

The Future of the Indonesian Mining Industry: Recommendations to Policy Makers

Indra Pradana SINGAWINATA
Ritsumeikan Asia Pacific University

Abstract

This paper discusses the condition of Indonesian mining industry for past seven years, during which mining issue has again become a major issue in the country. By providing a brief analysis based on the fieldwork founding (primary data) and secondary data both from the pro- and anti-mining perspective, the final part of this paper provides some conclusions and recommendations regarding the issue. The paper mounts an argument against those who proposed that the government close down all mining projects in Indonesia, as the cost that would be faced by Indonesia would be higher than the benefit. This author believes that Indonesia should be thinking rationally and trying to minimize the problems in good faith. Indonesia should respect the agreements that it has signed with external parties to show a full commitment and maintain international trust. The problems caused by some mining activities should be addressed on a case-by-case basis and generalizations from one case to others should be avoided.

Keywords: Mining industry, foreign investment, national development, policy, environmental NGOs, Transnational Corporations (TNCs)

Introduction

Since the 1997 Asian monetary crisis that also caused major chaos in Indonesia's economy and business sector, the mining sector has remained a consistent and significant contributor to Indonesia's domestic income. According to PricewaterhouseCoopers (2004), mining's contribution to the GDP had been at a constant average of 3.5 percent during the period between 1999 and 2003. This percentage merely accounts for the cash contribution, and surely underestimates the fact that mining may have created multiplier effects for local area development, including improvement in local social welfare. Social welfare includes not only personal wealth accumulation in the local community, but also social wealth generated through the construction of social infrastructure such as roads, telecommunications, water supply and electricity. The presence of local vendors, shops, markets and other forms of commercial activity further confirms the development impact of mining activities (LPEM-UI 2005). If one is to identify the most significant benefit of having mining activities in the local area, most likely it would be employment and business opportunities. PricewaterhouseCoopers (2004) foresees the future expansion of employment opportunities stemming from expansion of giant mining corporations'

operations to cover wider area.

The main issue that becomes the focus of this paper is the fact that despite the long list of benefits that accrue to the local community, the mining sector has never been free from attack by various parties which claim that mining brings adverse impact to the environment. Some even see mining as draining local economic potential. As was previously mentioned, mining is an important sector in Indonesia, and thus the controversy over its impact has been a major issue. It is important that a neutral stance is taken to address the problem objectively: mining is indeed inseparable from political conflicts of interest that may distort the arguments presented by either pro or contra parties. This author hypothesizes that the appropriate solution is neither the closure of mining activities nor maintenance of the status quo; rather, it involves mitigation of potential risks. A repetition of Soekarno's major expropriation of foreign assets under the 1960 nationalization program is indeed an unfavorable scenario (Singawinata, 2005). This paper attempt to address this issue through a balanced perspective, taking into account the multi-dimensional benefits and adverse impacts of mining, and to incorporate the changes in policy and regulatory environment into the analysis, hence allowing a thorough examination of the governance response to both parties' claims and enabling formulation of recommendations for policy makers.

Potential of the Indonesian Mining Sector

According to the PricewaterhouseCoopers report and the paper published by the Institute for Economic and Social Research – University of Indonesia (LPEM-UI 2005), the actual average profitability of the Indonesian mining industry compares well with competitor countries. The Return on Shareholder's Funds (ROSF) of all mines was 18.5% in 2003, and the average for last ten years is around 13.2%, while the ROSF for thirty world high class mining companies is 10.5% in 2003 (PricewaterhouseCoopers, 2004). One example is the comparison between the ROSF in Indonesia and Australia as shown in the following table 1.

Table 1 ROSF Rate Comparison between Indonesia and Australia

	1998	1999	2000	2001	2002	2003
Indonesia	13.1%	13.3%	8.1%	11.1%	15.6%	18.5%
Australia	3.7%	4.0%	13.9%	12.9%	7.9%	7.4%

Source: PricewaterhouseCoopers (2004).

The above table shows that in terms of ROSF, despite the monetary crisis period since 1998, Indonesia still has a high profitability and even compares to a developed country like Australia. In the years 1998 and 1999, Indonesia's ROSF is about 3 times higher than Australia's, while in 2002 and 2003 it is on average about 2 times that of Australia's rate. Only in the years 2000 and 2001 are Indonesia's ROSF rates less than Australia's, and even then the difference is not significant. This data indicates that even during the crisis period, Indonesia can still be seen as an attractive and high-potential destination for mining investment, providing competitive advantages over other destinations. Ironically, however, in the 7 years since 2000, the mining industry has suffered owing to several complex problems that will be explained in the next part of this paper.

Indonesia is a source of a number of different mineral products, but its main production in the last twenty to thirty years has been in coal, copper, tin, gold and nickel. These five minerals have been providing a significant contribution to the country's income for a long period, as can be identified from the following mineral production table.

Table 2 Indonesian Main Minerals Production

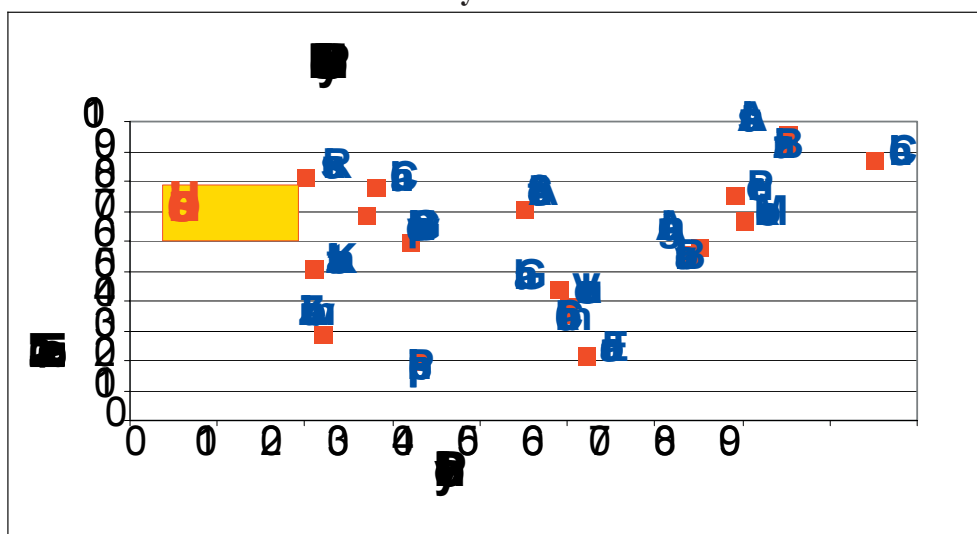
		1998	1999	2000	2001	2002	2003
Coal	'000 t	61,931	73,777	77,040	92,540	103,372	114,491
Copper	M lb	1,427	1,690	2,157	2,258	2,497	2,165
Gold	'000 t	3,641	3,929	3,802	4,856	4,326	4,389
Nickel	M lb	96	120	141	161	151	174
Tin	'000 t	54	50	47	54	67	65

Source: PricewaterhouseCoopers (2004).

The above table shows rather stable figures for all minerals except coal. Coal has been experiencing consistent growth in production from 1998 to 2003, while the other minerals have not experienced significant growth since the fiscal year 2000. Gold may be another exception, with a rather significant increase from 2000 to 2001; however, the figure went down to 4,326 in 2002 and rose only slightly to 4,389 in 2003. Japan is still the main consumer of coal and nickel products, followed by some other countries including the US, Australia and Taiwan (Hidayat 2005). The fluctuation in the mining products is heavily dependent on market demand, the producers' business capacities (capital, technology, etc) and, most importantly, government policies and regulations on exploration and exploitation procedures (Samosir 2005). Some experts mention that productivity can still be maximized in a highly regulated environment, however legal constraints mean that idle capacity is still quite high (Samosir 2005).

Regarding mineral potential (deposits), Indonesia's position is still relatively high in the world as we can see at the figure below:

Figure 1: Mineral Potential and Policy Potential Index



Source: LPEM-UI (2005).

The Policy Potential Index is a composite index that measures effects on exploration of government policies including taxation, environment regulations, duplication and administration of regulations, native land claims, protected areas, infrastructure, labor and socio-economic agreement as well as political stability (Wahju 2002).

The Mineral Potential Index rates a region's attractiveness based on the company's perceptions of geology by assuming no land use restrictions and any mine would operate to industry "best practice" standard (Wahju 2002).

It can be observed from the above table that Indonesia is still amongst the countries with the highest mineral potential. However, policy potential is considerably low, indicating the lack of support in the development policy of the nation. If the two indicators are to be weighed together, Indonesia is far less attractive than countries like Brazil, Australia, Chile, Peru, Mexico, Argentina and Bolivia. This is indeed contradictory to the fact that Indonesia's mining sector has been a significant contributor to economic growth and has also been a consistent growth sector compared to other sectors that are prone to industrial downfalls, as will be discussed later.

The Mining Industry's Contribution to National Development

In terms of capital inflows for national economic development and workforce absorption, the mining industry's contribution to the Indonesian economy and national development is highly significant. Even during the crisis from the middle of 1997 until 2003, this industry could still make constantly positive contributions to the economy, as can be summarized in the following tables:

Table 3 Contribution to Indonesian Economy

Rp – Billions	1998	1999	2000	2001	2002	2003
Employee Compensation (excl. Expatriates)	545	846	1,080	1,074	1,489	2,475
Purchases from Domestic Suppliers	3,253	3,688	4,790	4,304	6,627	7,153
Government Revenue	6,588	6,798	6,863	8,569	8,587	9,306
Dividends paid to Indonesian shareholders	203	298	647	338	411	329
Interest paid to Indonesian Companies/Banks	875	294	259	264	473	281
Total Contribution	11,463	11,924	13,641	14,549	17,586	19,545

Source: PricewaterhouseCoopers (2004).

Mining has also made significant contributions to other economic sectors, which is further illustrated in the above table. Employee compensation and purchases from domestic suppliers provide important injections into the local economy, which if followed by a multiplier effect, can create a significant impact on the local economy. Mining's contribution to both these important sectors has grown consistently in the years from 1998 to 2003. Dividends and interest fluctuate more compared to employment compensation and purchases from domestic suppliers: this can be explained by the changes in capital structure and company policies on dividend distribution and re-investments. In total, the contribution of mining to the Indonesian economy has shown consistent growth from 1998 to 2003. This consistent growth proves that the mining

industry is one of the sectors in the country that could still survive even during the crisis. This is in contrast to some industries, especially the finance and banking sectors, which placed a heavy burden on government expenditure due to the government's bank restructuring program pursued under the Indonesia Bank Restructuring Agency (IBRA) from 1998 to 2003. Moreover, this restructuring program has led to mass unemployment on a new scale, owing to the liquidation of 16 commercial banks (Samosir 2005). It might be said that while some sectors were making capital losses and creating unemployment, the mining sector was still creating capital inflows and consistent growth which could maintain its labor force absorption.

Table 4 Expenditure in the Public Interest

Rp – Billions	1998	1999	2000	2001	2002	2003
Employee Training	113	119	135	108	100	164
Regional & Community Development	238	211	270	279	464	604
Charitable Donations & Contributions to Not-For-Profit Foundations	41	44	80	40	68	59
US - Millions						
Research & Development	1,330	1,336	749	252	236	1,046
Expenditure on Reclamation, Mine Closure & Environment Control	99,688	62,426	87,950	74,766	79,763	83,607
Net Increase in Accumulated Provision/ Reserve for Reclamation & Mine Closure	9,863	21,503	12,260	21,240	17,971	44,592

Source: PricewaterhouseCoopers (2004).

Mining companies have also been spending significant amounts toward developmental activities that are positively contributing to the public interests. Regional and community development has seen a sharp increase from 238 billion Rp in 1998 to 604 in 2003. Employee training and charitable donation fluctuates around 110 and 50 respectively. Spending on research and development has seen another sharp increase after a significant downtrend in 2000 to 2002. Environmental conservation is also a major concern for companies, as shown from the consistent expenditure on reclamation, mine closure and environment control. The accumulation in reserves for reclamation and mine closure has increased significantly from less than \$10,000 million in 1998 to more than \$40,000 million in 2003. This increase is linear with the number of mining area closures due to end of production periods stipulated by contracts (10 – 30 years). One point that should be underlined regarding the above data is that the community development program is in the form of a grant (excluded from taxes and other obligations) from the companies as expression of their goodwill and desire to provide tangible and direct benefits to the local community. The community development program is highly managed by both companies and the local people, with a very limited degree of government involvement (Hidayat, 2005). By enabling intensive and direct interaction between companies and the locals, the community development program is an effective way to support local development and welfare based on locals' demands and aspirations (Samosir 2005).

Table 5 Direct Employment

	1998	1999	2000	2001	2002	2003
Indonesian Employees	33,215	36,887	32,189	32,909	33,102	33,112
Expatriates Employees	716	990	598	532	501	447
Total Direct Employees	33,931	37,877	32,787	33,441	33,603	33,559
Representing % of Employees	97.9%	97.4%	98.2%	98.4%	98.5%	98.7%

Source: PricewaterhouseCoopers (2004).

In terms of employment, the figure remains consistent around 33,000, in which the number of expatriates varies greatly in reflection of the short term nature of the appointments. This figure indicates that employee lay offs are insignificant or nonexistent. The number of Indonesian employees is far greater than the number of expatriates, and Indonesian employees are appointed based on long term contracts. One important factor that has enabled the mining sector to maintain a relatively stable number of employees (even during the first year of the crisis) is the fact that the industry is engaged mostly in long term investment projects (10 – 30 years). Another crucial factor is that mining is a labor intensive industry which requires employment of a mass of people. This means that every new exploration or project creates new job opportunities on a large scale. Expert experience shows that one medium mining project might absorb at least 200 people (Samosir 2005). In light of these facts, it is undeniable that mining sector is making a very significant positive impact in terms of employment.

The Problems: Dramatic Decrease in Investment in the Mining Industry

The mining industry suffered a setback during the period 2000–2003 owing to a combination of declining metal prices and uncertainty surrounding the effects of regional autonomy (PricewaterhouseCoopers 2004; Purnomo 2005). These uncertainties continued until 2005, affecting the level of new investments in the industry to a degree. Minister Purnomo Yusgiantoro states a number of uncertainties including regional autonomy, new mining legislation, and most crucially, the forestry law enacted under Law Number 41/1999 that has banned 22 mining companies' operations so far (Purnomo 2005).

Investment in exploration and new mines has been very low for several years now. This investment activity will not return to previous levels until certainty over long term investment conditions is completely restored (PricewaterhouseCoopers 2003). The decline in new mining investments is evident from the following table:

Table 6 Investment Fluctuation

US - Millions	1998	1999	2000	2001	2002	2003
Expenditures on New Area Exploration	27	18	11	7	7	7
Exploration & Feasibility	69	60	56	31	12	22
Development	192	367	191	73	107	31
Fixed Assets	1,879	963	657	167	237	326
Total Investment	2,168	1,408	915	278	363	386

Source: PricewaterhouseCoopers (2004).

Total investment decreases significantly from \$2,168 to \$386 million, largely due to the decrease in fixed assets as a result of decreasing expenditure on exploration. This may be a result of the non-conducive investment climate and the unsupportive policy environment, because mineral potential in Indonesia is still very high (see appendix 1). Furthermore, in 2002, exploration companies rated Indonesia poorly as a place to develop mines, despite good mineral prospects and potential (PricewaterhouseCoopers 2003). This is a very crucial issue for the mining industry's continuity. It is important to note that this industry very much depends on the exploration, discovery and development of new areas. Exploration takes at least ten years before a decision can be made regarding whether or not the area has potential. Therefore, laws and regulations are needed to guarantee that mining processes and activities can continue in the long term (PricewaterhouseCoopers 2004).

In addition, many business practitioners believe that disruptions to the mining industry do not only affect this industry, but can also disturb the foreign investment climate as a whole. The case of Nike in 2002 (Kompas, August 20th 2002), Sony in 2003 (The Jakarta Post, March 26th 2003) and Reebok in 2004 (Tempo, March 18th 2004), which left more than 11,000 citizens jobless, are clear examples that should be taken seriously by the Indonesian government and all policy makers.

The Anti-Mining Perspective and Proposals

It is also undeniable that some serious problems have occurred as a result of mining activities. In order to conduct a balanced analysis, interviews, position papers, research papers, and other report documents from environmental NGOs have been reviewed to identify several serious problems caused by the mining activities in the regions, as follows (Walhi 2003; Sangaji 2002):

- a. Environmental damage. Extractive industries are not sustainable because they are highly dependent on the exploitation of non-renewable resources. The damage outweighs the benefits to the people, and in the end mining leads to classical environment destruction patterns such as land (topsoil) pollution, the loss of forests, water pollution and air pollution. These problems always occur, and have the effect of systematically eradicating the local people's traditional livelihood (see appendix 2). Appendix 1 also shows some evidence which indicates that the tailings in some big mining project areas have made a very dangerous impact by creating a high concentration of cyanide in the rivers as a result of the gold extraction process in processing plants.
- b. The neo-colonialism process by Transnational Corporations (TNCs). Economic globalization has made third world countries the sources of raw materials to be supplied to developed countries. In case of Indonesia, TNCs owned around 90% shares in total mining projects (see appendix 3). This suggests that Indonesia actually receives only 10% of the total profits from this sector. This issue is the main factor that triggered the plan to review and cancel all the existing contracts in order to increase the rate of royalties, taxes and other retributions.
- c. Human rights violations towards the local people. Exploitation has occurred on a massive scale and most of the time has involved violence, conducted by the state and security personnel from corporations. The company Freeport has been facing a very serious problem in regards with the human rights issue in West Papua (Leith

2003). The “colonization” of local people through the collaboration of the company as a profit seeker, the central government as a ruler who has political power to form policies and regulations and the military forces as a “sheriff” is very obvious in many of the mining areas (Walhi 2003).

- d. TNCs are only looking for high profits for themselves without paying any attention to the local people’s interests. The sector is dominated by only a few large TNCs, some whom have bigger revenues than the country itself. TNCs are devastating the lives of millions of people while at the same time maximizing their profits. Tax and fiscal contributions from the industry can never justify the environmental, poverty and human rights damage. Furthermore the industry only contributes 3.5% of Indonesian Gross Domestic Product.
- e. The ignorance and elimination of local traditional customs by TNCs. In many cases, the presence of TNCs has a very negative impact on traditional local values and customs. Many of the local people have lost their traditional lands through pressure and intimidation by the TNCs in collaboration with government apparatus (Walhi 2003).
- f. Settlement of land disputes by the armed forces (army and police). It is common knowledge that in order to facilitate exploitation, TNCs maintain close relationships with the power elites in the countries where they operate. Cases like Freeport in Timika, Inco in Soroako, Newmont in Sumbawa and KPC in Sangatta are the examples of how the elites of the country are providing significant support in terms of licensing, regulation and security (Walhi 2003).

With regard to these problems, the anti-mining people propose several measures. Environmental NGOs are strongly lobbying the government of Indonesia to take the following measures (Walhi 2003; Sangaji 2002):

- a. A moratorium on new mining operations in Indonesia and a comprehensive review of the government’s policy on extractive industries, including the amendment of Law Number 11/1967 as the main cause of national environmental damage.
- b. An independent inspection team to evaluate all mining operations in Indonesia, especially regarding their environmental, social and human rights records.
- c. Clean-up, rehabilitation and restoration of mine sites.
- d. A renegotiation of all mining contracts already signed by the government and foreign investors, involving all stakeholders with the principle of transparency and fairness.

The Impact of Regional Autonomy on the Mining Industry

Ever since regional autonomy was implemented in January 2001 through Law Number 22/1999 and Law Number 25/1999, Indonesia has entered a new era in which certain powers have shifted from the central government to regional administration. Both laws give regions greater independence to manage their respective economies, natural resources and political institutions (Kompas 1999). One of the areas which has been transferred to the regions is power and responsibility over mining affairs. As with several other areas of responsibility under Law No. 22/1999, the powers and responsibilities for mining were transferred to the regions without adequate mechanisms in place, such as skilled human resources and government officials and educated and experienced

community leaders in mining and related fiscal affairs (Brojonegoro & Asanuma 2003). Similarly, members of the private sector do not possess the adequate knowledge and skills to work with their “new” partners in the regional autonomy framework. Finally, Law No. 22/1999 does not adequately provide the resolution of conflicts between citizens, regional governments and the private sector, among regional governments themselves, or between the central and regional governments.

In reality, since regional autonomy has been implemented for almost six years, several problems have been faced by the central government (Jakarta), private sector (local and foreign businesses) and foreign investors (PricewaterhouseCoopers 2003). Reports in the Indonesian media (TV, newspaper, radio, etc) since this new system was instituted show that conflict between local grass roots communities and the companies (especially foreign private companies) have occurred in almost every region in Indonesia. Furthermore one of the favorite targets is mining companies, especially the giant multinational mining companies. Anti-mining company mass demonstrations, blockades of the mining companies’ operational areas, violence, etc are daily news in Indonesia recently. No party appears able to provide a simple and effective formula to solve the problem, because everyone wants to preserve their own interest.

Abdurahman Wahid (Gus Dur), Indonesian President from 1999 to 2001, has said that the new system has triggered some of problems because it has not been set up with proper regard to the rapid political changes after the stepdown of Soeharto in May 1998 (reformasi movement 1998), and thus there are still many inappropriate rules in place (www.gusdur.net, August 14th 2002). One of the significant weaknesses of this law is that there are no clear and strict rule regarding the division of authority, responsibility and job description between the central government, provincial government and district government, kabupaten and municipality (Delivery Project Report 2002). Therefore in many cases, in the name of regional autonomy, most of the local governments seem to want from total freedom from Jakarta to make their own regulations in the area (Kompas 1999). President Megawati is one person who has expressed a strong intention to revise the regional autonomy system (Kompas, December 1st 2003). However, she faces many Governors and Bupatis / Mayors strongly against any revision. Moreover, the establishment of new provinces or kabupaten in some cases has added more problems to business activities, especially for the mining sector.

In an interview, Roy Pakpahan of the Regional Council of Indonesian Legal Aid and Human Rights Association or *Perhimpunan Bantuan Hukum dan Hak Azasi Manusia Indonesia* (PBHI) in Jakarta has identified that this improper law has raised some serious problems, such as:

- a. Decentralization of corruption from the central to the local government level.
- b. Potential to lead to disintegration of the country if it is still not managed and solved properly. Example; the issue of Riau independent movement (Kompas, January 31st 2000)
- c. Uncertainty of laws which has made some big investors pull out from the country. Case such as the withdrawal of Nike in 2002, Sony in 2003 and Reebok in 2004 are obvious examples of the impact of legal uncertainty on business activities.

These kinds of problems are actually caused by some of factors below:

- a. The bias of the law itself has highlighted some weak points in relation to the improper planning and setup of the law (Brojonegoro & Asanuma 2003).
- b. There is a lack of human resource capability (quality and quantity) at the local level,

because until now, local authorities have never been required to take responsibility for developing new initiatives. Everything was centralized in Jakarta in the past (Rasyid, Sugiyanto and Ozeki 2003).

But now, accepted or not, this system has been in place for almost seven years, therefore we all hope that the transition process is headed in the right direction. That is why at the moment many Indonesian experts from many backgrounds are still working together with the government and parliament to make some evaluations, corrections, and to formulate a better framework for revising the regional autonomy system. For the mining industry, which always invests for the long term (20 to 30 years in average) the certainty of law, security and political stability are particularly important (PricewaterhouseCoopers 2003).

Conclusions and Recommendations

Finally, by using these two perspectives (pro and anti-mining) as a base analysis, I would like to make several conclusions as follows:

- a. Even though some people claim that the mining industry only generates 3.5% of GDP, in a broader sense the mining industry still makes significant contributions to the national economic development and job employment.
- b. Foreign capital still has the majority share of mining investment in Indonesia. This condition has been viewed by many people as a type of “neo-colonialism” in Indonesia, where the TNCs are exploiting the wealth of Indonesian natural resources with unfair compensation.
- c. Indonesian mining potential has not been maximized yet compared with other nations with the same mining potential.
- d. The overlapping laws and regulations and poor coordination among departments involved in mining issues are explanations for the decreasing levels of mining investment (especially foreign investment) in the country.
- e. Implementation of the regional autonomy system has discouraged foreign investment.
- f. The environmental damage and human rights violations by some mining companies, and the conflict with the local people in the affected areas, have jeopardized the image of national mining industry as a whole and still present a major issue for the national mining industry in the future.
- g. The involvement of anti-mining NGOs, namely Walhi and Jatam, is still needed as a balancing tool.

To solve the current problems or at least minimize them, I also propose some recommendations as follows:

- a. The Government of Indonesia must reformulate and reconstruct a clear grand development strategic plan, especially with regard to foreign investment policy. Do we still need foreign investment? If not, what is the grand development strategic plan for earning working capital? Are we ready to implement it?
- b. The government and all elements in Indonesia must respect any contractual agreement that has been signed in order to achieve law enforcement and conditions of business certainty in the country. Liked or disliked, the Contract of Work (CoW) is a legal document that is also recognized under international arbitration rules. Therefore, in order to create and demonstrate law enforcement in the country, all elements in Indonesia must respect any agreement that has been signed. Regarding

the contractual agreement issue, there are two factors that should be considered by Indonesian government if they want to renegotiate or cancel it: the first is international trust and the second is the international arbitration court.

- c. The renegotiation of CoW can be conducted after the current CoW period is expired.
- d. The social environment and human rights problems caused by some mining activities should be dealt on case-by-case basis. In my opinion, one problem in a certain case cannot be applied or generalized to the mining industry as a whole. Each case should be settled in case-by-case basis. For example the problem of Freeport in West Papua does not reflect the situation in other areas, because the problem factors, the key players and the situation are specific to the area.
- e. In the future, the process of formulating and drafting any regulations related to the mining and environment issues must involve the environmental NGOs.
- f. The TNCs should pay more attention to the interests and aspirations of local people by engaging in close cooperation with grass roots communities in certain programs that would give tangible and direct benefits to locals.
- g. A long term capacity building program for the local administrative apparatus must be implemented immediately to anticipate the internationalization process in terms of business, trade, foreign investment and other international relations matters in local areas.
- h. A long-term plan for the post-mining period should be formulated to utilize and maximize the income, wealth distribution, public facilities and infrastructure development and technology transfer gained from the current mining activities. The key message at this point is the implementation of good governance, transparency and accountability both in the central and local governments in managing the billion US dollars per year that they earn from mining sector. Not only the funds, but the technology transfer program should be protected from the advance parties.
- i. Finally and probably the most important point is that the mining companies, central government, local government, community councils and environmental NGOs must cooperate together to formulate a comprehensive plan for the post-mining period. On average, a mining operation's lifespan is around 10 to 30 years; therefore the most important task right now is to anticipate what will happen when the mining operation is ended. What kind of steps should be taken? How can we anticipate the transition in the way of living for local people, who have been so influenced by mining activities for around 10 to 30 years? Comprehensive field research must be undertaken, involving all the local stakeholders and in cooperation with external experts from different fields, to achieve a comprehensive re-mapping of local potential and capabilities in the post-mining period. We also should be thinking how to utilize the physical facilities and infrastructure that will be left by the companies in the post mining stage. There are several important facilities that most of the mining projects must have: electrical power installation, water installation, high standard permanent housing, medical centers, telecommunication facilities, ports and private airstrips.

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Interviews

1. Interview with Harya Mitra Hidayat (28/10/2005), VP of Finance PT. Bumi Resources, Jakarta
2. Interview with Omri Samosir (5/11/2005), Former VP of Operational PT. INCO, Jakarta
3. Interview with Roy Pakpahan (10/11/2005), Regional Council of Indonesian Legal Aid and Human Rights Association or *Perhimpunan Bantuan Hukum dan Hak Azasi Manusia Indonesia* (PBHI), Jakarta

Appendix 1 Legislation Related to Forest Management

Legislation	Content
Agrarian Basic Law (Law No. 5/1960)	The Agrarian Ministry (now the National Agrarian Agency); on behalf the state, has the authority to manage and regulate the exploitation of land, water and air. Land refers to its surface, underground areas and subterranean water in Indonesian jurisdiction.
Mining Basic Law (Law No. 5/1967)	The Energy and Mining Ministry, on behalf of the state, has the authority to manage and regulate the mining activities in the country, including those on all islands, underwater and on the continental shelf.
Regional Autonomy Law (Law No. 22/1999)	Regional administrations have the authority to manage natural resources, as well as to preserve resources in their territories.
Forestry Law (Law No. 41/1999)	The Forestry Ministry, on behalf of the state, has the authority to manage and regulate the exploitation of forests including the issuance of forest concessions in the country.

Source: The Jakarta Post 2002.

Appendix 2 Environmental Destruction by TNCs in Indonesia

#	Company	Location	Environmental Destruction Problems
1.	PT. Freeport Indonesia (FI)	West Papua	<p>The Grasberg Mountain will be turned into a hole 2.5 km in diameter and 700 m deep. The company dumps 520,000 tons of waste rock every day into two valleys adjacent to the mine site. It is predicted that by the end of the Grasberg open pit mining operation in 2014, four billion tons of waste rock will have been dumped into to two valleys. In the year 2000, the amount of tailings dumped into the Aghawagon River was approximately 190,000 tons per day.</p> <p>Several big stock pile failures already prove that the dumping operation in that area is not safe. The last big incident in May 2000 caused four deaths</p> <p>The forming of Acid Rock Drainage (ARD) has caused the release of heavy metals like aluminum, cadmium and chromium into the environment.</p> <p>The corporation also uses a lake (with an area of 5.5 km x 2.0 km) as a waste rock dumping site.</p> <p>Satellite analysis by WALHI has discovered that total land area that has been contaminated by the tailings cover 35,820 hectares, which is already beyond the company's estimation of 31,800 hectares as mentioned in its Environmental Impact Assessment (EIA). The total sea area that has been contaminated by tailings covers 84,158 hectares. The tailing dispersion has reached as far out as 6 km from the seashore downstream from the Kamona River, and 10 km away from the seashore downstream from the west Ajkwa River. The images also show that the tailings have contaminated the Lorentz National Park trough the Mawati River and Otokwa River. The Lorentz National Park is a UNESCO World Heritage Site.</p>
2.	PT. Kaltim Prima Coal (KPC)	East Kalimantan	<p>Since 1990 the community has complained that the water quality of the Sangatta River has been worsening. The Sangatta River is clogged with lime used to neutralize acidity. The people are no longer able to fish in the Sangatta.</p> <p>The exploitation of the deposit in South Pinang Dome area will create huge impacts on the flow of the Murung River, Kenyamukan River and Melawan River. The Murung River will disappear altogether while some small tributaries from the Kenyamukan and Melawan Rivers will be cut off.</p>

#	Company	Location	Environmental Destruction Problems
3.	PT. Kelian Equatorial Mining (KEM)	East Kalimantan	<p>To create a tailings dump site, KEM built a 50 meter high dump in south west part of the Namuk valley, which has severely damaged this valley. By the end of its operation, KEM will have dumped over 100 million tones of waste rock into the environment.</p> <p>The tailings consist of 49% solids, containing among other things, carbonate compounds, copper (Cu), lead (Pb), mercury (Hg), zinc (Zn) and cyanide (CN). Although it has a high content of solids, the corporation categorizes tailings as waste water. According to an Indonesian regulation, dumping solid waste in water bodies is prohibited. Because of this, all mining operations categorize tailings as liquid/waste water.</p> <p>When the tailings mix with rainwater it causes Acid Rock Drainage (ARD) which contains heavy metals that have leached from the rock. ARD can infiltrate and contaminate the groundwater system. During the nine years of its operation, KEM does not have any data regarding the potential contamination of the groundwater system.</p> <p>The tailings also contain a high concentration of cyanide. The cyanide comes from the gold extraction process in the processing plant. The company does not treat the tailings to remove the cyanide, assuming that the cyanide will be broken down by sunlight. Walhi do not believe there is adequate scientific evidence showing that the cyanide is totally broken down using this method.</p> <p>According to a Government regulation (Regulation PP No.18 1999 and PP No.85 1999 on Toxic and Hazardous B3 Waste Management), waste that is reactive, like cyanide or cyanide-contained compounds, is categorized as hazardous/toxic waste and needs special treatment. We believe that this dumping method contravenes this regulation.</p>
4.	PT. Citra Palu Mineral (CPM)	Central Sulawesi	<p>According to the local communities, general-survey activities were carried out by CPM secretly. So were the exploration activities. The public only found about the provincial parliament. In the hearing, CPM asked the parliament to shift the boundary of the Poboya Forest Park so that CPM could operate there.</p> <p>The New State Act No.41/1999 on Forestry has become a huge issue for mining corporations as one of its clauses mentions very clearly that open cast mining is prohibited in conservation areas. Walhi is concerned that CPM-Rio Tinto and 149 other corporations have been attempting to lobby the government and the parliament very hard to change the law, or change the status of the conservation forest into production forest.</p> <p>According to the State Act No.5/1990, The Forest Park area has functions for the conservation of natural flora and fauna, endemic and non-endemic, and also has functions for research, education, training, and recreation. It is very clear that it does not mention a function for any mining operations. Besides that it is also clearly stated in the Act that: <i>“Everybody is prohibited from undertaking activities that are not in the line with the functions of the zone of use, and other zone of the national park, forest park, and nature park.”</i> WALHI is concerned that CPM-Rio Tinto’s operation in the forest park may have contravened the law.</p>

Source: Walhi (2003).

Appendix 3 Ownership by TNCs in Indonesia 2001

TNCs	Subsidiary Companies in Indonesia and % of Ownership by TNCs	Product	Location
Rio Tinto Ltd (Australia)	PT. Kelian Equatorial Mining (90%) PT. Kaltim Prima Coal (50%) PT. Danum Bukit Minerals (90%) PT. Danum Kelian Minerals (95%) PT. Uli Mandar Minerals (95%) PT. Citra Palu Minerals (90%) PT. Mitra Sumbawa Minerals (90%) PT. Rikit Alas Minerals (90%)	Gold & Silver Coal Gold Gold Coal & Gold Gold Metal Metal	East Kalimantan East Kalimantan East Kalimantan East Kalimantan Central & South Sulawesi Central Sulawesi West Nusa Tenggara Aceh
Broken Hill Proprietary Company Ltd (Australia)	PT. Arutmin Indonesia (80%) PT. BHP Sipirok Minerals (95%) PT. BHP Sumba Minerals PT. Gag Nickel (75%) PT. Kalteng Coal (99%) PT. Pari Coal (99%) PT. Sumber Barito Coal PT. BHP Kendilo Coal Indonesia (99.07%)	Coal Gold & Copper Gold Nickel Coal Coal Coal Coal	South Kalimantan North Sumatra East Nusa Tenggara Papua Central Kalimantan Central Kalimantan Central Kalimantan East Kalimantan
Newmont Mining Corporation (USA)	PT. Newmont Nusa Tenggara (45%) PT. Newmont Minahasa Raya (80%) PT. Newmont Mongondow Mining (80%)	Gold Gold Gold	West Nusa Tenggara North Sulawesi North Sulawesi
Newcrest Mining Ltd (Australia)	PT. Newcrest Nusa Sulawesi (90%) PT. Nusa Halmahera Minerals (82.5%) PT. Newcrest Sumbawa Raya (90%)	Gold Gold Gold & Copper	North & Centra Sulawesi, Gorontalo Maluku & North Maluku West Nusa Tenggara
Inco Ltd (Canada)	PT. Inco (58%) PT. Ingold Maluku Satu (85%) PT. Ingold Sumatra Satu (99%)	Nickel Metal Gold & Metal	South, Southeast & Central Sulawesi Maluku West Sumatra & Jambi
Freeport Mc Moran Copper & Gold Inc (USA)	PT. Ingold Antares (88%) PT. Freeport Indonesia (81.28%) PT. Irja Eastern Minerals (90%) PT. Iriana Mutiara Mining (80%)	Gold & Metal Copper, Gold & Silver Gold Nickel	West Papua West Papua West Papua West Papua

Source: Sangaji (2002).