

Lihir and International Law

Lihir and International Law	1
Lihir.....	1
Environmental investigations	2
Submarine Tailings Disposal	3
London Convention	3
South Pacific Treaties and Conventions	5
Consultants.....	5
Role of Export Credit agencies	5
OPIC.....	6
Lihir Islander Statements	7

Lihir

The Lihir gold mine is in Papua New Guinea. On an island north of New Ireland the mine is 700 km northeast of Port Moresby. Rio Tinto owns the mine¹.

The Lihir mine is one of the world's largest gold resources. Production started at the mine in 1997. Construction was started a year and a half before this.

****sat pic of the island <caption: Lihir island. The mine is partially obscured by cloud but is visible from 822 km above the earth. The mine pit extends below the surface of the sea. (SPOT satellite image, MPI/NEWG)****

The mine is expected to operate for 37 years producing 20 million ounces of gold².

¹ Major Shareholders are:

Name of Substantial Shareholder	Relevant interest	Percentage
Orogen Minerals Limited (and each of its related bodies corporate)	103,604,624	9.07
Newmont Canada Ltd	111,317,231	9.74
Battle Mountain Gold Company	111,317,231	9.74
Niugini Mining Limited	161,527,405	-
Rio Tinto plc	185,758,126	16.26
Rio Tinto International Holdings Limited	185,758,126	16.26
Rio Tinto Overseas Holdings Limited	185,758,126	16.26
Rio Tinto Lihir Holdings Limited	185,758,126	16.26
Rio Tinto Metals Limited	185,758,126	16.26
Rio Tinto European Holdings Limited	185,758,126	16.26
Each of Rio Tinto plc's subsidiaries other than Rio Tinto International Holdings Limited, Rio Tinto Overseas Holdings Limited, Rio Tinto Lihir Holdings Limited, Rio Tinto Metals Limited and Rio Tinto European Holdings Limited.	185,758,126	16.26
Mineral Resources Lihir Limited	77,169,431	6.76
ANZ Capel Court Limited	95,080,815	10.09

The percentages represent adjustments made by the Company to reflect the issued share capital of the Company at 1 March 2001 excluding the Lihir Gold Limited shares held by Niugini Mining Limited which is a wholly owned subsidiary of the Company. Niugini Mining Limited is shown as zero in the percentage column reflecting the wholly owned subsidiary relationship.

Source: Lihir Annual Report 2000

During the life of the mine it will dump 89 million tonnes of cyanide contaminated tailings and 330 million tonnes of waste rock into the ocean, in an area described by ecological studies as one of the richest areas of marine biodiversity on earth³.

There has been community opposition to the mine since the start of operations. Many people believe that this is likely to increase and that there has been insufficient attention to social impacts⁴. An environmental assessment plan by Kennecott Explorations says “male alcohol abuse has already become much more prevalent since exploration activities began with the attendant problems of neglect of gardens and physical abuse of wives⁵.”

Rio Tinto the owners of Lihir are the world's third largest mining company. It is listed on the UK and Australian stock exchanges and has significant operations in the USA and Canada as well as operating in Africa, Latin America, Europe and Asia/Pacific.

****Aerial photo of the mine (J Bennett)****

Environmental investigations

The mine disposes of its waste in two ways. Waste produced after extracting gold from rock (tailings) is piped into the sea. Waste is also produced as the mine has to dig through rock which does not contain much gold (the overburden). This rock is taken by barge and dumped into the sea.

The waste that is pumped into the sea and the waste that is dumped by barge contains copper, arsenic, cadmium, lead, chromium and mercury.

The tailings are piped into the ocean and discharged 125m under the surface.

The overburden is barged and dumped into the sea by Lihir close to the mine site. This waste dumping area is Louise Harbour.

Rock containing a low amount of gold is also stockpiled in the harbour for later processing.

****sat pic of the dumping sites <caption: The impact of the barge dumping operation can be clearly seen in this satellite picture. Around the centre of the barge dumping area is a large area of muddy water. A jet of muddy water from this area can be seen extending to the smaller islands in the north.> (SPOT satellite image, MPI/NEWG)****

² Department of Industry, Science and Technology, 1995, *Lihir Gold Project: Facts Sheet*, DISR, Canberra Australia.

³ Chatterton, Paul, 1996, *RTZ dumps on Lihir*, Mining Monitor, 1(1), 1 February, available at www.mpi.org.au/mm

⁴ Filer, Colin, 1992, '*Lihir Project Social Impact Mitigation, Issue and Approaches*', Report to the Dept of Environment & Conservation prepared by Colin Filer, Department of Anthropology & Sociology, University of PNG.

⁵ Pratap Chatterjee, 1996, *Environment-South Pacific: Gold mining plans at volcano denounced*, Project Underground, Berkeley, Cal, USA, 10 April.

****aerial photo from footage of the extent of the muddy water <caption: the barge dumping has an immediate and obvious impact on the ocean. When the waste is dumped into the water a proportion of it spreads across the surface of the water - the brown water in this picture. The impact visibly extends for at least four km. (J Bennett) ****

****photo of the barge <caption: Barge dumping will shift 276 million tonnes of rock into the ocean.[EP p93] It is expected that most of the mine waste will pile up on the sea floor - this will smother seabed life. (J Bennett)****

Submarine Tailings Disposal

Waste from the processing of rock and metal ore at Lihir is piped into the sea and discharged at a depth of 125 m. This waste contains metals and cyanide. In particular the waste in contains 4850 µg/l copper and 1220 µg/l free cyanide. [EP p100] In PNG the standard for these toxic chemicals in seawater is 30µg/l and 10µg/l respectively.

This is justified by the mining company's consultants by allowing an area of approximately 2.3 km in a semicircular radius around the outfall in which the PNG government standards will be exceeded.

When the waste is discharged it is expected to form an upper plume containing mostly dissolved metals and a lower plume with more solid waste.

fig. Ktsault mine's submarine tailing disposal*

Both the Submarine Tailings Disposal and the barge dumping will increase the concentration of "*chemical contaminants in the water column*". [EP p105]

"Chemical effects are expected to arise directly from the presence of filterable chemical contaminants in the tailing plumes, in the subsurface plumes from waste rock dumping and in the tailing and waste rock deposits on the ocean floor (long-term contaminant uptake)" [EP p105]

The waste dumped onto the bottom of the ocean floor will smother marine organisms living on the ocean floor. These organisms are assumed to be the principle food source for fish living at depth.

"Metal-contaminated macroinvertebrates are likely to then form a principal food component in the diet of bottom-dwelling fish, and these fish are also likely to show increased metal uptake via the gut and directly across the gills. Cumulative metals, such as cadmium, lead, mercury and arsenic, may be transferred to higher predatory fish by the processes of biomagnification". [EP p106]

The Lihir Environment plan then claims that no-one fishes at depth on Lihir – a claim which is directly contradicted by islanders (see *Lihir Islander Statements*).

London Convention

The London Convention bans the dumping of waste from ships. Its intention is to stop the pollution of the sea by waste. It is an international convention which obliges the countries that have signed it to stop allowing the dumping of industrial waste by barges or ships into the sea. Countries that have signed the London Convention include Australia, the USA, the UK, and Papua New Guinea.

The London Convention aim is to:

"... prevent the pollution of the sea by dumping of waste and other matter that is liable to create hazards to human health, to harm living resources and marine life.." [LC Article 1]

The convention stopped the dumping of industrial waste from ships from January 1 1996:

"the dumping of industrial wastes shall cease by December 31, 1995" and Industrial wastes are "waste materials generated by manufacturing or process operations" [LC Annex IX]

The barge dumping operation at Lihir breaks these sections of the London Convention. Before the mine started its operation it was known that the barge dumping would put toxic chemicals into the ocean.

"Waste rock comprises both barren and mineralised soil and rock. Most of the waste rock is mineralised to some extent but the mineralised portion is neither economically nor technologically recoverable" [EP p21]

"Some of the fine material would form a turbid surface plume, particularly during dumping of soft waste" [EP p26]

and

"...even the soft waste will fall rapidly through the water column. However, during dumping, the turbulence created by material sliding from the barge into the sea and by the release of entrained air will cause a portion of the fine material to form a surface plume of turbid water." [EP p94]

It was also known that the metals would be dissolved into the surface water:

"The principle results of the testwork program were that both these soft waste types were naturally acid and both release filterable metals when mixed with seawater" [EP p97]

In addition the metals will also dissolve as they sink to the bottom of the ocean:

"Each time a barge load of acid producing hard waste rock or soft waste is dumped a column shaped halo of acidic water and filterable metals is expected to form around the descending solids." [EP p97]

Metals in the waste dumped by Lihir include mercury and cadmium [OPIC p4]

The dumping of waste by Lihir barges into the sea breaks the London Convention.

South Pacific Treaties and Conventions

Waigani Convention

Papua New Guinea and Australia are parties to the Waigani Convention which was adopted at Waigani in Papua New Guinea on the 18th September 1995.

Each party “*which is a Party to the London Convention or the Protocol for the Prevention of Pollution of the South Pacific Region by Dumping, 1986, reaffirms the commitments under those instruments which require it to prohibit dumping of hazardous wastes and radioactive wastes at sea;*” [Waigani Article 4 (3) a]

The convention preamble also notes the concern “*about the growing threat to human health and the environment posed by the increasing generation of hazardous wastes and the disposal of such wastes by environmentally unsound methods*”

Other Pacific Treaties

Other South Pacific Treaties which recognise and state the dangers posed to the marine environment by dumping include; the Protocol For The Prevention Of Pollution Of The South Pacific Region By Dumping (Noumea 25 November 1986) and; Convention For The Protection Of The Natural Resources And Environment Of The South Pacific Region (Noumea 24 November 1986).

Consultants

The original environmental plan for Lihir it was produced by NSR Environmental Consultants of Australia.

As a result of conditions imposed when the Australian export credit agency EFIC provided political risk insurance for the mine were here is required to conduct independent environmental reports on its compliance.

Dames and Moore conduct these reports. The 1999 report found that “*Lihir mine operations are in substantial compliance with the environmental plan and that overall impacts of the mine are low compared to other comparable projects*”⁶

Role of Export Credit agencies

The U.S. Government export credit agency, called the Overseas Private Investment Corporation (OPIC), refused to provide political risk insurance to the Lihir project, on

⁶ Lihir, *Letter to Andrew West Sun Herald*, Lihir Management Company Limited, Port Moresby, PNG, 10/3/2000

environmental grounds. It stated *“it could not support the project based upon initial concerns about U.S. environmental policy regarding ocean discharge of wastes”*⁷.

Australia’s export credit agency, Export Finance and Insurance Corporation (EFIC), however, provided Lihir with political risk insurance of \$US250 million.

When EFIC provided political risk insurance to the Lihir mining project in PNG there were a number of conditions recommended under which the agreement was to be made. EFIC should *“so far as is practicable, use its involvement in the project to achieve the environmental conditions listed in the attachment to this letter”*⁸.

These conditions include:

“an independent programme to monitor the impacts of the project on the Lihirians (sic) over the period of EFIC's risk insurance.”

“Marine communities are monitored before and during operations to ensure that they are not adversely affected by the dumping of waste rocks in the harbour of tailings dispersal in the ocean”

“Further scientific research into the ecology and behaviour of the megapode that species is undertaken and appropriate and adequate programmes to ensure the continuity of a stable megapode that population established”

The Lihir mine relinquished the insurance in late 2000. EFIC stated in its letter 19/7/01 that it would not provide details of Lihir’s monitoring which had been sent to it by the company as *“a result of the confidentiality obligations”* it had entered into when it insured the mine.⁹ Consequently it is not possible to verify whether the company has fulfilled the conditions imposed on it.

Other backers of the project include the Union Bank of Switzerland who provided the loan, and the Multilateral Investment Guarantee agency (MIGA) that provided 76.6 million dollars of political risk insurance. MIGA sent a social and environmental mission to Papua New Guinea and receives monthly monitoring reports and an annual environment audit. Its conclusions of this study were that *“the environmental impacts of this project are balanced by the development benefits that are brought to the local community, the province and to the country”*¹⁰.

OPIC

Concerns about Lihir and its contravention of international conventions and US environmental law led the Overseas Private Investment Corporation (OPIC), the United States Government's Export Credit Bank to decide not to support the project.

⁷ OPIC, 1997, *Overseas Private Investment Corporation Environmental Summary of Lihir Gold Project, Papua New Guinea*, Washington D.C., 19 August.

⁸ Faulkner, *Senator John Faulkner letter to Senator Peter Cook*, Sen. Faulkner, Australian Parliament Canberra, 14 June 1995

⁹ Michael Jackson, *Letter to the Mineral Policy Institute*, EFIC, by email Thu 19/07/2001 5:23 PM

¹⁰ Motomichi Ikawa, 1998, *PNG – Lihir Mine*, The World Bank, Correspondence to Andrea Durbin, Friends of the Earth, Washington, D.C., 1 December.

OPIC said that it is required to assess the environmental impact of projects. After an initial assessment OPIC concluded it "*could not be assured that it could support the project based upon initial concerns about US environmental policy regarding ocean discharge of wastes.*" [OPIC 1997, p2]

OPIC is prohibited under US legislation from providing support to any project that "*will pose a major or unreasonable environmental, health or safety hazard.*" [OPIC 1997, p2-3]

It says it did not make a final determination about Lihir and whether its impacts contravened US policy and law including its international treaty obligations. The initial concerns were enough to stop the investigation and stop OPIC from offering financial support to the Lihir mine.

Lihir Islander Statements

Interview with Father Clement Taulam, Lihir Catholic Church, 5/12/00

Speaking publicly for the first time because of sense of responsibility for damage to island and society. The church owned the land and allowed prospecting and the mine to go ahead. Father Taulam was priest on the island twenty years before the mine and came back two years ago when the mine was operating. Says people are scared of their own water resource now. Says the mine causes massive social upheaval.

Father Taulam: "As a young priest I was here twenty years ago, and at the time we used to go out there with the kids to work the plantations, and the bay used to be a real good one. We had good place spots for fishing over there, to wash and everything. I was surprised when I came here twenty years after with all this development going on....."

"With regard to the dumping of toxic waste into the salt water and also the ground they are dumping into the bay."

Regarding Fish Kill

"Some months ago, in August [2000] I believe, there was a leakage in the pipe and some fish were dead and drifted ashore to the island. I was in town at the time and the island people came and talked about it. The people who were responsible didn't speak very much, in fact I was the one who went around the island and told people not to use the sea for a while until we hear further.

The week after, when I was going around and doing my patrols, people were asking "Is it safe now to use the sea?" and I kept telling them "I really don't know - we have to wait". That incident itself gave me the impression that there were things going on that were not good especially for the lives of the people.

Regarding Impacts and Fishing

“I do a lot of fishing here, I do bottom fishing, and often when I have caught fish people have refused to eat it because they are afraid of what may happen, especially with the toxic waste being dumped into the sea.

“I mean it’s about 150 metres down below - I’ve got strings that go down to about 300 metres to catch fish. But I do fishing mainly on this side of the island - I’m very careful when I go past the mine that I don’t do any fishing over there.

I’ve heard people saying “Why don’t they do something better than what they have now? Because it’s causing us this fear that things may go wrong”

Regarding Australian Responsibility

“Certainly we are going to lose a good bay. As I said earlier, it was a good harbour, a lot of fish in that harbour.

“The natural beauty of the place should be preserved. I know, in that bay, here only it’s one of the places that the leatherback turtle comes to lay its eggs, and now it doesn’t happen anymore. And I know too, because of the volcano, the wild fowl used to live there before and people used to sell those eggs, but it doesn’t happen any more now. So those things are gone - destroyed. I think Australians who know more about mining and seeing and hearing about things happening - they have the responsibility of saying something about it.

“And if they can do something which is better, and can help especially the environment and the people here, it would be very much appreciated.”

End of Father Taulam Interview

Other Footnotes:

EP = NSR, *Lihir Project Final Environmental Plan, Volume B: Main Report*, NSR Environmental Consultants Pty Ltd, Hawthorn, Australia, April 1992

OPIC = OPIC, *Letter to Andrea Durbin, Friends of the Earth*, Overseas Private Investment Corporation, New York, USA, 18 August, 1997

LC = London Convention, *Convention On The Prevention Of Marine Pollution By Dumping Of Wastes And Other Matter*, London UK1972

Waigani = Waigani Convention, *Convention To Ban The Importation Into Forum Island Countries Of Hazardous And Radioactive Wastes And To Control The Transboundary Movement And Management Of Hazardous Wastes Within The South Pacific Region*, Waigani, Papua New Guinea, 16 September 1995