instead of continually looking at the fast depleting land resources of the planet to meet society’s rising needs,” Mike Johnston, Nautilus’s chief executive, recently told *The Guardian*. But the area is rich in fish stocks and supports a lucrative tuna industry. Any damage to sea floor, scientists warn would have a detrimental impact on marine life in the area thus the Solwara field is increasingly being seen as a litmus test for an industry gearing up for the next big gold rush. Critics also said the environmental impact assessment is insufficient as it does not include a “rigorous risk assessment” or an environmental management plan.

Like East Timor, PNG wants entry into ASEAN, a trade bloc that has done little to protect its own environment against the forces of developers and corporates with much deeper pockets than the landowners whose real estate they’d like to monetize. Rainforests in Vietnam, Cambodia, Laos and Thailand and the wildlife they houses have been devastated, the annual haze, caused by forest fires in Indonesia, is an international embarrassment, islands and river communities have been lost to sand dredging and fish stocks in the Mekong River and other major waterways are pitiful when compared with just 20 years ago. And given the wealth of marine life and an abundance of seabed topography suitable for this type of mining around Southeast Asia — particularly in Indonesia and The Philippines — ASEAN must pay closer attention to this issue if a repeat of the ecological disasters of the past are to be avoided.

### **Ramu NiCO opens clan accounts**

Post-Courier, December 27, 2017

The landowners of Ramu Nickel project acknowledged the developer Ramu NiCo management (MCC) for facilitating the opening of their clan accounts for the project’s royalty payments. Chairman of the Inland Pipeline Landowners Association, Peter Tai representing all LOA chairmen and the landowner company executives, said 2017 has been a good year for the landowners after learning that they would be receiving their royalty payments, however this was delayed until early next year. Mr Tai made those remarks during the company’s end of the year function organised by the

MCC community affairs department. He also thanked the community affairs department for facilitating the opening of the clan and individual accounts for landowners in all four impact areas covering Kurumbukari, inland pipeline, coastal pipeline and Basamuk.

The department's general manager, Martin Paining said 2017 was a challenging year but good consultation between MCC and the LOAs allowed for smooth sailing until the end. He said there are certain challenges both the landowners and the company would need to work on in 2018. Mr Paining said as a company Ramu NiCo is always trying to find ways for a win-win situation for both itself and the landowners. Vice president Wang Baowen said despite all the challenges and difficulties, 200 bank accounts have been created with Bank South Pacific for the immediate landowners of the Ramu Nickel project, with necessary preparatory work for landowners to receive royalties has been sorted out. "My engagement with Ramu NiCo over the last ten years has prepared me well in understanding and cooperating with project stakeholders especially landowners," he said.

### **Wafi-Golpu: Tailings placement site identified**

Cedric Patjole, Loop PNG, December 26, 2017

The Huon Gulf deep sea trenches have been identified as a suitable location for deep sea tailings placement [toxic waste dumping] from the Wafi-Golpu Project [mine]. The Wafi-Golpu Joint Venture (WGJV) presented during the PNG Mining and Petroleum Conference that the Huon Gulf deep sea trench was highly suitable. Wafi-Golpu Joint Venture executive project director, Bryan Bailie, said in the presentation that local rivers, including the Markham, discharged 60 million tons per annum of natural sediment into the Markham Canyon, which reports to the New Britain Trench which is 9000 metres deep. He said it was a highly disturbed environment, with regular purging of sediments through mass flow events and has low bio accumulated risk. Huon Gulf is located on the northern coast of PNG, occupied by Morobe Province. Huon Gulf offers spectacular scenery, accessible diving spots and a range of climates from sub-alpine and alpine to tropical. Meanwhile, the Joint venture says a stable legislative and fiscal regime is critical to the development of the Wafi-Golpu Mine Project. The component is among five key areas which the Joint Venture highlighted and include:

- The completion of the updated feasibility study, and Environmental Impact Statement;
- Completion of the permitting and approval by the Harmony and Newcrest boards;
- Sustained landowner and community support; and
- Ongoing close coordination between WGJV and Government agencies

### **Chan reaffirms stance against Solwara 1 project**

Jemimah Sukbat, Loop PNG, December 24, 2017

The views of Governor Sir Julius Chan and the New Ireland Provincial Government have not changed, they have always been against the experimental seabed mining. This was reaffirmed by NIPG after *Loop PNG* published an article questioning the governor's stance. In response, *Loop PNG* was told that the provincial government has been demanding that an independent environmental impact study be conducted and the findings be made known to NIPG. "It will be worthwhile to note that the decision for Nautilus minerals to mine undersea had been made by the national government and as it is under the Mining Act, everything in the earth, in and above the sea belongs to the State," clarified the government.

"Sir J recognises this and is working on amendments to the act, so *mama* and *papa graun* can be fully recognised as owners of these minerals. "The amendments have gone before Parliament as a

private member's bill." NIPG further said as Nautilus is doing business in New Ireland waters using the road and land as access to its ships, etc, they have demanded that Nautilus give back to the community in projects, which it is doing on the west coast. "Nautilus had so far shown good corporate responsibility but this is not enough to convince NIPG that seabed mining is safe." Meanwhile, non-governmental organisations have been advised to visit Sir Julius' Kavieng office and dialogue with their government.

### **Momis announces moratorium on Panguna mining and exploration**

Aloysius Laukai, Asia Pacific Report, 23 December 2017



Panguna copper mine on Bougainville ... the catalyst for decade-long civil war. Image: Aloysius Laukai/Bougainville Forum

The President of the Autonomous Bougainville Government, Chief Dr John Momis, has announced an indefinite moratorium on exploration and mining in Panguna. He said the Bougainville Executive Council had its meeting on Wednesday made a "thoughtful and considered" decision to impose an indefinite reservation moratorium from any exploration or mining over Panguna in the best interest of the landowners and the people of Bougainville. The council debating the issue following advice from the Bougainville Mining Advisory Council.

"It is with much regret that the basic requirement for obtaining the landowners consent under the Bougainville Mining Act 2015 could not be met," Momis said. The voice of the Panguna landowners was clearly heard during the mining warden hearing that decided in a narrow split between those supporting the mine reopening by Bougainville Copper Limited (BCL) and the opponents. Dr Momis also said that to develop the mine by any other developer would be "untenable" under current circumstances. "We will not allow this project once again to reignite the wounds of the Bougainville crisis and distract our focus for restoring peace and our preparation for our referendum in 2019," he said.

### **Continued consultations**

While imposing this Panguna moratorium, Dr Momis said his government would continue to consult with Panguna landowners and the people of Bougainville over an "appropriate arrangement" or best alternative models of development of the mine if the people still had an appetite to develop the



mine in the future. The Bougainville Civil War was fought in 1988-1998 between Papua New Guinean military forces and secessionist guerrillas of the Bougainville Revolutionary Army (BRA). The conflict led to an estimated 15,000-20,000 deaths on Bougainville before a peace agreement was brokered by New Zealand in 1998. This led to the establishment of the Bougainville Autonomous Region Government. Bougainvilleans are due to vote in a referendum on possible independence in June 2019.

### **EITI releases 2016 Report**

Cedric Patjole, Loop PNG, December 23, 2017



The PNG Extractive Industry Transparency Initiative (EITI) has released its 2016 Report. This is the fourth report by the entity since joining the global EITI standards movement. In his forward in the report, Treasurer Charles Abel said the 2016 Financial Year Report is the culmination of continued commitment, collaboration and efforts by the Government, extractive industries and civil society organisations to provide a comprehensive picture of the sector, its impact on the economy and our management of the revenues and benefits derived. He said the 2016 Report is important in that it will form the basis of an external review and assessment for PNG's EITI membership validation in 2018. "The EITI process can also help improve current policy settings, the taxation and fiscal regime governing the extractives sector," he stated. "It demands Government to adhere to global best practices in the sector by increasing transparency and accountability of extractive revenues. It also demands the highest levels of transparency in the collection and distribution of revenues by the Government.

"I encourage the public to read the contents of the report and use it as a basis for stimulating further discussions on the management of the sector," said Abel. "Though PNG remains one of the most challenging countries to invest in geographically, it is amongst the most geologically attractive countries in the world. "While global commodity prices have remained subdued in the last couple of years, developers of a number of proposed projects in PNG have remained committed and proceeded with several major mines set to come on stream in the near future. "With promising signs of global commodity prices recovering, both developers, Government and our people stand to gain from the operation of these projects. "The Government values the EITI process because it is playing a critical role in providing such reports to the public for them to better understand how we are managing the revenues and other benefits derived from the sector." Abel reassures investors that PNG is committed to transparency and accountability to achieve better outcomes for our development aspi-

rations. The PNG EITI aims to promote revenue transparency and accountability in the country's mining and petroleum sectors. This report covers the calendar year from 1 January 2016 to 31 December 2016. Link: [www.pngeiti.org.pg/wp-content/uploads/2017/12/PNG-EITI-2016.pdf](http://www.pngeiti.org.pg/wp-content/uploads/2017/12/PNG-EITI-2016.pdf)

### **Solwara 1 funding delayed again**

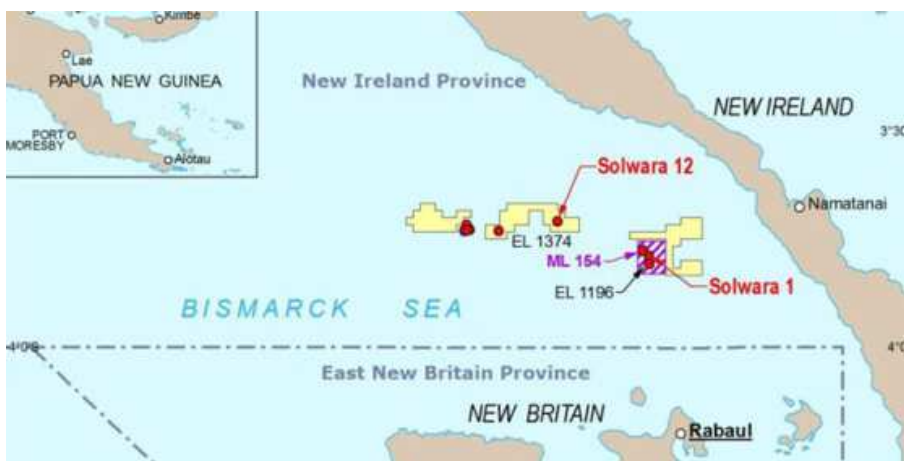
*NAUTILUS Minerals is still seeking funding for its controversial seabed mining project Solwara 1 after multiple delays.* PNG Industry News, 22 December 2017

According to the most recent update, discussions regarding funding requirements with various parties are taking longer than expected. The company initially reported in September that it required significant additional funding to complete the build and deployment of the seafloor production system that is to be used at the pending Solwara 1 project, located in the Bismarck Sea off the coast of New Ireland Province. Nautilus said it needed US\$41 million prior to the end of this year and, more specifically, at least US\$15 million before October 31 in order to meet its contractual commitments. In a November 1 update this deadline was pushed back to November 30 and the funding reduced to US\$10 million. The company revealed on December 4 that discussions with various parties were still continuing, and modified its previous funding deadline again, this time extending it to December 20. Despite stating it remained positive the discussions would be concluded soon,

Nautilus made no assurances it would be successful in securing the additional financing within the required time, or at all. Nautilus was granted its first mining lease at Solwara 1 in 2011. The deposit sits on the seafloor under about 1600m of water and contains a copper grade of about 7%. Earlier this month environmental groups and community representatives formally lodged an application in PNG's national court seeking documents including the original permit, environmental management plan, independent reviews, oceanographic data and any studies or modelling of environmental, social, health, culture and economic impacts. The plaintiffs claimed key documents had not been published. Nautilus responded by stating Solwara 1's key documents had been publicly available for years.

### **Money hungry Nautilus weighs funding options as project challenges mount**

Henry Lazenby, Mining Weekly, 22 December 2017



Marine mining pioneer Nautilus Minerals is in active discussions with a range of potential financiers and shareholders to secure the funding required to start mining the Solwara 1 project, offshore Papua New Guinea (PNG), the company said on Thursday. The company has thus far been unsuccessful to secure tens of millions of dollars required to keep the project and associated production equipment and support vessel on track to start production in the Bismarck Sea during

the first quarter of 2019. Nautilus said in September that it needs to raise at least \$41-million before year end, in order to meet the company's contractual commitments regarding certain equipment forming part of the seafloor production system. The Toronto-headquartered company cautioned that there can be no assurances that it will be successful in securing the necessary additional financing transactions within the required time, or at all. In the latter case, the company will evaluate all options to maximise shareholder value.

Meanwhile, Fujian Mawei Shipbuilding, the owner of the shipyard where Nautilus' production support vessel (PSV) is being built, has notified the company that MAC Goliath, the buyer of the PSV, has failed to pay the third instalment of the contract price of about \$18-million, plus accrued interest. Should MAC fail to make the payment within 21 days from December 11, the shipyard has the right to sell the about 70% completed vessel. Nautilus has the option to remedy the default on behalf of MAC, or replace MAC as a party to the contract via a novation, but given the current funding shortfall, the company has its work cut out. Nautilus advise that the vessel's derrick substructure was recently delivered to the shipyard for installation on the PSV. Further, the builder is installing foundations for two of the three launch and recovery systems, the bulk cutter winch has been installed, work on the cargo handling system is progressing, and both the 100 T and 200 T cranes have also been installed.

The company advised in October that submerged trials of the first of the seafloor production tools (SPTs), the collecting machine (CM), have been completed at the trial facility in Motukea Island, Port Moresby, PNG. The trial results indicated that the machine can perform to design specifications, and the team is now looking at operating enhancements. The auxiliary cutter has also been trialled and will be followed by the bulk cutter. Nautilus formed a joint venture company with PNG's nominee, Eda Kopa (Solwara), in December 2014 to mine high-grade polymetallic seafloor massive sulphide deposits. Nautilus has an 85% shareholding and Eda Kopa 15%. Nautilus in September 2016 announced a revised work programme, pending the company successfully raising the required capital by June this year. It entails a more staged approach, moving the Nautilus equipment integration phase of vessel construction out until after the vessel has been delivered by Fujian Mawei Shipyard and Marine Assets Corporate in the fourth quarter of 2018, resulting in a 12-month delay to the original schedule.

### **Landowners to rescue Solomon Islands mine – and perhaps more**

Catherine Wilson, The Interpreter, 21 December 2017



The Gold Ridge gold mine in Solomon Islands has had a chequered history.



The dusty streets of Honiara are bustling. Once ravaged by militia fighting, 14 years of peacekeeping by the Regional Assistance Mission to Solomon Islands now sees men, women and children at markets, schools and shops, confident and free. But the future of the vast archipelago of rainforest-covered islands to Australia's northeast is still work in progress. Long term peace and stability after the 'Tensions' (1998-2003) depends on addressing the causes and grievances of the conflict, and making headway on equitable development for urban and rural islanders. According to the Pacific Islands Forum, hardship and unemployment remain high in the country and 'strong resource-led growth is failing to trickle down to the disadvantaged'. Landowner grievances, compromised governance and acrimonious competition for land and resources were key triggers of the violence that erupted in Guadalcanal Province in the late 1990s. So tackling land disputes, corruption and management of the country's natural resource wealth is at the core of ensuring sustainable peace.



Western province, Solomon Islands (Photo: Catherine Wilson)

Natural resource management will be in the spotlight after the government in Honiara recently identified the exploitation of mineral resources – still relatively under-developed in Solomon Islands – as one avenue to boosting post-conflict economic recovery. At the same time, plans are underway to reopen the Gold Ridge mine by the end of 2018. The mine, a drive of less than an hour from Honiara across the flat, sun-baked Guadalcanal Plains, through farming villages and miles of oil palm plantations, has stood dormant for the past three years. The extraction of gold began here in 1998, but a succession of foreign owners and intermittent periods of closure due to civil unrest and environmental problems has left a troubled legacy. In nearby villages there are diverse views on the mine's future, but predominantly people want to see greater local ownership. 'It [the mine] may open, but it needs to involve more people than before,' said Stanley Holmes Vutiande. He lives in Navola village, just two kilometres from the mine.

'More people need to raise their voices and their concerns be taken care of ... we need to have the young people and the women come in to participate in deciding the future because the future belongs to them.' The next phase of the mine's life offers a window of potential. After Cyclone Ita and torrential rain damaged infrastructure and forced the mine to shutdown in 2014, its Australian owner, Santa Barbara, sold the venture and its legal liability a year later to Gold Ridge Community Investment Ltd, a local landowner company for AU\$100. Walton Naezon, chairman of the what is now a landowner-led joint venture, Gold Ridge Mining Ltd, is adamant that a more inclusive and visionary corporate structure is in the making. The aim is to embrace corporate responsibility through increased operational and environmental transparency. This will allow local participation in decisions and better relations and communication with stakeholders, especially communities.

Local landowners hold a 30% stake in the company, Naezon said, and representatives of communities surrounding the mine, where up to 5,000 people live, conduct environmental monitoring. Water samples are taken in nearby rivers and community monitors oversee the results. The representatives

have participated in key company decisions, including the agreement outlining the benefits communities will receive from the mine. They have also joined in the appointment of an independent environmental consultant. Local students are invited to visit the tailings dam to learn about the water treatment process and witness the release of treated water. Yet the story of the dramatic decline of the nation's logging industry, which at one time accounted for 60% of export earnings, stands as a warning of the obstacles ahead. Half a century of rampant timber extraction saw in excess of four times the sustainable rate of 250,000 cubic metres per year. Transparency Solomon Islands has claimed it 'regularly hears stories of politicians using their power to protect loggers, influencing police and giving tax exemptions to foreign businesses, in return loggers fund politicians'.



Logging on Kolombangara island, Solomons. (Photo: Catherine Wilson)

The reopening of the Gold Ridge mine is important for economic growth, said a spokesperson for the Ministry of Mines, Energy and Rural Electrification. A significant drop in national revenue followed the closure in 2014 and the start of two bauxite mines in West Rennell province the following year. But the risks remain. Graham Baines pointed out in a [paper](#) published by the Australian National University that 'should mining be forced while governance of the mineral sector remains weak and uncertain, corruption is rife and villagers are ill-informed and uncertain, the rural population could become a potent source of dissent and obstruction'. This was especially a danger in Melanesia, Baines said, where violence and mining seem to be partners. Yet conflict is not the inevitable consequences of natural resource development in fragile settings.

A recent report by Chatham House in London [claims](#) the outcomes depend on behaviour – by politicians, bureaucrats, companies and community representatives. The Solomon Islands government has recently launched the National Minerals Policy (2017-2021), providing a legal framework for improving regulatory authority, industry scrutiny and revenue accountability. It also requires landowners and communities are party to consultations and can access legal advice. Awareness training is especially critical for those landowners who lack substantial understanding of the mining industry, their legal rights or the consequences of their decisions. It is still early days. The government, working with the World Bank, is only beginning to implement the new policy. But the Gold Ridge mine will be a case to watch as not only Solomon Islands, but the Pacific islands region, grapples with how to take natural resource extraction out of the hands of elites and avoid the trap of conflict.

### **Can science keep deep sea miners from ruining the seafloor?**

*One partially built deep mining ship is in dry dock after the company hired to build it ran out of money and defaulted on an \$18 million payment this month.*

Eric Niiler, Wired, 20 December 2017



GETTY IMAGES

OCEAN EXPLORERS AND entrepreneurs have been thinking about how to scoop up mineral-laden deposits on the seafloor since the HMS Challenger dragged a few up in a bucket during its globe-trotting scientific voyage in the 1870s. A century later, the CIA used deep sea mining as a cover story for a [secretive plan](#) to recover a sunken Russian nuclear sub. Now, it's a serious engineering proposition. Companies in Belgium and the UK are testing crawlers and rovers to suck up potato-sized nodules on the seabed. And companies backed by Chinese, Japanese, and Korean governments are investigating the idea of drilling into the sides of underwater volcanoes or breaking off chunks of inactive hydrothermal vents—both places where minerals are deposited over time.

But some conservation groups worry that this seabed suction and the resulting clouds of sediment will kill sea life that can't move out of the way: tiny sponges, corals, and slow-moving mollusks that exist nowhere else. And a group of scientists are trying to get ahead of the problem, working with the would-be miners to build dredging technology that will minimize environmental destruction. Andrea Koschinsky, a marine geochemist at Jacobs University in Bremen, is studying just how much sediment impacts seafloor life—and if there's a way to prevent robot harvesters from creating the plumes. The effects of seabed mining are a lot like trawling by fishing boats, Koschinsky says. Both leave scars on the seabed that remain for years, although studies have shown that some animals eventually return and recolonize disturbed areas. "We will not know for sure the complete effects on the deep sea ecosystem, should we decide to do deep sea mining," Koschinsky says.

Those operations plan to dredge up three-inch mineral nodules, deposits of manganese, nickel, copper, cobalt, and various rare earth elements—objects formed over millennia, as phytoplankton ingested and then concentrated the minerals that spewed out of deep sea thermal vents. They'll site the nodules with roving drones, scoop them up with a crawling robot, then lift them 7,000 to 10,000 feet from the ocean bottom to the ship in a suction pump or elevator-like mechanical lifter. From there, the nodules will be loaded on a cargo ship and taken to a processing plant, where they'll either be bathed in chemicals like arsenic or cooked at high temperatures to recover the valuable minerals. The Yukon of deep sea mining is a place called the Clarion-Clipperton Fracture Zone, a remote region about 500 miles southeast of Hawaii that stretches a thousand miles toward Mexico. That's where DEME group, a Belgian dredging firm, plans to launch a full-scale pilot dredging operation in 2019. But before the dredging begins, Koschinsky and lab director Laurenz Thomsen are



prepping a series of laboratory tests in Holland to find out what could go wrong—and if it can be prevented.

Koschinsky is studying how quickly the seabed recovers over time from mining operations. She's using data from earlier commercial tests in the early 2000s and comparing them to more recent views of the same place. Thomsen, meanwhile, has built a seabottom crawler called "Wally" that is collecting data about mineral deposits at hydrothermal vents. He tests new modifications in a swimming pool-sized tank on the university campus. About two hours drive away, at the GEOMAR Helmholtz Centre for Ocean Engineering in Kiel, Germany, Jens Greinert leads a separate team of engineers and physical oceanographers trying to build a better nodule harvester for DEME. "We want to figure out what makes the least impact," Greinert says. "The mined area is buggered up anyway. If you put another 5 centimeters of sediment on top of 20 centimeters it doesn't matter. What you don't want is to impact the area outside the mined area."

Greinert says his team is experimenting with boosting the amount of suction into the harvester, which seems counterintuitive. Spewing out a bigger and thicker cloud of bottom sediment with larger bits of material may force the plume to settle more quickly and cover a smaller area, at least according to preliminary tests in the lab. These tests are part of an environmental impact statement that Greinert is writing as part of the German government's collaboration with the DEME group. If all goes well, Greinert will be aboard the German oceanographic research vessel Sonne in March 2019 to monitor the DEME dredger as it picks up nodules. "All mining is environmentally destructive, and seabed mining will be environmentally destructive," says Conn Nugent, director of seabed mining project for the Pew Charitable Trust. "We are most worried about people pretending to know what's going to happen without it having happened yet. All the extractive studies saying it's going to be different, financially and operationally. Any number of things could go wrong."

For her part, Koschinsky thinks that it's better to work with the mining companies. "This is a question we are discussing as to exactly who we are helping," she says. "We might help promote a development that might have disastrous consequences in the future. But if we don't develop our best knowledge, it might happen in a way that is much more harmful." The scientists have another incentive, too: Deep sea mining gets them access to an ecosystem they might not otherwise get to explore. Watching wildlife near a construction site on land (or even a sun-splashed coral reef) is pretty easy. But trying to count the number of deep sea fishes, clams, or sea worms 10,000 to 15,000 feet below the surface is nearly impossible, where light rarely penetrates and populations are tiny. "You might see some individual species only once," says Koschinsky, "and you don't know what their larvae look like or how they reproduce." But with mining as a call to action, the German government is funding environmental studies on these remote areas.

Of course, the scientists' concerns could never materialize. The International Seabed Authority has regulated the minerals in the Clarion-Clipperton Zone since the early 2000s, and the Jamaica-based authority is taking comments on a new set of environmental regulations governing the mineral leases. These new rules should be finished by late 2018, and they could change who's allowed to mine where. And, double of course, nobody has technically figured out how to harvest deep sea minerals and still make a profit. One partially built deep mining ship is in dry dock after the company hired to build it [ran out of money](#) and defaulted on an \$18 million payment this month. And once operating, it takes about \$50,000 a day to run a deep sea mining ship. "We've taken a conservative look at the worst-case scenarios," says Christopher Williams, director of UK Seabed Resources, a London-based subsidiary of Lockheed Martin that plans a pilot project to mine the seafloor in 2019. "Even given those numbers, we don't see it as a pipe dream. We see it as a realistic process." In this slow-motion race to reap seafloor riches, some companies will likely go under. But scientists say even so, they are hoping learn a lot about new forms of marine life. Maybe, even, the devices they build now could one day be used to explore seas on other planets.

## Pundari discusses impact of Frieda mine

The National, December 21, 2017



THE Conservation and Environment Protection Authority (CEPA) has received a notification of intention by PanAust to develop the Frieda gold mine as required under the Environment Act 2000. As part of the process to obtain an Environment Permit to develop the mine, the company has met the initial requirements of the legal process by submitting to the Director for Environment an Environment Inception Report. Information CEPA has to date on the proposed gold mine is contained in the Environment inception Report. Based on the EIR the following information is known by CEPA: Copper mineralisation was first identified at Freida River in 1966/67, with the first exploration permit (termed a Prospecting Authority) held by Mount Isa Mines Ltd. Since that time, the area has had a long history of exploration activities undertaken by numerous companies, with exploration permits held from 1967 to the present day. The project is located within the Sepik River catchment and would comprise development of the Horse-Ivaal-Trukai, Ekwai and Koki (HITEK) copper-gold deposit in Telefomin district, West Sepik.

The project lies some 200km south of the northern coastline of mainland PNG and 75km east of the border with the West Papuan province of Indonesia. The project would be developed by FRL, a company owned by copper and gold producer PanAust Limited on behalf of the joint venture between FRL and Highlands Frieda Limited (HFL), a wholly-owned subsidiary of Highlands Pacific Limited (HPL). These deposits contain significant gold and copper with an estimated mine life of 17 years. The main activities associated with the development of the project would include:

- A sire access road from the Sepik River to the mine site;
- mining will be done via an open pit mine;
- placing waste rock and tailings into an integrated storage facility;
- processing ore in a conventional concentrator at a site adjacent to the open pit;
- copper-gold concentrate transportation by pipeline to a Sepik River port then barging along the Sepik River and northern coast of PNG to the proposed concentrate export facility located at Cape Moem near Wewak;
- power generation during operations using an intermediate fuel oil (IFO) power station then augmented by a hydroelectric power station;
- an airport constructed at Kaugumi Creek to transport personnel to and from the site;



- the viability of the Project reflects a combination of economic, engineering environmental and social consideration that have been assessed and presented in FRL’s proposal for development; and,
- The proponent for the project is FRL as manager of the Freida River Joint Venture and on behalf of joint venture participants FRL and HFL.
- The participants and their equity in the project are: PanAust Ltd (80 per cent), Highlands Frieda Limited (20 per cent).

Pan Aust Limited is a copper and gold producer in Southeast Asia and has a portfolio of organic growth projects in Laos and Chile.

### **Processing method**

The mine processing method will involve conventional crushing grinding and flotation circuit. Mine tailings and waste rock will be contained within an engineered Integrated Storage Facility (ISF). The mine will also have quarries to provide materials for the construction of dams, roads, water diversion bunds, infrastructure pads and the construction of the ISF embankment.

### **Power supply**

During the construction phase, power generation will be provided by diesel generators. Following construction phase and during operations, a portion of the power will be supported by hydroelectric power.

### **Raw water requirement & supply**

The Nena River will supply all raw water requirements for the mine.

### **Main access road**

A main access road will connect the Sepik River port, Kaugumi Creek airport, Freida River airstrip, IFO power station, ISF, process plant, mine infrastructure area and accommodation camps.

### **River ports**

Construction: Freida River port and Sepik River port will accommodate transport of construction materials to the mine site. The Wario River port, adjacent to Nekiell, will provide access for construction of the main access roads. Operations: The Sepik River port will be used for import of equipment and consumables and export of concentrate. A tugboat refuelling facility will be located at Pagwi and a mooring point will be located upstream of Yambon Gate.

### **Logistics**

Mine equipment and consumable will be received at the Port of Wewak where it will be transferred to barges, transported to the Sepik River and then trucked to site. Concentrate will be transported in barges along the Sepik River and the Bismark coast to a new concentrate export facility at Cape Moem. Accommodation construction: Main (mine camp) – accommodation for 1500 personnel and various other accommodation facilities at different locations.

Construction: Peak construction workforce of 3720 personnel.

Operations: About 2000 personnel with a further 1000 ISF contractors in Years 1 to 9 ongoing construction campaigns for the ISF.

### **Main airport**

Existing Freida River airstrip to start followed by a new airport to be constructed at Kaugumi Creek.

### **Tailings management**

Integrated Storage Facility (ISF) will be constructed in the lower Nena River catchment about

4.5km upstream of its confluence with the Ok Binai. Along with the large open-pit void, it will be the most prominent feature of the mine. The primary design objective of the ISF is to safely store tailings and waste produced by the mining and milling operation. This design has been subject to international expert peer review by Pan Aust's ITGRP, which has been established to assess the adequacy of the design of the ISF and the underlying studies informing this design, and to provide recommendations on additional studies or evaluations to address areas of uncertainty.

### **Environment regulatory process**

The environment regulatory requirements for satisfying the environment impact assessment process as contained in the Environment Act 2000 is as follows:

- Submission of EIR;
- approval of EIR;
- conduct of environment impact assessment;
- submission of EIS;
- stakeholder consultation on EIS;
- preparation of submission to Environment Council;
- Environment Council recommendation to Minister;
- minister's approval-in-principle; and,
- Director of Environment issues Environment Permit.

The above process can take up nine months to complete and is also dependent on adequacy to technical information submitted. CEPA will also conduct its independent peer review on critical aspects of the project submissions will then be presented to the Environment Council for deliberation and recommendation to the minister to issue an AIP.

### **Mine tailings dam failures major cause of environmental disasters: report**

Zoe Sullivan, Mongabay, 19 December 2017



- Between 2008-2017 it's estimated that more than 340 people died, communities have been ravaged, property ruined, rivers contaminated, fisheries wrecked and drinking water polluted by mining tailings dam collapses. Estimates from the year 2000 put the total number of tailings dams globally at 3,500, though there are likely more that have not been counted.
- A new United Nations Environmental Programme (UNEP) report states that as mining production escalates globally to provide the minerals and metals required for a variety of industrial needs, including green technologies, it is urgent that nations and companies address tailings dam safety.
- The UNEP report recommends that mining companies strive for a "zero-failure objective" in regard to tailings dams, superseding economic goals. UNEP also recommends the estab-

lishment of a UN environmental stakeholder forum to support stronger international regulations for tailings dams, and the creation of a global database of mine sites and tailings storage facilities to track dam failures.

- One idea would be to eliminate types of tailings dams that are just too dangerous to be tolerated. For example, mining experts say there is no way to insure against the failure of “wet tailings disposal” dams, like the Samarco dam that failed in 2015 – Brazil’s worst environmental disaster ever. As a result, they recommend storing all future tailings waste via “dry stock disposal.”



The Imperial Metals Mount Polley gold and copper mine tailings dam disaster in British Columbia, Canada, dumped 24 million cubic meters (more than 31 million cubic yards) of mine waste and sludge into neighboring Lake Polley and polluting the Hazelton Creek watershed. Photo courtesy of the Multinationals Observatory

It’s estimated that more than 340 people have been killed since 2008 in mining tailings dam failures –preventable environmental disasters that also saw the ruination of communities and property, the contamination of rivers, destruction of fisheries, and pollution of drinking water supplies. Spurred by those calamities, the United Nations Environmental Programme (UNEP) has issued a report stressing the need for increased tailings dam safety around the globe. Tailings dams store pools of toxic mining waste. UNEP notes that large quantities of minerals and metals will be required in the near future for a variety of industrial needs, including the development of green technologies that support the UN’s 2030 Sustainable Development Goals (SDGs). The report offers two key recommendations and a number of policy actions to dramatically reduce tailings dam fatalities and accidents.

The first recommendation: Mining companies should strive for a “zero-failure objective,” superseding economic goals. UNEP cites an expert panel convened in the wake of a major tailings dam failure in British Columbia, Canada, the Mount Polley gold and copper mine, which dumped 24 million cubic meters (more than 31 million cubic yards) of mine waste and sludge into neighboring Lake Polley. The panel concluded that “safety attributes should be evaluated separately from economic considerations, and cost should not be the determining factor.” The second key UNEP recommendation: Establish a UN environmental stakeholder forum to support stronger international regulations for tailings dams. Payal Sampat of Earthworks, a US-based NGO, notes: “Mine waste storage facilities are like ticking time bombs, putting communities and waterways in harm’s way in the event of catastrophic failure.”



Aftermath of the Samarco tailings dam failure that sent a wall of toxic mud into the village of Bento Rodrigues, Brazil, killing 19 people and contaminating more than 500 miles of the Doce River. The UN report says that many such disasters are preventable if Mining companies strived for a “zero-failure objective,” superseding economic goals. Photo by Romerito Pontes licensed under the Creative Commons Attribution 2.0 Generic license

### **A record of disaster**

The UNEP report was prompted by multiple serious accidents occurring around the world over the past decade. It points to China and Canada as the two countries with the worst recent safety record. Canada has had seven accidents since 2011, while China has had eight. Chile registered five separate tailings dam failures in 2010, according to the report, while the U.S. saw five tailings dam accidents over the past decade. Other countries have experienced disasters and grief. In Minas Gerais state, Brazil, on November 5, 2015, the Fundão dam collapsed releasing 50 million tons of toxic iron tailings into the Doce River – the nation’s worst environmental disaster ever. The dam held back waste from the Germano mine run by Samarco, a joint venture of BHP Biliton and Vale, two of the world’s largest mining firms. Nineteen people died when the slurry engulfed the town of Bento Rodrigues. Survivors fled for their lives to high ground and were left homeless. More than 500 miles of the river was contaminated, all the way to the Atlantic Ocean.



La Tortolas tailings dam high in the Andes Mountains of Chile. The dam was built in a seismically active area, but is designed to resist earthquakes. Photo by Lodecop licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license



Ugo LaPointe of Mining Watch Canada told DeSmog Canada that these major disasters represent just a portion of the problem: “This is just a glimpse of what we know. A lot of the data is missing. We need an international database of mining spills and mining failures. If you don’t collect that solid data, you are not in the best position to correct the problems.” Along with increased international regulation of tailings dams, UNEP’s Safety is No Accident report also calls for the establishment of a first-of-its-kind global database of mine sites and tailings storage facilities to facilitate the tracking of dam failures. Research cited from the year 2000, estimates that there are 3,500 tailings dams around the globe, though that figure is likely low considering that there are around 30,000 industrial mines planet-wide. No one knows how many tailings dams there may be, or their current condition. The UNEP report also calls for financial securities firms to give mining companies an economic incentive to prioritize safety. Suggestions include a global insurance pool, mandatory financial securities for the life of every mine, and a global financial assurance system for mine sites.

### **Views within the industry**

Canada’s mining industry plays a significant and influential role internationally, with 30 Canadian mining companies operating in Brazil, for example. Further, Canadian mining firms were given advance notice earlier this year about the Brazilian government’s plans to open up a vast region in the Amazon to mineral extraction. Canada’s mining sector contributed \$56 billion to Canada’s gross domestic product in 2015. The Mining Association of Canada told DeSmog Canada it would soon be releasing a revised Tailings Guide informed by mine reviews conducted by an independent task force it had assembled. A spokesperson for the U.S. National Mining Association (NMA) told Mongabay via email that the UNEP report’s recommendations don’t apply to the United States, “where mining is heavily regulated for any releases to the environment and where the only event of this type in recent years was caused not by miners but by a faulty EPA operation in an old legacy mine [Gold King] in Colorado.”



Dry bed of the tailings dam at the Brukunga Pyrite Mine east of Adelaide in the Mount Lofty Ranges, South Australia. The mine was closed in 1972 and this photo comes from 1992. In 1974, a severe storm resulted in the retention ponds overflowing into nearby Dawesley Creek with water quality impacts occurring downstream. Tailings dams continue to be environmental hazards long after mine closures. Photo courtesy of CSIRO ScienceImage licensed under CC BY-NC-ND 4.0

However, a Bureau of Reclamation audit of that spill found that the circumstances “are not isolated or unique, and in fact are surprisingly prevalent” in the United States. The audit also reported that the release was the culmination of events over several decades including an “inadequately designed closure of the mine portal” and misinterpretation of the groundwater conditions when it was reopened in 2014/2015. Asked whether the NMA plays any role in monitoring U.S.-based companies’ international operations, the spokesperson said that the NMA doesn’t regulate mining operations.



LaPointe emphasized that: “The problem is that the industry is not yet acknowledging publicly that there are too many financially risky, marginal mines that are being permitted.” He maintained that marginally profitable companies and mines are a major part of the problem because they cut corners on safety and don’t have the money to guarantee the safety of people and the environment.

#### **“Reducing the number of dams that can fail”**

Suzanne Greene, a communications officer for the Massachusetts Institute of Technology Metals and Minerals for the Environment group, told Mongabay that a “key element of dam safety is reducing the amount of waste produced by the mine. MIT has a number of technologies under development that will help achieve this, such as low or no-waste extraction and separation.” Greene also pointed to new technologies, such as sensors that can be embedded in dam walls, to monitor and detect cracks or bulges in these structures in real time. As importantly, some types of dams may need to be abandoned all together. Speaking with Mongabay by phone, Earthworks’ Alan Septoff explained that there are “financial assurances that are intended to do reclamation after a mine completes operations, and financial assurances for when something goes wrong.” But in the case of a disaster as extreme as Brazil’s Fundão disaster, Septoff cited research by Chambers and Bowker which concluded that “it’s essentially impossible for a company to get insurance for this severity.” And logically, if companies can’t get insurance for a particular type of operation because it is too risky, that type of operation will be eliminated, preventing future disasters, and promoting safer methods.

As an example, Septoff points to Canada’s Mount Polley rupture and to the [conclusions the review panel produced](#): “The independent review panel, which was peopled with mining engineers working for industry, said there was no way to insure against ‘wet tailings disposal’ like the kind that failed at Samarco [in Brazil] and that all future tailings storage need to be ‘dry stock.’” The Mount Polley report added: “The Panel firmly rejects any notion that business as usual can continue.” And also that “The Panel does not accept the concept of a ‘tolerable failure rate’ for tailings dams.” Rejecting the idea of slow incremental change within the industry, the panel concluded: “dam failures are reduced by reducing the number of dams that can fail.” For Septoff, this conclusion contrasts with most industry rhetoric: “Industry is trying to give the perception that this problem is going to go away, and so people should keep investing, but if the true cost of this type of disposal is made known, then the prospects for responsible investors investing in them will go considerably down.”



A mining tailings dam in the Balkans. Estimates from the year 2000 put the total number of tailings dams globally at 3,500, though there are likely more that have not been counted. With mining operations fast expanding around the globe, more accidents are likely unless action is taken to safeguard tailings dams. Photo courtesy of WWF

## **New Ireland Province gets K640m in royalties**

December 19, 2017, The National Business

THE people of New Ireland had received K640 million in royalty payments from the Lihir Gold Limited (LGL) since 1997. A company statement said of the total royalty payments made between 1997 and September 2017, the New Ireland provincial government received K320 million, Nimamar Local Level Government K192 million and special mining lease block owners K128 million. From January to September this year, LGL paid K54, 903, 661. The memorandum of agreement stated that the 50 per cent portion for the provincial government be divided as follows:

- 20 per cent to the Namatanai District for infrastructure projects and programmes;
- 20 per cent to the Kavieng district for infrastructure projects and programmes;
- 10 per cent for general administration and for the administration of the MOA obligations.

For the 20 per cent royalty portion for the SML blockowners, an arrangement was made between the block executives and Lihir Mining Area Landowners' Association for LGL to deduct 20 per cent and pay it directly to the association to put in a financial savings scheme for the landowners. As part of its contribution to the future of New Ireland and Papua New Guinea, LGL continues to deliver sustainable and socially responsible outcomes. Also, as a corporate citizen, LGL honoured the MOA and other agreements and complied with all laws of PNG by paying royalty every month and reports this payment to the Mineral Resources Authority and to other relevant government agencies such as Internal Revenue Commission.

## **Solomons' landowners raising funds to battle miner in court**

Landowners in Solomon Islands' Temotu province are trying to raise funds to challenge the prospecting rights of miner Pacific Bauxite in court.

Radio New Zealand, 18 December 2017



Temotu locals want to protect their land against devastation from mining activities. Photo: Facebook

The Australian company which is being supported by the provincial government has met with growing opposition from the resource owning communities in West Nende. A mining advisor for the Temotu Conservation and Sustainable Development Association said that recently in the provincial capital Lata he witnessed the company's representatives being forced by angry landowners to get back on to a plane after they had just landed and fly back to Honiara. Ruddy Oti said communities across Temotu were working together to try and raise around \$US6,456 or \$SBD50,000 to

engage a lawyer to challenge the legality of Pacific Bauxite's prospecting licence. "We appoint certain people to look after donations from each community. The cost involved to challenge a mining company in the court of law it is very expensive. The people of Nende even though this issue is very complex I think the people of Nende are united and patriotic to pursue this," said Ruddy Oti. Mr Oti said their aim is to file a case early in the New Year.



NASA picture of Nende, known also as Santa Cruz, in Solomon Islands' Temotu province. Photo: NASA

## **Gas flares success in Gulf**

Post-Courier, December 18, 2017

BY MELISHA YAFOI

TWINZA Oil Limited has gifted the country with the successful flaring of its Pasca A4 gas condensate field 90 kilometres off the Orokolo Bay in Gulf province on Saturday. The flaring was witnessed by the Minister for Petroleum Fabian Pok, Department of Petroleum and Energy acting Secretary Kepsey Puiye and Twinza executives on a VIP visit to the rig. Managing director Huw Evans said the flaring was a first test after 48 years of conducting well checks reinforcing the goal of developing it as the first offshore oil and gas development for PNG. Mr Evans said this has been in progress since 2011 and after being given the licence earlier this year and was the result of hard work. "We hope to see with the help of the minister and the department, good grace of the people of Gulf to see a project development granted at the end of March next year and we should begin full production at the end of 2020," Mr Evans said.

Some of the production will go into the domestic market which is a very important part of business development for us at Twinza, the natural resources some of which will benefit the local market." Mr Evans said the company has already invested almost K155 million (US\$48 million) into the project and will invest almost K811 million (US\$250m) when a development licence is granted. Mr Pok thanked the company for the confidence in Papua New Guinea to invest in an offshore field and pledged his support and the government to help Twinza deliver the project. "We want to ensure that the project is successful so that we can see the benefits of the country and for the company," Mr Pok said. Following the drilling of the Pasca A4 well, the company aims to progress towards final investment decision (FID) for the development phase in 2018.



### **Sir David Attenborough against experimental seabed mining**

*"That is where life began, and that we should be destroying these things [hydrothermal vents] is so deeply tragic"* Sir David Attenborough

David Shukman, BBC News, December 15, 2017

Plans for the world's first deep sea mine are taking shape in the waters off Papua New Guinea. The ocean floor is rich in gold, copper and other minerals in big demand around the world. But some scientists warn that digging up the seabed will destroy marine life, and Sir David Attenborough is among those objecting. BBC News science editor David Shukman reports.

Link: <https://ramumine.wordpress.com/2017/12/18/sir-david-attenborough-against-experimental-seabed-mining/>

### **Mining Minister peddling ignorant misinformation about biodiversity and experimental seabed mining**

PNG Mine Watch, 15 December 2017



Underwater life in the McMurdo Sound

Papua New Guinea's Minister for Mining, Johnson Tuke, has been peddling some ignorant misinformation in his attempts to defend experimental seabed mining. The Minister has claimed no life exists at 1600m under the ocean where Nautilus Minerals hopes to strip mine the seabed. That is completely untrue and irresponsible according to scientists like Cindy Dover, a professor of biological oceanography at Duke University: "We have learned that the deep sea is as exquisitely diverse as any bit of shallow marine or terrestrial environment". Indeed, dozens of new species are routinely discovered during forays to the bottom of the ocean, even at depths twice as deep as the proposed Nautilus mining operation. This all completely contradicts the Minister's ignorant claim that:

"There is a certain dark area (in the seabed to be mined) where it is out of photosynthesis. They say there is no life beyond that point." To pour further scorn on Minister Tuke's school boy error, scientists also say that the deep sea is vitally important not just for the biodiversity it contains, it also plays a "critical role in the functioning and buffering of planetary systems" and is "an area we know is very important to society." The Minister should apologise for misleading the nation and take a science lesson or do some basic research before he opens his mouth to speak again about experimental seabed mining.

## UN Environment Assembly moves to curb pollution from extractive industries

UN Environment, 14 December 2017

The city of Mariana, Brazil, and the town of Panguna in the autonomous province of Bougainville in Papua New Guinea, occupy two diametrically opposed parts of the world, separated by more than 10,000 miles. They have distinct historical differences, dating several centuries ago, but in a very unique way they share a common story and destiny: that of the adverse effects of a well-intentioned exploitation of natural resources gone awry. While few inhabitants of both urban centres may have interacted with each other, they have a common story to tell about the disastrous, and often unintended, consequences of natural resource extraction. Both settlements experienced the worst mining disasters in their respective countries and highlighted the need for integration of local communities in the planning and execution of extraction of natural resources. In Panguna, the discovery of copper deposits in 1969 heralded the establishment of what was then the world's largest open-pit copper mine, which began production in 1972. However, and unbeknownst to many locals at the time, a dispute over revenue-sharing and mine waste management between the local community and mine-operators, would lead to a protracted armed conflict which cost nearly 20,000 lives.

Despite the official end of the conflict in 2001, Panguna is still grappling with the disastrous effects of the mining. "Even though the mines and logging on our island produced hundreds of millions of dollars in profit the island didn't become prosperous. Less than one per cent of the profits of the mine went to local communities. The mine had an enormous impact on our capacity to produce food and access safe water," said Helen Hakena, the director, of the Leitana Nehan Women's Development Agency, in Bougainville, during a side event at the Third UN Environment Assembly on 4 December. "The mine polluted our water and redirected our economy," she said. "Even now much of the population is exposed to mercury used by artisanal miners, including pregnant women, who access the gold. We have a high rate of birth complications and deformities as result," Hakena added.



Alluvial miners at work on Bougainville

Similarly, in 2015 Brazil experienced its worst mining disaster when two dams, owned by the Samarco mining company, collapsed and spewed forth their iron-ore mine waste into nearby rivers including the Rio Doce - an important river basin in southeast Brazil. The incident affected communities along the approximately 650 km course of the river, disrupted livelihoods and necessitated a \$250 million clean-up operation by BHP Billiton, which jointly run the Samarco mining operation together with Brazil's Vale mining company. Inhabitants of both Mariana and Panguna, and numerous other mining communities around the world, are likely to benefit from a UN Environment Assembly resolution aimed at curbing pollution. The resolution, which was passed on 6 December, urges governments, and corporations, to work closely with local communities to ensure pollution is



addressed. The resolution aims at strengthening efforts to integrate conservation and sustainable use of biodiversity in various sectors such as agriculture, fisheries and aquaculture, tourism, mining and energy, infrastructure and manufacturing among others. It also points to the need to prevent and reduce pollution from these sectors.

“A new paradigm needs to be promoted: people and planet over profits. It is crucial to have responsible mining and sourcing of metals. There is need for a convergence of ethics and views among governments, business and society as well as the reform of production systems and practices that currently benefit only a few so that they can benefit many people,” said Ligia Noronha the Director of UN Environment’s Economy Division. David Granger, President of the South American nation of Guyana, echoed that message in his statement to those assembled for the side event: “The world’s natural resources are the patrimony of humanity,” Granger said. “People therefore, must be at the heart of the development of our natural resources. In the final analysis people must come before profits. The pursuit of profits has been accompanied over the past century by an exponential increase in extractive industries. This expansion, however, has aggravated environmental damage which can have a long lasting and harmful negative impact on human dignity and well-being. “Pollution in the extractive industries threatens environmental security.”

The event coincided with the release of a report on mine tailings dam failures. The publication, *Mine Tailings Storage: Safety is No Accident*, was jointly produced by UN Environment and GRID-Arendal. It highlights six case studies of mine tailings dam failures dating back to 1985 and recommends the establishment of a UN Environment stakeholder forum to facilitate international regulation of dams. Among the most recent major incidents highlighted include the Mount Polley, western Canada, when a mine storage facility failed in August 2014 and 25 million cubic metres of waste water contaminated Lake Polley.

It also assessed the impact of the 2015 Samarco incident in south-east Brazil when approximately 33 million cubic metres of mine waste travelled 650 km to the Atlantic coast and disrupted water supplies for hundreds of thousands of people. The side event was attended by delegates from communities that have been affected by mine waste pollution. They talked about some of the adverse, long-lasting and negative effects on their water, land and lives. Representatives of the private sector were also in attendance. John Atherton, a director at the International Council on Mining and Metals, said electrification of the mining industry holds “great promise” of cleaner extraction and called for “shared responsibility” in ensuring the reduction of pollution.

### **World-first mining case launched in PNG**

Tom Lodewyke, *Lawyers Weekly*, 14 December 2017

Citizens of Papua New Guinea have launched landmark legal proceedings against the country’s government over a deep seabed mining project. Coastal communities in Papua New Guinea (PNG) recently commenced proceedings against the PNG government over the Solwara 1 project, the world’s first deep seabed mine. The Centre for Environmental Law and Community Rights (CELCOR) in Port Moresby is representing four community plaintiffs. They are seeking information on the legality of the mine’s approval, as well as the likely environmental, social, cultural and economic impacts. The Environmental Defenders Office (EDO) NSW, a partner of CELCOR, said in a statement that these are “landmark proceedings”. It is the first case relating to the world’s first commercial deep seabed mine, and one of the first public interest access to information cases brought under the PNG constitution, as PNG does not have freedom of information laws.

The EDO said community representatives in PNG have been requesting information on the mine, including the environmental permit, for years without success. “[T]his is a historic case, not just for

Papua New Guinea but globally, as communities try to understand the legality and potential impacts of the world's first commercial deep seabed mine," said BJ Kim, international program manager at EDO NSW. "It's so important that the international legal community steps up and supports lawyers in PNG who seek to use the law to protect the environment. Fewer legal environmental protections, and less well-resourced environmental regulators, see worse environmental impacts from mining and logging operations in the Pacific than in countries like Australia where greater checks and balances exist.

"EDO NSW knows that like-minded organisations in the Pacific can learn a great deal from our experience and expertise, and that's why we've been supporting partners in the Pacific for over 25 years." EDO NSW CEO David Morris said the case is a "coming of age" moment for public interest environmental law in PNG, which his organisation is proud to be part of. CELCOR executive director Peter Bosip said the relationship between the two organisations is crucial in supporting environmental law in PNG. "This case is a result of the hard work of many partners," Mr Bosip said. "We are exceptionally grateful to EDO NSW for the dedication they have shown in support of our fledgling public interest environmental law practice. "We have learnt a great deal from EDO NSW about running a successful public interest environmental law practice and their support has allowed us to build a strong CELCOR which is of crucial importance to PNG. But we can't do it alone. Without international donor support, landmark cases like this could simply not be run. "Communities cannot afford to pay the rates PNG lawyers charge and without organisations like CELCOR, PNG will be left entirely at the whim of the government and maverick resource companies."

### **Government urged not to renew the Porgera Special Mining Lease Agreement**

Jack Lapauve Jnr., EMTV, 14 December 2017

President of Resource Owners Federation PNG is calling for an equal playing field between mining operators and resource owners. President Jonathan Paraia told EMTV News, too many agreements or understandings are signed but 90 percent of that is not achieved. Mr Paraia said the government and mining operators must consider the issues presented by resource owners. He says Resource Owners Federation of PNG has kept a tight lip over the years. With more complaints raised by resource owners around the country, he says, the government and mining giants must pay equal consideration. In the past 10 years, Papua New Guinea has seen a rise in explorations in the Oil, Gas and Mining sector. More explorations are ongoing with new mines and project sites identified. Mr Paraia says if all stakeholders are given the attention needed, the standard of living including goods and services will improve very much in many communities where mining or oil and gas projects are in operation. Meanwhile, he has urged the National Government not to renew the Porgera Special Mining Lease Agreement. Mr Paraia says landowners demand an investigation into the issuing of water permits by the mining operator. Landowners say severe damages were done but remain unreported.

### **BCL confident of backing from Panguna landowners**

*Two companies vying for control of the Panguna mine site in Papua New Guinea's Bougainville remain at loggerheads.* Radio New Zealand, 14 December 2017

Earlier this week RTG claimed the resolution of a dispute over the leadership of the key landowning group at the mine site cleared the way for it to proceed. But Bougainville Copper Limited, which used to mine Panguna and wants to return, says there is more court ordered mediation to come. BCL company secretary, Mark Hitchcock, said a judge has ordered that the views of the membership of the Special Mining Lease Osikiang Landowners Association be sought. And he says BCL was confident that it would win their backing. "We know for a fact that the majority of those land-

owners are pro-mining, to start with, and they are also supportive of BCL. We have seen that evidence. At the recent wardens hearing, we have seen the turnout at that hearing and we are confident of the support." Mark Hitchcock said there were 367 individuals who could have a say on the issue. The mediation is scheduled for the end of next month.

### **PNG mining minister says govt committed to deep sea mining**

Radio New Zealand, 14 December 2017

Papua New Guinea's Mining Minister says the government is committed to the controversial Solwara 1 seabed mining project. The project, led by Canada-based Nautilus Minerals, seeks to extract gold and copper from deep under the surface of the Bismarck Sea.



Collecting machine. Photo: Nautilus Minerals



Papua New Guinea's parliament. Photo: RNZI / Johnny Blades

However local community groups have launched legal proceedings in a bid to obtain key documents around the Solwara 1 agreement. They accuse the government of withholding information on the project's approval and environmental impact reviews. But the Minister, Johnson Tuke said the government has been open about the project, and that Nautilus has already released a thorough envi-

ronmental impact statement. "Of course this government is responsible. The environment context of it has to be taken on board, and proper due diligence has been conducted already...I suppose. Government have bought into it already, on a 15 percent stake," said Johnson Tuke.

Mr Tuke, who is new in the ministerial role, recognised the long-running community concern about the project, but echoed the former Mining Minister in expressing satisfaction with the level of risk in the environmental impact study that Nautilus had submitted. He claimed the mining would be taking place in an area where no life existed, some 1.6 kilometres under the ocean surface. "I'm really not a marine biologist who has got a preview for you but... Nautilus has given us a feasibility study. That is the reason why the license was granted," he explained. "And from what I know, there is a certain dark area (in the seabed to be mined) where it is out of photosynthesis. They say there is no life beyond that point."



Sampling copper under the sea Photo: Nautilus Minerals

However lack of financing appears to be another obstacle to Nautilus advance the project. It recently released a statement to the Toronto Stock Exchange indicating it was struggling to secure funding for the project.

### **Mimika regency to get rump of Papua's Freeport shares**

Radio New Zealand, 13 December 2017



West Papuans have long expressed frustration about the environmental destruction caused by the Freeport mine operations in Mimika regency. Photo: MIneral Policy Institute



The Government of Indonesia's Papua province is to get 10 a per cent share in PT Freeport Indonesia, the company which operates a huge gold and copper mine in Papua. The new share arrangement is part of a divestment package that Freeport's US parent company, Freeport McMoran, negotiated with Indonesia. Tabloid Jubi reports that seven per cent will go to Mimika Regency where the Grasberg mine complex is located, while three per cent will go to the Papua provincial government. As part of the overall divestment, Indonesia will get 51 percent of the shares in Freeport's Papua operations. Papua's Governor Lukas Enembe confirmed the new arrangement, saying it would be signed this Friday between his government, the national government, PT Freeport and Mimika Regency's administration. Mr Enembe had previously complained about the lack of participation by Papuans in control of Freeport.

### **Australian firm taps into Gulf resources**

The National, December 11, 2017

AUSTRALIAN company Mayur Resources now has an exclusive licence to develop a resource, energy and industrial complex in Gulf. An agreement was signed on Friday between Governor Chris Haiveta and Mayur managing director Paul Mulder in Port Moresby. Haiveta said the agreement would use resources it had discovered in Gulf such as iron sands, zircon, ilmenite, coal and high grade silica sands for domestic use and export opportunities. He said this would be done while leveraging favourable port areas in Gulf and the domestic market obligation for gas for a petrochemical industry. "Our country is in an energy crisis and we continue to send foreign currency offshore and import foreign liquid fuels at a far higher cost and far higher polluting than using our own domestic energy sources," he said. "Other Asia-Pacific countries are using their domestic energy and industrial resources." PNG is importing most of our energy and nation building products even such things as cement, lime and diesel that enriches other countries rather than our own.

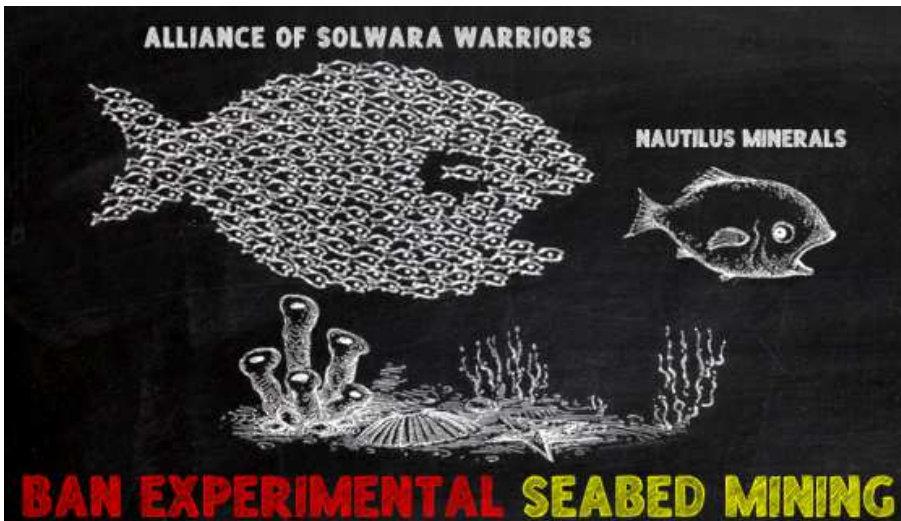
"Our Prime Minister has advocated cheap, reliable accessible energy while doing this in an environmentally beneficial manner that improves our current state." Haiveta said the time for talking about the concept was over. "We need action. We need growth. We need employment. We need industry. We need prosperity. And we only get this by having access to cheap, reliable power," he said. "Gulf today has taken the next step to use its gas, iron coal and other mineral sand resources and bring us out of the dark and poverty. "Our plans are nothing different to what Japan, Australia, New Caledonia, West Papua, Vietnam, Malaysia, Philippines, Indonesia, Thailand." Mulder said Mayur Resources had been working for over five years to explore minerals in Gulf, Central and Western.

### **Nautilus EIS in public domain for 8 year**

PNG Industry News, 11 December 2017

THE environmental impact statement for Nautilus Minerals' Solwara 1 seabed mining project has been on the company's website for more than eight years. The EIS - full document with all the appendices - has been available to anyone who wished to see it since April 2009. "We translated the summary of the document into pidgin [Tok Pisin], and that is available as well. And there are also copies of our EIS at the offices of CEPA (Conservation Environment Protection Authority)," said Mike Johnston, Nautilus chief executive officer. Johnson was responding to a comments by an activist NGO which says it intends to launch legal proceedings against the Papua New Guinea government to "obtain key documents" relating to the Solwara 1 project. "We have had three public hearings for the EML (extractive minerals lease) - in Port Moresby, Rabaul and Kavieng," said Johnson, who was responding to the claim that there had been "very little information about the Solwara 1 project" by NGO Centre for Environmental Law and Community Rights (CELCoR).

Johnston said that all the information about Solwara 1 had been freely available on the company's website and there were public hearings through the EIS process. Solwara 1 is in the Bismarck Sea, about 30km from the nearest coast in New Ireland Province.



"We have had ongoing community engagement and meetings," he said. "All of their claims are baseless, from what I see," Johnston said, predicting that the court would throw out the proceedings. "It is just another publicity stunt by NGOs to try and keep things in the newspapers. I am not sure what they are trying to achieve or where it is going to go. People believe some of this stuff. The government has followed due process, PNG has good mining laws which are very similar to Australia's. The adopted Queensland's mining regulations," Johnston said. On Friday CELCoR said that acting on behalf of "coastal communities", it had launched legal proceedings against the PNG government in a bid to obtain key documents relating to the licensing and the environmental, health and economic impacts of the Solwara 1 project. Activist Jonathan Mesulam, from the west coast of New Ireland Province, said this "information" had been requested for the past four years, but the government had ignored its requests.

### **Shipyard notifies Nautilus of default by major contractor**

GLOBE NEWSWIRE, December 11, 2017, Source: Nautilus Minerals Inc.

TORONTO, Dec. 11, 2017 -- Nautilus Minerals Inc. announces that Fujian Mawei Shipbuilding Ltd (the "Shipyard"), the owner of the shipyard where Nautilus' Production Support Vessel (the "PSV") is being built, has notified the Company that MAC Goliath Pte Ltd ("MAC"), the buyer of the PSV, has failed to pay the third installment of the contract price (~US\$18M + interest). Under the shipbuilding contract between the Shipyard and MAC (the "contract"), MAC is required to rectify the default immediately, and perform corresponding obligations under the contract. If MAC fails to remedy the default within 21 days of the receipt of a notice to MAC from the Shipyard, then the Shipyard may rescind the contract. In the event that the contract is rescinded, the Shipyard has the right to either complete or not complete the PSV and to sell the PSV by private sale either in a complete or incomplete state.

In accordance with the terms of the contract, Nautilus Minerals Singapore Pte Ltd has the option to either remedy the default on behalf of MAC and/or replace MAC as a party to the contract by way of a novation or assignment within fourteen days of receipt of the notice to the Company from the Shipyard. Nautilus notes that the current build of the PSV is progressing well, with construction over 70% complete. The derrick substructure was recently delivered to the Shipyard for installation on the PSV. Foundations for two of the three Launch and Recovery Systems (LARS) are being in-

stalled, the Bulk Cutter winch has been installed, work on the cargo handling system is progressing, and both the 100T and 200T cranes have now also been installed (see links below). Nautilus is in discussions with the Shipyard, MAC and third parties with respect to the default and potential remedies, and will issue further updates as matters develop.

### **Troubled Papua New Guinea deep-sea mine faces environmental challenge**

Community groups accuse PNG government of keeping documents for its approval under wraps  
Helen Davidson and Ben Doherty, *theguardian*, 11 December 2017

A controversial experimental deep-sea mine is being challenged in court by environmental groups who have accused the Papua New Guinea government of withholding key documents about its approval. Nautilus Minerals Inc, a Canada-based company primarily owned by Russian and Omani mining firms, wants to extract gold and copper deposits from 1.6km below the surface of the Bismarck Sea, using a seabed mining technique never before used in commercial operations. Nautilus told the Guardian it has conducted dozens of community meetings – reaching more than 30,000 people from nearby islands – and has had its key documents, including a detailed environmental impact statement, publicly available for years. But members of nearby communities, represented by the Port Moresby-based Centre for Environmental Law and Community Rights Inc (Celcor), claim they were not adequately consulted and that they hold grave concerns over its impact. There are also concerns over its financial viability and the PNG government’s stake in it.

Celcor, which has been assisted by the New South Wales Environmental Defenders Office, formally lodged an application in PNG’s national court and served the PNG government last week. It said key documents had not been published, and that under the PNG constitution affected residents had a right to the information. The plaintiffs have previously sought documents including the original permit, the environmental management plan and independent reviews, all oceanographic data on the site, and any studies or modelling of the environmental, social, health, culture and economic impacts. They had also asked for any agreements made between Nautilus and the PNG government or other entities in relation to the project, and evidence of the mining minister’s original granting of the exploration licence and his reasons.

“Our major concern is the environmental impact of this project, since there is no independent environmental study,” a plaintiff, Jonathan Mesulam, from PNG’s New Ireland Province, said. Mesulam criticised the company’s consultation approach, and said the community at large did not give “free, prior and informed consent” on the company’s permit. “They had no control. It has been organised by the former minister, and a few other people from the local level government,” he said. The Solwara 1 field, in a volcanic area between the islands of New Britain and New Ireland, was identified by Australia’s CSIRO in 1996. Nautilus was granted an environmental permit for the field in 2009, and a mining licence in 2011. Seabed mining – which Nautilus described as “the next big disruptive technology” – is usually based around areas of metallic nodules, or active or extinct hydrothermal vents, which carry valuable metal deposits. The proposed process uses machinery previously used in other mining industries to excavate materials from the sea floor, then draw it up to the surface as seawater slurry. The slurry is then “de-watered” and transferred to another vessel for shipping. Extracted seawater is then pumped back down and discharged close to the sea floor. Critics have said the environmental impact assessment is insufficient as it does not include a “rigorous risk assessment” or an environmental management plan.

“The mining process would generate plumes of sediment, and our critique of the EIS is that there is not sufficient scientific research or modelling done by Nautilus on what would be contained in those plumes,” said Dr Helen Rosenbaum, coordinator of the deep-sea mining campaign. “Our reviews all show there are significant gaps in the document. The gaps are big enough to render the

EIS not fit for purpose.” Nautilus says the Solwara 1 deposit – Solwara means “salt water” in Tok Pisin – contains high grade copper and gold deposits, up to 10 times higher than typical grades for land-based mines, and has the potential to yield “far superior” ore to mines on land with far less impact on the environment and those who live nearby. The chief executive of Nautilus Minerals, Michael Johnston, said seabed mining did not require large pits to be dug and created no waste, and the company had carefully modelled the impact of mining on the sea floor. He said there was no impact on fishing because the mining took place more than 30km offshore and far from reef fishing areas.

Johnston said the company has run public meetings every two years, reaching more than 30,000 people, on the progress of the project and the modelled potential environmental impacts. He said the project had “broad and strong public support” and across all levels of government, and opposition was being led by “a handful of ... professional activists”. “You always get one or two people who jump up and down,” he said. “Some people think if they make a lot of noise, they’ll be given money to go away, and we don’t do that.” Johnston said Nautilus had helped in developments on New Ireland island, bringing toilets and running water to 25 schools, and working with health organisations running vaccination programs. He said the company had been transparent with all the information on the project, and he was “struggling to know” how they could be more open. “Our EIS has been on our website since April 2009, and the executive summary has been translated into Tok Pisin,” he said. “It’s with the conservation and environment protection authority offices in Port Moresby for anybody to see, and we will happily print out copies for anyone who wants one. Anyone who is sceptical about the project, we are happy for them to contact us and we’ll talk them through it.”

There have been long-running concerns about the experimental project, including a 2012 petition with more than 20,000 signatures from the residents of the Madang, Oro and New Britain provinces calling for it to be stopped. In 2016 the then PNG attorney general and minister for justice, Sir Arnold Amet, rejected the “Papua New Guinea-pig” project, which he said was approved under the Mining Act and without an adequate regulatory framework. “We are a developing nation, we don’t have the capacity, we don’t have the resources ... There is not a tenable argument that says we ought to be used as an experimental locality,” he told the ABC. In 2016 Oregon State University scientists discovered that hydrothermal vents and methane seeps were emerging as “a major force in ocean ecosystems, marine life and global climate” but were under threat from human activity, including seabed mining.

In June, Blue Ocean Law and the Pacific Network on Globalisation said that compared with industries with a proven track record of sustainability, seabed mining was “a gamble”, risking potentially irreversible environmental impacts and destruction of local fisheries. Beyond the legal challenge, the Solwara 1 mining venture has also been plagued by financing issues and delays, including a three-year dispute between the company and the PNG government over the equity agreement. In 2013, arbitration found PNG had breached the agreement, which had previously been described as “high risk” and “low return”, according to a report by Blue Ocean Law and the Pacific Network on Globalisation.

The PNG’s current stake, held by a government company, is 15%, financed by a loan from the Bank of the South Pacific. Last week the opposition spokesman on treasury and finance, Ian Ling-Stuckey, called for an end to “silly investments best left to the private sector”, labelling the US\$113m Nautilus deal a “foolhardy investment”. Nautilus told its AGM this year “there is increased uncertainty and economic and technical risks of failure associated with this production decision”, and that it required significant additional funding to advance production. This month Nautilus issued a statement to the Toronto Stock Exchange warning of cashflow and financing difficulties, deferring for a third time its due date for a required \$10m funding injection.



## **ANNOUNCEMENT TO THE TORONTO AND AUSTRALIAN STOCK EXCHANGES**

RTG, Stockhouse, 8 December 2017

The Board of RTG Mining Inc. is pleased to announce that through a further direct investment and conversion of loans in Central Exploration Pty Ltd (“Central”), RTG has increased its interest in Central to 24%. Michael Carrick is now Chairman of Central and Justine Magee has also been appointed a director of Central. In addition one of RTG’s major shareholders (interests represented by Mr. Richard Hains, who also independently provided early stage funding to Central), has a 32% interest in Central. As announced previously, Central is the joint venture partner of the Special Mining Lease Osikaiyang Landowners Association (“SMLOLA”), being the owners of the minerals at the old Panguna Mine.

The joint venture is held through Central Me’ekamui Exploration Limited who has applied for an exploration licence over the customary land of the SMLOLA members, being the old Panguna Mine. The SMLOLA has nominated RTG as their development partner for Panguna. The Autonomous Bougainville Government (“ABG”) is currently considering all exploration licence (“EL”) applications, including the purported EL renewal application of Bougainville Copper Limited. Both the SMLOLA and RTG are committed to working with the ABG to ensure both the ABG itself, and all Bougainvilleans benefit from any redevelopment of Panguna.

### ***MEDIA RELEASE***

Deep Sea Mining out of our depth, Friday 8 December 2017

#### **Legal action launched over the Nautilus Solwara 1 Experimental Seabed Mine**

PAPUA NEW GUINEA: Coastal Communities have today launched legal proceedings against the PNG Government in a bid to obtain key documents relating to the licensing and the environmental, health and economic impacts of the Solwara 1 deep sea mining project. “Very little information about the Solwara 1 project has been disclosed by PNG Government or the project developer, Nautilus Minerals”, stated Peter Bosip, Executive Director, Centre for Environmental Law and Community Rights (CELCoR). “Communities likely to be impacted by the project have no choice but to bring legal proceedings against the PNG Government.” “They are seeking information to enable them and all Papua New Guineans to clearly understand whether the project was approved lawfully and what the impacts will be on local communities. The Solwara 1 Environmental Impact Statement contains insufficient information to determine this.” Lucielle Paru, of the Central Province Pressure Group says, “Section 51 of the PNG Constitution provides the right of reasonable access to official documents to every citizen of Papua New Guinea. It is a sad condemnation of our national Government that we have to force them to share information about this experimental seabed mining project.”

“We expect our Government to enact a duty of care towards us but it seems to prioritise Nautilus’s interests instead. The Government’s reluctance to provide the documents makes us wonder if they have something to hide.” “The implications of this high-risk project for communities close to the proposed site are significant. We want to know what risk analysis the Government did before it granted Nautilus an Environmental Permit for Solwara 1”, added Ms. Paru. “I am sure that communities living near other mines in Papua New Guinea will want to know this information too as it might shed some light on how the government generally assesses the impacts of mining projects on surrounding environments” According to Jonathan Mesulam from the West Coast of New Ireland Province, “Civil society in Papua New Guinea has been requesting this information for the past four years [1]. My people live only 25km from the proposed location for the Solwara 1 mine in the Bismarck Sea. If the mine goes ahead it will impact our lives and livelihoods [2].” “We have the right to know the whole truth about Solwara 1. The Government has ignored written requests for key

documents so we now have to resort to legal action. Communities along the West Coast of New Ireland are fully in support of the legal action.”

### Notes

[1] For example, as long ago as 2012 the [Deep Sea Mining campaign](#) and [Mas Kagin Tapani](#) sent a letter to PNG PM Peter O’Neill requesting the release of key documents relating to the Solwara 1 seabed mining project. No response was received and those documents are still not in the public domain, <http://www.deepseaminingoutofourdepth.org/letter-to-png-pm>

[2] Reports produced by the Deep Sea Mining campaign highlighting the economic, social and environmental concerns of Nautilus Minerals Solwara 1 deep sea mining project:

‘*Out of Our Depth: Mining the Ocean Floor in Papua New Guinea*’, November

2011, <http://www.deepseaminingoutofourdepth.org/wp-content/uploads/Out-Of-Our-Depth-low-res.pdf>

‘*Physical Oceanographic Assessment of the Nautilus Environmental Impact Statement for the Solwara 1 Project – An Independent Review*’, November 2012,

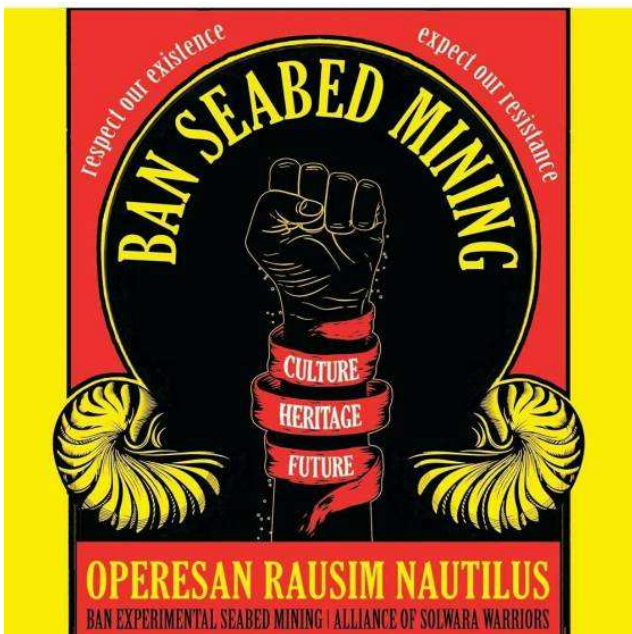
<http://www.deepseaminingoutofourdepth.org/wp-content/uploads/EIS-Review-FINAL-low-res.pdf>

‘*Accountability Zero: A Critique of Nautilus Minerals Environmental and Social Benchmarking Analysis of the Solwara 1 project*’, September 2015,

[http://www.deepseaminingoutofourdepth.org/wpcontent/uploads/accountabilityZERO\\_web.pdf](http://www.deepseaminingoutofourdepth.org/wpcontent/uploads/accountabilityZERO_web.pdf)

### Locals file case to stop seabed mining

Jemimah Sukbat, Loop PNG, December 8, 2017



The Solwara Alliance has filed a case against the government at the Waigani National Court to stop the operation of seabed mining in West Coast New Ireland. Filed on Thursday afternoon, the Alliance wants the Government to make public all necessary and relevant documents under seabed mining agreement, who is involved in approving the project and on what grounds and why the government is still pursuing the project. Jonathan Mesulam, a West Coast New Irlander and a member of the Solwara Alliance, says the people in the village are strongly against seabed mining because their livelihood will be affected by the project. They want the Government to ban the project. “No one knows the environmental impacts of this project. There is also no independent environmental studies so why is the government pushing for this project? “There will be negative impacts in the local

and national economy, especially the fisheries sector,” says Mesulam, who is currently in Port Moresby to file the case.

“Solwara 1 is not a good investment, it will only last for three years.” They want the developer, Nautilus Minerals Limited, to pack up and leave by next year. When asked if the villagers were consulted before the agreement was signed, Mesulam said the developer never consulted the locals. “This MOA was signed by a few people who only think about themselves.” From the footages taken from the villages along West Coast New Ireland, the people say they own both the land and sea and the mining will greatly affect their lifestyle, especially in shark-calling. Mesulam said New Ireland does not need a seabed mine. They already have fish, cocoa, coconut and other resources where they can depend on for economic benefits.

### **Talks still on over seafloor system**

December 7, 2017, The National Business

NAUTILUS says discussions between the company and various parties involved in the manufacture of the seafloor production system is continuing. Nautilus in a statement said it was making progress with respect to deferring some of its immediate cash-flow requirements. And as a result, the company is updating its previous reference to a funding requirement of US\$10 mil (K31.45mil). Nautilus said there could be no assurances that the company would be successful in securing the necessary additional financing transactions within the required time or at all. Failure to secure the necessary financing may result in the company engaging specialist advisers and taking various steps aimed at maximising shareholder value such as undertaking various transactions including, without limitation, asset sales, joint ventures and capital restructuring.

### **BOUGAINVILLE: DO NOT MEDDLE WITH PANGUNA SAYS MASONO**

By Aloysius Laukai, New Dawn, 6 December 2017

ABG Vice President and Minister for Mining, RAYMOND MASONO is calling on Panguna leaders, PHILIP MIRIORI and LAWRENCE DAVEONA to know that the Panguna mine is no ordinary mine. He said that the Panguna mine has a bad history that has crippled the economy of PNG and Bougainville and with many lives lost fighting for it. The Vice President said that the Panguna mine no longer belongs to the landowners because Bougainvilleans blood were spilt over that particular mine. He said that whilst the resources in Panguna and other parts of Bougainville might belong to the people, the ABG has a responsibility to protect its people from unscrupulous companies whose sole interest is to exploit our people for their own economic interests.

The Vice President said that we have seen how Bougainvilleans were exploited by foreigners since colonial days and the ABG does not want a repeat of the past. He said that he was surprised that certain individuals can so easily sell their birth right for as little as FOURTY THOUSAND KINA a month to a foreign company when foreign exploitation was one of the issues against which our people fought and died. Also the ABG rejects companies that think they can bribe their way into the people’s resources by giving certain individuals money to gain landowner consent.

### **PANGUNA WILL BE DEVELOPED SAYS VICE PRESIDENT**

The ABG Vice President and Mining Minister, RAYMOND MASONO says that the PANGUNA MINE in Central Bougainville will be re-developed under the Bougainville Mining Act 2015 and by a developer or developers who respect the Autonomous Bougainville Government and its laws. In a press statement, MR. MASONO said that the developer must also come through the main door. MR. MASONO made these remarks when commenting on a statement by RTG of a deal supposed-

ly made between MR. PHILIP MIRIORI and LAWRENCE DAVEONA to support RTG to develop the PANGUNA mine. He said that it seems ironic that two people who were fighting over the leadership of the Osikayang Landowners Association in court, a mediation case which is still the subject of a court decision can suddenly reconcile to support a company that does not respect the legitimate government and its mining laws.

The Vice President said that the ABG, the landowners and the people of Bougainville will not entertain companies who use the back door or break and enter through the window using self-centred individuals who think that they have a monopoly over the people's resources or represent their interests. He said that the landowners will decide who the preferred developer would be through a transparent process undertaken by the ABG Department of Minerals and Energy Resources currently underway. MR. MASONO said that the process has not yet been exhausted and any deals supposedly made between landowner leaders, companies, or the National Government and in particular RTG are premature at this stage.

### **Bougainville locals give thumbs up to RTG project; shares soar 83pc**

Melissa Yeo, Stockhead, December 6, 2017

RTG Mining hit 52-week highs on Tuesday after the junior explorer got the green light from Bougainville locals to start work on its copper and gold mine. The historic partnership, the first of its kind in 30 years, pushed RTG shares as high as 34.5c before they cooled to 28c — a gain of 83 per cent for the day. Consent from the traditional land owners is required for the issue of any exploration licence on their customary land at the Panguna 1.5 billion tonne copper and gold project on the central island of Bougainville, a process which has historically escalated to wide-scale political unrest on the island. The region has long been known for its copper and gold prospects, but disputes between regional residents and explorers such as Rio Tinto subsidiary Bougainville Copper Limited (BCL) have marred production since the early 1970s. Conflict between the Bougainville Revolutionary Army and Papua New Guinea Defence force escalated to a civil war in 1988 and took almost ten years to cease.

Now, the Autonomous Regional of Bougainville is seeking independence for its population of 250,000, with a target date of June 15, 2019 set for a referendum on the topic. They will be the ones to decide the fate of RTG's application, now led by the traditional landowners, the Special Mining Lease Osikayang Landowners Association (SMLOLA) and chairman Philip Miriori. "We believe the proposal presented by the SMLOLA consortium represents a unique and once in a generational opportunity to responsibly re-open the Panguna Mine for the benefit of all Bougainvilleans," the company told the market. "RTG has always suggested that this is best achieved by discussion and negotiation with all relevant parties, including the ABG." In 2016, Rio's subsidiary BCL was forced to abandon the mine in the face of attacks by rebels, transferring its take to the provincial and national governments at no cost.

### **Parliament defers MRA Bill**

Post-Courier, December 6, 2017

BY JEFFREY ELAPA

The Mineral Resources Authority Act Amendment Bill 2017 that was before Parliament yesterday, was deferred to allow more time for MPs to scrutinise the proposed changes. The sought changes are also related to the functions of the MRA, membership of its board, reporting requirements, expenditure under the Public Finance (Management) Act, financing and increase of production levy among others. Among MPs who disagreed with the Bill was Sinasina-Yogomugl's Kerenga Kua



who said section 27 gave unrestrictive powers to MRA to retain all funds derived from revenue sources. He said specific revenue sources or fees paid like Mining Act 1992, Mining Regulations, Ok Tedi Acts, Ok Tedi Agreements, the Mining ( Bougainville Copper Agreement) Act or other agreements including rentals, production levies, fines and penalties and others should be not be kept by the Authority, but be remitted to the consolidated revenue.

Mr Kua said all the substantial amount of monies should be used to support Government programs. He said the Bill also makes the MRA an independent authority which should be subject to national Parliament scrutiny. “We want to correct a mishap but it is unconstitutional and therefore the Opposition will not vote for this Bill,” Mr Kua said. East Sepik Governor Allan Bird said he is happy to support any Bill that is a good law for the interest of Papua New Guinea. He said the Bill gives MRA powers to regulate and also make money. He further said that MRA will lose focus of its regulatory function as they would concentrate more on money making. “When we introduce such Bills like this, we must be very careful,” Mr Bird said. Trade and Commerce Minister Wera Mori said the composition of the board includes a member from the law society and a professional accountant. He said this is inappropriate as mining is a technical field that requires people with knowledge in the industry. Leader of government business, James Marape rescinded the final reading to be relooked before the final reading.

## UNEARTHING CORRUPTION RISKS IN MINING APPROVALS

Transparency International, December 5, 2017

From resource-rich West Africans nations, to the mining giants of the Pacific and North America, every time a government signs a deal to allow mining of its natural resources there are corruption risks – no matter where that country is. These risks in mining approvals processes – decisions about when, where and under what circumstances mining can occur – can result in environmentally unsound and socially destructive mining projects being approved. They can lead to politicians or government officials taking advantage of their position to profit from their interests in the sector and local communities being excluded from decision-making processes that could cause them to lose their homes. In 2016, for example, a grand jury in [Liberia indicted top government officials](#) on charges of bribery for conspiring to amend key laws to enable a London-listed company, Sable Mining SBLM.L, to get rights to one of the world’s richest iron ore deposits – the Wologozi Mountain Range. [Leaked documents](#) alleged that over US\$950,000 was used to pay off top government officials and their relatives.

On the other side of the world in the coal-rich Australian state of New South Wales, a former Mining Minister and a current government minister [were charged with corruption](#) in a 2015 case involving mining licences that involved complex and opaque company structures set up during the mining approvals process. Transparency International’s new report, [Combating corruption in mining approvals: assessing the risks in 18 resource-rich countries](#) examines what makes mining approvals vulnerable to corruption and what roles governments, the mining industry, and communities can play in preventing corruption from occurring. “Natural resources are too often vulnerable to corruption...The goal of this work is to have a greater understanding of corruption risks in the mining approvals process so that corruption can be countered at the very start of the process.” Delia Ferreira Rubio, Chair, Transparency International.

Based on research carried out in 18 countries and drawing insight from more than 750 stakeholders from a range of sectors – plus a further 250 individuals who participated in validation and review of the risk assessments – the new report is the first of its kind to drill so deeply into mining approvals across such a broad range of countries. Presenting a truly global picture of risks in mining approvals processes, the examples in the report are drawn from a broad range of contexts: major mining econ-

omies such as Australia, Canada and South Africa; emerging mining economies such as Cambodia and Kenya; and 11 members of the Extractive Industries Transparency Initiative (EITI).

THESE ARE A FEW EXAMPLES OF WHERE AND WHY CORRUPTION CAN OCCUR:

**Political and administrative**

- There is poor transparency around political donations and lobbying by industry
- Controls on revolving doors between industry and government are weak

**Land allocation**

- The process and criteria for opening land to mining is not clear or transparent
- Land rights are poorly protected and not properly registered

**Mining licence applications and approvals**

- Due diligence on licence applicants is inadequate
- Decision-making criteria are unclear or decisions are vulnerable to ministerial interference

**Environmental and social impact assessments (ESIAs)**

- Verification of impact assessments is inadequate
- Criteria for environmental approval decisions are not clear or transparent

**Community consultation**

- Information about the project or its potential impacts is not accessible to community members
- Consultation only occurs with local elites

WHAT NEEDS TO BE DONE TO COMBAT CORRUPTION

Transparency International has framed six questions to help identify *where* and *how* an approvals regime is vulnerable to corruption. The answers to these questions can help target the underlying causes of corruption, informing key players on how to take effective preventative action *before* corruption occurs. Change starts by answering these questions:

1. Who benefits from mining approval decisions?
2. How ethical and fair is the process for opening land to mining?
3. How fair and transparent is the licencing process?
4. Who gets the right to mine?
5. How accountable are companies for their environmental and social impacts?
6. How meaningful is community consultation?

Government, industry and civil society in any country can use these questions – and real country examples highlighted in the report – as a starting point for understanding corruption risks in their own context and to guide them in building corruption-free mining approvals regimes.

The assessing of these corruption risks is only the beginning, real change will come with the addressing of these corruption risks. Access the full report, [Combatting corruption in mining approvals: assessing the risks in 18 resource-rich countries](#) and our tool, [Mining awards corruption risk assessment tool](#) Countries involved in the research: Armenia, Australia, Cambodia, Canada, Chile, Colombia, Democratic Republic of the Congo, Guatemala, Indonesia, Kenya, Liberia, Mongolia, Peru, Papua New Guinea, Sierra Leone, South Africa, Zambia, and Zimbabwe.

*This work has been funded by the BHP Billiton Foundation and the Australian Government through the Department of Foreign Affairs and Trade (DFAT).*

**Total will do PNG right, says Pok**

Post-Courier, December 5, 2017

The Total-led Papua LNG project is the next big thing for PNG and is important this project is brought on-stream without delay says, the Minister for Petroleum and Energy Fabian Pok. Mr Pok said it took the country 20 years to deliver the first gas project and that will not repeat as the country

does not have the luxury of time. He said this is because cost advantages, influenced by oil prices and better gas and geographical advantage, has given the country an opportunity to leverage off that. “PNG does not want to miss that and there will be zero tolerance for delays and warehousing of gas. “We need to work together to deliver this industry, government and stakeholders,” he said. Mr Pok said PNG stakeholders need to get their fair share of the economic pie because at the moment the country has one of the most congenial fiscal regimes in the world with no signature and production bonuses.

He said its not that he is trying to impose them but it is only right to be fair to the aspirations of a young nation to have revenues to support its development agenda while at the same time providing reasonable return to explorers and developers. “The government and my department will be open for dialogue and engage early to continue to cooperate and push forward the project,” Mr Pok said. “We also value the project delivery and corporate credentials that Exxon Mobil and Total bring to this country. There are lessons learnt from the previous projects. One such lesson is about landowner identification,” Mr Pok said. “This time, we will make sure full landowner identification is carried out before the PDL is issued and we can start rolling out benefits as soon as the project starts production.”

### **Villagers oppose Solwara 1 project**

Jemimah Sukbat, Loop PNG, December 4, 2017



Concerns have been raised on how seabed mining would affect marine life/resources of the Bismarck Sea

West Coast New Ireland villagers near the Solwara 1 project strongly oppose the Nautilus Minerals Limited operation. John Merebo, a Messi villager, revealed to *Loop PNG* that West Coast New Irelanders were never part of the agreement when it was signed. The seabed mining agreement was signed in 2012 by the then Mining Minister and Namatanai MP Byron Chan, the New Ireland Provincial Government and National Government. He said they do not want the development of the project to go on because they do not see any benefits in it. “There is not a lot of economic activity out of the project because everything will be done by the company off shore.” But since the government has already signed for the project, Merebo said they want to be part of the negotiating team in the next part of the operation. This is to discuss spin-off benefits. Meanwhile, during a recent conference, UPNG Professor Chalapan Kaluwin said seabed mining would be disastrous for New

Ireland Province. Professor Kaluwin stated the project could be catastrophic for our waters given the fact that PNG has 20 percent of the world's tuna; it also has the world's warmest waters and fastest currents.

### **ExxonMobil paid no tax on \$18 billion revenue, Australian unions allege**

Noel Towell, Sydney Morning Herald, December 3 2017

Energy giant ExxonMobil has not paid a cent in corporate income tax in Australia in at least two years, despite reaping more than \$18 billion from the nation's natural resources, according to three of the company's workplace unions. Tax campaigners accuse the company of cashing in on Australia's soaring gas prices, but avoiding paying tax on its profits by sending much of its money to a network of offshore companies, some based in notorious tax havens. The company dismissed the unions' claims as "misinformation" and said it paid state and federal royalties on its Australian operations as well petroleum resource rent tax and corporate tax. But in Victoria, where ExxonMobil runs the giant Esso Longford gas plant supplying much of the east coast market, the state government wants an investigation, saying Australians expect a fair return from companies profiting from the nation's natural resources.

Three unions fighting a bitter industrial dispute with the energy giant will launch a campaign in Canberra on Monday for the Commonwealth to investigate Exxon's tax affairs. The Electrical Trades Union, the Australian Manufacturing Workers' Union and the Australian Workers Union recruited the Tax Justice Network (TJN) to examine Exxon's tax affairs and say the network has uncovered tax avoidance on a massive scale. The TJN says Exxon is more aggressive in minimising its tax than Chevron, which agreed to a settlement believed to be worth more than \$1 billion this year, after being taken to court by the Australian Taxation Office. Exxon is the latest large corporate player to be revealed using "related party loans" to its overseas entities to minimise or avoid Australian taxes, the unions and the TJN allege.

The network says it has uncovered a bewildering array of at least 575 Exxon-linked companies incorporated in the Bahamas, one of the tax havens recently exposed in the "Paradise Papers" scandal, including at least three with direct links to Australia. TJN spokesman Jason Ward says Exxon has up to \$54 billion "stashed" offshore. "Exxon could very well prove to be more aggressive than Chevron," Mr Ward said on Sunday. "The initial research shows Exxon is just as brazen about bending the rules to the point of being ridiculous and even less transparent. "These natural resources belong to the Australian people and we should be getting more. "Exxon hasn't paid any corporate tax in two years, while reporting \$18 billion in revenue. "Now we know how they did it; by using notorious tax havens such as the Netherlands and the Bahamas, high-interest loans and other related party transactions."

The tax avoidance claims mark an escalation in the industrial dispute at Longford in Gippsland where 230 employees have been battling the company for six months over a new workplace agreement that unions say slashes wages and conditions. The union will bus workers and their families to federal Parliament on Monday to pressure MPs and senators for a full investigation of Exxon's record of paying taxes in Australia. But the company said on Sunday that the unions were engaged in a campaign of misinformation. "ExxonMobil Australia's entities have made a significant contribution to the Australian economy through the reliable supply of energy to fuel economic growth, as well as through direct tax and royalty payments to state and federal governments," a spokesman said.

"Esso has paid more than \$12 billion in Petroleum Resources Rent Tax to the federal government. "When combined with corporate income tax during the past decade, this equates to more than 50 cents in the dollar tax paid." The company says it is not a party to the ongoing dispute in Victoria,



which it says is between its contractor UGL and the unions. Victorian Treasurer Tim Pallas said on Sunday that allegations of tax avoidance needed to be fully investigated. "Victorians and Australians alike deserve fair compensation for our resources, in particular those that are exported overseas," Mr Pallas said. "Any allegations of tax avoidance should be fully investigated."

### **Karkar Islanders against seabed mining: Leader**

Jemimah Sukbat, Loop PNG, December 2, 2017



Brian Kramer at the event at UPNG

Karkar Island has joined New Guinea Islanders in the fight against seabed mining. This was the message from senior statesman Sir Arnold Amet. His message was relayed by Member for Madang Brian Kramer at the School of Natural and Physical Sciences forum at UPNG's main lecture theatre recently. Kramer, who was just there as an observer, relayed Sir Arnold's written speech as he was unable to attend the forum. Sir Arnold says the Karkar Island, where he comes from, is located in the western part of the Bismarck Sea. Therefore, he and the islanders are pledging their support in the stand against the development of seabed mining.

He said the project will be the world's first deep sea mine operation and a high level of uncertainty surrounds it. Furthermore, the mine is situated on traditional fishing grounds thus it threatens the villagers' main source of income, food and the tourism industry. The mine is 25km from Kono and Messi villages of west coast New Ireland. It is also 40km from the Duke of York Island of East New Britain. In 2012, PNG decided to issue the world's first commercial mining licence to Canadian mining company, Nautilus Minerals Inc, to mine the Solwara 1 project in the Bismarck Sea. The project is expected to be a reality in 2019.

### **Seabed mining would be disastrous for New Ireland Province**

Jemimah Sukbat, Loop PNG, November 30, 2017

The Solwara 1 project is an "experimental project" and is expected to be a reality in PNG in 2019. During a discussion forum at the UPNG main lecture theatre yesterday, Professor Chalapan Kaluwin, acting Dean UPNG, pointed out that the project by Nautilus Minerals is a new global concept. He says the developer is pursuing it because it is an investment, but what about the sustainability of the ocean resources and the livelihood of the people? Professor Kaluwin states the project could be catastrophic for our waters given the fact that PNG has 20 percent of the world's tuna; it also has the world's warmest waters and fastest currents. "Whose ocean is it? Does it belong to the people or the Government? "These are sustainable development issues," says Professor Kaluwin.

He points out that though the country does not have an ocean policy nor a policy on on-shore mining, the Government still decided to support the development of the project. Additionally, environmental activist Rosa Koian says because it is a research project, it would have a short lifespan. She questions the Government as to whose responsibility would it be to clean up after the research project. Meanwhile, during the Mining and Petroleum conference on Tuesday, Minister for Mining Johnson Tuke stated that one of the government's outlook is to see the Solwara 1 project be fully operational in the next 10 years.

### **Yandera targets production in 2024**

Post-Courier, November 30, 2017

BY MAXINE KAMUS

Yandera Copper project in Madang Province is aiming for production in 2024. This was announced by the company's exploration manager Dr Nathan Chutas during the 2017 PNG Mining and Petroleum conference in Port Moresby. Dr Chutas said, the Yandera copper project is set to become one of PNG's most billion dollar potential projects relating to investment and the area of economic influence could span five or more provinces, including Madang, Western and Eastern Highlands, Chimbu and Morobe province. He said, the Yandera project will be an important contributor to the treasury of PNG with upfront investment, foreign revenue, royalties and taxes. Yandera is located 95km southwest of Madang and the project will lead to an upgrade of Ramu Highway, establishing strategic roads, power generation and port infrastructures. It will provide jobs, training, skills development and support communities development along the Yandera corridor, said Dr Chutas. Dr Chutas said the project will impact national infrastructure enabling significant prosperity and growth in PNG.

### **Wafi-Golpu to drive economic growth**

Post-Courier, November 30, 2017

Wafi-Golpu will be the country's largest, deepest and complex underground mine when it goes into production. Executive project director Bryan Bailie stated yesterday that this mine has the potential to leverage the country including Lae. Mr Bailie said it is important to note that most block cave mines around the world are typically brown field expansion projects that leverage off previously mining infrastructure while the Wafi-Golpu project is a Green field project. Therefore, he added that it will be intensive to develop with a long time to construct and ramp up to commercial and production. He said progressing of Wafi-Golpu project as quickly as possible, within PNG law is the strategic object of the government. "Key to achieving this objective is the development of a highly important and transparent formulation process. It facilitates seamless coordination to the various regulatory authorities, government departments, project stakeholders and joint venture," Mr Bailie said.

He alluded that the commencement and timing for project execution and the resulting to achievement of first production is dependent on, "the time taken by the regulator to evaluate variation. "Completion of the permitting and approval by the Harmony and the Newcrest boards, importantly the requirements for a stable and competitive legislative fiscal regimes. If the mentioned criteria is achieved, commercialisation of the project will be begin," he said. Mr Bailie added that project success in this type of environment is highly dependent on regulating stability, sustained government and landowner and community support, the timing of the provision of infrastructure, ongoing close cooperation between the joint venture and the government agencies. "If the Wafi-Golpu project is developed this project will support increasing PNG's National Gross Domestic Product and export

earnings and through this project provide a long term use to government revenues by improving on-going sustainability and opportunities,” he added.

### **Frieda Mine opens economic corridors**

Post-Courier, November 30, 2017

Successful exploration and production of the Frieda mine in West Sepik Province will open the Western economic corridor. PanAust managing director Fred Hess said this project will bring in many investments that the people of the Sepik region will benefit from. He said after a dialogue between the local members of the two provinces they have agreed to invest in other projects such as a 400 megawatt power project that will serve the two provinces after the mine life. “The hydro electric power station we have done a little work on that and believe me that’s actually a standalone commercially and viable opportunity that PNG Power is very interested in participation with us in the project. “We have engaged in some very large construction companies to supporting the commercialisation of that sort of facility on the back of a very long term power purchase agreement with mining operations. Benefits from this sort of project can be extended between the region of Sepik and Sandaun and also it takes the route down the western corridor with road access and further business developments,” Mr Hess said.

He added that logistics remains one of the main challenges for them to carry out studies on the mine. However he said after the completion of the feasibility study done in 2016, they were able to get feedbacks and identify alternatives to problems such as transportation. “We are looking at an access route from the mine site down by road and part of that reason was that a local member was very keen to see that we have road access to the site and access to Telefomin. “Investment in infrastructure, hydro electricity generated power generation and power distributions were all strategic things that came on the agenda. We look forward to the fact that this mine next year will be promoted very strongly with both governments Australia and PNG during APEC,” he said. “If we can see all these things come together, I am very confident about the copper price environment in five to seven years and every where there is growth for copper demand and also we’ll see come difficulties in supplying that demand.”

### **Mining sector generating over 50pc in revenue: Tuke**

November 30, 2017, The National Business

THE mining sector is currently the single largest export earner, contributing over 50 per cent of the country’s revenue, according to Minister for Mining Johnson Tuke. He said the overall mineral production on all exports and revenues in 2017 including from the alluvial sector was almost K11 billion – an increase of 13.4 per cent from 2016. “These figures are supported by direct employment of the mineral sector increasing from 15,000 employees last year to more than 17,000 this year,” he said. Tuke said 86 per cent were PNG workers. He also told the PNG Mining and Petroleum Conference in Port Moresby yesterday of the conclusion of the 2009 legislative review of Papua New Guinea’s mining sector.

The consultation and the review exercise took seven years. The mining ministry in addition developed six new mining policies. “My ministry has also developed six new mining policies. These policies are aligned with international best practice requirements,” he said. “The revised mining act and the six new mining policies are now with the National Executive Council for deliberation.” Tuke lauded the industry for exceptional safety practices at all the mining site in the country. “In any mining operation safety is of paramount importance. I am happy to announce (that) the mining sector had no serious or fatal accidents for the past 16 months,” he said.

## **K600mil eyed for Ok Tedi project**

November 30, 2017, The National Business

ABOUT US\$200 million (K600 million) will be spent on the relocation of the in-pit crusher by Ok Tedi to enable greater access to mineral ore. Ok Tedi chief executive Peter Graham said the relocation would “release value” in the company’s productivity and was expected to double returns on investment cost. “During the first 10 months of this year, we made an after-tax profit of just under US\$200 million with cash generation to match,” Graham said. “This in turn enables the relocation of the in-pit crusher which will enable us to gain access to additional ore. “This was a high value opportunity that was identified in our 2016 strategic planning cycle and expected to generate a return of double our investment.

“There is significant value opportunity associated with the crusher relocation. “In 2017, the project was approved by the OTML board. “By relocating the in-pit crusher in the mine opposite the workshop, considerable value is released by accessing a higher-grade ore under that infrastructure. “I guess it is always the case when you build infrastructure on top of a high-value resource.” The new mine workshop and office will be completed in the first quarter of 2018 and the new crusher is expected to be operational in the first quarter of 2020, Graham said. He also said Ok Tedi would prioritise its understanding of slope stability and water drainage in the mine pit as part of the company’s operational changes in 2018.

## **Western LNG construction date set for 2020**

November 30, 2017, The National Business

THE construction phase of the Western LNG is projected to commence in 2020, according to a brief on the project by Horizon Oil chief executive Brent Emmet. Emmet said the pre-FEED (front end engineering design) stage was due to be completed this year. An investment decision based on the results of this would be made in the later part of 2019 by joint venture partners in the project. “Our focus has really been on two things. It has been on costs and on getting these resources on stream as soon as possible,” he said. “We are currently at the pre-FEED stage of the project and have quality contractors working on the three main elements of the project – the upstream gas processing plant, the export pipelines and the module facility.

“We expect to complete pre FEED by the end of this year. Our target is to begin FEED sometime later in 2018 with the objective of reaching a final investment decision in late 2019. This will allow construction to begin in 2020 targeting late 2023 for completion. Some will say it is an aggressive timeline and absolutely. “At Horizon Oil, we don’t apologise for ambition.” Emmet said the project would be competitive in the global LNG market when production is set to commence in 2023. “We expect to see a strong demand for LNG in the Indonesian archipelago, in the countries surrounding the South China Sea, Malaysia, Philippines, Singapore, Thailand and Vietnam, with growth rates forecast at 12 per cent per annum through the next decade.”

## **Environmental and eco risk unknown in Cooks’ deep sea mining**

Dateline Pacific, Radio New Zealand, 29 November 2017

The Cook Islands is exploring the benefits and potential of its deep sea resource. Beneath the sunlit zones, where the country's tourism and fishing industries lie, is a largely unexplored and untapped expanse of promise. Also unexplored is the environmental risk and potential threat to other parts of the economy. Dominic Godfrey reports. Five kilometres below the surface of the Cook Islands exclusive economic zone lie manganese deposits which could provide a pathway to prosperity for the



country. The problem is not just getting them to the surface but the environmental impact this may have, as New Zealand's principal ocean scientist Malcolm Clark explains.



Seabed mining machine

**MALCOLM CLARK:** "The deep sea is a very poorly understood system. There are no boundaries in the oceans and so - coastal, continental shelf, deep sea, inshore, offshore - it's all linked. And that's especially important in the Pacific Island countries where we're fairly small land-masses in the middle of a large ocean. So the connectivity across potentially quite large areas of ocean space is very important to understand."

Dr Clark says while the actual area of mining may be small, the impact could encompass large areas.

**MALCOLM CLARK:** "In digging up these resources, there's going to be disturbance of the sea bed and the sediment that's been sitting idle is going to be demobilised and it will form a cloud. And that's going to start to move with the currents, away from the area of direct physical impact. That's an aspect that we don't yet well understand but what the effect on the sea-floor communities, the sea-life, we're not too sure at the moment. We're working on that in a number of research programmes around the world."

The co-ordinator for the Pacific Network on Globalisation, Maureen Penjueli, says the lack of understanding is a major concern as Cooks' seabed legislation contains no reference to avoiding international harm.

She says the 2009 Seabed Minerals Act also has no provision for 'precautionary principle', where human activities could plausibly result in unacceptable harm.

**MAUREEN PENJUELI:** "There was very little understanding about the potential impacts. There was an over emphasis on the potential economic benefits. So the legislations were set up under the broad narrative that seabed mining was considered small risk, very high return."

Maureen Penjueli says it was drafted with no provision for the possible impact on tourism, fishing and black pearl farming.

**MAUREEN PENJUELI:** "When you consider that our economies are heavily dependent on the ocean - our people are heavily dependent on the ocean for livelihoods, food security - that's quite problematic in terms of the current legislation."

However, the country's Seabed Minerals Authority commissioner Paul Lynch says 'precautionary principle' and environmental issues were front and centre to the original Act.

He says it was amended in 2015 and is under continual review with input from Ms Penjueli and PANG welcome.

**PAUL LYNCH:** "We're very open to that but currently we've got the act out for review and we're expecting that out to the community next year and into Parliament should there be any changes needed."

But Mr Lynch says this year the Marae Moana Act was passed to provide an holistic umbrella to all aspects of the Cooks' marine management.

He says it's ground-breaking national legislation that has conservation as its main plank.

PAUL LYNCH: "With zoning for different users, like zoning for fishing, zoning for tourism, zoning for mining. Mining if it takes place in the future, it's going to be quite contained and controlled based on a zoned management marine spatial plan."

In zones beyond the Cook Islands in the north-east Pacific, mining projects are underway managed by the International Seabed Authority under the UN's Law of the Sea.

The environmental organisation Te Ipukarea Society's Kelvin Passfield says the Cooks should learn from these.

KELVIN PASSFIELD: "I'd be inclined to wait and see what the environmental impacts outside of our EEZ were before allowing any mining within our EEZ. The Cooks can wait and see what happens in other jurisdictions or in the high-seas like the Clarion Clipperton Zone and determine what impacts there may be from them."

PANG'S Maureen Penjueli agrees but points to Nautilus Minerals' plans to mine Papua New Guinea's Bismarck seabed.

MAUREEN PENJUELI: "If you simply take PNG as the case study, the Solwara 1 project, it is clear that impacts have already been felt. You don't have to go into it to look at the impact, you can look at PNG."

An annual report from the Canadian company shows both the environmental impacts and profits from the project are unknown.

In the Cooks, Texas based Ocean Minerals has 17 months left in its agreement to apply for manganese nodule prospecting and exploration licences but with weak global demand for rare earth minerals, the economics may not stack up.

## **O'Neill tells Papua New Guinea resources sector there will be no new taxes**

David James, Business Advantage, 29 November 2017



Prime Minister Peter O'Neill announced no new resources sector taxes. Source: Business Advantage International

Papua New Guinea's Prime Minister, Peter O'Neill, told the PNG Mining and Petroleum Conference yesterday that there would be no new taxes for the resources sector. Meanwhile, presentations by the major industry players suggest the next 12 months will be critical in determining the future growth of the sector. 'I believe we have emerged stronger,' he said. 'The global economy has turned the corner. We have maintained the faith and we can see light at the end of the tunnel.'

O'Neill claimed 'it is time to invest in Papua New Guinea,' pointing to the anticipated Total-run Papua LNG project, and the proposed Wafi Golpu and Frieda River mines. 'This is not a time for us to make many changes but to maintain discipline.' O'Neill said there is an upswing in the global

economy and the commodity cycle, but he warned that the country cannot depend on it. ‘We cannot continue to over-rely on the mineral and petroleum sector to advance our goals,’ he said.

### **Cautious optimism**

Business leaders presenting at the conference expressed cautious optimism about the prospects. Andrew Barry, Managing Director of ExxonMobil PNG said the existing PNG LNG project is running above expectations. ‘We are on track to produce a total of 8.2 million tonnes of LNG this year, which is about 20 per cent beyond what we first thought the plant could achieve when the facilities were designed. He said drilling at the Muruk field led to a new discovery near the Hides field. A K1 billion kina investment will be made next year ‘to tie the Angore field into the production system at Hides,’ he said. Philippe Blanchard, Managing Director of Total E&P PNG said the company is well advanced in its engineering studies, field surveys and appraisals program for Papua LNG. He said the company has also begun to assess commercial viability, looking at the project structure, financing and the LNG market. ‘The environment is changing a lot,’ he said, adding that the company will need to see how to take advantage to get the best project. Blanchard said integrating with established infrastructure is a complex task. ‘Our gas is very different from the gas in PNG LNG. We need to find the right elements between what is existing and what we want to build.’

### **Critical time**

Peter Botten, Managing Director of Oil Search, observed that the ‘next 12 months is the most critical in all the years I have been here.’ ‘The LNG market has never been more dynamic. We are also seeing some of the best exploration opportunities I have seen in PNG. ‘PNG LNG is a stellar world class project but there are legacy issues.’ Botten said the number of LNG-importing countries is expected to rise by 100 by 2020. He said there is strong demand in Asia, with demand in the first quarter of this year up by 37 per cent in China on the previous corresponding period, by 14 per cent in South Korea, by 12 per cent in Taiwan and by 9 per cent in Japan. He said LNG is increasingly preferred to nuclear and coal. Botten noted that there is a five-to-seven year investment horizon for new projects, and current planned activities are only likely to produce ‘about half of what is needed’. ‘The window is opening for new demand.’

### **New Mining Act**

Botten added that about 30-35 per cent of LNG is now traded in the spot market, with large companies like ExxonMobil and Total building their own positions. He said it ‘changes the financing’ and the types of alliances that are formed. Johnson Tuke, Minister for Mining, told the conference that a revised *Mining Act* is ‘now before the National Executive Council.’ Tuke said the mining sector has made ‘an impressive turnaround.’ The Wafi Golpu and Frieda River proposals remain a priority for the government, he said.

### **LNG project economical**

Post-Courier, November 29, 2017

A total of K820 million has been invested by ExxonMobil to build infrastructure, develop social programs, and enhance skills and knowledge. Managing director Andrew Barry said the PNG LNG is also investing K150 million in improvements to two sections of the Highlands Highway in Papua New Guinea LNG project areas. Mr Barry said work started this year and will continue through until 2019 under the management of the Department of Works. He said they expect this investment to create job opportunities in the local communities in its duration. “We have continued to build on our significant key programs in education, health and environment, women’s economic empowerment and agriculture,” Mr Barry said. “Our approach has always been to build partnerships with community organisations to deliver outcomes that meet the community’s needs for the long term.”

“We are committed to improving the learning opportunities for children in our project areas so improved access to education is a key priority.” He said as part of ExxonMobils’ commitment they have increased 13 scholarships for health training in project areas on top of others awarded in 2015 and 2016. “We have significantly contributed to improved data collection and health diagnostics in PNG LNG project areas through our partnership with the Papua New Guinea Institute of Medical Research. “We also saw the positive effects of our livelihoods support program in and around Hides with villages supplying local produce to Hides Alliance Group for camp catering at our Hides Gas conditioning plant. “This resulted in 30 tonnes of vegetables being purchased directly from local communities with further potential for expansion as the supply chain improves,” Mr Barry said.

### **Environmental knowledge key to deep sea mining in Cooks**

Radio New Zealand, 29 November 2017

New Zealand's principal scientist says a lot more needs to be known about the Cook Islands' deep sea environment before mining can take place safely.



Mining for copper under the sea Photo: Nautilus Minerals

Malcolm Clark said while technological hurdles were being overcome for extracting resources five kilometres down, the environmental implications were not well understood. He said low commodity prices were a barrier to extracting what are known as rare earth minerals, but he said that would eventually be overcome by market forces.



NIWA scientist Malcolm Clark. Photo: NIWA

However, Dr Clark said more important environmental concerns needed to be overcome as well. "That I think is the real hurdle that these commercial companies will have to deal with," he said. "The deep sea is not out of sight, out of mind. It's been increasingly recognised that it's a large environment but it's also a fragile one and we've got to know a lot more about it before deep sea mining can



take place where we can be confident that the sustainability of that ecological system is not going to be threatened."

## **Supreme Court condemns PNG LNG as one of many 'large-scale frauds'**

PNG Mining Watch, 29 November 2017

The Supreme Court has issued a stunning indictment of large-scale resource extraction projects in PNG, labelling them as 'large scale frauds committed against the true and correct landowners' in a judgement delivered on September 25. The Court singled out the PNG LNG project for special mention as one where the State and the 'developers' have failed to obtain free and informed consent and a social licence for their operations. The case before the Court concerned trespass and illegal use of customary land by logging giant Rimbunan Hijau, and the court endorsed an earlier award of damages of more than K6 million against the company. But the Supreme Court decision goes much further in its examination of the issues of social licence and consent and concludes that many landowners around PNG are entitled to compensation from mining, logging and oil and gas companies for the 'illegal entry, occupation and conduct of their businesses':

*What happened here is in fact a sad story that is repeated throughout the country over a long period of time from the colonial administration in the name of opening up wild frontiers for various so called developments and projects. The so called projects and development covers from logging, prospecting for minerals and oil and gas to actual mining, to oil and gas developments to other customary land base developments like the famous or infamous Special Agriculture Business Development Leases (SABLs). What is happening in most cases is that, developers and the State alike are failing to either deliberately or by inadvertence to first ascertain, then properly organise, empower and deal with the properly identified and confirmed customary land owners. Rather than taking this most important first critical step, the State and the developers are entering customary land and are proceeding with their activities and in so doing, choosing to and are indeed dealing with persons who claim to be landowners when in fact they may not be the true and correct landowners... The State to the extent that it is doing nothing about this practice is encouraging this improper and illegal approach by so called developers which in fact is a large scale fraud committed against the true and correct landowners by the so called developers with the support of the State and in collaboration with persons claiming to be owners when they are not.*

*Kandakasi J., in his decision in the P'Nyang and Kanga Kawira cases correctly calls them "fraudsters and thieves." As was noted by his honour in his judgments, the PNG LNG project presents a clear case on point. In this project, despite s. 47 of the [Oil and Gas Act](#), both the State and the developers have failed to properly identify the true and correct landowners, properly organising them into ILGs, enable the landowners to fairly and meaningfully enter into negotiations with the developers and the State and for the developers and the State to seek and secure from the true and correct landowners through their duly elected or appointed leaders the landowners free and informed consent and approval and ultimately, their social license to operate. The contracts or agreements and the deals the State and developers enter into with persons not properly identified and appointed by the landowning clans, or groups, remain null and void ab initio or void and of no effect from the very beginning. Given that, when the true and correct owners eventually assert their ownership rights and exercise their rights, challenging the contracts or deals with the fraudsters and or thieves, they must give way. Such contracts do not bind the true and correct landowners. If need be, the State and or the developer concerned need to enter into completely new contracts with the true and correct landowners on terms that are fair and reasonable with reasonable compensation being paid for the earlier illegal entry, occupation and conduct of their businesses.*

Read the full Supreme Court decision - [Rimbunan Hijau \(PNG\) Limited and Ina Enai \(2017\)](#)

## **Fiji farmers' claims of waste spillage refuted**

Luke Rawalai, The Fiji Times, November 28, 2017

THE Mineral Resources Department has refuted claims by livestock farmers in Naibulu, Dreketi of bauxite waste water spillage. Naibulu livestock farmer Deo Chand told this newspaper that livestock in the area had nowhere to drink since drains were flooded with excessive waste water from the mining site, which spilled into waterways. Mr Chand said livestock farmers normally relied on rainwater that filled the drains to quench their animals' thirst. "However, when it rains this becomes a problem because the water in these drains turn reddish and we believe this is water from the mine site's collection pond," he said. Another livestock farmer, Anup Kumar, said they did not face the problem before mining started in the area.

Responding to these concerns, Mineral Resources Department director Raijeli Taga said in the last inspection report by the team, the runoffs from stockpiles and mining area had been taken care of. Ms Taga said sediment traps had been installed to cater for runoffs. "These are closely monitored by the mine manager and the inspection team to avoid stream sedimentation," she said. "The wet season is being accounted for in the monitoring plans because of the protection of the downstream communities' livelihood, which also includes the ecosystem in the area of mining. "Evidence received so far from the mine site manager has shown that such plans and management strategies and plans indicated that it is working, hence the need to continue to monitor for improvements. "An inspection team sent out included a (Ministry of) Lands officer from our northern office and an officer from the Department of Environment."

## **Law and order at LNG site needs attention**

November 28, 2017, The National

THE law and order issue at the LNG project site in Hela needs to be urgently addressed by the landowners, the Government and ExxonMobil, according to former Nipa-Kutubu district administrator Robin Pip. It follows a roadblock set up by landowners from PDL1 (Petroleum Development Licence 1) in the Komo-Margarima district. They want the Government to pay their outstanding K20 million. Pip, also a former community affairs officer with ExxonMobil, said these issues should have been addressed before the gas production. He said the government should have identified the genuine landowners and pay their royalties and equity accordingly.

Meanwhile, Komo-Margarima MP Manasseh Makiba presented a petition to parliament last Friday from the landowners reminding it to start the clan-vetting project and pay out the K35 million promised to them. Makiba said the landowners of PDL 1, 7 and 8 wanted the government to address clan-vetting urgently and pay the K35m that was agreed to be paid to the landowners in a Memorandum of Understanding in August, 2006. "The K35m and the clan-vetting was later approved in an NEC 2010/2016 decision allowing for the K35m to be paid out to the landowners and the clan-vetting to begin a week after," he said. "The NEC decision also tasked the Attorney-General to file applications at the National Court to set aside restraining orders. However, since then nothing has eventuated," he said.

## **2018 a critical year for mining industry**

Post-Courier, November 29, 2017

BY MELISHA YAFOI and MAXINE KAMUS

The next 12 months will be critical for the mining and petroleum industry. Oil Search managing director Peter Botten said that despite progress being made, the sector has many challenges to over-

come. Mr Botten said there is a critical set of discussions going on around how the next phase of LNG in this country and how these gas projects can actually come together. “We are going against a process which is really challenging in a market sense,” Mr Botten said. “The LNG market has never been more dynamic it is changing very rapidly with customers expectations and contracts being structured and how we manage that ... And we have companies moving towards equity marketing of LNG.” Mr Botten said there has been substantial work done on the next phase of LNG. He said though the Papua New Guinea LNG project is a world class project being operated by world class operators there are issues that need to be looked at.

“Right now there are issues that need to be addressed around balance and reward for country, land-owners and investors, which clearly will have an impact on the next phase of LNG. “They need to be addressed quickly in order to be moving forward at a phase that we all want to. There is a real strategic rationale to the question not just this next phase but also the phase after because that will drive investment and we’re encouraging government to look at long based industries in this country,” he said. Mr Botten said that there are theories that the resource base investment will continue to drive real economic growth and job creation into the future. He said there is a strong demand of growth in the Asian markets who are putting their hands up to invest as well as buying LNG. “The country is entering into a period when LNG capacity exceeds demand and the LNG expansion from Papua New Guinea is ideally placed to secure premium Asian buyers,” Mr Botten said.

### **Mining laws in need of review**

Post-Courier, November 27, 2017, BY JEFFREY ELAPA

The Resource Owners Federation of PNG Inc is against development of new mines in the country without amendments to the existing laws governing the industry. President Jonathan Paraia said while the Federation acknowledges the government’s desire to open new mines as expressed by the Mining Minister Johnson Tuke a review of the mining laws must be undertaken first. “The customary landowners of Papua New Guinea by all means will oppose the development of any new mining projects without amending the Mining Act 1992 and the Mineral Resource Authority Act of 2005. “The reasons are that the Mining Act 1992 must be amended to be compliant with the Constitution and the customary laws of Papua New Guinea, which both vest the ownership of all lands and minerals contained therein by those who own the lands. “The amended Mining Act must therefore ensure that the landowners receive a fair share of the profits from any mining project.

“In the past, the mining companies have deceived the landowners and the national government into believing that their entitlements from the mining projects, such as contracts, compensation payments, royalties, taxes, levies and so on, were benefits, when in fact, an entitlement as in the English language is not a benefit. The dictionary of English, states that a benefit is a profit. Entitlements are therefore not benefits as we have been led to believe for so long by the mining companies,” he said. Mr Paraia said the Federation also continues to support many calls for the removal of the representatives of the PNG Chamber of Mining & Petroleum and the PNG Business Council from the board of the Minerals Resources Authority (MRA), because of their inherent conflict of interest. “MRA is the regulator of PNG’s mining laws and regulations and the Chamber of Mining & Petroleum and the PNG Business Council are representative bodies of the mining industry, the subject of the mining laws administered by the MRA. It is therefore inappropriate for those that are being regulated to be on the board of the regulator,” he said.

## **Aopi: Mining Law review vital for investments**

Post-Courier, November 29, 2017

Review of legislation is critical to future investments in mineral exploration and development says PNG Chamber of Mines and Petroleum president Gereia Aopi. Mr Aopi said at the Mining and Petroleum conference yesterday that they are impressed with the government's decisions on legislation such as the Mineral Resources Authority (MRA) Act. The MRA bill, he said if passed in its current form would have significant impact not only on MRA but the mining industry as a whole. He said the task of updating the current legislative challenges was necessary because of the difficulties the industry is facing in trying to align with government systems and processes.

The chamber is grateful that Treasurer Charles Abel and the Mining Minister have undertaken to open dialogue with the resources sector to ensure that any changes including mining and taxation arrangements are not detrimental particularly in terms of attracting investments. He said it is and will be the chamber's desire to work closely with the government to ensure that their shared aspiration of world class industry operations impacting positively on the development of PNG is sustained. He said while upfront investment for the Wafi-Golpu and Frieda River projects are huge, even after completion they will require ongoing investments. Mr Aopi said this has been the norm at the other giant mines like OK Tedi, Porgera and Lihir, that is why a favorable and stable investment climate and internationally benchmarked legislation is of the utmost importance to the future growth of the industry.

## **West Papuans call for closure of Freeport gold mine**

Radio New Zealand, 24 November 2017



Freeport security personnel looking on at the Freeport McMoRan's Grasberg mining complex, one of the world's biggest gold and copper mines, located in Indonesia's remote eastern Papua province. Photo: AFP PHOTO / OLIVIA RONDONUWU

Thousands of West Papuans have demonstrated in Jayapura, calling for the closure of the massive Freeport gold mine in Mimika regency. They're also demanding Indonesian security forces withdraw from the area around the mine where a standoff continues with the West Papua National Liberation Army, or TPN. An estimated two thousand Papuans took to the streets of Papua's provincial capital to demand the closure of a mine they see as a symbol of oppression. Freeport is Indonesia's single largest source of revenue but Papuans say they see no benefit from it. Recently, Jakarta has been negotiating for Freeport's US parent company to divest from the mine, but West Papuans say they are not consulted over the matter. Now, tensions in the region around the mine have been escalating amid intensified movements of security forces. Reports from Mimika indicate the Indonesian



military launched rockets into the TPN stronghold earlier this week, killing two of their members. Police and military blame the TPN for shootings on the road to the mine last month which left two policeman dead and others injured. Reports not yet confirmed by police say a Papuan was also shot dead in the past month on the road.

The road between Timika city and the Freeport mine, which is about 125 kilometres long, is guarded by an estimated three thousand Indonesian security forces. According to Indonesian human rights researcher Andreas Harsono, 50 people - including Freeport workers, civilians, police and military officers - have been killed and over five hundred injured in shootings along the road in the past fifteen years. With the recent spate of unrest along the road have come signs of an Indonesian military sweep operation of the kind that have caused many Papuan villagers to flee into the bush in the past. Earlier this week Indonesian police said they were evacuating residents from several villages in the Tembagapura area. But villagers said they were terrified by the presence of these forces, and that the military were obstructing their ability to access food. It contrasts with claims by Indonesian police earlier this month that the TPN was holding people in Kimberley and Banti villages hostage.



Demonstrators in Timika seek answers from Indonesian security forces over the disappearance of local Papuan Martinus Beanal. Photo: Supplied

A demonstration was held in Timika yesterday by a group of local civilians protesting against what they described as "hoax reports" in Indonesian media regarding the hostage claims. The demonstrators also sought answers about the reasons for the recent disappearance of a local Papuan, Martinus Beanal, whose family has now been told by police that their son is buried. The family said they had not seen his body since and were given no reasons for his reported death. Meanwhile, a spokesman for the Justice and Peace Secretariat in Mimika's capital Timika, Saul Paulo Wanimbo, said the TPN had relayed a message to local villagers that they were not targeting them. The TPN said its conflict was strictly with the Indonesian military and police, and that one of their main goals was to close the Freeport mine.

## **Exxon moves non-essential workers away from PNG's Hela**

Radio New Zealand, 23 November 2017

The oil and gas multi-national ExxonMobil says it has moved non-essential staff away from its LNG project operations in Papua New Guinea's Hela province. This comes amid a surge in unrest and tribal fighting in the remote Highlands region where the gas fields for Exxon's LNG project are located. Three days ago an expatriate worker with the project was kidnapped and held hostage by landowners who are reportedly frustrated with the government over non-payment of project com-

mitments. Police said the hostage was released without harm two days ago. A spokesperson for ExxonMobil PNG said that due to recent community tension in Hela areas Hides, Angore and Komo, the company has suspended non-essential work. She said non-essential personnel were being re-deployed to other areas. According to Exxon, the Hides Gas Conditioning Plant is continuing to operate, as the company monitors the security situation in Hela Province.



Armed clansmen in the town of Komo in Papua New Guinea's Hela Province. Photo courtesy of Michael Main

### **Tribal violence surges again in PNG's Hela** Radio New Zealand, 22 November 2017



Hela Province Tribesmen Photo: RNZI / Johnny Blades

A man was shot dead in the Highlands province yesterday, sparking a revenge attack later in the day. The former mayor of Hela's capital Tari, George Tagobe said there was significant disaffection in the province over government's failure to pay royalties from the LNG gas project. He said while this year's election was widely believed to have been rigged in Hela, tribal fighting in the intervening three months is not related. "The warlords are hunting their enemies, hunting them down. They're driving around and shooting down people, killing people just like nobody's business. Just yesterday a young Hela man was shot down. And unconfirmed reports I got last night say three

were shot at Koroba in relation to payback for the killing that happened yesterday." Meanwhile, Exxonmobil has withdrawn non-essential staff from its LNG Project operations in Hela amid increased security risks. Earlier this week the company was able to negotiate the release of one of its expatriate staff who was reportedly taken hostage by a group of Hela landowners. The landowners are understood to be frustrated at repeated stalling over non-payment of funds committed to them by government under the project agreement. Landowners gave government an ultimatum over LNG gas project commitments.



Hela province, Papua New Guinea. Photo: RNZI / Johnny Blades

Although the multi-billion dollar venture has been exporting gas for over three years, landowners in the project's hub say they have seen no committed benefits yet. The government says commitments can't be fulfilled until a clan vetting process is completed to identify correct landowners who would receive the benefits. Not the first ultimatum they have extended on this matter, Hela landowners have given the government until next week to complete this process. They are also demanding that by next week government honour an \$US11 million commitment it made in August. If the demands aren't met, the landowners have threatened to shut down the project again.

### **BCL confident of Bougainville landowners backing**

Radio New Zealand, 21 November 2017

Bougainville Copper Limited says it remains on course to resume its mining operation at Panguna. The company, which is now part owned by the autonomous government in the Papua New Guinea region, was forced out of Bougainville in 1990 by the civil war. Last week, it held just its second board meeting on Bougainville for the past 27 years. Ongoing mediation is still to resolve which of the landowner groups around the Panguna mine site has the right to make decisions over what will happen there. But the company secretary, Mark Hitchcock, said it has broad backing. "Can't say much about the mediation but we have seen widespread approval for the return to mining, with Bougainville Copper, with the people who have been attending mediation and we are confident we have widespread support of the landowners in the region - in the Panguna area," he said. One of the landowner groups involved in mediation is working with rival mining company RTG.



## **Fiji: New mill, processing site to create 200 local jobs**

Kalesi Mele, The Fiji Times, November 20, 2017



Acting Prime Minister and Minister for Lands and Mineral Resources Faiyaz Koya (centre) officiates at the groundbreaking ceremony of Tuvatu Gold Mine processing plant civil works in Sabeto, Nadi last Friday. Picture: REINAL CHAND

LION One Ltd Mines will soon have a new mill and processing site after a groundbreaking ceremony at Tuvatu, Sabeto in Nadi. The new development is set to create employment for about 200 locals. The company had set up in Fiji eight years ago and was only issued a special mining lease in January 2016. Acting Prime Minister Faiyaz Koya, who officiated at the event on Friday, said the development was set to have direct contributions to the economy. "It is evident how the company has forged ahead in meeting its exploration targets and is now advancing into the next stage of finalising its deposits for mine production," he said. "This is a positive sign as it portrays the commitment of Tuvatu Gold Mine to produce to its full capacity by the second quarter of 2019. "This expansion work will contribute to the economy directly and indirectly in many forms, such as the employment of the local community." Lion One Metals chief executive officer Walter Berukoff said ore body of the rocks found at the mine was one of the best and believed to be in the top 10 in the world. "Our goal is also to provide job opportunities for locals for generations to come," he said. "We made the promise to build an environmentally sustainable mine and our mandate has not changed. That was the promise I made to Prime Minister Voreqe Bainimarama years ago and it is a promise we will keep."

## **Ramu cobalt project highly rated**

Post-Courier, November 20, 2017

The Ramu nickel and cobalt project in Madang province has been billed as the largest in the Oceania continent. Ramu Nico president Gao Yongxue made this remark during a dinner meeting hosted by Mineral Resources Authority for the Mining Minister, Johnson Tuke and his delegation in Madang last week. Mr Gao said Ramu NiCo being China's largest investment, provides the courage and foundation for the company to strive and become the role model for bilateral cooperation between China and PNG. "Now with China's "The Belt and Road" initiative in place, relationships between countries are becoming more interactive. "Ramu NiCo is strategically located on the growing economic relationship between China and PNG. "We want to be here for the long term for further cooperation and development opportunities in more and wilder areas. We will emphasise on



sustainable development on a multi-lateral and more profound level,” he added.

Mr Gao said the monthly production of the project is maintained well above 3000t and production capacity above 106 percent, giving the company great opportunity for the long term production sustainably and consistency, which encourages the growing economic relationship between China and PNG. He said the high production sustainability is the result of the company’s aim to cut production cost while increasing efficiency through management enhancement. Mr Gao said Ramu NiCo will pursue the management philosophy of efficiency, cooperation, perfection and innovation, advocate study and creation, respect cultural differences and expand the company’s global vision. “We are seeing a change in global growth. As time advances, globalisation plays a vital role in the development of world economy. “We should work to achieve an economic environment that is open, equal, coordinated and creates mutual benefit. And maintain a relationship with communities following the “One Ramu NiCo, One Community” and embark on creating benefit for our stakeholders,” he said.

### **Bougainvillean to chair Bougainville Copper Ltd**

Radio New Zealand, 20 November 2017



Mel Togolo Photo: PNG Chamber of Mines & Petroleum

Mel Togolo, who only joined the board in October this year, is to replace Robert Burns who is retiring. Mr Togolo has had a long involvement in the mineral sector and served on the BCL board in the early 1990s. He has held significant business leadership roles in Papua New Guinea, including other board memberships. The company, which is in the process of re-engaging with Bougainville after being forced out by the civil war in 1990, held just its second board meeting on Bougainville in 27 years last week. BCL, which is now part owned by the autonomous Bougainville government, hopes to re-start its Panguna copper mine.

### **\$100 Million Invested Into New Tuvatu Gold Mine: Lion One**

Lusiana Banuve, Fiji Sun, 19 November 2017

A gold mining company in Sabeto, Northeast of Nadi International Airport, says it has invested over \$100 million in projects leading up to its new operations opening this weekend. And Minister for Trade, Industry, Tourism, Lands and Mineral Resources Faiyaz Koya has congratulated the Lion One Ltd Mines for their ongoing belief in the government of the day and the people of Fiji. Mr Ko-

ya, the acting prime minister, said: Finances committed by the company to date has amounted to approximately \$100 million in various forms of operations such as the exploration work, mine preparatory plans, environmental management measures and of course contributing to the economy through employment of its skilled Fijian workforce. “Currently the company employs 50 locals and about 3 expatriates and this will surely increase in the near future.” Mr Koya said. The Minister said the new employment business opportunities would go well for the people of Sabeto and particularly acknowledged the landowners and the people. “I would like to acknowledge the support given by the 20 mataqalis whose land is the centre of this exploration and mining works.

“To all the Turaga ni Mataqali, thank you and vinaka vakalevu for your continued support and belief. “Your unwavering commitment is truly commendable and I am certain that today’s ground breaking ceremony will benefit your communities in many, many ways. “Not only for this generation, but for generations to come.” Mr Koya said. “This work will open up the Sabeto corridor, bringing in the much needed business in the area. “This is one of the plans of the Fiji First government, in which the decentralisation of services and business is encouraged for rural communities. “Consequent to this, will be the improvement of health and educational facilities, infrastructure and business which will boost the economy and the livelihoods of these Sabeto communities,” he said. For a relatively new company, Mr Koya commended Lion One Ltd Mines for its vision and determination. “In January 2016, our Honourable Prime Minister issued Lion One Tuvatu, its Special Mining Lease. “This was a 21 years surface lease which commenced from May 2014 and it is evident how the company has forged ahead in meeting its exploration targets, now advancing into the next stage of finalising its deposits for mine production,” he said.

The Minister also urged everyone present to continue looking after the environment even while business investors grew. “With the Honourable Prime Minister leading the global charge to combat climate change by taking up the Presidency of COP 23 and this being the first time ever in the history of Fiji, we have a monumental task. “We must get behind our Prime Minister and ensure we tell the world that we are doing our part, despite being the smallest contributors to global warming. “And yes, we would not wish to see that day when we are not able to breathe fresh air or drink clean water, things we take for granted in Fiji. “Thus, I urge you all to work together in protecting our environment and learn our lessons from previous climate events, to help us build resilience and promote a culture of caring and protection what surrounds us – our environment, our beautiful country and the world,” he said.

### **Construction to begin on Fiji gold mine**

Talebula Kate, The Fiji Times, November 18, 2017



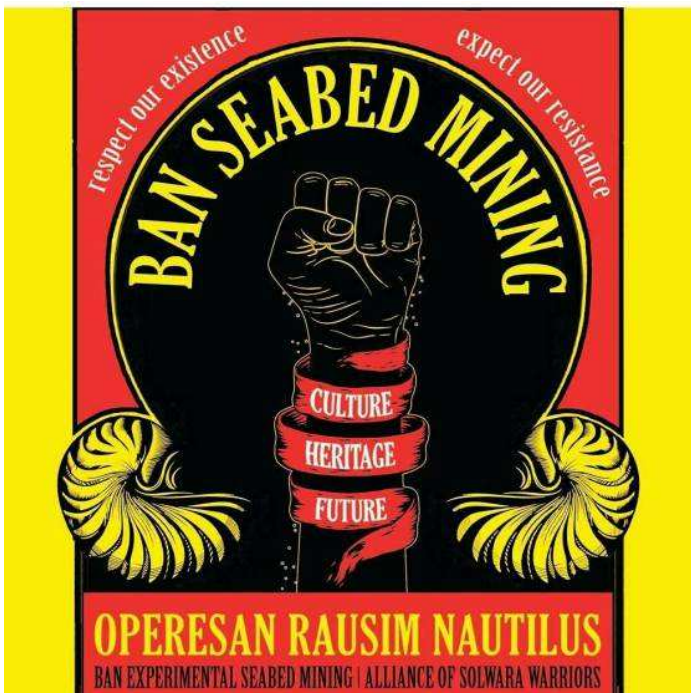
Acting Prime Minister and Minister for Industry, Trade and Tourism Faiyaz Koya breaks ground marking the beginning of the civil works on November 17, 2017. Photo: DEPTFO

TUVATU Gold Mines which was given mining license for 21 years beginning in 2014 had its ground breaking ceremony of its Mines processing plant civil works yesterday. The beginning of the construction of the mill and processing plant is a positive sign, as it portrays the commitment of Tuvatu Gold Mine to produce to its full capacity by the second quarter of 2019. This expansion work will contribute to the economy directly and indirectly in many forms such as the employment of the local community. Acting Prime Minister and Minister for Industry, Trade and Tourism Fai-yaz Siddiq Koya officiated at the event.

### **Lack of environmental safeguards highlighted in Cooks legislation**

*The Pacific Network on Globalisation says claims environmental costs would stop seabed mining in the Cook Islands would be thwarted by a lack of safeguards in the country's laws.*

Radio New Zealand, 17 November 2017



PANG co-ordinator Maureen Penjueli says the Cooks' Seabed Minerals Act dates back to 2009 when deep-sea mining was believed to be low risk, high return. She said in 2017 the risks to the environment were still little understood. The country's Seabed Minerals Authority Commissioner Paul Lynch said earlier this week that mineral extraction will likely not go ahead if the environmental cost is too high. Ms Penjueli said there was nothing in the legislation to stop prospecting or mining on environmental grounds. "When you consider that our economies are heavily dependent on the ocean - our people are heavily dependent on the ocean for livelihoods, food security - that's quite problematic in terms of the current legislation."

### **K92 first production ready for shipment**

The National, November 16, 2017

THE K92 Mining Inc says the first concentrate from the Kora production in Eastern Highlands has been transported to Lae to be shipped overseas. This is pursuant to a new off-take agreement, with the provisional payment (90 per cent of total value of shipment) received by K92. According to the company, the new off-take agreement included a provision for a funding of US\$15 million (K47.04 million) in non-dilutive financing from one of the world's largest commodity trading groups, to secure the long-term off-take for production from the Kora Deposit. The financing is subject to a



number of closing conditions, which the two parties have started pursuing. Prior to the removing of these conditions, K92 will ship the Kora concentrate under an agreement with interim provisions facilitating the same.



K92 expects to use the US\$15m to target an expansion of the mining and processing rate to a level envisioned in the preliminary economic assessment. K92 chief executive John Lewins said the off-take agreement “allows for immediate shipping of concentrate that K92 is producing from Kora”. “At the same time, it provides a potential path for a non-dilutive financing to target significant production expansion,” he said. “The off-taker is one of the world’s largest commodity traders, is very active in Papua New Guinea and familiar with K92 and our operations. “The discovery of the Kora extension area adjacent to our current mining area has been game-changing for the company and we are continuing to drill and mine in this area.” K92 Mining has begun gold production from the Irumafimpa gold deposit, which together with the Kora gold deposit, is part of the company’s Kainantu gold project located in the Eastern Highlands. Kora remains open for expansion in every direction and strongly mineralised at the extent of all drilling.

### **Temporary stop to royalty payment**

Post-Courier, November 16, 2017

The National Court yesterday ordered a temporary stop to Newcrest Mining from paying royalty payments from the Lihir mine project into the New Ireland provincial treasury until further orders. Justice Hitelai Polume-Kiele, further ordered that the payments be made into the National Court trust account instead, while waiting for the matter to return to court on December 4, when all parties are expected to present their cases on the orders. The orders came on the same day that monthly payments are supposed to be paid into the provincial coffers, as was the practice. The order was sought by Walter Schnaubelt and Ian Ling-Stuckey as MPs for Namatanai and Kavieng, respectively, against New Ireland Governor Sir Julius Chan, acting provincial administrator Lamiller Pawut, Mineral Resource Authority, Newcrest Mining and the state. Keith Iduhu, lawyer representing both Mr Schnaubelt and Mr Ling-Stuckey, told the media that the matter is in relation to the allegation of unfair administration of the Lihir memorandum of agreement, resulting in the electorates missing out on their share of the royalty for the last seven to 10 years.

“The substantive proceedings are seeking orders for an account of the money dispersed in the last seven to 10 years for as long as it has been paid to the provincial treasury, and also some form of restitution to the respective districts,” Mr Iduhu said. Mr Schnaubelt, who was in court as well,



claimed that those years without royalty payments equated to K70 million that his Namatanai people missed out on. He said as per the Lihir MOA, out of the 50 percent of the royalty payment to the provincial government, 10 percent remains with the provincial treasury for administration purposes while the two open electorates are supposed to receive 20 percent each. "It's a bit confusing on our part, so we just want some clarity and we said, let's all go to court, present your case and let's clear it up and who is supposed to be paid," Schnaubelt said.

### **Papua's TPN says villagers not targetted in standoff**

Radio New Zealand, 16 November 2017

Police blamed the TPN, which it refers to as a criminal group, for shootings near Tembagapura and the Freeport mine since August. One policeman was killed and several injured. A tense standoff has developed, with police and military accusing the TPN of holding 1300 people hostage. The TPN, which recently declared war on the Indonesian state, denies this. A spokesman for the Justice and Peace Secretariat in Mimika's capital Timika, Saul Paulo Wanimbo, said the TPN had relayed a message to local villagers. "TPN say to people, we have no problem with you, we always have problem with military and police. If we went to war, we went to war against police and military only. They say that to the people in Tembagapura area."

Mr Wanimbo said Timika was generally peaceful, but that Indonesian security forces have been busy flying personnel into the area. "They always send military and police every night by plane from Java, Sulawesi or Maluku to here, to Timika. Every night we hear the plane sounds arrive and go from Timika." He said there were also many Indonesian intelligence officers in Timika and in the area around the Freeport mine. Freeport has temporarily shut the main supply route to its Papua mine amid the escalating tensions. Indonesian officials on Saturday said about 200 police and military personnel had been deployed in preparation to secure the area by force, if necessary.

### **Environmental cost will likely stop Cooks' seabed mining**

*The Cook Islands' Seabed Minerals Authority Commissioner says deep sea mineral extraction in the country will likely not go ahead if the environmental cost is too high.*

Radio New Zealand, 15 November 2017



Photo: Florence Syme-Buchanan/RNZ

Paul Lynch said the country's Seabed Minerals Act ensured a careful, steady approach to any potential exploration or mining. He said the act was the world's first, dedicated national legislation to control seabed minerals activities. Mr Lynch said criticism, based on objections to seabed mineral prospecting in other countries, is superficial and close-minded. The Pacific Network on Globalisation co-ordinator Maureen Penjueli said Pacific Island governments need to be extremely cautious about deep sea mining as it's largely experimental with many potential liabilities. Mr Lynch said, at a depth of 5000 metres, the Cook Islands manganese nodules are a different resource to other countries. He said any future extraction may be 5-10 years away. The Cook Islands government last month entered into an agreement with the company Ocean Minerals to reserve 23,000 square kilometres of the country's exclusive economic zone for up to 18 months. The agreement gives the company exclusive rights to apply for manganese nodule prospecting and exploration licenses.

### **Can the Solomon Islands' Gold Ridge Mine serve as a new model for resource extraction in the South Pacific?** Catherine Wilson, Mongabay, 15 November 2017



The coastline view near the capital, Honiara. Photo by Paul Hilton/Greenpeace.

- *After 17 years of foreign ownership and a checkered environmental history, the Solomon Islands' Gold Ridge mine is now being led by a local landowner-driven joint venture.*
- *The company saw its first major test in April 2016, when rainfall triggered a spillover from the mine's tailing dam. However, independent tests found the water quality downstream remained safe.*
- *Though concerns still remain, the new ownership structure could be a model for mining operations elsewhere in the region.*

In April 2016, thousands of villagers living in the vicinity of the Gold Ridge Mine in the southwest Pacific nation of the Solomon Islands braced themselves for a major disaster as torrential rainfall triggered a spillover of thousands of cubic meters of untreated water from the mine's tailings dam. The Ministry of Health issued instructions to people to cease using water from the nearby Kwara, Tinahula and Matepono rivers for drinking, washing or fishing, due to possible risk of chemical contamination. The gold mine is situated on the country's main island of Guadalcanal, 40 kilometers (25 miles) from the capital, Honiara. Stanley Holmes Vutiande, who lives in Navola village, located along the Gold Ridge Road leading to the mine and 2 kilometers (1.2 miles) from the dam, remembered when it happened.

"We fled because there was water overflowing from the dam and we thought it might burst, so people just panicked and took off," he recounted. "There was general information to look for safety, for higher ground, but no specific instructions as to what to do." Joe Horokou, the environment and

conservation director at the Ministry of Environment, said the incident “was bad because it took us by surprise,” even though the company had been given approval to discharge tailings from the dam. “The approval was given with conditions like before it is discharged the water has to be treated to acceptable standards.” Despite the dire warning, the expected disaster didn’t materialize. The dam held, and stakeholders, including Gold Ridge Mining and the ministries of environment and health, commissioned numerous independent tests of nearby rivers and streams. “Based on the findings of those analyses we were able to determine that, even if the water was discharged untreated at the time, it caused no immediate harm to the downstream communities ... the water quality was safe within the dam,” Horokou said. Vutiande also said that, at the time, he noticed nothing of concern in the water quality of the Tinahula River near Navola.



A palm oil plantation in the Solomon Islands. The land used to be grassland and bush. Photo by Lorette Dorreboom/Greenpeace.

The incident was the first major test for the new landowner-led company, Gold Ridge Community Investment, which had taken ownership of the mine only the year before. After 17 years of foreign ownership and a checkered environmental history, the Gold Ridge mine is now being led by a local landowner-driven joint venture that is emerging as a potential new mine management model in the Pacific Islands region. In 2015, Gold Ridge was sold for 100 million Australian dollars (\$73.8 million at the time) to Gold Ridge Community Investment (now Gold Ridge Mining), by its Australian owner, St. Barbara. The company decided to abandon the mine, which contains an estimated 3.18 million ounces of gold, in the wake of extensive damage caused by Cyclone Ita and flooding the previous year. The mine hasn’t been operational since, but following the signing of an agreement with Australia-based AXF Resources, which will provide the majority of investment, plans are now in place to resume extraction by the end of next year.

Walton Naezon, chairman of the landowner-led Gold Ridge Mining, said he is now keen to both reduce any risk the tailings facility poses to the surrounding environment and communities, and to increase public transparency of the company’s environmental processes. The top priority, he said, is dewatering, or emptying out the dam to ease pressure on its wall and decrease the chance of any further overflows. Naezon spoke to Mongabay about implementing his vision of an extractive project where local communities are part of the corporate structure. About 3,000 to 5,000 people live in villages surrounding the mine, and traditional landowners own 30 percent of the company. They have already participated in making key decisions, such as the selection of an independent environmental consultant. They also observe operations at the tailings dam and take part in the company’s environmental testing and monitoring of nearby rivers and streams.



Larger than life in a blue Pacific print shirt, Naezon is bullish in his drive and optimism about the enterprise when we meet in a Honiara hotel. But he also comes across as astute, widely informed about the industry and its issues, and attuned to the sensibility and needs of his own people. No doubt this is a product of his previous career in politics, as well as skills and grasp of the cultural context as a traditional leader. He was minister of mining and energy from 1997 to 2001, minister for state government until 2003, and minister for commerce for another two years. Naezon is visibly relaxed about the attention given the mining industry worldwide by what he refers to as the “greens” movement, commenting that it “makes the developer and company stronger.” The revived Gold Ridge venture, at this stage, comes across as more than ticking the right boxes in order to be assessed a responsible corporate citizen. There is evidence of an attitudinal shift, a genuine motivation to alter the structure of power, participation and accountability.



The Gold Ridge Mine tailings dam in Guadalcanal Province, Solomon Islands. Photo by Catherine Wilson for Mongabay.

### **Community Involvement**

As I stood in the water treatment plant at the edge of the vast blue expanse of the dam, reflecting the brilliant tropical sun, Gaheris Porowai, the supervisor, readily answered questions. He said that we were looking at 1 million to 2 million cubic meters (264 million to 528 million gallons) of water, with the water level currently 1.5 meters (5 feet) below the spillway. Treated water was being discharged, as permitted, at 500 cubic meters (132,086 gallons) per hour or 12,000 cubic meters (3.17 million gallons) per day, with water testing conducted twice weekly. This will be done persistently, Naezon said, until the dam is empty. “There should be no water there. In the next two years, no water, we don’t want to see water there,” Naezon said emphatically, adding that Golder Associates, the company responsible for the dam’s construction has also been reengaged to review its current state and potential future.

Phil Fairweather, Gold Ridge’s general manager, said that he and many other people had been attracted to the venture by the vision of building an enterprise on greater transparency, community inclusion and social and environmental sustainability. “Any dewatering that is happening at the moment, for example, involves the communities,” Fairweather said. “It actually involves unqualified community people coming and observing the testing, coming and being involved in community awareness prior to any discharge and during.” Local village chiefs, landowners and students are all invited to visit the tailings dam to learn about the water treatment process and witness its discharge.



“We want to see the mine open, but the health and safety and environmental responsibility is an utmost priority to us,” said Robert Rafaniello, the company’s deputy CEO. “And that is why as we lower the water, we will do more investigations into the stability of the dam, assess it. Does it need any strengthening to future-proof it for any other unknown event? Do we use the tailings dam in its current form, do we look at alternatives?”



Tropical forest, Vella Lavella, Solomon Islands. Forests cover more than three quarters of the country’s land area, but illegal logging remains a serious problem. Photo by Lorette Dorreboom/Greenpeace.

In hindsight, the lack of continuity in the mine’s foreign corporate ownership since the late 1990s — and intermittent periods of closure resulting in inconsistent environmental practices — can be seen as factors in the problems being experienced today. The start of mining in 1998, by the Australian company Ross Mining, coincided with the stirrings of civil unrest. The mine was forced to close a mere two years later when the violence escalated. While a peace agreement was achieved in 2003, Gold Ridge didn’t reopen until 2010 after acquisition by Allied Gold. The venture changed hands again in 2012, this time to St. Barbara. Then, in April 2014, calamity struck when a cyclone and torrential rain caused massive flooding that damaged mine infrastructure, raising concerns about the stability of the tailings dam and forcing a second shutdown. Losses and damages at the mine amounted to \$27.7 million, 26 percent of the total economic impact of the disaster on the country. Soon after, St. Barbara decided to exit the country, selling the mine and its legal liability to Gold Ridge Community Investment the following year, while the Solomon Islands government declared the site a disaster zone.

### **A model for the region?**

The Solomon Islands is not the only Pacific Island state to experience environmental problems in the mining industry. Natural and mineral resource extraction has, over decades, generated major revenues in a number of other countries in the region, such as Papua New Guinea and Nauru, while many more are now considering the lucrative potential of deep-sea mineral extraction. But in both island states the extractive industries have been plagued by environmental disasters. Both have failed to achieve environmental sustainability, and the economic windfalls have not led to substantial improvements in human development. Glaring examples include the Panguna copper mine in Bougainville, Papua New Guinea, where the fallout from the destruction of land and waterways nearly 30 years ago remains unaddressed; as well as the OK Tedi copper and gold mine in the country’s Western Province, where massive discharge of mine waste into local river systems since the mid-1980s decimated fish and animal species and contaminated water sources and farmland. In the

tiny state of Nauru, aggressive phosphate extraction has ravaged 80 percent of the country's landscape.

In the Solomon Islands, the government is looking to mining as the next big revenue earner as it faces the challenges of post-conflict economic recovery and the exhaustion of commercial forestry after decades of unsustainable logging. The country is known to have significant mineral resources, including gold, silver, nickel and lead. "The Gold Ridge mine reopening is very important for the government and Solomon Islands as it contributes significantly to the economy," a spokesperson for the Ministry of Mines, Energy and Rural Electrification told Mongabay. Nevertheless, the economic, social and environmental success of mining ventures over the next generation depends on not repeating the problems of the past.

A 2013 UNDP symposium on managing extractive industries in Pacific Island states highlighted some of the steps needed to overcome the hurdles. These include conducting better consultations with stakeholders and communities, developing a more complex understanding of customary land tenure, improving the transparency of political processes and revenue management, and achieving greater commitment to environmental protection, over and above the basic requirement of developers producing environmental impact assessments. Expert observers have also expressed concerns about the influence of corruption and limited capacity of the government to manage the demands of regulating and overseeing mining activities.



Logging road in a deforested area in Vangunu Island. Photo by Paul Hilton/Greenpeace.

"Too close an identification of political leaders with resource extraction companies has not served Solomon Islands well," Graham Baines of the Bergen Pacific Studies Research Group has written ([pdf](#)). "The chance to build an economy based on sustainable timber production has been lost. And just as government institutions have been shown to be ineffective in controlling logging abuses, so, too, their role in guiding and controlling mining is weak and compromised." Recently the government has tried to address some of these issues with the launch of a new National Minerals Policy (2017-2021). It aims to guide reformed financial practices, industry oversight, and procedures for tailings management, corporate environmental audits, biodiversity management and the mitigation of deforestation and soil erosion.

"With the policy now launched, the ministry is working closely with the World Bank to begin implementing the policy, and this process is already under way, focusing mainly on the regulatory framework," the Ministry of Mines spokesperson confirmed. This includes reviewing resource and

manpower capacity and rolling out public outreach and awareness of the new policy. Progress in these areas is vital to turning around the suspension of the Solomon Islands by the Extractive Industries Transparency Initiative (EITI), which in March of this year sanctioned the country due to assessed deficiencies in areas including licensing procedures, monitoring and control of production, and revenue distribution. The revival of the Gold Ridge mine will bear witness to how much progress the government has been able to make in the short term.

In May, the government and company began consultations with landowners about the mine's proposed reopening next year, seeking to address issues such as royalties and environmental impact. There is evidence, though, that not everyone is satisfied and local environmental concerns persist. Vutiande said that in Navola, "the water system was always a long-term concern since the opening [of the mine] by the previous companies. The water issue is an ongoing issue. There were a few times when there were people who found things that have died in the river, such as fish and frogs." Despite the company's stated commitment to transparency, Gold Ridge Mining remains tight-lipped while it considers the range of options for dealing with mine waste. The decision as to whether the dam will continue to be used is still to be made, and the government is still awaiting the environmental management plan. The contents of these will be the first step in translating the new Gold Ridge vision into reality and establishing, or debunking, its standing as a model for the rest of the region.

### **No decision made in Bulolo licence application**

The National, November 15, 2017



Bulolo township

THE Mineral Resource Authority has clarified that a decision is yet to be made on the application for an exploration licence in Bulolo. Managing director Philip Samar was responding to the claim by Bulolo district administrator Tae Gwambelele that an exploration licence (EL2544) had been issued. Gwambelele had supported the objection by business houses, Papua New Guinea Forest Products and town residents over the alleged issuing of the exploration licence over existing leases near the town. But Samar said no licence had been issued. Samar said the MRA would conduct a wardens-hearing to allow the public and stakeholders to discuss their concerns and raise objections against the application.

After that, he said the warden would table a report with the mining advisory council for consideration. "There will be no need for a township relocation just because an EL application has been lodged," he said. He also clarified that the MRA "does not issue tenements". "It recommends (it) to the minister or the head of the state," Samar said. Gwambelele said the application would be opposed. "Bulolo residents are prepared for the scheduled hearing on November 28 to tell the warden



that Australia has done enough damage to land in Bulolo,” Gwambelek said. Morobe acting Governor Waka Daimon said that the land from Golden Pine Bridge to McAdams Park across to Manki Tower and along the Watut River down to Pine Top was owned by the National Forest Authority.

### Way cleared for Misima restart

*THE Supreme Court of British Columbia has granted final approval for the merger between Kingston Resources and WCB Resources.* PNG Industry News, 15 November 2017



WCB's key asset is the Misima gold project on an island of the same name in PNG's Milne Bay Province. Historically, Misima has produced more than 3.7 million ounces of gold. It holds a recently completed NI43-101 resource of 2.3 million ounces. Kingston managing director Andrew Corbett said the merger represented a transformational step for both KSN and WCB shareholders. "We would like to take the opportunity to thank the WCB management and shareholders for their support during the merger process. The KSN board and management team welcomes the new KSN shareholders and we look forward to starting work on Misima this month [November]." The court approval follows overwhelming support from WCB shareholders for the merger with KSN. The process is under way to delist WCB and to issue new KSN shares to WCB shareholders.

"We are immediately starting work on Misima which includes completing a JORC resource, and re-establishing a field team incorporating current and new operational personnel who will be restarting geochemical field work shortly. "Historical data completed on Misima has enabled Kingston to rapidly identify priority drill targets on Misima. The KSN management team aim to submit drilling approvals in the new year with a target of mobilising a drill rig in the fourth quarter of financial year 2018," Corbett said. Kingston said it was already working with the established field team to restart exploration work on the island. A review of historic data has highlighted four key target areas. Each of these areas has been underexplored in the recent history of Misima as exploration work subsequent to the 2004 mine closure has focused on deep copper targets. "Kingston is excited to return the focus to these anomalies, the initial aim will be to add shallow, higher grade tonnes to the existing resource," the company said. The four target areas are:

- Umuna East: Mineralised structures on southeast side of Umuna that are up to 1.8km in strike with evidence of high grade, shallow mineralisation.



- Misima North: Which has more than 3km untested strike open to the north supported by historic mining and geochemistry.
- Umuna extensions: The existing resource is open along strike and down dip, with additional potential from both shear-hosted and skarn mineralisation which may add to the resource with drilling.
- Quartz Mountain: To the west of Umuna, Quartz Mountain is an area of higher grade mineralisation where the average hole depth to date is only 90m. The mineralisation remains open at depth.

### **Ok Tedi Development Fund: K33mil hotel to open in February**

November 14, 2017, The National Business

THE K33 million Cassowary Hotel in Kiunga, Western is expected to open in February. According to the Ok Tedi Development Foundation, the hotel will be generating an annual return in excess of K2 million over 20 years for eight Community Mine Continuation Agreement (CMCA) Trusts. They are Nupmo, Tutuwe, Wai Tri, Middle Fly, Suki-Fly Gogo, Manawete, Kiwaba and Dudi. Also to benefit are the four CMCA women's associations in Nupmo, Tutuwe, Wai Tri and Middle Fly. In their October 2017 progress report to OTDF, chief executive Ian Middleton and property developer Pacific Palms Property representative Aaron Polden said that work was progressing smoothly. The 40-room hotel will be managed by the Coral Sea Hotels group which had begun the recruitment process for staff positions.

Coral Sea Hotels staff will test the systems, fully-furnished and stock up the facility next month. Employment will be on merit basis but priority will be given to applicants from the CMCA areas and those from Western. Community Mine Continuation Agreement and Western people will benefit from selling local produce to the hotel. Middleton said the project had not been without its contract challenges. "But these have been overcome and I am pleased to be working with PPP to deliver such a high-quality facility in Kiunga town," he said. "The CMCA Trusts are to be congratulated for recognising Kiunga as a fast-growing, vibrant urban centre with a high demand for quality accommodation for public and private sector business travelers." Mining Minister Johnson Tuke was impressed with the development. The hotel is the eighth and final major investment project to be delivered by OTDF under the current Community Mine Continuation Agreement Trust Investment processes.

### **Frieda gold set for 2019**

Post-Courier, November 14, 2017

Construction phase for the Frieda mine gold project in West Sepik Province will begin in 2019. Mining Minister Johnson Tuke said this during his ministerial visit to the mine last week. The production will start around 2030 or 2040 which the developer PanAust committed to deliver in line with the Government's 100 days plan. Mr Tuke said the government has been given two years to go through government agencies like, Conservation & Environment Protection Authority, Mineral Resources Authority, provincial governments and the extractive industry to get the project started. "There is no issue but I would like both governors to continue with the positive attitude they've embraced and get their provincial MPs on board, because inclusive management and political will is crucial to get Frieda off the ground," he said. The East Sepik and Sandaun governors have agreed to work together to get this project off the ground. "All of us have to work together and I've assured the people and the developer, give us two years to get all the paperwork done and then we can start on the project," Mr Tuke said.

## Papua shooting shuts down Freeport route

*The Indonesian unit of Freeport-McMoRan has temporarily shut the main supply route to its Papua mine after a shooting incident, a spokesman says, amid escalating tensions between security forces and an armed Papuan group in the area. Radio New Zealand, 13 November 2017*



West Papuans have long expressed frustration about the environmental destruction caused by the Freeport mine operations in Mimika regency. Photo: Mineral Policy Institute

No one had been reported hurt after shots were fired at a vehicle, but the main supply route to the world's second-biggest copper mine had been temporarily closed while the security situation was assessed, Freeport Indonesia spokesman Riza Pratama said in text message. Authorities in Indonesia's eastern province of Papua are delivering food and aid to villages near the mine where security forces say the rebel group has blocked residents' movement, as security personnel surround the area, a police official said. Police said a group linked to the Free Papua Movement (OPM) was preventing about 1000 people from leaving five villages near the Grasberg mine operated by the US company. "We continue to try a persuasive approach and dialogue," said Viktor Mackbon, police chief of the Mimika area, where the villages are located. Talks with the group would be conducted through public and religious figures in the region, he added.

Officials on Saturday said about 200 police and military personnel had been deployed in preparation to secure the area by force, if necessary. Police said they will distribute, on Monday, a notice in the area for the "armed criminal group" to give themselves up and surrender weapons. Reuters could not immediately reach members of the rebel group, the West Papua National Liberation Army (TPN-OPM), to seek comment. On Friday, the group denied occupying villages near the mine, but said it was "at war" with the police, military, and Freeport. A resident from one of the villages, Banti, said security forces had blocked access to the village. Residents he had spoken were not being held hostage by separatists but "are only worried about what might happen if the police and military come into their area", he said. A state of emergency has been declared in the area and security stepped up after a string of shootings since August 17 that killed one police officer and wounded six. Papua has had a long-running, and sometimes violent, separatist movement since it was incorporated into Indonesia after a widely criticised UN-backed referendum in 1969. -Reuters

## Locals threaten to shut down Tolukuma mine

Cedric Patjole, PNG Loop, November 11, 2017



Landowners of the Tolukuma Mine in Goilala District, Central Province, have issued an ultimatum to the Government to withdraw the mining lease from operators, Asidokona, or they will shut down the mine. Chairman of the Yulai Landowner Group, George Gusi, announced on his Facebook profile yesterday that a seven-day ultimatum was given, which lapses on Monday, November 20. Gusi stated that the current operator was not capable of operating the mine and called for its withdrawal and for another operator to invest in the mine. “I have given 7 days’ ultimatum for the government to withdraw the mining licence from Asidokona Mining Resources Ltd. “The rationale behind this? Asidokona has no capacity to operate a mine.” He alleges the operator lacks financial capacity as well as expertise. “I am taking this bold action to rescue my suffering landowners to make way for a potential investor to come in and invest on our land,” said Gusi.

“MRA and other concerned authorities must come out clear and provide clear explanation on this issue. “I have already woken up from my long sleep now so I will continue to pursue until I achieve what I want. “My appeal to all those relevant authorities to be patriotic to our country, our people and take our people’s issues/concerns at heart in ensuring that any decisions made are there to serve the best interest of our people,” he added. When contacted by *Loop PNG*, Gusi claims formal notices have been issued to the Mineral Resources Authority (MRA), Mining Minister Johnston Tuke and other stakeholders. He said if a favourable response is not received by the due date, they will shut down the mine. In June this year Gusi snubbed the signing of the Tolukuma Mine memorandum of agreement (MOA), citing unmet outstanding issues. Despite Asidokona being granted the mining licence, return to production has been problematic. Last month the MRA stated that tenement, regulatory and funding issues have stalled production.

## Bulolo opposing new mining exploration

The National, November 10, 2017

THE Bulolo district administration is strongly opposing a licence for exploration activities near the town because the land had been damaged by past explorations, Administrator Tae Gwambelele says. The administration is supporting the move by the business community and PNG Forest Products (PNGFP) after the Mineral Resource Authority (MRA) issued EL2544 to the Wabu Alluvial Mining company (WAM). Administrator Tae Gwambelele said Australia had done enough damage to land in Bulolo leaving behind huge craters on which the township was built. “History will never be repeated again,” Gwambelele said. “We have Hidden Valley and Wafi-Golpu mining including many small-scale activities. That is enough.”

Gwambelele said the Bulolo district development authority also acquired an exploration licence from MRA to conduct explorations outside Wau and Bulolo towns. “How on earth, will MRA issue the EL 2544 to WAM to conduct explorations within the town? It is illogical,” he said. “Bulolo town is not an exploration area and we totally object to the idea. “We have PNGFP, National Forest Authority, University of Bulolo, Telikom Exchange, district administration office, police and court-house and many small businesses operating in town and paying taxes to the government. He said as the district chief executive representing 102,118 people in 324 villages and 108 wards, the idea was 100 per cent rejected. He said the scheduled warden hearing on Nov 28, would be facilitated in front of the district headquarters to allow people to air their views. Bulolo business representative Aaron Akui urged Minister for Mining Johnson Tuke and MRA chief executive Philip Samar to review the decision.

### **Porgera: Clan registration vital for benefits**

Post-Courier, November 10, 2017

After more than 20 years of the existence of the Porgera Gold Mine, the landowners have just realised the importance of having a registered incorporated land group (ILG). Chairman of the ILG formed and registered is the Tuanda ILG, Mr Sole Taro said it is important to register clans so that the benefits and wealth from the Mine could be distributed evenly and accordingly. The Tuahda tribe is located at the special mining lease area where the mining activity is in progress. “Company community service obligations and other development services could be easily carried out through the ILG unlike before, as all the clans came under one association and they did not receive the full benefit,” Mr Taro said. He said the Tuanda tribe holds more than 600 hectares of land and the benefit receive was according to the land size, adding that most villagers from Tuanda Apalaka have been displaced since the mining with no proper relocation being carried out.

He acknowledged management of Porgera Joint Venture mine, individuals and organisations who assisted in registering the ILG in Porgera, Enga Province. He also thanked those behind the national identification program for spending time in Porgera in early 2017 to register the 2000 plus population of the Tuanda clan. He said his clan members have now mobilised themselves through the ILG, and want to work closely with PJV and the government to address the issues of the Porgera Gold mine. The forming of the ILG was Mr Taro initiative as he believed it was important for the benefit of future generation. He encouraged the landowners from the Lease Mining Purpose areas who are also benefactors of the mining to do the same.

### **Separatist violence threatens to disrupt Freeport’s Indonesia mine**

Fergus Jensen, Agustinus Beo Da Costa, Sam Wanda, Reuters, 9 November 2017

Armed separatists have occupied five villages in Indonesia’s Papua province, threatening to disrupt Freeport-McMoRan Inc’s giant Grasberg copper mine, which has already been hit this year by labour unrest and a dispute over operating rights. A state of emergency has been declared and around 300 additional security forces have been deployed to the mining area of the eastern province after a string of shootings since Aug. 17 that killed one police officer and wounded six. “They want to disrupt Freeport’s operations,” said Suryadi Diaz, a spokesman for the Papua police. “(Freeport) is rich but they are poor, so they just want justice,” Diaz said, adding that the militants were a splinter group of the separatist Free Papua Movement (OPM). Freeport Indonesia spokesman Riza Pratama said the company was “deeply concerned” about security and was using armoured cars and helicopters to ferry workers to and from the Grasberg mine in the province’s Mimika regency.



He said attacks had been launched along the road near the town of Tembagapura, about 10 km (6 miles) from the mine, where families of employees - including expatriates - live. He added that so far there had been no impact on production and shipments from Grasberg, the world's second-biggest copper mine. Last year Freeport Indonesia contributed about a quarter of the parent company's global sales of 4.23 billion pounds (1.92 million tonnes) of copper. Arizona-based Freeport, the world's largest publicly listed copper producer, has already been grappling with labour problems at Grasberg and a lengthy dispute with the Indonesian government over rights to the mine. The mine has also been dogged by major concerns over security due to a low-level conflict waged by pro-independence rebels in Papua for decades. Between 2009 and 2015, shootings within the mine project area killed 20 people and wounded 59.



Papua and neighbouring West Papua provinces make up the western half of an island north of Australia, with independent Papua New Guinea to the east. The provinces have been plagued by separatist violence since they were incorporated into Indonesia after a widely criticised U.N.-backed referendum in 1969. President Joko Widodo has sought to ease tension in the two provinces by stepping up investment, freeing political prisoners and addressing human rights concerns. Police spokesman Diaz said around 1,000 local residents and migrant workers who pan for gold in Mimika were being prevented by the separatists from leaving the five villages.

Security forces had entered the occupied area on Thursday, police and military sources told Reuters, but it was not clear if they had been able to evacuate any of the residents. "Perhaps they feel envious with the company's presence," Papua Police chief Boy Rafli Amar told Reuters. "We are trying to maximise protection for the community ... because people have been raped and some have had goods stolen." In one attack in late October, shots were fired through the windscreen of an ambulance that was ferrying a villager who had just given birth, police said. The water supply of Tembagapura town had also been contaminated with kerosene, Boy said, but police had not been able to ascertain if it was an act of sabotage carried out by the same group behind the shootings.

#### "JUST WILD THIEVES"

In a video purported to come from the National Liberation Army (TPN-OPM), part of the OPM group, dated Sept. 29, a guerrilla action coordinator named as Joni Beanal reads out an open letter warning of attacks on Freeport in order "to destroy it". "The main reason for the integration of Papua into Indonesia was a conspiracy by America and Indonesia in the interests of mining exploitation by Freeport MacMoran in Papuan soil," the coordinator said on the video, which was seen by

Reuters. Reuters was not able to verify the authenticity of the video. Papua police spokesman Diaz dismissed the recording as “old”. Papua Military Commander Major General George Elnadus Supit said the TPN-OPM posed no significant threat and were “just wild thieves who are perhaps being used by a separatist group”. Concord Consulting group warned that a harsh crackdown on the militant group could “backfire” if security forces were unable to prevent civilian casualties.

“Militants in Mimika will be able to hide among the local population – many of whom share their rejection of Indonesian rule,” the security consultancy said in a note on Wednesday. Freeport contributed \$20 million towards Indonesian government-provided security protecting workers and infrastructure in 2016, about one-third of its local security budget. The company paid \$668 million to the Indonesian government last year in income taxes, royalties and export duties, making it one of the country’s single largest taxpayers. The Panguna copper and gold mine in neighbouring Papua New Guinea was abandoned in 1989 after a campaign of sabotage by the rebel Bougainville Revolutionary Army. Echoing the situation in Papua, there was deep resentment among the indigenous Bougainville people about the wealth going to the Papua New Guinea central government and the mine’s then operator, Conzinc Riotinto of Australia Ltd, a forerunner of Rio Tinto .

*(Reporting by Fergus Jensen and Agustinus Beo Da Costa in JAKARTA; Additional reporting by Sam Wanda in TIMIKA; Editing by John Chalmers and Alex Richardson)*

### Geopacific muscling into giant territory with PNG gold majors

*'The project came gift wrapped, courtesy of the PNG Government who will buy 5% when it is ready to be mined by paying the equivalent of 5% of sunk costs to-date. This could see the PNG Government shell out more than \$6m for just 5% of the project'.*

Matt Birney, Business News, 9 November 2017



They say that it’s often the second owner of the big projects that make money from them and that may well be true of Geopacific Resources’ Woodlark Island project in PNG. It was picked up for a song by Geopacific from Kula Gold and is positioned dead centre in the middle of a string of copper and gold infested islands that make up mineral rich Papua New Guinea. In a region littered with mining projects that boast gold resources of up to 60m ounces, it is almost unthinkable that Geopa-

cific's mineral reserve would remain at just 766,000 ounces of gold – a number that would already have most junior explorers starting a conversation with an EPC contractor. A quick glance at the existing PNG projects that form a neat radius around Geopacific's Woodlark Island project leaves you with the distinct impression that this is indeed the land of the giants.

Neatly positioned around Woodlark is Newcrest's 49m ounce Lihir project, St Barbara's 6m ounce Simberi project, Rio Tinto's former 23m ounce Panguna mine, the 29m ounce Hidden Valley project, the dual 17m ounce Ok Tedi and Frieda River deposits and the 24m ounce Porgera project. The goliath amongst the giants however is clearly the 63m ounce Freeport Papua project that boasts one of the largest gold and copper resources in the world. At 2m ounces of resource and 766,000 ounces of reserve going 2.2 grams per tonne, Geopacific's deposit, as impressive as it is, drifts into obscurity amongst these giants. The company is however continuing to furiously drill it out and with such huge projects in their midst, management's expectation of a sizeable upgrade in reserve is perhaps not unreasonable. Kula Gold listed on the back of the Woodlark project with a remarkable \$1.80 float in November 2010 that resulted in a \$203m market cap for the company. They had \$80m in the bank on listing day and spent the lot on the project and then some.

In fact by the time Kula ran out of financial puff last year they had plunged almost \$150m into the project and associated corporate entities. Amazingly, Geopacific picked up 87% of it earlier this year through a series of corporate and project level plays for the paltry sum of just \$10m worth of script and \$650k worth of expenditure on the ground. And the project came gift wrapped too, courtesy of the PNG Government who will buy 5% of it when it is ready to be mined by paying the equivalent of 5% of sunk costs to-date. This could see the PNG Government shell out more than \$6m for just 5% of the project. In addition to now holding 86% of Kula who own 95% of Woodlark, Geopacific already own 5% of the actual Woodlark project after spending \$650k on it as part of their farm in agreement. Geopacific started their quest for control of Woodlark initially by entering into a farm in agreement with Kula, but later decided to take over the entire company in a 1 for 1.1 all script offer and to-date have secured 86% of Kula's stock in a move that cost them only about \$10m in script.

They also have further farm in rights and creep abilities that will most likely see them own almost all of it save only for the PNG Government's 5% share in due course. Woodlark could very well be a miners paradise too, with a reserve that may well keep growing and a project that is already fully permitted from both an environmental and mining perspective. The project came with a veritable storehouse of drilling data from over 275,000 metres of drilling and Geopacific have added over 20,000 additional metres since getting involved. Even though the global resource grade at Woodlark is 2.2 grams per tonne, the three different prospects within the project boast some impressive high grade breakouts. These include a 32m intersection grading 7 grams per tonne gold, 48m @ 10.39 g/t, 36m @ 12.52 g/t, 11.2m @ 36.3 g/t and 22m @ 7.54 g/t gold, all of which are from the Kulumadau prospect which is still open to the west and East.

Geopacific discovered an 84m mineralised zone at Kulumadau with several well mineralised intercepts including 10m @ 7.84 g/t, 13m @ 3.11 g/t and 12.3m @ 2.23 grams per tonne gold. Other impressively long intersections at the project include 21m @ 3.27g from 40m, 23m @ 4.82 g/t from 102m, 52 @ 4.5g/t, 19m @ 3g/t, 27m @ 2.5g/t, 34m @ 3g/t and 33m @ 4 grams per tonne gold. Kula completed a feasibility study on the project some years ago which will most likely require updating now but will serve as a cost effective base for Geopacific's own study of the resource. Kula concluded that the project could turn out 674,000 ounces of gold over the first 6 years of mine life from a 1.8mt per annum plant. They predicted that figure could increase to 813,000 ounces over the first nine years when in-pit inferred resources and lower grade stockpiles were utilised.



Cash operating costs were predicted to come in at around US\$730 an ounce with capital cost looking like being somewhere in the order of US\$160m. Kula's study also identified several out of pit areas that could potentially increase the ore reserve in time, particularly at the Kulumadau prospect where a further 4mt at 2.9 grams per tonne for around 400,000 inferred ounces were identified but not included in the pit design at the time. Kula were looking to upgrade these resources with further drilling and the grand plan was to eventually amalgamate the Kulumadau east and west pits. Geopacific recently raised \$10.5m in an oversubscribed capital raise to continue the considerable work already carried out on Woodlark by Kula and they are now armed and dangerous as they hurtle headlong towards a decision to get into production. The market is expecting an upgrade to the mineral reserve at Woodlark sometime soon as Geopacific completes its own study on the project and continues its extensive drilling campaign.

Geopacific management appear have form too. The management team, led by Geologist Ron Heeks point to the 10 mines in six different countries they have developed between them as evidence that they can make Woodlark fly. Notably Heeks was the technical manager at Straights Asia and was partly responsible for turn around at the Muro gold mine and also at the Sebuk coal mine amongst other things. The institutions are also sitting up and taking notice of Woodlark too with the likes of Tembo Capital, RCF, Pacific Road, Franklin Advisers and RMB Australia sitting comfortably on the Geopacific register now. Woodlark is a fast developing story that looks to still have some upside with the potential to really surprise given the monolithic projects on its doorstep. PNG is a region that does not consider a 2 million ounce resource or even a 2 million ounce reserve to be remarkable – at just 2.7c a share and with a market cap of around \$50m, Geopacific and Woodlark look interesting amongst a sea of amazing projects.

### Im Goldrausch der Tiefe

*Die Tiefsee enthält Schätze, nach denen bald alle Welt graben könnte: Gesteinsbrocken am Meeresboden mit wertvollen Edelmetallen. Auch Deutschland hat sich ein Abbaugelände im Pazifik reserviert. Wie gefährlich ist der Tiefseebergbau für die Umwelt? Von Sinan Reber*

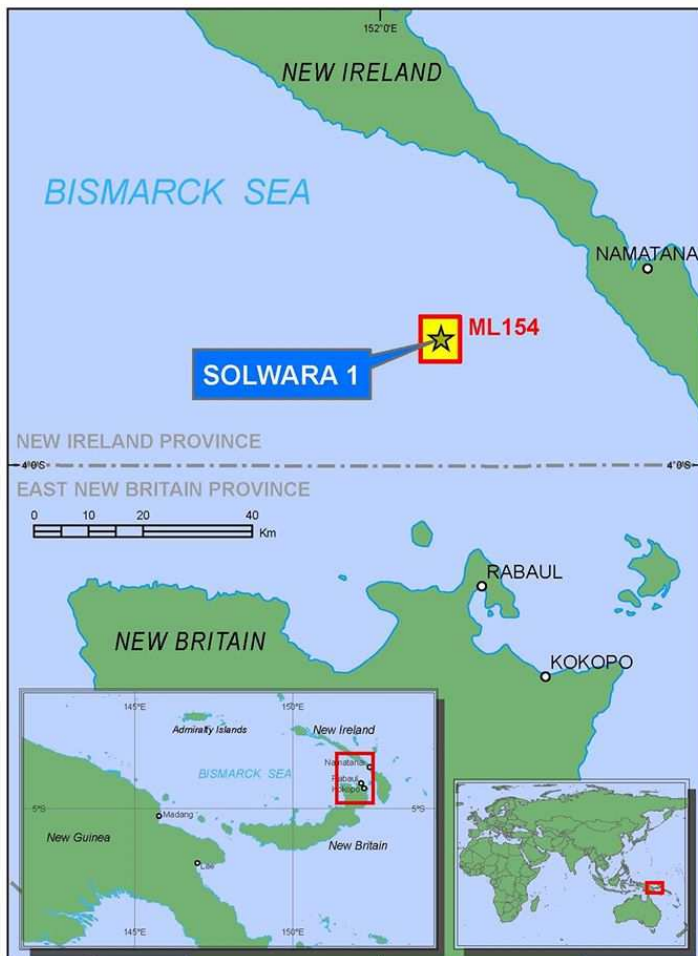
ZEIT Wissen, 8. November 2017



Ein japanisches Testgerät gräbt nach Erzen und sammelt sie ein. Quelle: Japanisches Wirtschaftsministerium

Japan ist jetzt auch mit dabei. Vor ein paar Wochen förderte das japanische Ölonternehmen JOG-MEC 1600 Meter unter der Meeresoberfläche Tiefseerze, sogenannte Massivsulfide. „Der Erfolg des Tests bedeutet einen großen Schritt vorwärts für die Technologie, die notwendig ist, um Meeresbodenschätze zu heben“, schwärmte das japanische Wirtschaftsministerium. Im Herbst diesen Jahres nutzte man die guten Wetterbedingungen vor den südlichen Inseln in der Okinawa-Präfektur, um die Tiefseerze aufzusammeln und zu einem Schiff an die Wasseroberfläche hochzupumpen.





Unweit der Küste will eine kanadische Firma Massivsulfide vom Meeresboden holen. Quelle: Nautilus Minerals

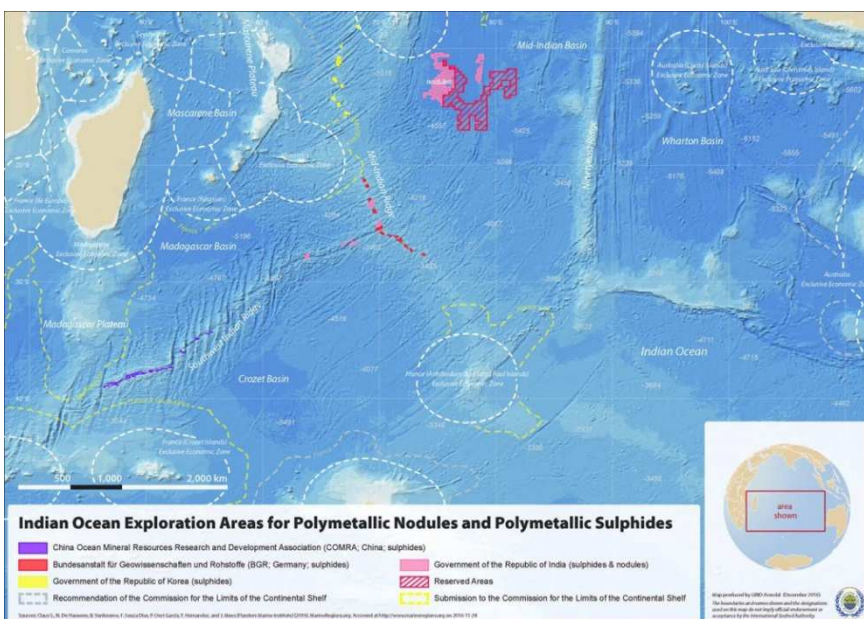
Bricht nun ein globaler Goldrausch in den Weltmeeren aus? 30 Kilometer vor der Insel Neuirland in Papua-Neuguinea will das kanadische Unternehmen Nautilus Minerals Anfang 2019 am Meeresboden nach Seltenen Erden und Edelmetallen graben. Auch diese unterseeische Lagerstätte, Solwara 1 genannt, beherbergt Massivsulfide: Gesteinsbrocken, in denen Gold, Kupfer, Nickel, Kobalt und andere Metalle enthalten sind. Das Material ist begehrt für die steigende Produktion von Smartphones, Windrädern und Batterien. Am Meeresboden ist die Konzentration der Edelmetalle oft größer als in Erzen an Land: bei Probemessungen von Nautilus Minerals zeigte sich, dass durchschnittlich sieben Prozent Kupfer in den unterseeischen Metallklumpen stecken. An Land geförderte Erze enthalten rund ein Prozent. Die Goldkonzentration beträgt nach Angaben des Unternehmens bis zu 20 Gramm pro Tonne Abbaugestein im Vergleich zu sechs Gramm pro Tonne an Land. Ein Erfolg dieses Projekts könnte daher ein globales Wettrennen um die Schätze der Tiefsee lostreten.

Massivsulfide sind an den sogenannten Schwarzen Rauchern zu finden, also kleinen Tiefseevulkanen, die zugleich Grundlage für das Ökosystem am Meeresboden sind. Meerwasser dringt an den Grenzen von Kontinentalplatten zwei bis drei Kilometer in den Ozeanboden, wird dort auf über 200 Grad erhitzt und wieder nach oben gedrückt. Dabei wäscht der heiße Wasserstrom verschiedene Metalle und Stoffe aus dem Gestein. Am Meeresboden dringt dann aus diesen „hydrothermalen Tiefseequellen“ heißes, mineralienreiches Wasser in Form von schwarzem Rauch aus. Trifft das heiße Quellwasser auf das 2 Grad kalte Tiefseewasser, fallen Metallsulfide aus, reichern sich an den Austrittsstellen an und formen meterhohe Türme, Schlote genannt. Auf dem Grund von Solwara 1 hat Nautilus Minerals bis zu 15 Meter hohe Schlote gesichtet.



Die Schloten der Massivsulfide reichen am Standort "Solwara 1" bis zu 15 Meter hoch. Quelle: Nautilus Minerals

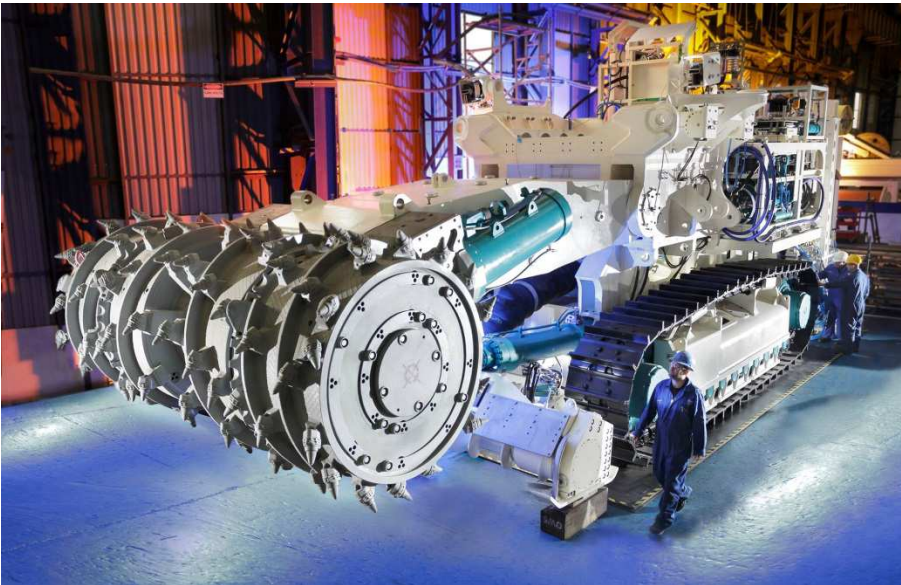
Die Internationale Meeresbodenbehörde (ISA) mit Sitz in Jamaika ist für Meeresgebiete außerhalb der nationalen Gesetzgebung zuständig. Wer sich einen Teil vom Ozean sichern will, kann einen Antrag für eine 15-jährige Lizenz stellen, die ein bis zu 150.000 Quadratkilometer großes Areal abdeckt – dafür gehen die Antragsteller Verpflichtungen ein und müssen beispielsweise ökologische Untersuchungen durchführen, bei denen Sie die Artenvielfalt, Meeresströmungen und Sedimente analysieren. Auch Deutschland hat sich Gebiete gesichert – unter anderem eine Erkundungslizenz für Massivsulfide im Indischen Ozean vor Madagaskar sowie für Manganknollenfelder in der sogenannten Clarion-Clipperton-Zone in der Pazifik (siehe Karte). Manganknollen sind Steinklumpen, die wertvolle Elemente wie Gold, Kobalt, Mangan, Kupfer, Zink und Nickel enthalten. Verantwortlich für die Exploration und einen möglichen Abbau ist in Deutschland die Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) als Oberbehörde im Auftrag des Wirtschaftsministeriums. Im Hype um Tiefseelagerstätten spielt vor allem der Drang, sich von ausländischen Bodenschätzen unabhängiger zu machen, eine Rolle – ein Anreiz für rohstoffarme Länder. Bergbauunternehmen wiederum lockt die Aussicht auf das große Geld. Das ist im Meer nicht anders als an Land.



Genehmigte Erkundungsgebiete im Pazifik: Deutschland und Indien sind Nachbarn. Quelle: Internationale Meeresbodenbehörde



Zurzeit arbeitet die ISA noch an dem sogenannten Mining Code, der internationale Standards zum Tiefseebergbau festlegen soll. Wenn dieser fertiggestellt ist, können die Erkundungslizenzen für die Staaten und Unternehmen in Abbaulizenzen münden und die Jagd nach Rohstoffen wird eröffnet sein. Einen ersten Entwurf für den Mining Code hat die Behörde im August veröffentlicht: er sieht vor, dass die Lizenznehmer Machbarkeitsstudien durchführen, Finanzierungsnachweise erbringen, Umweltdaten liefern, Notfallpläne erarbeiten, Antikorruptionsmaßnahmen ergreifen und einen jährlichen Bericht herausgeben. Die Abbaubedingungen am Meeresboden sind deutlich komplizierter als in Minen: In bis zu sechs Kilometern Tiefe, zum Teil mehr als 1000 Kilometer vom Festland entfernt, herrschen ein extremer Druck und niedrige Temperaturen. An der Meeresoberfläche müssen die Mutterschiffe Strömungen, Stürmen und Wellen trotzen.



Bulk Cutter nennt sich dieses Gerät mit den gigantischen Fräsen. Quelle: Nautilus Minerals

Die Abbaugeräte sehen nach Science Fiction und schwerem Geschütz aus: Tiefseepanzer mit gigantischen Fräsen und Trichtern sollen die Erze abbauen. Das anvisierte Gebiet sei mit 0,1 Quadratkilometern extrem klein, beteuert Nautilus Minerals, „es gibt keine Auswirkungen auf Fischerei, Riffe oder die Küstenbewohner.“ Für Solwara 1 braucht es wie bei dem japanischen Testabbau ein Schiff, das wie eine Art Ölplattform über dem Abbaugelände schwebt und zu dem Pumpen die Tiefseerze fördern können. Das Pump- und Rohrsystem sei vollständig geschlossen, die Erze würden sich nicht mit dem Wasser vermischen, erklärt die Firma. Außerdem finde der Abbau in mindestens 1300 Metern Tiefe statt, Thunfische oder Wale würden hingegen in Tiefen von 800 Metern und darüber leben.

„Was auf jeden Fall bei einem Abbau passiert, ist, dass man die Lebensgemeinschaften grundlegend stört“, sagt Sven Petersen von GEOMAR, dem Helmholtz-Zentrum für Ozeanforschung in Kiel. Petersen ist Rohstoffgeologe und erforscht die Schwarzen Raucher. „Man geht normalerweise davon aus, dass die Schwarzen Raucher an Gebiete erhöhter vulkanischer Aktivität gebunden sind und die Lebensgemeinschaften angepasst sind, weshalb sie sich relativ schnell regenerieren können. Ein Abbau wird aber dafür sorgen, dass sich die Lebensgemeinschaften anders zusammensetzen. Ob der ursprüngliche Zustand wiederhergestellt werden kann, wissen wir nicht, ist aber eher unwahrscheinlich. Da die abgebauten Gebiete aber relativ klein sind, halte ich das im globalen Maßstab nicht unbedingt für ein Ausschlusskriterium für den Abbau von Massivsulfiden.“

In den betroffenen Küstenregionen regt sich breiter Widerstand gegen das Vorhaben: die Menschen befürchten, dass das Projekt Solwara 1 unter anderem die Fischbestände und marinen Ökosysteme schädigen könnte – gegen diesen „experimentellen“ Tiefseebergbau wehren sie sich, denn die Fischerei und ein intakter Ozean sind Lebensgrundlage vieler Küstenbewohner. „Das geplante Solwa-

ra 1-Projekt befindet sich mitten in unserer Fischfangregion, und die dortigen Meeresströmungen treiben die Schadstoffe direkt an unsere Küsten“, erklärt Jonathan Mesulum von der Alliance of Solwara Warriors, einer Organisation für das Verbot von Tiefseebergbau im Pazifik, auf der Webseite Papua New Guinea Mine Watch.



Um die Schwarzen Raucher gedeihen Ökosysteme in der Tiefsee. Quelle: Bundesanstalt für Geowissenschaften und Rohstoffe

Ähnlich skeptisch äußerte sich Emele Duituturaga, die Generaldirektorin von PIANGO, einem Zusammenschluss von NGOs mehrerer Pazifischer Inselstaaten, auf der diesjährigen Ozeankonferenz der Vereinten Nationen: „Viele Jahre kämpften Vereine kleiner Fischereibetriebe gegen ocean grabbing und die Privatisierung der Fischereiressourcen. Tiefseebergbau ist ein Beispiel für diese wachstumsorientierte Strategie und die umweltschädigende Nutzung von Meeresressourcen. Sie missachtet die Rechte der örtlichen Gemeinden und ihre Existenzgrundlage und befriedigt den Ressourcen hunger von Industrie- und Schwellenländern.“

Die Hoffnung auf neue Arbeitsplätze für die Küstenbewohner von Neuirland hat sich jedenfalls zerschlagen: die Mitarbeiter von Solwara 1 werden hochqualifizierte Fachkräfte wie Forscher und Ingenieure sein, einen breiten Zugang zum Arbeitsmarkt in Papua-Neuguinea gibt es also nicht. „Alle Erfahrungen mit bisherigen Bergbauprojekten an Land sind durchweg negativ“, sagt Jan Pingel vom Ozeanien-Dialog, einem Verein für Anliegen der Zivilgesellschaft pazifischer Inselstaaten. „Die Menschen, denen diese Großprojekte außer Entschädigungszahlungen vor allem Umweltverschmutzung, Krankheiten und Hunger gebracht haben, gehören heute zu den Ärmsten im Inselstaat, obwohl ihnen etwas völlig anderes versprochen wurde.“ Die betroffene Bevölkerung wolle verhindern, dass ihre Inselwelt erneut zum Testgebiet für eine zerstörerische Technologie gemacht werde. Auch die Erfahrungen mit den Atombombenversuchen im Südpazifik hätten die Pazifikbewohner traumatisiert.

Eine Garantie, dass der Tiefseebergbau die Meerestiere und Fischbestände nicht verseucht und die Lebensgrundlage der einheimischen Bevölkerung nicht bedroht, gibt es nicht. „Wir fürchten, dass mit dem Abbau von Massivsulfiden ein umfangreicher Artenverlust in der Tiefsee stattfinden wird, der auch Konsequenzen für die Meeresökosysteme insgesamt haben wird“, sagt Kai Kaschinski von der NGO Fair Oceans in Bremen. Manche Arten in der Tiefsee sind endemisch, das heißt, es gibt sie einzig und allein im unmittelbaren Gebiet. Ein Abbau könnte Arten auslöschen, die noch gar



nicht erforscht sind. „Das größte Problem, was die Biologen gerade haben, ist, dass wir die Zusammenhänge in den Meeresregionen nicht verstehen“, sagt Sven Petersen vom GEOMAR. „Wenn man jetzt einen einzelnen aktiven schwarzen Raucher abbauen würde, wie dient dieses Areal zur Rekrutierung von anderen Arten in anderen Vorkommen? Im Moment verstehen wir zu wenig davon, wie die Netzwerke zwischen Nahrung und den Tieren in der Tiefsee funktionieren.“

Es gibt auch die Befürchtung, dass giftige Schwermetalle, die aufgewirbelt werden, sich über das Plankton in der Nahrungskette konzentrieren könnten. „Die Schwermetallbelastung sehe ich als geringstes Umweltproblem beim Tiefseebergbau an“, sagt hingegen Carsten Rühlemann von der Bundesanstalt für Geowissenschaften und Rohstoffe, die den Meeresboden im Auftrag des Wirtschaftsministeriums nach Rohstoffen absucht. „Es ist ausgeschlossen, dass Stoffe, die in solcher Tiefe entstehen, nach oben gespült werden oder hochtreiben.“ Außerdem seien Schwermetalle nur dann gefährlich, wenn sie nicht in Form von Oxiden gebunden seien, also wenn sie keine Verbindung mit Sauerstoff haben. Doch weil das Wasser am Meeresboden sauerstoffreich sei, würde das Blei sofort in Oxid umgewandelt und sich ablagern.



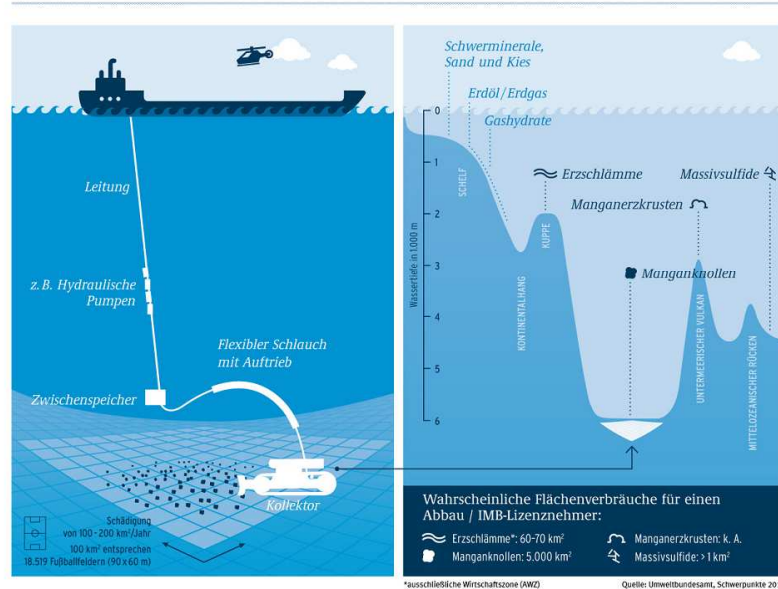
Ein Manganknollenfeld am Meeresboden. Quelle: GEOMAR

Deutsche Tiefseeforscher griffen 1989 in einem Experiment nach harschen Mitteln: sie pflügten ein 11 Quadratkilometer großes Areal am Meeresboden vor Peru um und sahen zu, was passierte - was sie herausfanden, stimmt nicht gerade optimistisch. Das empfindliche Ökosystem, das sich in der Tiefe des Meeres befand, war zu großen Teilen zerstört und sollte sich selbst nach Jahren nicht wieder vollständig erholen. Eine internationale Forschungsmission erkundete 26 Jahre nach dem Experiment den umgepflügten Meeresboden. Nur wenige Organismen hatten sich regeneriert. Auf Manganknollen siedeln sich Schwämme und Weichtiere an. Diese Knollen sind im Gegensatz zum weichen Sedimentboden ein fester Untergrund, auf dem das kaum erforschte Ökosystem der Tiefsee gedeihen kann. Nach dem Umpflügen kamen kaum Meeresbewohner zurück, und Manganknollen entstehen erst nach Millionen von Jahren. Bis sich Lebewesen am Meeresboden nach einem solchen Eingriff wieder ansiedeln, können nach derzeitigem Forschungsstand Jahrzehnte oder gar Jahrhunderte vergehen.

Beim Ausheben von Manganknollen werden zudem Sedimente aufgewirbelt. Was mit den Tiefseebewohnern am Meeresboden passiert, wenn sich diese künstlich erzeugten Sedimentwolken auf ihnen absetzen, ist schwer abzuschätzen. Eine andere Gefahr ist, dass die aufgewirbelten Sedimente und Trümmer sich wie ein wandernder Schleier über den Meeresboden legen. Diese Sedimentfahne kann nach Modellrechnungen mehrere Zehnerkilometer über den Meeresboden driften und so größere Flächen als die eigentlichen Abbaugelände bedecken. „Die Bodenströmungen sind sehr langsam, im Durchschnitt drei Zentimeter pro Sekunde. Diese bewegen sich in eher elliptischen oder kreisförmigen Bahnen. Bis diese Sedimentfahne über größere Strecken weg vom Abbauort trans-

portiert wird, dauert es sehr lange“, sagt Carsten Rühlemann von der BGR. Problematisch an dem Sedimentschleier: er sinkt über den Filterierern ab, also Tiefseebewohnern wie Schwämmen, Korallen und Weichtieren, die auf klares Wasser und nur wenige organische Partikel eingestellt sind. Die Tiere drohen zu ersticken.

## TIEFSEEERGBAU



Manganknollenfelder befinden sich in größeren Tiefen und verteilen sich viel breiter auf dem Meeresboden als Massivsulfide. Quelle: Umweltbundesamt

Rahul Sharma vom indischen National Institute of Oceanography schlägt vor, einen Abbau streifenweise zu betreiben: ein Streifen wird bearbeitet, die benachbarten Meeresbodenstreifen bleiben zu Regenerationszwecken unberührt. Gewissermaßen Dreifelderwirtschaft in der Tiefsee. Ob dieses Verfahren das Problem mit dem Sedimentschleier löst, ist allerdings fraglich.

„Das Gebiet und seine Ressourcen sind das gemeinsame Erbe der Menschheit.“

Wem das Meer gehört, regelt im weitesten Sinne das UN-Seerechtsübereinkommen von 1994. Dort heißt es in Artikel 136: „Das Gebiet und seine Ressourcen sind das gemeinsame Erbe der Menschheit.“ Mit dem „Gebiet“ wird der Bereich des Ozeans bezeichnet, der nicht mehr einzelnen Staaten gehört. Die sogenannten Hoheitsgewässer eines Staates erstrecken sich rund 22 Kilometer (12 Seemeilen) von der Küste in die See, bis dahin gelten die nationalen Gesetze. In den weiteren 22 Kilometern vor der Küste, der sogenannten Anschlusszone, hat der Staat Kontrollbefugnisse. Danach eröffnet sich die ausschließliche Wirtschaftszone (AWZ), diese reicht bis zu 200 Seemeilen vom Festland ins Meer: dort kann der Staat natürliche Ressourcen ausbeuten, also fischen oder eben auch Bergbau betreiben.

Doch wer haftet dafür, wenn in der AWZ vor Papua-Neuguinea etwas schiefgeht und der Meeresboden samt Fischbeständen verseucht werden? Auch angrenzende Inselstaaten sind auf die Fischerei angewiesen. Der Internationale Seegerichtshof mit Sitz in Hamburg hat dafür im Februar 2011 ein Rechtsgutachten vorgelegt. Die elf Richter der Meeresbodenkammer betonten darin, dass die Staaten dafür sorgen müssen, den Abbau sicher und gesetzeskonform zu gestalten. Ist Papua-Neuguinea bereit, ein solch riskantes Unternehmen zu tragen und die Verantwortung dafür zu übernehmen? Ein Rückblick auf das Verhältnis zwischen der Regierung und dem Rohstoffunternehmen zeigt: es hat gekriselt. Papua-Neuguinea wollte die vereinbarte Firmenbeteiligung von 30 Prozent zunächst nicht wahrnehmen. Die Finanzierung von Solwara 1 stand auf der Kippe und das Projekt wurde auf Eis gelegt. Das Unternehmen schaltete ein Schiedsgericht ein, das 2014 zu Gunsten von

Nautilus Minerals entschied - die Regierung musste 15 Prozent der Anteile im Wert von sieben Millionen US-Dollar übernehmen. Sie hat eine Option auf weitere 15 Prozent, die sie aber bisher nicht wahrgenommen hat. Schätzungen zufolge soll der Abbau und der Transport von Erzen über Solwara 1 mindestens 380 Millionen US-Dollar kosten, während der tägliche Betrieb des Projekts 260.000 Dollar verschlingt. Wenn die Tiefseebewohner vor Papua-Neuguinea Glück haben, werden vorerst noch keine Panzer über ihre Kolonien pflügen. Eine Aktie von Nautilus Minerals ist derzeit weniger als ein Dollar wert.

Quelle: <https://www.facebook.com/notes/zeit-wissen/im-goldrausch-der-tiefe/10155853145680238/>

### **Key meetings to determine timeline for rebuilding Bougainville's Panguna copper mine**

Kevin McQuillan, Business Advantage, 8 Nov 2017



The abandoned Panguna copper mine. Credit: Sydney Morning Herald

Two key events before year's end are likely to decide the timeline for the rebuilding of the Panguna copper mine on Bougainville Island. The Chairman of Bougainville Copper Limited, Rob Burns, tells *Business Advantage PNG* two board appointments are part of the company's strategic development. The appointment of Bougainvillean and mining specialist, Mel Togolo, and OK Tedi Mining's Managing Director, Peter Graham, to the board of Bougainville Copper Ltd (BCL) last month reflects the company's desire for more Bougainville representation, and the need for strategic management expertise, according to BCL Chair, Rob Burns. 'We've been talking to the Autonomous Bougainville Government (ABG) and are keen to get Bougainville representation—so first and foremost that was our number one priority,' Burns tells *Business Advantage PNG*. 'We'd like to make more appointments and get greater representation from the Bougainville side. 'We also wanted to bolster our project development capabilities. 'Peter Graham's knowledge of project development and project management is second to none in PNG.'

#### **Lease extension**

Two key events this month and next will determine the timeline for rebuilding the mine, which is estimated to cost US\$4–6 billion, and could take up to 10 years. The first is a third round of mediation talks on 23–24 November aimed at settling a dispute over the chairmanship of one of the nine landowner associations in the project area: the Special Mining Lease Osikaiyang Landowners Association (SMLOLA). A dissident landowner, Philip Miriori is at the centre of the dispute, along with his cousin Lawrence Daveona. They both lay claim to the chairmanship. The second event is wardens' hearings on 11–12 December about the five-year renewal of the mining exploration lease, which is currently held by BCL. Under the *Bougainville Mining Act 2015*, the ABG needs to hold wardens' hearings as part of the process for a five-year renewal of the lease. The wardens' recom-

mendation then goes to the Minister. ‘I’m optimistic it will be renewed. The landowners have agreed because they want a better life and see this as the way forward.’

### **Mediation**

Burns expects there will be fresh elections for the executive positions of the SMLOLA after this month’s mediation talks. Miriori’s group opposes the involvement of BCL in the rebuilding and operation of the Panguna mine. The group is backed by a small Perth-based company, RTG Mining. ‘Things are progressing but not as quickly as we would like, and not as quickly as the Bougainville people would like, with the court mediation process to settle the landowner dispute still to run its course,’ says Burns. ‘We want to get on with it, but we are respectful of the need to get landowner and community understanding of what the operation will look like and get their input into how it’s designed and what features it will have. ‘BCL has project knowledge and the intellectual property.’

‘If we get all that right to start with it’s going to make it a far more efficient and effective development process. We believe we’ve got good support. ‘We don’t want some individuals and other consortia continuing to thwart us so we’ll entertain anything. But there’s a thing called trust in all this and until they demonstrate they can be trusted you can’t have a relationship—a sustainable one.’ Burns is sceptical about the role of RTG Mining (which has not yet responded to Business Advantage PNG’s requests for an interview). ‘They’ve got their story and they’ve made representation to Philip Miriori and a presentation to the ABG. ‘That’s been rejected by the ABG, so I believe this is part of their business plan—to eke their way into the redevelopment of the Panguna mine.’

### **Intellectual property**

Burns says he believes BCL are ‘the rightful developers and have the community support to carry the development of the project.’ He argues that BCL has project knowledge and owns the intellectual property, which includes the geological database, where the ore is located and where the waste is. ‘If another party comes in, they’d have to commence a massive drilling program to ascertain basic details.’

### **Costings**

Once the landowner dispute is settled and the lease is determined, Burns says BCL will work on getting more accurate assessments of capital requirements and operating costs. BCL has US\$50 million in liquid assets to do the social, technical, environmental and regulatory studies needed to prove the viability of the mine. That would lead to a full feasibility study, which might cost US\$150 million. ‘There are people approaching us all the time about getting involved and how we might undertake that financing for the feasibility study, and for the major construction and rebuild that would follow. ‘We have a clean sheet of paper and that’s why I’m leaning on people like Peter Graham to assist us with strategic thinking.’

### **South Africa: Alarm at seabed destruction from SA phosphate mining**

*If you imagine fish as birds of the ocean, they fly through forests and over fields which grow in the rich soil of the continental shelf. Just as on land, it’s Earth teeming with roots and creatures that form the base of the sea’s food web and upon which its health depends. Around South Africa’s coasts, that could soon change writes DON PINNOCK.*

Don Pinnock, First Thing, 7 November 2017

The Department of Mineral Resources has granted three prospecting rights over vast areas of the sea floor that could signal the start of a mining process to grind up the seabed to extract phosphate. The resulting sediment would be dumped back into the water column as liquid “dust”, posing a threat to ocean ecosystems, fish and fisheries. What it would do to the seabed is almost unimaginable. The licences cover 150,000km<sup>2</sup> within South Africa’s western and southern Exclusive Eco-

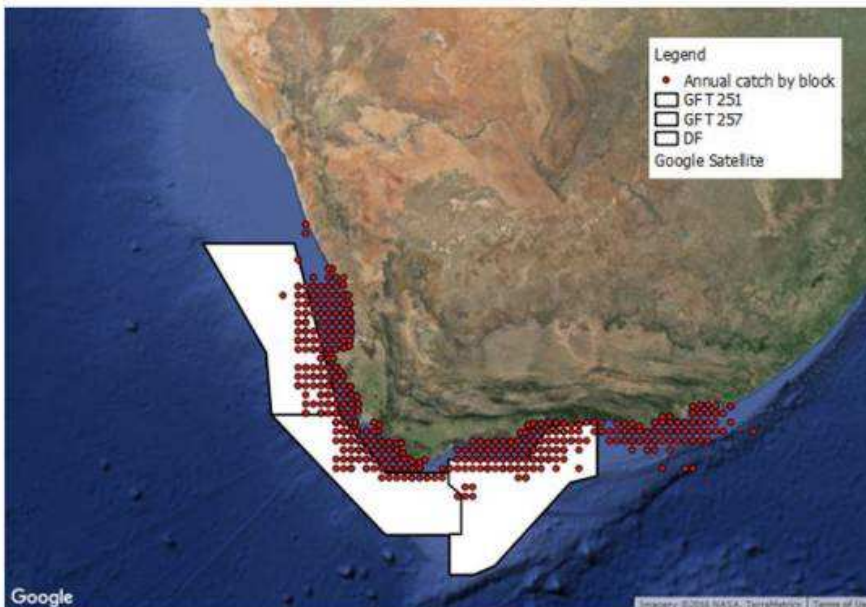


nomic Zone and were awarded to Green Flash Trading 251, Green Flash Trading 257 and Diamond Fields International.



A map shows the three marine prospecting rights on the sea floor..

Studies commissioned by the Safeguard our Seabed Coalition (SOSC), an alliance of non-governmental organisations, has warned that marine phosphate mining “would have severe and irreversible impacts on marine ecosystems and fishery resources and associated jobs, livelihood and food security benefits sustained by our fishing industry”.



The proposed fishing and mining areas

Bulk marine sediment mining uses a suction hopper dredge which gouges the sediment to a depth of three metres. It’s dredge head, which is about 11 metres wide with cutting teeth and high-pressure water jets, is dragged across the sea floor, crushing hard sediment and sucking it – and everything else in the way – up a tube. Once the phosphate has been filtered out, all excess water and fine particulate is flushed back into the sea, creating a sediment plume. Mining would take place on the continental shelf in what is known as the benthic zone, the area just above and below the seabed. Apart from anchoring aquatic plants, it’s home to sea stars, barnacles, mussels, anemones, urchins, snails, crustaceans, molluscs, worms, ground fish and other organisms that make their home on or in the sea floor, at depths where light still penetrates. Much of the food supply is in the form of “marine snow”, small particles of decaying organic matter that slowly descend through the water

column and accumulate on the ocean bed. According to Saul Roux, a legal campaigner at the Centre for Environmental Rights (CER), the impact of mining will include:

- Destruction of seabed ecosystems which are the building blocks of marine ecosystems;
- The release of hazardous substances such as radioactive materials, methane, hydrogen sulphide and heavy metals locked in the seabed;
- Destruction of spawning, breeding and feeding habitats for fish species, many of which are commercially important;
- Reduced light penetration and therefore photosynthesis of marine plants;
- Burial and smothering of marine organisms in the mining block and surrounding areas; and
- Habitat destruction and ecosystem changes in mined areas which could be permanent, as recovery would take centuries. The CER has flagged serious gaps in South Africa's legal, governance and institutional frameworks able to manage such bulk marine sediment mining. This would mean, says Roux, that the phosphate mining operations would be "unregulated and not subject to state monitoring or enforcement of its compliance with licences and environmental laws". This would facilitate severe and irreversible damage to marine environments and fisheries. Only 0.4% of South Africa's Exclusive Economic Zone lies within marine protected areas (MPAs). The government, through Operation Phakisa, has committed to safeguard at least 5% of this zone in a network of 22 offshore MPAs. These have not yet been established and, says Roux, would not be big enough to protect biodiversity from resource exploitation, especially along the West Coast. Even if MPAs are declared, there is considerable doubt about the government's ability to police them. The Tsitsikamma MPAs was rezoned for fishing in 2016 and in Table Bay fishing has been taking place in the Paulsberg MPA. Marine mining technologies worldwide have caused massive environmental disasters, both through human error or equipment failure. The *Deepwater Horizon* spill in the Gulf of Mexico and the *Exon Valdez* spill off Canada are among many many examples. Although a prospecting right doesn't grant a legal entitlement to mine, it provides an expectation that mining will be allowed. The phosphate licensing follows a number of other indications that the government plans to develop a bulk seabed mining industry.

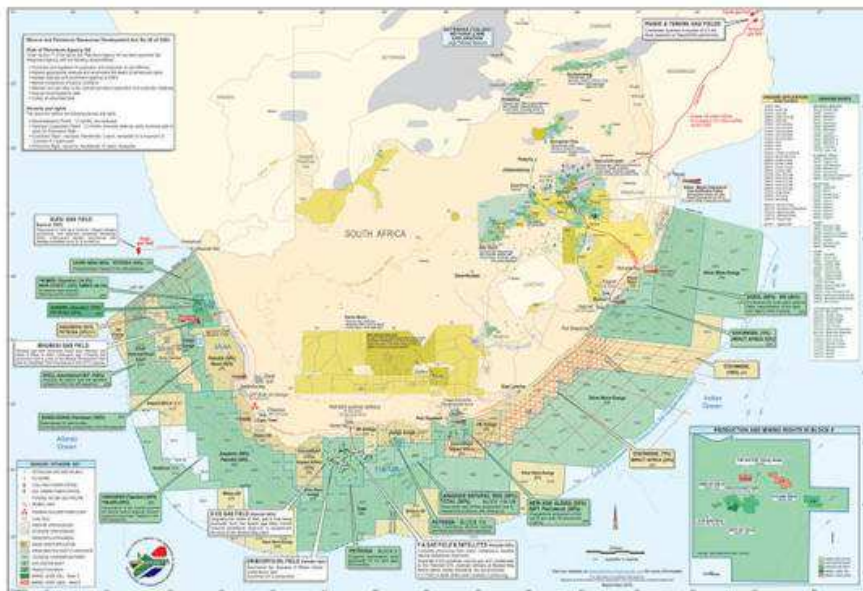


Photo: The bigger picture – offshore oil and gas activities as at 2016. Source: Petroleum Agency SA

In 2015 the Departments of International Relations & Co-operation as well as Mineral Resources announced the development of a Seabed Mining Roadmap aimed at developing this industry. Its media releases allude to the latter's intentions to develop seabed mining in South Africa's EEZ.

CER has pointed out that South Africa's EEZ is already under considerable threat from marine petroleum extraction, with 98% already granted for exploration and production. It has called for appropriate governance frameworks for offshore oil/gas exploration and production as well as for seismic activities. In response to the Seabed Mining Roadmap, The Safeguard our Seabed coalition has called for a moratorium on bulk marine sediment mining until a strategic environmental assessment has been done and a network of marine protected areas declared.

A report commissioned by the SOSC highlights the fact that there is no need to undertake marine phosphate mining as there are more socio-economically and environmentally friendly ways to obtain it sustainably. These include the recovery of phosphates from human and animal waste and a more efficient application of phosphate fertiliser to soils. Despite the environmental and economic risks and after almost three years of advocacy, government has not responded to calls by the SOSC for an environmental assessment of marine phosphate mining. Neither has it taken any steps towards establishing a moratorium pending a strategic inquiry into this highly destructive process. This seems to indicate a determination to forge ahead at all costs.

*Illustrative photo: Maddie Dimaggio/(Unsplash).*

### **Mining works continue in Fiji**

Luke Rawalai, The Fiji Times, November 07, 2017



XINFA Aurum Exploration Fiji Ltd is continuing with mining at the Naibulu bauxite mine site. Ministry of Lands and Mineral Resources permanent secretary Malakai Finau said mining was progressing well. Mr Finau said the company was trying to stockpile as much as it could during the dry weather. "Only one shipment has left Bua shores for the Chinese market so far this year," he said. "We were all anticipating for the first shipment. "The first shipment which left the country in March this year earned Fiji \$2.8 million in revenue. "The shipment to the Chinese market weighed 58,709.60 tonnes." This brings total earnings to about \$52.2m since mining started at Nawailevu in Bua in 2010. In 2015, this newspaper reported that the company had exported 1.2 million tonnes of bauxite worth \$48m from the shores of Bua in the Northern Division.

In July last year, the company said they were expecting to export 70,000 tonnes of bauxite valued at \$4m by mid-August, however, in September it was announced that a shipment of 69,000 tonnes valued at \$1.4m had been exported. Company director Derek Qiu earlier said they could not export more bauxite because of a drop in global market price. He said the quality of bauxite was another contributing factor to the slow export process. Director Mineral Development Dr Raijeli Taga earli-



er said the challenging bauxite market, coupled with issues surrounding the ore's quality, affected bauxite export. Despite this situation, Dr Taga said XINFA Aurum Exploration Fiji Ltd would continue with its mining operation to stockpile for later export when the commodity price improves.

### **Will Papua New Guinea allow another mine to dump toxic tailings in the sea?**

*Harmony Gold and Newcrest investigating marine waste dumping for Wafi-Golpu*

Mining Review, 7 November 2017



Landowners have previously opposed marine waste dumping in Papua New Guinea

The Wafi-Golpu Joint Venture parties continued to progress activity in line with the forward work plan previously communicated, including engagement with the PNG Government on the application for a Special Mining Lease (SML) for the Wafi-Golpu project. The current study work is focused on assessing internally-generated power options, developing deep-sea tailings placement options to compare with terrestrial tailings storage options, and reassessing block cave levels and increased mining rates due to increased knowledge obtained from further drilling undertaken during the year. The Joint Venture parties are targeting a complete update of the feasibility study by the end of the March 2018 quarter. The focus of this work is to further optimise the business case and confirm any amendments necessary to the supporting documents for the SML application. Timing of first production is dependent on the updated study outcomes and the granting of the SML.

### **Pari villagers still waiting for oil-spill report – six months later**

November 7, 2017, The National National

THE National Maritime Safety Authority (NMSA) is waiting for government agencies for a report on the oil spill at Pari village near Port Moresby in April, says manager Pawa Limu. Limu was speaking to The National following concerns from the villagers who were waiting for a response or report regarding the spill on April 25, which was caused by a leak at the subsea hose connected to the pipeline that fed the Kanudi terminal facility. The oil spill had spread to the village. “We (NMSA) had a meeting with Puma Energy and government agencies on May 3 and we agreed on carrying out an independent investigation into the oil spill to identify its cause, effects, possible costs and compensation involved,” Limu said. He said that to date he was still waiting for those government agencies – the Department of Labour, Conservation and Environment Protection Authority, PNG Ports Corporation, besides Puma Energy, to get back to him.

“At NMSA, we do not issue licences, we only respond to clean-ups when there is an oil spill or so and those government agencies were the ones to issue licences and permits to conduct independent investigations into such incidents,” Limu said. He said NMSA had asked those departments to give them credible or any consultants that were independent to do the investigation on behalf of the



agencies. “I am just waiting for them to give me any consultant who can do as per the licence conditions to conduct and coordinate the investigation and as per the meeting we agreed that Puma Energy was supposed to fund that independent investigation.” Limu said because there was no one to coordinate the investigation process, NMSA had to take up the role. “The Department of Environment and Conservation guys have been locked out of their office for the last two months at the bmobile building. “Their files and everything have been locked out as well. They are now operating from their homes and it is really hard for me to follow up with them.”

### **PNG to get first floating LNG plant**

PostCourier, November 6, 2017

PNG will have its first floating liquefied natural gas plant to be established in the Gulf Province following the official signing of a memorandum between the facility builders and engineers. They have been tasked to finalize a conceptual design by the end of the year based on project risk reduction execution. They are Chinese based Winson Offshore and Marine and KBR who will collaborate to design the facility for state-owned Kumul Petroleum Holdings Limited. The facility will be a 1.5 MPTA floating LNG (FLNG) liquefaction unit which will be a first in the country. It will be the second one to the current US\$19billion LNG project in PNG if it comes off the ground. In August 2017, KBR announced it was awarded a contract by Kumul Petroleum Holdings Limited for the conceptual development and feasibility study services for an energy hub in the Kikori region of the Gulf Province of PNG.

CEO of Wison Offshore & Marine Ying Cui said: “We’re looking forward to a fruitful cooperation between Wison and KBR.” “We’re confident the combination of both parties’ strengths will create the best value for our clients by providing them with more cost-effective and quality solutions to lower the overall investment of FLNG project,” he said. KBR president, Asia Pacific, Greg Conlon, said: “KBR is very pleased to be associated with Wison Offshore & Marine in developing a significant nation-building project for Papua New Guinea and looks forward to further strengthening our relationship with Wison.” Kumul Petroleum managing director, Wapu Sonk commented that he was pleased to see a PNG dedicated alliance between one of the world’s largest and specialised FLNG engineering companies KBR, with the world’s leading FLNG construction company Wison Offshore and Marine.

“With the conceptual studies for the Kumul LNG project planned for completion by the end of the year, the seamless and integrated relationship between engineer and constructor is paramount in reducing the project execution risk. “Should the business case for the project prove to be viable and in the interest of the people of PNG. This alliance between KBR and Wison will give Kumul Petroleum an experienced and capable development option,” Mr Sonk said. Wison has proven track record in delivery of the world’s first barge-based FLNG. In September 2016, Wison successfully completed its performance test at the Wison yard in Nantong, China. This marked for the first time in history LNG had been produced on-board a floating facility. It was also be the world’s first gas trial for a floating liquefaction unit before sail-out.

### **New Zealand: Locals to join in man’s 400km walk against seabed mining**

Tara Shaskey, Taranaki Daily News, November 3, 2017

A hīkoi along the New Plymouth coastline to raise awareness of seabed mining will go ahead whatever the weather on Saturday. The walk will begin in Bell Block and finish at the Wind Wand, Kiwis Against Seabed Mining (KASM) member Chris Wilkes said. The event aimed to continue the organisation's momentum with raising public awareness of KASM's high court appeal on the Envi-

ronmental Protection Authority's (EPA) decision to allow Trans Tasman Resources to mine iron sand off the Taranaki coast. In total, seven groups are appealing the decision which included South Taranaki iwi Ngāti Ruanui, Fisheries Inshore New Zealand Ltd Conservation, Forest and Bird, iwi Ngāa Rauru, Greenpeace and Te Ōhu Kaimoana, the Māori Fisheries Trust. Wilkes said the walk was also in support of fellow KASM member Athol Steward's personal hīkoi, Walk the Walk Together for our Ocean. The Whanganui doctor embarked on a 400-kilometre coastal walk on October 28 to raise funds and awareness for KASM's appeal.



Athol Steward and other KASM members protest seabed mining.

"We want to show a bit of solidarity there and allow him as much of a platform to say what he wants to say," Wilkes said, "He's obviously passionate about ocean protection and we want to tau-toko his efforts." Steward has averaged 30km a day and his walk, which began in Raglan, is scheduled to finish on November 12 in Whanganui. "He's been walking the beaches and farmland, it's pretty amazing really," Wilkes said. "He's very passionate and just sick of not being able to do anything. I think we all feel a bit helpless." A free bus will leave Puke Ariki's bus stop in New Plymouth at 12.30pm and head to Bell Block beach ready for a 1pm start. Wilkes expected anywhere between 50 and 100 people would take part in the event.

"Rain or shine it's going to go ahead."

### **Nautilus seeks funding**

November 3, 2017, The National Business

NAUTILUS Minerals, the operator of Solwara 1 project, hopes to secure \$US10 million (K31.41 million) by the end of this month to fund its operations and develop the project. It said in September that based on its cash position and budget, in order to maintain the company's operations and the development of the Solwara 1 project, the company needed to obtain new funding of around US\$41 million (K128.81 million) before the end of the year. In particular, it had needed at least US\$15 million (K47.12 mil) before the end of last month to meet contractual commitments in relation to equipment forming part of the seafloor production system. Yesterday, Nautilus said discussions were continuing with various parties involved in the manufacture of the seafloor production system.

It is making progress with respect to deferring some of its immediate cash flow requirements. As a result, the firm is updating its previous reference to a funding requirement of US\$15 million by Oct 31, to a funding requirement of US\$10 million (K31.41 mil) by Nov 30. "There can be no assurances that the company will be successful in securing the necessary additional financing transactions within the required time," he said. "Failure to secure funding may result in the company engaging specialist advisers and taking certain steps aimed at maximising shareholder value such as undertak-

ing various transactions including, without limitation, asset sales, joint ventures and capital restructurings.”

### **Ok Tedi innovation a world first**

November 2, 2017, The National National

A land reclamation and rehabilitation programme by Ok Tedi Mining Ltd and its Bige operations in Western using innovation that is classed as a world first has impressed Mining Minister Johnson Tuke and a government delegation. Tuke was on his final leg of a three-day tour of Ok Tedi Mining Ltd (OTML) operations last week. Tuke and Harry Kore, the Mineral Policy and Geo-Hazards Management secretary were taken on a tour of the operations at Bige. OTML deputy chief executive Musje Werror said it was the first time that a government minister had visited Bige. Bige covers a vast area downriver consisting of reclaimed and rehabilitated land located roughly an hour's flying time from Tabubil by helicopter. It is at an intersection where debris and silt from Strickland and Ok Tedi rivers wash into.

Western is mainly swampland and the Bige operation has managed to transform a once landless area into one that has great potential for community settlement and, especially, agriculture and reforestation programmes, giving riverbank communities more land to use. According to Werror, Dredeco dredged about 50 hectares of silt at a cost of US\$56.7 million this year. He said the operation involved 341 people ranging from caterers to engineers and community relations staff to coordinate revolutionary soil-management techniques and flora and fauna recovery regimes to give life to a once dying river system.

### **Ok Tedi mine paid K147mil to State: Tuke**

November 1, 2017, The National Business

THE OK Tedi Mining Limited paid a dividend of US\$47 million (K147.55 million) to the government last year. The information was revealed during a visit to the mine in Western last week by Mining Minister Johnson Tuke. Since it began operations in 1984, OK Tedi had extracted 4.65 million tonnes of copper, 30.2 million ounces of silver and 14.3 million ounces of gold. OK Tedi was the first mine visited by Tuke as it was 100 per cent PNG-owned. It encompasses operations from Mt Fubilan to Tabubil town and weaving down the OK Tedi River tributary to the Bige dredging and land reclamation and regeneration operations. It reaches Kiunga where cargoes are loaded onto ships for international markets.

Last year, the mining company contributed 3.3 per cent to the national Gross Domestic Product and an after tax profit of US\$121 million (K338 million). The company also maintained ongoing economic commitment towards environmental outcomes through its environmental programmes by spending US\$54 million (K184 million). The workforce structure comprises 97 per cent Papua New Guineans and three per cent were expatriate employees. Other sites and businesses visited by the ministerial team included the Yuk Creek mini hydro plant, the mine and mill, Tabubil Hospital, Bige OTML operations, Kiunga OTML operations, Cassowary Hotel, OK Tedi Development Foundaiton office and its Eaglewood programme.

## Pacific Islanders call for Australia not to fund Adani coalmine

*Caritas says thousands face threats to their wellbeing, livelihoods and 'their very existence' due to rising sea levels, Naaman Zhou, The Guardian, 31 October 2017*



The village of Eita in Kiribati in 2015. Residents of endangered Pacific islands want the Australian government to stop funding Adani's Carmichael coalmine. *Photograph: Jonas Gratzner/LightRocket via Getty Images*

Pacific Islanders whose homes face eradication by rising sea levels have called on Australia to not fund the Adani Carmichael coalmine, as a new report reveals the worsening impact of climate change across Oceania. Residents of the endangered islands have described their forced displacement as like “having your heart ripped out of your chest” as they called on the Australian government to do more to combat climate change. A report released by international aid group Caritas on Wednesday found that thousands of Pacific people across the region faced “threats to their wellbeing, livelihoods and, in some places, their very existence” due to rising sea levels, king tides and natural disasters brought about by climate change. In Papua New Guinea, 2,000 households across 35 coastal communities were displaced by coastal erosion over the past year. In Samoa, 60% of the village of Solosolo was relocated to higher ground.

In the Torres Strait, 15 island communities were identified as at risk over the next 50 years. The mayor of the Torres Strait Island regional council, Fred Gela, described the forcible removals as like having your heart ripped out “because you are told you're not able to live on your land”. Erietera Aram, a resident of Kiribati who works for the Department of Fisheries, said he decided to visit Australia to ask its government to take action. “We talk about the Adani coalmine,” he said. “That's a new one. I think it's not a good idea – it makes the world worse for all of us. It is inconsiderate of other humans on this planet. “We didn't think of Australia as a country that would do that. We looked at it as our bigger brother. Proceeding with that new mine is a sad move. We live together in the environment but it's like they are ignoring us.

“We're two metres above sea level. With the sea level rise, most of our lands have been taken by coastal erosion. We love our country and we want our children to live there as well, hopefully forever. It's hard to talk about leaving the place where you belong.” According to the report's authors, the impact of coastal erosion and flooding reached “severe” levels in 2016, upgraded from “high” the year before. Climate change also made it “increasingly difficult to maintain the health and integrity” of food and water sources. Water scarcity was deemed a “serious slow-onset problem throughout Oceania”. In terms of natural disasters, a month's worth of rain fell in 24 hours in New Caledonia in November 2016, killing nine people, while flash flooding in Fiji after Cyclone Winston forced 3,000 people into evacuation centres in December 2016.



In Fiji, the report found that certain types of fish were becoming poisonous, potentially as a result of farming contamination or seabed mining operations. “Earlier this year four people died in the island of Gau from fish poisoning,” said Leo Nainoka from the country’s social empowerment education program. Global sea levels are expected to rise 30cm by 2050 compared with a 20cm average rise over the 100 years before 2000. But in certain areas of the tropical western Pacific, sea level rise has been four times the global average due to El Nino and associated weather effects. “Australia needs to make a stronger contribution to fight climate change and its impacts,” the report says. “To reach our emissions reductions targets, Australian policies need to rule out any major new fossil fuel projects or the expansion of existing ones, as this would be inherently incompatible with meeting our global climate commitments.”

### **Japan’s Strength in Resource Diplomacy Lies in Its Ocean Floor**

Katsutoshi Takagi (staff writer of the Sankei Shimbun)

Diplomacy & Security, October 19, 2017, Katsutoshi Takagi



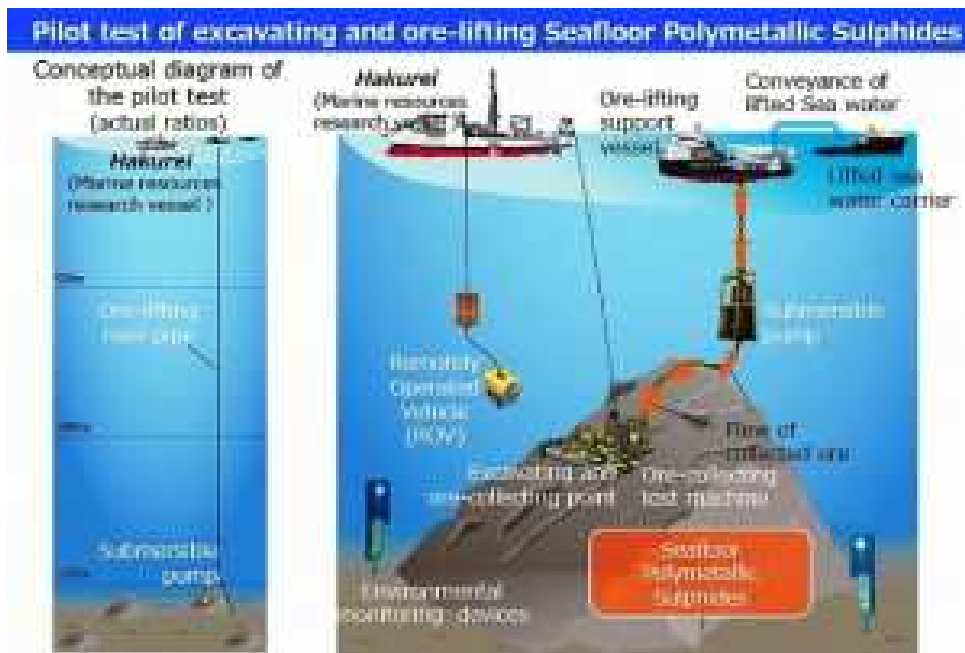
Does your heart race when you hear adventures about seeking gold and silver at the bottom of the sea? Such stories might soon become reality. The Ministry of Economy, Trade and Industry (METI) and the Japan Oil, Gas and Metals National Corporation (JOGMEC) announced in September that their experiment to stably draw mineral ores from the ocean floor was a record-breaking success. They plan for the mineral ores to become commercialized in the latter half of 2018.



As a country surrounded by sea, and with one of the largest exclusive economic zones (EEZ) in the world, Japan is seeing a dream come true in the development of domestic resources. If commercialization is realized, Japan will no longer have to be complaisant in resources diplomacy. But how do we know that this won't be a short-lived dream?

### Series of Excavation

The experiment in question involved successively drawing up large amounts of mineral ores from hydrothermal mineral deposits. These are formed when water heated by magma erupts from the ocean floor, and the metal in the seawater cools and solidifies. These mineral ores contain large amounts of rare metals, such as gold, copper, and zinc—an essential ingredient for galvanized iron used for bicycles, for example. The experiment was conducted by JOGMEC from mid-August until the end of September in Okinawan waters. An excavator was lowered 1,600 meters into the water, which was then used to break the mineral ores into 3-cm pieces. The pieces were then drawn up using a submersible pump.



The challenge was drawing up the seawater containing the heavy mineral ores without clogging the pump. In the experiment, excavations were carried out 16 times, once every 10 minutes. A total of 16.4 tons were drawn up. It is thought that the mineral ores contain 7–8% of mineral resources. Until now, there were no means of drawing up mineral ores from the hydrothermal mineral deposits. The only option was to use a submarine to excavate mineral ores, and only tentatively. The trail-blazing achievement of successive excavation of mineral ores from the ocean is the culmination of the advanced extraction technology developed by Japanese companies. The excavator and pump were designed by Mitsubishi Heavy Industries. It also involved impressive ship handling skills, which were necessary to keep the ship still despite the ocean current.



Producing large pumps and low cost excavators are paramount when it comes to commercialization, but Japan's technology is a cut above the rest.

### Deposits in Nine Locations

In order to determine the feasibility of commercialization in 2018, METI will be conducting investigations in other parts of the ocean to determine the amount of resources available, among other data. Hydrothermal mineral deposits have been found in eight other locations aside from Okinawan waters, such as the sea near the Bonin Islands.



It is said that there are 7.4 million tons of mineral resources in Izena Caldera, located on the sea floor approximately 110 kilometers deep, northwest of Okinawa Island. That amount of resources is equal to the domestic annual consumption. Japan's EEZ is the sixth largest in the world. In addition to hydrothermal mineral deposits, it is said that essential marine resources lie in deeper seas. For example, cobalt-rich crusts are clusters of rocks that contain large amounts of rare metals, such as cobalt, nickel, and platinum. Manganese nodules are round rocks that also contain rare metals. These are also expected to contain rare-earth elements, which are ingredients used in the magnets of high-performance motors. Mud-containing rare earth has also been discovered around Minami-Torishima Island, located at the easternmost tip of Japan, approximately 1800 kilometers from Honshu.

Quelle: <https://japan-forward.com/japans-strength-in-resource-diplomacy-lies-in-its-ocean-floor/>



Hiroshige Sekō, the Minister of Economy, Trade and Industry, said in a press conference: “We expect the presence of mineral ores in the ocean around Japan, of an amount that is greater than the domestic annual consumption. Based on the success of the experiment, we aim to start the development of domestic natural resources in order to lead the country in securing a stable supply of mineral resources.”

### **Hurdles to Overcome**

However, massive hurdles must first be overcome before marine resources on the ocean floor can be successfully exploited. The first hurdle is the sheer depth involved. Even the shallower hydrothermal mineral deposits are located 700 to 2,000 meters under water. Manganese nodules and rare earth sediments are located at a depth of 4,000 to 6,000 meters, and the cobalt-rich crusts are located at the bottom of deep ocean, 800 to 5,500 meters deep. The excavators are indispensable for the hydrothermal mineral deposits, but an even more sophisticated level of pressure-resistance and sealability will be imperative.

Furthermore, the beneficiation process, which separates impurities from the useful mineral ores, will be different for mineral ores found on land and mineral ores found in the sea. A beneficiation process that is suitable for mineral ores in the sea must be developed. Another issue is that most domestic mines have closed down, along with the beneficiation facilities. “If we compare our situation to hiking, it’s like we finally got all our equipment together and are now standing at the base of the mountain,” Sekō said. Even if the exploitation of marine resources can be actualized, it won’t be happening for the next few decades. However, merely having domestic resources gives Japan a powerful negotiation advantage in what a member of the press calls the “fast-pace race of resource diplomacy.”

In September 2010, a patrol vessel of the Japan Coast Guard collided with a Chinese fishing trawler off the coast of Senkaku Islands (Ishigaki, Okinawa). When the Japan Coast Guard detained the captain of the fishing trawler, tensions rose between China and Japan, and the Chinese government blocked exports of rare-earth elements to Japan. Although Japan was aiming to develop motors that didn’t need rare-earth elements at the time, having domestic resources can empower Japan to confront China more assertively.



“I feel like we have overcome the first hurdle,” said the executive of METI, his countenance showing relief. The executive director of JOGMEC, Takafumi Tsujimoto, gives his stamp of approval on the “turning point of the development of marine resources.” Japan is not a country without its resources. The light of the country’s hope shines in the darkness of the deep ocean.



## Japan successfully undertakes large-scale deep-sea mineral extraction

The Japan Times, Kyodo, Sep 26, 2017



A mining machine is put into water off the coast of Okinawa Tuesday to extract minerals from a deep-water seabed. AGENCY FOR NATURAL RESOURCES AND ENERGY. VIA KYODO

Japan has successfully tapped into a deposit of mineral resources from a deep-water seabed off the coast of Okinawa, the economy ministry said Tuesday, the largest such extraction of its type. It is the first time metals have been mined from the seabed in such quantities using ship-based extraction technology, according to the Economy, Trade and Industry Ministry and Japan Oil, Gas and Metals National Corp. The effort was undertaken after a series of recent discoveries of ore deposits off the coast of Okinawa, according to the ministry. From mid-August through late this month, JOGMEC deployed excavators to access the ore deposit at a depth of about 1,600 meters, sucking mineral ore up to the sea surface. The ministry believes the mined deposit includes an amount of zinc equivalent to Japan's annual consumption. The ore deposit also includes gold, copper and lead.

Six ore deposits have been found in the past three years in waters around the island prefecture, all within Japan's exclusive economic zone. The ministry expects more ore deposits to be found in the area and is planning to commercialize mining at the sites around the middle of 2020 following an economic evaluation scheduled for fiscal 2018, which starts next April. Japan relies heavily on mineral imports. After establishing a highly efficient means of extraction, the country "could possibly become a resource-producing nation if abundant quantities of deposits were confirmed," the ministry said. The deposits, known as hydrothermal minerals, are formed when material-laden water leaches out of rock in the Earth's crust before being heated by magma and expelled out of the sea floor.