



# Impacts of Mining on Environmental Damage in Central Kalimantan

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**Abstract.** Increasing and uncontrollable mining activities cause various impacts on the community, specifically those around the site. The impacts are environmental damage, massive pollution (soil, water, and air), and damage to houses and public facilities. This study used normative juridical method, departing from a number of sources categorized as secondary data, namely official documents, books, reports, dictionary, and encyclopedia. The results point out that mining gives many impacts, namely landslides, increased soil density, decreased land productivity, sedimentation and erosion, as well as disturbance to public health and microclimate change. Meanwhile, the impacts of post-mining are changes in land morphology and topography. The landscape becomes irregular and has massive steep holes and mounds of former landfills. In addition, it becomes unproductive and prone to landslides.

**Keyword:** Mining, environment, environmental damage

## 1. Introduction

In Law No. 32 of 2009 concerning environmental protection and management, we as humans must preserve the environment. However, recently, the environment has become a much-discussed issue. This is due to the high impact of human activities on the environment, which can endanger the existence of the environment itself, especially development activities. One of the most common environmental damages is damage caused by mining.

The substitution of Law No. 4 of 2009 on Mineral and Coal Mining to Law No. 3 of 2020 is expected to bring in a better management of mining in Indonesia. This is because mining management is bound with environment which must be protected and preserved sustainably. Even the constitution states mandate that natural resources are owned by the state for people's welfare.

Law of Mineral and Coal Mining has also accommodated regional interests, by granting authority to the provincial government planning, granting mining license, and determining restrictions on the area and duration of mining permits. Hence, this new regulation forced coal mining entrepreneurs in Indonesia to adapt. When the need for coal increases, many entrepreneurs and members of the public are involved in this "black gold" business, even illegally. This is where the practice of mining without a permit begins.

Business activity, such as coal mining, should not essentially be a cause of "loss" for certain parties or even all people in general, as well as the nature. Massive

exploitation will eliminate the balance of the ecosystem, leading to various damages. Furthermore, values held by humans can also be reduced or disturbed. In fact, environmental damage can also trigger death cases, specifically in the context of illegal exploitation.

A number of preventive efforts have been done, but many are to be improved and more intensively implemented. Fundamental rules related to the environment have been passed under the Law Number 32 of 2009 on Environmental Protection and Management (EPH) Substantial instruments on the Environmental Impact Analysis (EIA) have also been issued, starting with Government Regulation No. 51 of 1993. The regulation is an elaboration of the precursor law on the environment, namely Law No. 4 of 1982. EIA arrangements were then refined through the Government Regulation No. 27 of 1999, which was issued to emphasize the importance of environmental management instruments through licensing. In this case, EIA is a prerequisite for obtaining such permits. Furthermore, the regulation regarding EIA is integrated into the Government Regulation No. 27 of 2012 on Environmental Permits.

The issuance of Law No. 32 of 2009 puts the environment as a determining factor in the decision-making process for the utilization and processing of natural resources. Development no longer places natural resources as capital, but as a single ecosystem unit which contains humans, the natural environment, and the built environment that forms a functional unit, interrelated and interdependent in a specific order, different from one ecosystem type to another. Therefore, environmental protection and management is specific, integrated, holistic, and has a spatial dimension.

According to Law of ESDM No. 32 of 2009 Article 1 paragraph (1), the environment is "the unity of space with all objects, forces, conditions, and living things, including humans and their behavior, which affect nature itself, the continuity of life, and the welfare of humans and living things other". Meanwhile, environmental protection and management is defined as "systematic and integrated efforts made to preserve environmental functions and prevent environmental pollution and/or damage which includes planning, utilization, control, maintenance, supervision and law enforcement".

Article 12 paragraph (1) emphasizes that the use of natural resources must be carried out based on the Environmental Protection and Management Plan. It consists of the national, provincial, and district/city plan as a whole. Thus, the utilization of natural resources is carried out by taking into account the carrying capacity of the environment.

Coal exploitation is closely related to the concept of environmental management, in which business activities are more vulnerable to environmental damage due to reduced environmental quality as a result of mining operations. Social life quality can also be affected as well. Abrar Saleng states various negative impacts of mining activities as follows:[1]

- a. In a relatively short time, mining business can change soil topography so that the ecosystem balance gets affected.

- b. Mining business can cause various kinds of disturbances, including pollution due to dust and smoke which contaminates air and water, water waste, tailings, and mine waste containing toxic substances.
- c. Mining done without regard to work safety and field geological conditions can lead to landslides, mine explosions, mine collapses, and earthquakes.

From the background of the problems above, the scope of the main problem in this research is the impact of mining exploitation on environmental damage in Central Kalimantan.

## 2. Problem

The problem to be studied in this article is "How is the impact of coal mining exploration on environmental damage in Central Kalimantan"?

## 3. Methods

This study was sociological normative legal research, focusing on the impacts of coal mining on environmental damage. It started with a preliminary study/problem identification. Two types of data were selected, namely: (1) Primary data, namely data taken directly from the interviewee/respondents (field research). (2) Secondary data, namely data obtained from library research, in which researchers collect and study regulations and writings related to the environment.

The researchers used the following techniques to collect the data : (1) The researchers did some interviews with the Regional Environmental Agency of Central Kalimantan Province and communities around the mining sites to collect the primary data. (2) The researchers studied the following materials to collect the secondary data: (a) primary legal material, which consists of norms or rules of law, jurisprudence, and treaties. (b) secondary legal material, which consists of books, scientific articles, and reports. (c) tertiary legal materials, which consists of dictionaries, cumulative indexes, and encyclopedias. The collected data were analyzed. The researchers used qualitative descriptive analysis to explain the applicable regulations and relate them to the reality in the field.

The data analysis method used in this research is a qualitative method. The qualitative analysis method is a research procedure that produces descriptive-analytical data. This means that the data produced, both primary and secondary, is fully researched and studied. Descriptive-analytical research is what is stated, written or verbally, by sources of information, and their actual behavior is researched and studied as a whole. Conclusions are drawn from the data that has been analyzed using interpretive-deductive thinking. Deductive analysis is a way of thinking that is based on general facts, from which specific conclusions are drawn. Interpretative deductive means that in analyzing, it is possible to have opinions, views, or interpretations of the data found. This aims to look for patterns, models, themes, and theories.[2]

#### 4. Discussion

In the context of natural resources control, the state has responsibilities of making policies, administering, regulating, managing, and supervising. Supervision by the state (*toezichhoudensdaad*) is to monitor the production sites that are important or influential to the people's livelihood. All aims to guarantee public prosperity.

Forest resources have an important function in supporting human life. In order to support this function, the government has organized forest areas with their respective main functions, namely: (1) conservation forests for the purpose of preserving plant and animal diversity and their ecosystems, which also function as areas for life support systems; (2) protected forests for the purpose of regulating water management, preventing floods, controlling erosion, preventing seawater intrusions, and maintaining soil fertility; and (3) production forests to produce forest products.[3]

In an agrarian country like Indonesia, land ownership is a necessity to fulfill the right to a decent life. In this concept, land control by individuals and communities is based on rights granted by the state based on applicable regulations. One important factor in supporting development that is pro-people is changing policies with all development bureaucracies that are considered important so that they become organizations that respect the rights of the community as implementers of development itself.

Not only do communities have their own land tenure system to support their lives, but these communities also have rules for managing natural resources, including clearing forest land for their agriculture. As the semi-autonomous social field concept was introduced, communities living in and around forests are social arenas that have the capacity to form their own arrangements (self-regulation) as a means of protecting forest areas and maintaining social order in their community areas.[4] Maria Rita Ruwastuti states that the law-making process can actually be controlled by any group, as long as they have power or authority, meaning that the people can control the law-making process to create rules that support and protect their own interests. [5]

Prior to the issuance of Law No. 23 of 2014 (State Gazette of the Republic of Indonesia of 2014 No. 244, Supplement to the State Gazette of the Republic of Indonesia No. 5587) on Regional Government, the majority of mining business permits were issued by district/city governments. This condition seems to place the regional head as a "puny king" in the area he leads. Even if mining occurs in regency/municipality boundary land, which is actually the authority of the province to issue permits, the rule can be "tricked" by issuing two mining licenses of each district/city government. Out of a total of 10,776 issued licenses, 8,000 permits for mining companies were issued by district/city governments—the rest by provincial ones. Unfortunately, of that number, 4,807 are problematic (Tribun News, 2022).

According to data from the Energy and Mineral Resources Office of Central Kalimantan Province, out of 656 coal mining permits issued by regencies/cities in Central Kalimantan, 236 licenses have not been clear and clean. Some issues were stated, one of which was the fact that they had not complied with the ESDM Law regarding licensing procedures. This is quite ironic since coal mining is a natural resource that makes a very significant contribution to economic development in Indonesia.

Another problem in mining management is that most coal mines are located in protected and production forest areas. [5] Prohibitions regulated in Law No. 41 of 1999 on Forestry and Law No 19 of 2004 on Stipulation of Government Regulations in Lieu of Law No. 1 of 2004 on Amendments to Law No. 41 of 1999 on Forestry have no significant effect on the use of forest areas as mining areas. Some government policies indeed allow the use of protected and production forests as mining locations.

Mining permits became out of control since the era of regional autonomy. 6-7 mining business permits were issued every day is based on data from the Ministry of Forestry in 2021 (specifically in Central Kalimantan). The determined forest area used for exploration is around 402,655.98 hectares, while the area for production is around 191,433.04 ha.

The impacts of mining on the environment are generally decreased land productivity, increased soil density, erosion and sedimentation, landslides, disturbance to flora and fauna, as well as disturbance to public health and microclimate change. Meanwhile, the impacts of post-mining are changes in land morphology and topography. The landscape becomes irregular and has massive steep holes and mounds of former landfills. In addition, it becomes unproductive and prone to landslides.

Mining has an important increasing local revenue, absorbing labor, becoming a source of foreign exchange, and role in development by producing raw materials for industry. On the other hand, mining also produces various adverse impacts on the environment. Its activity carries a risk of pollution and/or environmental damage. No mining activity does not have the potential to pollute and/or damage the environment, as stated by George W. (Rock) Pring:[6]

*“Mining is inherent (inseparable) with environmental degradation, no mining activity is environmentally friendly. Mineral resource activities affect all environmental media, namely their flora and fauna and land, air, water, individual safety and health, cultural continuity, local community lifestyles, economic life and social order. While temporarily assuming that the majority of mining impacts are said to be local in nature, mining can cause environmental problems nationally, transnationally, and even globally.”*

The right to the environment began to be discussed with the right to development since the UN Conference on the human environment, which was held in Stockholm, Sweden in 1972. The event was then followed by the Earth Summit in Rio de Janeiro, Brazil in 1992, focusing on the development and the environment. Another UN Conference was held on sustainable development in Johannesburg,

South Africa in 2002. This conference resulted in commitments, conventions, and action plans for the implementation of environmentally sustainable development.

In essence, environmental protection and management are foundation of various types of human rights, such as the right to life, the right to an adequate standard of living, and the right to health and a clean environment. Health is closely related to achieving the quality of human life, so that the right to a good and healthy environment cannot be reduced in any condition. In addition, no discrimination of any kind is allowed in respecting the right to the environment.

The right to a good and healthy environment requires legal arrangements that are oriented towards the environment as a feature of modern environmental law. The legal politics of environmental management underwent fundamental changes in the 1945 Constitution of the Republic of Indonesia since the second amendment (18 August 2000) and the fourth (10 August 2002). The fundamental change referred to is through the constitutionalization of environmental law norms as stated in Article 28H paragraph (1) of the 1945 Constitution of the Republic of Indonesia, namely by the inclusion of the principle of environmental protection; article 33 paragraph (4) in the form of affirmation of the principles of sustainability and environmental insight in running national economy.

The environment has the right to obtain legal protection from a theoretical and juridical perspective. The issuance of Law No. 32 of 2009 on ESDM contains a philosophical value: Indonesian people have right to a good and healthy environment. This means that the most important essence of the ESDM Law is respect and guarantee for an ideal environment.

In general, the basis for regulations and policies for the management of mining or minerals is Article 33 paragraph (3) of the 1945 Constitution and Law Number 3 of 2020. Article 33 paragraph 3 of the 1945 Constitution states &quot;earth, water and the natural resources contained therein are controlled by the state and used for the greatest prosperity of the people. The use of Article 33 paragraph 3 is carried out with the assumption that natural resources are controlled by the state and are common property, in this case national, and are used for welfare and as much as possible for the benefit of the prosperity of the people from one generation to the next in a sustainable manner.[7]

In this case, based on Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia, the state is to control natural resources by supervising any utilization activities—under the environmental principles. Mining activities and the environment are two things that cannot be separated. There is even an expression: no mining activity without environmental damage/pollution.

Unfortunately, coal mining activities have also taken away the economic, social, and cultural rights of citizens, especially those living around the sites. The economic, social and cultural rights of every citizen, which is stated in Article 22 is the Universal Declaration of Human Rights guarantees. It says that a person (as a member of society) has entitled to the implementation of economic, social, and cultural rights and is the right to social security—which are international cooperation and indispensable for his dignity, free personal development, through national efforts

and according to the arrangements and resources of each country.[8]

Based on the research results, coal mining exploitation leads to serious environmental damage that triggers loss of people, namely transformation of forests to business sites, high level of pollution on rivers around the mining sites, and even coal dust pollution due to the activity of transporting mining products.

Based on the results of research and discussions related to the impact of mining, namely the Mining Service. The partnership document stipulates rights and obligations, including the obligation to plant and maintain trees, the obligation to secure the area and its surroundings from illegal logging activities and forest encroachment, and the obligation to expel group members who violate the provisions. The government's role here is to bridge public and private interests so that things run fairly without harming any of the parties, whether the government, society, or the private sector. The government's role as a motivator has been carried out as it should to date in every meeting between the government and the community to always encourage the community to increase creativity in the field of creative economy.

Reclamation is an activity carried out throughout the stages of the Mining Business to organize, restore and improve the quality of the environment and ecosystem so that it can function again according to its designation. A good and clean environment is the hope of all nations and countries. Therefore, reclamation activities are needed which are activities to restore former land. mining as it should be and in accordance with the planned Post-mining Reclamation plan, so that it can be used again as intended.[9]

In order to increase community participation, the government needs to carry out outreach activities. Outreach, guidance, and comparative studies must continue to be carried out over a certain period of time. By carrying out activities repeatedly at certain intervals, it is hoped that the community will have the awareness to participate in an environmentally sound land management system, starting with planning, seeding, planting, and even maintaining and developing post-mining trees.

## **5. Conclusion**

From the analysis of the legal issues that the researchers raised in this research, they can draw the conclusion that coal mining activities as a form of utilization of natural resources are basically part of the implementation of economic development, which essentially refers to national development goals, namely improving community welfare. However, mining is an activity that is very vulnerable to the risk of pollution and environmental damage, so the government, as a consequence of the state's right to control over natural resources, is obliged to carry out the functions of regulating, administering, and supervising the management of natural resources.

As a form of utilization of natural resources, coal mining is basically to increase state economics for the national development and community welfare. However, it is extremely prone to contamination risk and environmental damage. Therefore, the government must carry out the functions of managing, regulating, and supervising the mining business. The policy on environmental permits and mining

license must be crystal clear, referring to the sustainable development. These efforts are to prevent any damage.

This article suggest:

- a. Communication effectively and evenly to all levels of society in the context of developing and managing post-mining areas so that cooperation between all parties, both government and community, can synergize so that there is no sense of worry or turmoil among the community regarding environmental damage caused by mining;
- b. Establishment of forest area managers and mining area supervisors while still involving all levels of society without exception to make it easier to manage and develop post-mining areas so that no party feels disadvantaged; and
- c. The participation of regional governments is very much needed, even though they no longer have the authority to manage regional mining policies, but they can supervise mining activities in their regions with recommendations from the central government.

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