

Downstream, Good Mining Practices, Reclamation and Post-Mining: Policy and Law Enforcement in Indonesia

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Abstract

This research aims to find out and see the connection between operational patterns in mineral and coal mining activities in Indonesia, downstream policies, as well as reclamation and post-mining implementation. Mining activities cause negative impacts in the form of serious environmental damage which occurs in almost all mining areas in Indonesia. From a regulatory perspective, mining companies and mining service companies are obliged to implement good mining principles with administrative sanctions for those who violate them, mining companies are obliged to carry out downstream within the country so as to provide added value and expand employment opportunities, mining companies are also obliged to carry out reclamation and post-mining with 100% success rate. Using normative juridical research methods and qualitative juridical analysis, it is known that the operational cooperation pattern is not appropriate to apply because, in the operational cooperation agreement, the position of the mining company and the mining service company is equal so that the mining service company does not carry out good mining activities, the mining company does not have control over this and In fact, 70% of environmental damage in Indonesia is due to mining operations, mineral, and coal downstream policies are carried out inconsistently so that it is less than optimal in increasing the added value of minerals and coal and there are legal loopholes in opening up reclamation in other forms, making the success rate of reclamation and post-mining of ex-mining excavated flat. the average is less than achieved 100% success.

Keywords: *Corporation; Downstream; Reclamation*

1. INTRODUCTION

The Indonesian government is targeting a greater contribution from mining activities and being able to integrate with the Indonesian manufacturing industry ecosystem. The policy taken is to require mining companies to carry out downstream operations domestically. This is in line with the provisions of article 170 A of Law No. 3 of 2020 concerning Amendments to Law Number 4 of 2009 concerning Minerals and Coal.¹

Downstream must be carried out with a mature plan so that the results can be more optimal. The government, in this case the Ministry of Energy and Mineral Resources (ESDM), has revealed the fact that Indonesia's nickel reserves are dwindling. According to the ESDM Ministry's records, Indonesia's nickel reserves could run out within 6 to 11 years. It is recorded that for nickel through the pyrometallurgical process in Indonesia or those that process high-grade nickel, there are 44 smelters, while for nickel through the hydrometallurgical process that processes low-grade nickel, there are 3 smelters.²

¹ M Ubaidillah, "Menteri ESDM Akan Hentikan Ekspor Mineral Mentah per 10 Juni 2023," <https://swa.co.id/read/405033>, n.d.

² Firda Dwi Muliawati, "Cadangan Nikel RI Cuma Tahan 6 Tahun," CNBC Indonesia, n.d.

There are several patterns of cooperation between mining companies and mining service companies. The pattern of cooperation that gives full authority to mining service companies causes a lot of environmental damage. Good mining practices are no longer just an obligation that must be fulfilled by mining companies and mining service companies. Furthermore, in the current era, many companies are realizing that environmental, social, and governance factors are prerequisites for sustainable corporate business.³ As a result, mining occurs almost throughout Indonesia. Environmental damage also occurs in areas of mining activity. The Indonesian Environmental Forum (WALHI) revealed that mining activities are one of the factors that have decreased the quality and accelerated the rate of environmental damage in West Java. The existence of mining not only changes the function and landscape but also has an impact on the social conditions of the community living in the area around the mine.⁴

The Bangka Belitung Islands are a fairly large Tin and Quartz Sand mining area in Indonesia. Environmental damage due to tin mining is one of the problems faced by Bangka Regency, Bangka Belitung Islands Province. As the largest tin-producing area in the world, former tin mining land is not suitable for development because it has a fairly low fertility rate with high soil acidity (pH), low nutrient availability, and poor soil chemical properties.⁵ Not to mention the massive illegal Tin mining activities that occur.

Kalimantan, Indonesia's largest island, has been the center of intensive mining activities in recent decades. Extensive and uncontrolled mining activities have caused serious environmental pollution and significant negative impacts on natural ecosystems and surrounding communities. The environmental damage faced includes: (1). Coal mining activities and emissions from vehicles and machinery used in the process produce toxic gases such as sulfur dioxide, nitrogen dioxide, and harmful dust particles. 2). Mining activities also cause serious water pollution. Uncontrolled dumping of mining waste and the use of chemicals such as mercury and cyanide in metal processing can pollute rivers and surface water sources. (3). Mining activities in Kalimantan have also caused extensive deforestation. Deforestation affects global climate change because the carbon stored in trees is released into the atmosphere. (4). The complex ecosystem in Kalimantan has been seriously damaged by mining activities. When ecosystems are disturbed, interactions between organisms are disrupted, food chains are broken, and the harmony of nature is disrupted.⁶

The Indonesian Ombudsman revealed some findings from the Mandiodo Block nickel mine in North Konawe Regency, Southeast Sulawesi related to the serious environmental impacts caused by illegal nickel mining. In Tapumea Village, the Ombudsman found the fact that before mining

³ Kompas, "Praktik Pertambangan Yang Baik Menjadi Keniscayaan," <https://www.kompas.id/baca/ekonomi/2023/10/29/>, 2023.

⁴ Aktivitas Tambang Jadi Faktor Utama Kerusakan Lingkungan di Jawa Barat, "Walhi," <https://www.liputan6.com/regional/read/4146732/03-Jan-2020>, n.d.

⁵ Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi, "Tanggulangi Kerusakan Lingkungan Di Kabupaten Bangka Lewat Gerbang Lestari," <https://www.menpan.go.id/04/04/2022>, n.d.

⁶ KBK News, "Kerusakan Lingkungan Akibat Tambang Dan Pematatan Hutan Di Kalimantan Memprihatinkan," <https://kbbk.news/07/17/2023>, n.d.

activities, most of the community worked as farmers and fishermen. However, currently the community can no longer go to sea and farm because the sea waters around the Mandiodo Block have been polluted by mining activities. In addition, the lack of maintenance of public roads from both the company and the government means that local people have never experienced decent roads in their village. A similar thing also happened in Tepunggaya Village. Meanwhile, in Mandiodo Village, the Ombudsman found the fact that exploitation activities had started in 2007, but there were no CSR programs from private mining companies.⁷

For companies whose business activities are in the field of natural resource management and whose business activities have a direct impact on natural resources, corporate social and environmental responsibility becomes an obligation. Mining companies engaged in managing natural resources must be responsible for their mining activities so that the environment is maintained and the social and economic conditions of the community become better than before.⁸

The reclamation obligation was originally the responsibility of the mining company at the end of its mining activities. However, sometimes this is not done completely and some are even left untreated, so that it doesn't get worse, real action is needed so that reclamation can be carried out immediately.⁹ Environmental damage is magnified by the large number of unauthorized activities in mining areas. The impact of illegal mining activities is divided into two parts, namely the impact on the environment and the impact on humans themselves. The impact on the environment concerns the impact on air, water, land, erosion, and ecosystems, while the impact on humans themselves can threaten work health and safety and even the loss of someone's life.¹⁰

In previous research, environmental damage due to mining activities was explained. Previous research has not touched the root of the problems that exist in mineral and coal mining activities. Analyzing the root causes of environmental damage as a result of mining activities from a regulatory and policy perspective is very important so that solutions can be found. This article aims to analyze the root causes of environmental damage in mining activities, such as operational cooperation patterns between mining companies and mining service companies, consistency of mineral and coal mining downstream policies, and legal gaps in reclamation and post-mining regulations so far.

2. METHOD

This research uses normative juridical research methods by examining secondary data sources which include primary legal materials, such as statutory regulations related to cooperation in both

⁷ Ombudsman, "Ombudsman RI Ungkap Temuan Tambang-Tambang NikeBlok Mandiodo Di Konawe Utara Sulawesi Tenggara Indonesian," <https://ombudsman.go.id/news/r/01/23/2024>, n.d.

⁸ La Ode Angga et al., "Penerapan Tanggung Jawab Sosial Dan Lingkungan Oleh Perusahaan Migas Perseroan Terbatas Karlez Petroleum," *Bina Hukum Lingkungan* 7, no. 2 (2021).

⁹ Syahrudin, "Pelaksanaan Reklamasi Lahan Bekas Tambang Di Provinsi Kepulauan Bangka Belitung Melalui Pendekatan Whole of Government," *Journal of Public Policy and Applied Administration* 3, no. 1 (2021).

¹⁰ Muhammad Agus Fajar Syaefudin and Fajar Ari Sudewo, "Penegakan Hukum Terhadap Tindak Pidana Pertambangan Mineral Dan Batubara Ilegal Di Kota Cirebon," *Dikum : Jurnal Ilmu Hukum* 8, no. 1 (May 27, 2020): 108–24, <https://doi.org/10.24905/diktum.v8i1.81>.

the Civil Code and the Mineral and Coal Law as well as their implementing regulations, mineral and coal downstream policies as well as regulations regarding reclamation and post mine. Secondary legal materials such as books and journal articles that discuss mining law and good mining principles. The electronic documents in this research include tertiary legal materials in the form of news and opinions. The normative juridical research method is a method commonly used in legal research. According to Soekanto and Sri Mamudji, normative law is legal research that studies various sources of literature or secondary data, otherwise known as library legal research. This method is relevant to use considering that the problems analyzed are all related to legal regulations and policies that have been determined with the data source coming from literature studies. The data collected was analyzed using qualitative juridical methods. Qualitative juridical is an assessment of the results of data processing that are not in the form of numbers by emphasizing legal analysis in the process of drawing conclusions deductively and inductively through the use of formal and argumentative thinking methods. This method is appropriate considering that the data collected and analyzed is descriptive.

3. RESULTS AND DISCUSSION

3.1 Cooperation between Mining Companies and Mining Services Companies and the Urgency of the Obligation to Implement *Good Mining Practices*

National development has been carried out by the Indonesian Government. In order to achieve national development goals, it is necessary to empower natural resources managed by the Central Government, Regional Government, and private communities.¹¹ The current mineral and coal management system has undergone a very fundamental change, which originally used a work contract system for mineral considerations and a coal mining entrepreneur work agreement (PKP2B) for coal mining, but now the management system has changed to a permit form. The mineral and coal management permits currently known include Special Mining Permits (IUPK).¹² However, until now there are still companies considering work contract permits and PKP2Bs that still have a remaining term.

Mining activities can be carried out by the mining company itself or can be carried out by other parties through a collaboration system. Of the many companies that are granted mining permits, the majority use mining service companies. The pattern of cooperation in mining activities can be used with a cooperative operations (KSO) model with other mining companies. Some of the advantages of KSO are the combination of resources and expertise of each party, savings in expenses, and reduction of risks through sharing costs and risks between the parties. Who are partner? The weaknesses include that the position between mining companies and KSO partners is equal so that the parties do not have direct control over the roles and responsibilities of each party, and this KSO pattern does not provide balance for the parties, especially in mining activities because of the burden of responsibility for environmental damage resulting from mining activities

¹¹ Dani Prianto Hadi, *Implementasi Hukum Pertambangan Di Indonesia* (Purbalingga: Eureka Media Aksara, 2022).

¹² Salim, *Hukum Pertambangan Mineral Dan Batubara* (Jakarta: Sinar Grafika, 2014).

carried out by mining service companies as KSO partners are the responsibility of the mining company that owns the mining business permit.

For example, nickel mining activities in the Mandiodo Block, North Konawe Regency, Southeast Sulawesi Province. In 2021, Antam agreed to enter into joint operations (KSO) with regional public companies (Perumda) and private companies, namely PT Lawu Agung Mining. Landscaping activities carried out by PT Antam's KSO partners in the Mandiodo Block are carried out without paying attention to good mining rules and even tend to be illegal mining.¹³ The Indonesian Ombudsman revealed a number of discoveries from the Mandiodo Block nickel mine in North Konawe Regency, Southeast Sulawesi. One of the findings based on the results of the field inspection at the end of 2023 is that there are quite serious environmental impacts resulting from illegal nickel mining.¹⁴

Another pattern of cooperation is a pattern of cooperation with a subordinate relationship as part of the supply chain. The mining service company will only carry out mining activities on the orders and control of the mining company. The relationship between the mining company and the mining service company is not equal. Here, there is a pattern where the mining company is the party that orders and controls the mining service company, while the mining service company will only carry out mining activities on the orders of the mining company and under the control of the mining company. The mining service company does not have the full ability to act in carrying out its mining activities. All mining activities by the mining service company are under the full control of the mining company.

Law No.4 of 2009, if seen from its contents, is one of the *green legislation* *Green legislation is a manifestation of the green constitution*. Green legislation is a manifestation of the Green Constitution. Jimly Asshiddiqie put forward the idea of the importance of a green constitution, environmental sovereignty, and the concept of ecocracy to support sustainable development.¹⁵ This can be traced from the principles in Law No. 4 of 2009 as regulated in Article 2, namely: benefits, justice, and balance; siding with the interests of the nation; participatory, transparency, and accountability; sustainability and environmental insight are the principles of mineral and coal management. The first principle is multidimensional. This means that benefits, fairness, and balance cover many aspects, namely economic, social, cultural, environmental, and other aspects. The second principle shows an attitude of nationalism and sovereignty over the use and results of mining management, as well as anti-foreign interference. The third principle demands that mining management involve the community, and be open and responsible. The fourth principle states that

¹³ Achmad Dwi Afriyadi, "Masalah Di Blok Mandiodo Hingga Setop Operasi," <https://finance.detik.com>, January 23, 2024.

¹⁴ Ombudsman, "Ombudsman RI Ungkap Temuan Tambang-Tambang Nike Blok Mandiodo Di Konawe Utara Sulawesi Tenggara Indonesia."

¹⁵ Arief Hidayat, "Bernegara Itu Tidak Mudah," *Pidato Pengukuhan Jabatan Guru Besar Ilmu Hukum Fakultas Hukum Undip* (Semarang, February 4, 2010).

there is a need for environmental and socio-cultural-economic compatibility in efforts to consider minerals and coal in realizing community welfare.¹⁶

Article 124 of Law No. 3 of 2020 regulates that local and/or national consideration companies must be used by mining companies holding IUP or IUPK. The use of foreign investment mining service companies is carried out if there are no local or national mining companies. This shows that local and national mining service companies are given priority. The mining services business consists of implementing services in the fields of: General Investigation, Exploration, Feasibility Studies, Mining Construction, Transportation, Mining Environment, Reclamation and Post-mining, and Mining Safety. The use of local and/or national mining service companies is carried out based on a) The proximity of the location of mining business activities to the presence of mining service companies in the district/city, province, and other provinces. b) Mining Services company status as a domestic investment company.¹⁷

Mining activities must be based on the principles of Good Mining Practices. Good Mining Practices basically carries out mining operations from the exploration stage for mineral deposits which is carried out with a feasibility study and ends at the post-mining land reclamation and revegetation stage. Good Mining Practice is a mining system that follows and complies with the rules and is well-planned. This obligation is stated in Article 3 of the Minister of Energy and Mineral Resources Regulation No. 26 of 2018. Good mining rules include: good mining engineering rules and mining business governance. This obligation also applies to holders of IUP OP Processing and Refining (Article 4) and holders of mining service businesses (Article 5).

The obligation to carry out good mining activities for companies holding IUP OP Processing and Refining includes technical aspects of Processing and/or Refining activities, Processing and/or Refining safety, environmental and post-operation management, as well as Mineral and Coal conservation. Meanwhile, mining service companies include environmental management efforts, mining safety, Mineral and Coal conservation, and mining techniques by their business field; and the obligation to appoint the person responsible for operations as the highest leader in the field.

The obligation has administrative sanctions as regulated in Article 50 in the form of: written warnings; temporary suspension of some or all business activities; and/or revocation of permits. The sanction of revocation of business permits is the most severe administrative sanction because once the business permit is revoked, mining companies, mining service companies, processing and refining companies, mining and coal mineral transportation companies, and mineral and coal trading companies will legally stop carrying out their business activities. Administrative sanctions are less effective because they do not have a deterrent effect and violations continue to occur.

In terms of good mining principles, mining companies, and mining service companies within the framework of a KSO agreement must promise and agree to jointly comply with the principles of

¹⁶ Dwi Haryadi, "Pengantar Hukum Pertambangan Mineral Dan Batubara" (Malang, 2018).

¹⁷ Zahrashafa Putri Mahardika, "Perbandingan Peraturan Perundangan Tentang Skema Program Jaminan Kesehatan Nasional Di Indonesia Dengan National Health Insurance Di Taiwan" (Universitas Indonesia, 2023).

good mining so that environmental damage from mining activities can be minimized and ultimately after mining activities are completed, consistency is needed. carry out reclamation and post-mining as planned in the RKAB and closely monitored by the Ministry of Environment and Forestry.

The strategy to ensure the implementation of good mining principles in mineral and coal mining business activities must determine success criteria, as well as pay attention to and consider national and global climate changes so that operational productivity can run optimally. Indonesia is very rich in natural mineral and coal resources. Indonesia is also listed as an agricultural country with a tropical climate that has quite large and varied biological resources. Indonesia is also on the equator, a country with the threat of natural disasters and climate change. For this reason, risk mitigation in mining activities and the mining cooperation patterns implemented must be a serious concern for all mining stakeholders in Indonesia, both the government as regulator and the holder of the constitutional mandate from the community in managing natural resources, mining companies, mining service companies, community, environmental activities. Choosing the right pattern of cooperation between mining companies and mining service companies with good mining procedures must be consistent and carried out consistently by each party so that the risk of environmental damage can be avoided as much as possible and as early as possible.

3.2 Downstream Policy to Increase Added Value and Employment Opportunities

Downstream is a process of sustainable economic transformation in which industrialization policies are based on high-value-added commodities, towards a more complex economic structure. The core of downstream is increasing added value. Increasing added value should be carried out by the Indonesian Government in carrying out the mandate of the constitution and laws and regulations. Downstream can be in the form of processing and refining. Downstream is the right and bold step taken by the government to improve people's welfare. Although there is a possibility of an impact on declining exports and absorption of domestic mining materials, this does not dampen the policy which is considered without other alternatives. If Indonesia continues to be an exporter of mining raw materials, then gradually the natural wealth in the mining mineral sector will be eroded without leaving significant profit for the progress of Indonesia's development. So the downstream policy in the mining sector is a breakthrough that risks the under-absorption of the processed mining results. However, this choice is minus malum (the least risk) for a condition without other choices, the government must take this bold policy if it does not want to be trapped in a condition of losing more severe mining potential. As if breaking through the constraints of the global mining business system, Indonesia confidently places the long-term interests of the Indonesian people above the interests of the temporary regime.¹⁸

Processing is an effort to improve the quality of Mineral mining commodities to produce products with physical and chemical properties that do not change from the nature of the original mining

¹⁸ Armadani Rizky Illahi, "Hilirisasi Pertambangan Dan Dampaknya Terhadap Aspek Ekonomi Lingkungan Hidup Di Indonesia," *Jurnal Justitia* 9, no. 3 (2022).

commodity to be refined or become industrial raw materials. Refining is an effort to improve the quality of Mineral mining commodities through physical and chemical processes and further purity improvement processes to produce products with different physical and chemical properties from the original mining commodity to metal products as industrial raw materials.

The obligation to build smelters for mining companies is also mandated by Law Number 4 of 2009. Work contract holders (KK) are also prohibited from selling minerals abroad without going through processing and refining processes domestically. This obligation is regulated in Article 102. Explain that holders of Mining Business Permits (IUP) and Special Mining Business Permits (IUPK) are obliged to increase the added value of mineral and/or coal resources in the implementation of mining, processing, and refining, as well as utilization of minerals and coal. Then Article 103 regulates further, namely that holders of Production Operation IUP and IUPK are obliged to process and refine mining products domestically.

Mineral downstream is intended to give Indonesia sovereignty in providing raw materials for the manufacturing industry in Indonesia, which so far has only been imported. The construction of domestic processing and refining facilities will be able to meet the needs of raw materials for the national manufacturing industry, the effect of which will certainly be very significant for improving the economy of the Indonesian people.¹⁹ Downstream policies can foster innovation, breakthroughs, mastery, and development of science and technology to increase the capacity and competence of highly competitive human resources. Activities to increase added value to the maximum in the context of national industrial and economic development, so that the management and utilization of minerals and coal are managed domestically including associated minerals, strategic minerals/critical minerals, and rare earth metals. As well as optimal management and utilization of residual processing and refining results for national development. The policy of increasing the added value of minerals and coal including associated minerals, strategic minerals/critical minerals, and rare earth metals used in the processing and/or refining process into products or semi-products that can be used as raw materials for industry, manufacturing industry, and/or energy sources. The application of the value chain concept in activities to increase the added value of minerals and coal can be expected to provide benefits and a snowball effect that will be felt by the upstream, downstream, side, and other related sectors.²⁰

The downstream policy of stopping the export of raw minerals in several commodities has resulted in a decrease in state revenue from export duties from 2021 to 2023.²¹ However, this decrease is offset by state revenue from income tax and value-added tax which is quite large. Minister of Investment/Head of the Investment Coordinating Board (BKPM) Bahlil Lahadalia said that the downstream policy and the ban on nickel exports that have been carried out by the government

¹⁹ Ahmad Helman Hamdani, "The Research Design of Downstream Minerals and Processing Locations in Indonesia," *BIO Web of Conferences* 73 (November 8, 2023): 03010, <https://doi.org/10.1051/bioconf/20237303010>.

²⁰ Hamdani and Ahmad Helman, "The Research Design of Downstream Minerals and Processing Locations in Indonesia," in *International Conference on Tropical Resources and Sustainable Sciences* (Kelantan: CTReSS 5.0, n.d.).

²¹ Kompas, "Simalakama Hilirisasi Dan Terganjalnya Penerimaan Negara," <https://www.kompas.id/baca/ekonomi/2023/09/26/>, n.d.

since 2020 have succeeded in generating profits of up to US\$ 30 billion or equivalent to Rp450 trillion (assuming an exchange rate of Rp15,000 per US\$).²² According to Joko Widodo, President of the Republic of Indonesia, when raw minerals are exported, they produce approximately only Rp17 trillion a year, then after entering the downstream industry, downstream becomes Rp510 trillion.²³ The growth of the mineral and coal processing and refining industry in Indonesia increases the need for human resources.

The current downstream policy has only reached semi-finished products, not finished products. To reach finished products, further processing is required. The downstream policy must be carried out with consideration of sustainability aspects, do not let downstream be carried out without a clear direction so that the benefits obtained in the short term are not comparable to the long-term losses which are greater, such as environmental damage.

The Climate Rights International (CRI) report released on January 17 2024 shows that the PT Indonesia Weda Bay Industrial Park (IWIP) nickel industrial complex in Halmahera, North Maluku, has violated human rights, and caused deforestation and air and water pollution. The mineral and coal downstream policy carried out inconsistently and carried out hastily, on the one hand, has an impact on increasing state income, but on the other hand, environmental damage is not mitigated in depth.

Even though it has great potential, downstream is not free from various challenges. Infrastructure limitations, geographic complexity, potential for social conflict, and environmental damage are some of the main challenges that need to be overcome. Downstream requires adequate infrastructure, large funds, and environmentally friendly technology.

3.3 Mining Companies' Obligations to Carry Out Reclamation and its Implementation

Development in Indonesia has unknowingly hurt the quality of Natural Resources (SDA) because on several occasions, natural resources are used to finance development activities without paying attention to environmental and community protection and management.²⁴ Companies that obtain mining business permits are required to carry out post-mining reclamation. Reclamation is an activity to organize and repair the ecosystem and environment after mining so that it functions again according to its intended purpose. The calculation is direct costs in the form of land management, revegetation, acid mine water, and maintenance. Companies must also carry out land management, and revegetation of land management. Mining companies have a great responsibility in carrying out mine reclamation to ensure that ex-mining land can be restored properly and contribute to the restoration of the environment and local communities.

²²CNBC Indonesia, "Proyek Hilirisasi Jokowi Untung 10 Kali Lipat," <https://www.cnbcindonesia.com/news/20230704074459-4-450955/4> Juli 2023, n.d.

²³CNBC Indonesia, "Dicibir Faisal Basri Nilai Pajak Hilirisasi Melejit 10 Kali Lipat," <https://www.cnbcindonesia.com/news/20230814104311-4-462678/>, August 14, 2023.

²⁴ Hikmah Zougira et al., "Perlindungan Hukum Terhadap Masyarakat Dan Lingkungan Akibat Dari Reklamasi Pantai Manado," *Bina Hukum Lingkungan* 7, no. 3 (2023).

This reclamation guarantee fund is the government's way of making mining companies responsible after mining is complete. This fund is obtained before mining activities begin. This means that mining entrepreneurs first save their reclamation guarantee funds before mining. The reclamation guarantee covers both exploration activities and production operations. The guarantee is a confirmation of the mining company's commitment to restore its original condition in order to realize sustainable development.²⁵

Mining companies with exploration permits have an obligation to place a reclamation guarantee at the exploration stage in a predetermined amount. The Reclamation Guarantee is placed at the beginning of the work plan and reclamation cost budget no later than 30 calendar days. The Reclamation Guarantee for this stage is in the form of a Time Deposit placed in a Government bank in Indonesia in the name of the Director General or Governor QQ who holds the IUP. Placing collateral does not negate the mining company's obligation to carry out reclamation. Any shortfall in costs to complete reclamation remains the responsibility of the exploration permit holder. Changes in the amount of reclamation guarantees rest with the Minister or governor by their authority provided that there is a change in the reclamation plan or the implementation costs are not by the plan.²⁶

Mining companies in the production operation stage are required to provide reclaim guarantees in a predetermined amount. The placement mechanism is carried out entirely for the first 5 years and the next 5 years according to the life of the mine. The placement of collateral can be in the form of a joint account or time deposit placed in a Government bank in Indonesia in the name of the Director General or governor and the Holder of Production Operation IUP or Production Operation IUPK. Placement of reclamation guarantees can also be done through bank guarantees issued by Government Banks by the production operation phase schedule.²⁷

The Ministry of Energy and Mineral Resources noted that out of a total of 4,867 companies, only 2,966 companies have placed reclamation guarantees. The remaining 1,901 have not yet placed as collateral. Then, of the total 4,867 companies, 4,655 are PMDN IUP companies, of which 2,760 have placed reclamation guarantees and the remaining 1,895 have not.²⁸ The factors causing many mining companies not to pay for reclamation are the weak legal awareness of mining entrepreneurs and the lack of supervision and action from law enforcement officials.

The commitment to carry out reclamation is concreted by providing a reclamation guarantee in the form of a deposit certificate which can be cashed out if the reclamation obligation has been declared 100% successful, but on the other hand, the reclamation guarantee will be taken by the Government to carry out reclamation if the mining company is not successful in carrying out 100%

²⁵ Helmanida Irsan and Yunial Laily Mutiasari, "Kebijakan Reklamasi Pasca Tambang Sebagai Bentuk Pengendalian Lahan Bekas Tambang Batubara Ditinjau Dari Kewenangan Otonomi Daerah Di Sumatera Selatan," *Jurnal Galang, Universitas Sriwijaya*, 2016.

²⁶ *Ibid.*

²⁷ *Ibid.*

²⁸ Eksplorasi.id, "Ribuan Perusahaan Tambang Belum Setor Dana Jaminan Reklamasi Dan Pascatambang," <https://eksplorasi.id>, September 23, 2019.

reclamation. For IUP and IUPK holders whose business permits have been revoked or expired but have not carried out reclamation and post-mining or have not placed reclamation and post-mining guarantees, they can be sentenced to imprisonment for a maximum of five years and a fine of up to one hundred billion rupiah. In addition, IUP and IUPK holders may be subject to additional penalties in the form of paying fines.²⁹

The implementation of reclamation includes 3 criteria, namely: a) land management, b) erosion reclamation and sedimentation control policies, and (c) revegetation. Land management takes the form of refilling mine excavation holes, managed areas, and land stability. Erosion control is an activity that must be carried out during and after mining activities. Erosion can result in reduced soil fertility, the occurrence of mud deposits, and sedimentation in river channels. Revegetation is part of reclamation activities, an effort to repair and restore damaged vegetation on ex-mining land through planting and maintenance activities on land that was formerly used as a forest area. Vegetation must adapt to the natural environment, and adjust to the habits of vegetation and its species that are adjusted to physiological and ecological conditions.³⁰

The Director General on behalf of the Minister or governor with his/her authority before approving the disbursement of the Reclamation Guarantee for the Exploration stage is required to evaluate the implementation report for the Reclamation for the Exploration stage after the Feasibility Study document is approved. The disbursement of the Reclamation Guarantee for the Exploration stage can only be done after the assessment results reach a value of 100% (one hundred percent).

Data from the Ministry of Energy and Mineral Resources shows that until now, many mining companies have not placed reclamation guarantees. The Director General of Mineral and Coal at the Ministry of Energy and Mineral Resources said that most companies that have not placed reclamation guarantees are Mining Business Permit, Domestic Investment (IUP PMDN) companies. Of the 4,524 companies, 4,403 are IUP PMDN, of which 1,283 have and the remaining 3,120 have not placed post-mining guarantees.³¹ The large number of mining companies that have not placed post-mining reclamation guarantees shows that many mining companies do not comply with the provisions of laws and regulations so the Government should take firm action to impose sanctions. There has been no disbursement of reclamation guarantees before the reclamation is declared 100% successful. This must be prevented to ensure that the reclamation process can be carried out according to the approved reclamation plan.

Mining companies that have successfully carried out reclamation, for example, the Indonesian Mining Industry Holding Group MIND ID, have successfully reclaimed more than 6,770 hectares of ex-mining land by 2023, higher than the actual accumulation in 2022 which reached 6,300 hectares. PT Bukit Asam Tbk (PTBA) reclaims ex-mining land using cover crop and backfilling

²⁹ Kementerian ESDM, "Lebih Target, Reklamasi Pascatambang Garap 7.920,77 Hektar Di 2023," <https://www.esdm.go.id/id>, January 18, 2024.

³⁰ Irfan Ido, et al., "Kajian Keberhasilan Reklamasi Pada Lahan Bekas Penambangan Bijih Nikel Di Kabupaten Konawe Selatan," *Jurnal Geografi Aplikasi Dan Teknologi* 6, no. 1 (2022).

³¹ Eksplorasi.id, "Ribuan Perusahaan Tambang Belum Setor Dana Jaminan Reklamasi Dan Pascatambang."

methods. Cover crops are intended to slow erosion, and improve soil quality, including increasing biodiversity. Aneka Tambang Tbk (ANTAM), for example, has annual planning and five-year planning in the Reclamation Plan document approved by the government. Meanwhile, ANTAM is implementing a reclamation strategy in the form of land arrangement, planting, erosion and sedimentation control, plant maintenance, and natural succession efforts. The revegetation methodology is also carried out by PT Timah Tbk (TIMAH). The company carries out land mine reclamation using a pot system and sea mine reclamation through various activities such as fish shelters, coral transplants, artificial reefs, squid restocking, mangrove planting, installation of abrasion barriers, crab restocking, and monitoring seawater quality.³²

Another form of reclamation is an alternative step in utilizing former mining areas in ways other than revegetation but can be used for other things for the benefit of the wider community. This is because not all ex-mining areas can be revegetated³³ Ex-mining land has various topographical and hydrological characteristics depending on the type of mining material and the method of mining carried out. Ex-mining locations with poor land structure result in various problems such as wavy/bumpy land with piles of overburden, tailings scattered sporadically, the dominant texture being very coarse (sand or coarser) or very fine (heavy grit), many former mine holes, small in size. and scattered sporadically, cover rock is potentially acid forming (PAF), the emergence of Acid Mine Water (AAT), dry climate conditions, and ameliorant materials to improve the quality of planting media are difficult to obtain.³⁴

Based on Minister of Energy and Mineral Resources Decree No. 1827 K/30/MEM/2018, reclamation activities at the Production Operations stage can be carried out in the form of revegetation and/or other uses such as cultivation areas, water sources, residential areas, or tourism. Even though the Minister's decision has been revoked, it has been partially revoked, namely by the Decree of the Minister of Energy and Mineral Resources Number 111.K/MB.01/MEM.B/2024 concerning Guidelines for Applications, Evaluation and Approval of the Reopening of Reclaimed Areas in Mining Business Activities and Coal. Thus, reclamation in other forms is still open. As a result, many large potholes are used which are not managed properly and are dangerous for humans and the surrounding environment. This can be seen in the Bangka Belitung Islands, Central, South, and East Kalimantan as well as in Southeast Sulawesi and North Maluku. The open opportunity for reclamation in other forms in statutory regulations is the weak point of these regulations and is not in line with the reclamation obligation with a 100% success rate. Reclamation and post-mining are intended to return to the original condition before the consideration activity. Regulations that allow reclamation in other forms need to undergo a judicial review so that existing regulations can be in line both vertically and horizontally.

³² Indrastuti, "6770 Ha Bekas Tambang Berhasil Direklamasi," <https://mediaindonesia.com/16/06/2024>, June 16, 2024.

³³ Bappeda Provinsi Kalimantan Timur, "FGD Reklamasi Bentuk Lain Di Kalimantan Timur," <https://bappeda.kaltimprov.go.id>, February 5, 2022.

³⁴ Dirjen PPKL, "Petunjuk Teknis Pemulihan Kerusakan Lahan Akses Terbuka Akibat Kegiatan Pertambangan" (Jakarta, 2016).

4. CONCLUSION

The pattern of cooperation between mining companies and mining service companies in the form of KSO is inappropriate because the parties have the same position and the mining company does not have direct control over mining activities. Mining companies, mining service companies, and processing and refining companies are required to implement good mining practices, and the administrative witnesses imposed are less effective in providing a deterrent effect for violators. Although the downstream obligation has succeeded in increasing state income and expanding employment opportunities, it has been carried out inconsistently and without thorough risk mitigation, especially the risk of environmental damage which will be a side effect of the downstream policy in the future. Reclamation and post-mining obligations must be monitored and implemented consistently, including the need for evaluation in the form of a judicial review, especially regarding reclamation norms in other forms as one of the legal loopholes that is not in accordance with the objectives of reclamation and post-mining, namely restoring conditions before mining activities with a 100% success rate

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