

## THE DYNAMICS OF ILLEGAL STONE MINING CONFLICT IN THE KENDENG MOUNTAINS, SUKOLILO SUBDISTRICT

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### ABSTRACT

Rock mining activities in the Kendeng Mountains, Sukolilo District, continue to generate environmental and social conflicts due to the proliferation of illegal mining and weak regulatory enforcement. Previous studies on mining governance have largely emphasized environmental impacts, while limited attention has been given to how government supervision systems influence conflict dynamics between miners and local communities. This study aims to analyze the effectiveness of government supervision in managing rock mining activities and its role in mitigating conflicts in the Kendeng Mountains. This research employed a qualitative descriptive approach using observation, in-depth interviews, and documentation. Informants were selected purposively, including local residents, miners, village officials, local government representatives, and law enforcement officers. Data were analyzed using the Miles and Huberman interactive model consisting of data reduction, data display, and conclusion drawing. The findings reveal that mining conflicts in the Kendeng Mountains are multidimensional, involving regulatory inconsistencies, operational issues, and community resistance triggered by environmental degradation, dust pollution, damaged road infrastructure, and declining agricultural productivity. Weak supervision and limited understanding of licensing procedures among miners have contributed to the persistence of illegal mining activities and escalating conflicts. This study contributes to the literature by highlighting the role of government supervision capacity and multi-stakeholder collaboration as key factors in promoting sustainable mining governance and reducing socio-environmental conflicts in local mining areas.

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### INTRODUCTION

Conflicts in natural resource management are a persistent issue in Indonesia, particularly in the mining sector, where economic interests often intersect with social and environmental concerns. Mining activities frequently involve

multiple actors, including government institutions, private operators, local communities, and environmental groups, each with different interests and priorities. When natural resource exploitation is not accompanied by effective governance, transparent regulation, and community participation, mining activities can easily trigger social conflicts and environmental degradation. Therefore, natural resource management should not only be viewed as an economic activity but also as a complex governance process involving regulatory control, social legitimacy, and environmental sustainability (Ho & Zhao, 2022; Kana & Goki, 2022).

Illegal mining represents one of the most significant challenges in this context. In many regions of Indonesia, mining activities are frequently conducted without official permits, weak supervision, and limited enforcement of existing regulations. These conditions often lead to environmental damage, economic losses for the state, and conflicts between mining operators and surrounding communities (Cerya & Khaidir, 2021). Previous studies have emphasized that conflicts in the mining sector are often rooted in weak institutional control, limited participation of affected communities, and inconsistencies between regulatory frameworks and their implementation in practice. However, the dynamics of such conflicts may vary across local contexts depending on governance capacity, socio-economic conditions, and environmental vulnerabilities (Asril, 2014; Saiman et al., 2025).

One case that illustrates these challenges is the rock mining activity in the Kendeng Mountains, located in Sukolilo District. In recent years, mining activities in this area have increased significantly, and a considerable proportion of them operate without official permits from the government. The rapid expansion of these activities has generated multiple environmental and social problems, including landscape alteration, dust pollution, road infrastructure damage, and the reduction of agricultural land that serves as the primary source of livelihood for local communities. The environmental degradation caused by uncontrolled mining activities has raised serious concerns regarding ecological sustainability and the carrying capacity of the Kendeng Mountains ecosystem.

The impacts of these mining activities are directly experienced by surrounding communities. Residents have frequently reported air pollution caused by dust from excavation processes and the intensive movement of heavy trucks transporting mining materials through residential areas. Continuous exposure to dust pollution not only reduces environmental quality but also poses potential health risks, particularly for children and elderly residents (Junita & Handoko, 2020; Siregar et al., 2023; Sumawidayani, 2023). Moreover, the heavy traffic of mining trucks has accelerated the deterioration of road infrastructure, which disrupts the mobility of local residents in conducting daily economic and social activities. In addition, the presence of steep excavation cliffs that are not properly rehabilitated increases the risk of landslides, posing safety threats to communities living near the mining sites (Gupta, 2024; Kumeh & Hirons, 2025).

These environmental and social impacts have triggered resistance from local communities who perceive that the costs of mining activities are disproportionately borne by them, while the economic benefits are concentrated among mining operators. From the perspective of social conflict theory, such situations often emerge when resource exploitation generates unequal distributions of benefits and risks among stakeholders (Ahmad & Nurdin, 2022; Nuralam et al., 2017). The imbalance of power relations between mining operators and affected communities can intensify tensions and lead to prolonged conflicts, especially when communities feel that their concerns are not adequately addressed by government authorities (Novitri & Riana, 2025; Rini & Maratussholihah, 2019).

Another factor contributing to the escalation of mining conflicts in the Kendeng Mountains is the weakness of government supervision. The increasing number of illegal mining sites indicates that monitoring and enforcement mechanisms have not been functioning effectively. According to Bambang Riyanto, Chairman of the Kendeng Heirs Association, there were 21 illegal mining sites along the Sukolilo–Prawoto road in 2023, compared to 16 sites in previous years. This trend reflects a growing gap between formal regulations governing mining activities and the realities of their implementation in the field.

Statistical data further support this concern. According to the Central Java Statistics Agency (BPS), only five mining operations in the area possessed official Mining Business Permits (IUP), while the majority of mining activities operated without legal authorization. This situation demonstrates that regulatory frameworks exist but are not effectively enforced. In addition to environmental and social impacts, illegal mining activities also result in financial

losses for the local government because they are not registered as taxable mining operations. Data from the Regional Financial and Asset Management Agency of Pati Regency indicate that the realization of Non-Metallic Mineral and Rock (MBLB) tax revenues remained far below the government's target. In 2022, tax realization reached only 40.99 percent of the target, while in 2023 it declined further to 30.70 percent. This low level of tax revenue reflects the large number of mining operations that operate outside the formal regulatory system (Mojo et al., 2017; Suyono & Suryanto, 2018).

Although various studies have discussed mining conflicts and environmental governance in Indonesia, most of them focus primarily on environmental impacts, legal frameworks, or community resistance. Relatively limited attention has been given to the role of government supervision systems in shaping the dynamics of conflicts between miners and local communities, particularly at the local governance level. As a result, there remains a gap in understanding how weaknesses in supervision, regulatory enforcement, and policy implementation contribute to the persistence of illegal mining and the escalation of social conflicts in specific regional contexts (Ramadhan et al., 2016; Safa'at & Qurbani, 2017).

Based on this gap, an important research question arises: how does the government supervision system influence the persistence of illegal mining activities and the emergence of conflicts between miners and local communities in the Kendeng Mountains, Sukolilo District? Addressing this question is important not only for understanding the governance challenges associated with illegal mining but also for identifying institutional factors that hinder effective conflict management in natural resource governance.

Therefore, this study aims to analyze the role and effectiveness of government supervision in managing rock mining activities in the Kendeng Mountains and to examine how weaknesses in supervision contribute to conflicts between miners and local communities. By exploring the interaction between regulatory governance, mining practices, and community responses, this research seeks to provide a deeper understanding of the institutional dynamics that shape mining conflicts at the local level.

The findings of this study are expected to contribute both theoretically and practically. From a theoretical perspective, this research enriches the literature on natural resource governance and conflict management by highlighting the importance of supervision capacity and regulatory enforcement in mitigating socio-environmental conflicts. From a practical perspective, the study provides empirical insights that may support local governments in developing more effective supervision mechanisms, strengthening policy implementation, and promoting participatory approaches in natural resource management.

## METHOD

This study employed a qualitative research method with a descriptive approach. The descriptive qualitative approach was selected because the research aims to obtain an in-depth understanding of the phenomenon of rock mining conflicts occurring in the Kendeng Mountains, particularly regarding the dynamics of relationships between miners and the surrounding communities. Qualitative descriptive research focuses on collecting natural data, classifying information based on emerging themes, and interpreting the findings systematically to explain social phenomena comprehensively. Through this approach, the researcher seeks to describe the forms of conflict, the actors involved, the factors contributing to the conflict, and potential conflict resolution strategies related to rock mining activities in the Kendeng Mountains.

The research was conducted in the Kendeng Mountains area, Sukolilo District, Pati Regency, Central Java. The location was selected purposively because the area has experienced a significant increase in illegal rock mining activities in recent years, which has triggered social tensions and conflicts between local communities and mining actors. In addition, the region has distinctive social, economic, and ecological characteristics, making it relevant for examining local natural resource governance and conflict dynamics.

Informants in this study were determined using a purposive sampling technique, which involves selecting individuals who possess relevant knowledge, experience, and involvement in the phenomenon under study. A total of 15 informants participated in this research, consisting of six community members living around the mining sites, four

rock miners, two village officials, one sub-district government official, one representative from the local government, and one police officer. The diversity of informants was intended to capture multiple perspectives regarding the mining conflict and to obtain comprehensive information from different stakeholders directly involved in or affected by the mining activities.

Data collection was carried out through observation, in-depth interviews, and documentation. Observation was conducted directly at the research site to examine environmental conditions, mining activities, and social interactions occurring between miners and the surrounding community. Through this method, the researcher was able to obtain factual data regarding field conditions that might not emerge during interviews. In-depth interviews were conducted using a semi-structured format to explore informants' perceptions, experiences, and views regarding rock mining conflicts and government supervision. Documentation was also used as supporting data, including policy documents, government reports, photographs, and statistical records related to mining activities and conflicts in the research area.

To ensure data validity, this study applied triangulation techniques, including data source triangulation and method triangulation. Data source triangulation was conducted by comparing information obtained from different informants, such as community members, miners, government officials, and law enforcement officers. Meanwhile, method triangulation was implemented by cross-checking data obtained through observation, interviews, and documentation to ensure consistency and reliability of the findings.

The data obtained were analyzed using the interactive analysis model developed by Miles and Huberman, which consists of three stages: data reduction, data display, and conclusion drawing and verification. Data reduction involves selecting, simplifying, and focusing raw data obtained from the field to align with the research objectives. Data display refers to the process of organizing the reduced data into thematic categories, descriptive narratives, and matrices to facilitate interpretation. The final stage, conclusion drawing and verification, involves interpreting the meaning of the data and confirming the consistency of findings through continuous comparison of the collected data.

To ensure the trustworthiness of the research, several strategies were applied. Credibility was achieved through prolonged engagement in the field, triangulation of data sources and methods, and member checking with selected informants to confirm the accuracy of interpretations. Transferability was ensured by providing detailed descriptions of the research context, location, and characteristics of informants so that readers may evaluate the applicability of the findings in similar contexts. Dependability was maintained by documenting the research process systematically, including data collection procedures, interview guidelines, and analytical steps, allowing the research process to be reviewed and audited if necessary.

Ethical considerations were also carefully addressed throughout the research process. All informants were informed about the purpose of the study and their voluntary participation prior to data collection. Informed consent was obtained from each participant, and confidentiality of personal information was maintained by anonymizing informants' identities in the research report. These ethical procedures were implemented to ensure that the research respected the rights, privacy, and dignity of all participants involved. Through the use of a descriptive qualitative approach, triangulated data collection, and systematic analysis, this study seeks to produce a comprehensive and credible understanding of the dynamics of rock mining conflicts in the Kendeng Mountains and to provide insights into effective strategies for managing natural resource conflicts at the local level.

## RESULTS AND DISCUSSION

### **The Dynamics of Mining Conflict in the Kendeng Mountains, Sukolilo District**

The potential possessed by Sukolilo District, particularly its extensive limestone mountain range within the Kendeng Mountains area, has positioned the region as a strategic site for economic activity, especially in the mining sector of non-metallic minerals and rocks. The abundance of limestone resources has attracted mining activities that are perceived as capable of increasing regional revenue and improving the economic conditions of local communities through job creation, business opportunities, and the circulation of local income. From a development perspective, the presence of natural resource potential can indeed function as a catalyst for regional economic growth. However, the process of utilizing these natural resources cannot be viewed solely from an economic standpoint, but must also be

carefully considered from legal, environmental, and socio-cultural perspectives that shape the social life of the Sukolilo community.

From a legal perspective, the exploitation of natural resources, including stone and limestone mining, should comply with existing mining regulations, spatial planning policies, and environmental protection laws. In reality, many mining activities in Sukolilo District are carried out without official permits, which raises serious concerns regarding legal certainty, regulatory compliance, and governance effectiveness. The absence of formal licensing not only creates administrative irregularities but also weakens government control over mining practices, environmental management, and revenue collection from the mining sector. Consequently, the legal dimension becomes a crucial aspect in understanding the broader dynamics of mining conflicts in the Kendeng Mountains area.

Sociologically, the utilization of abundant natural resource potential tends to produce complex social dynamics in the form of cooperation, competition, and even conflict among stakeholders. On the one hand, mining activities may foster cooperation between miners, transport workers, and local economic actors who benefit directly from the mining supply chain. On the other hand, competition over resource access and economic benefits can create tensions between different groups, particularly when resource utilization is perceived as unfair or environmentally harmful. Social conflict becomes more likely when economic interests dominate resource exploitation without adequate community participation and environmental safeguards. This situation tends to persist as long as natural resources remain available and economically exploitable, making conflict a recurring phenomenon in resource-rich regions such as Sukolilo District.

Therefore, the role of local government becomes increasingly important in ensuring that natural resource management is conducted in a controlled, regulated, and sustainable manner. A stronger governmental role is needed not only in the form of regulatory enforcement and licensing supervision, but also in conflict mediation, environmental monitoring, and community empowerment. Without firm oversight, mining activities may continue to expand in an unregulated manner, thereby exacerbating environmental degradation and social tensions within the community.

Upon closer examination, the stone mining conflict in Sukolilo District can be categorized as a social conflict that has gradually evolved over time and involves multiple actors, including miners, local communities, village authorities, and regional government institutions. The conflict is not a single-dimensional issue but rather a multidimensional phenomenon rooted in governance gaps, economic interests, and environmental concerns. Broadly, there are three main types of conflict occurring in Sukolilo District.

First, regulatory conflicts at the regional level, which are closely related to technical mining practices, licensing issues, spatial planning, socio-cultural considerations, and legal certainty. The mismatch between formal regulations and actual mining practices in the field has created legal ambiguity and governance challenges. While the government requires miners to operate based on official permits and environmental standards, many mining actors continue their activities informally, leading to tensions between policy expectations and practical realities.

Second, procedural and technical conflicts associated with mining operations. These include issues related to exploration systems, mining management, land reclamation, and the distribution of mining products, particularly transportation and road access. Mechanized mining methods that are highly explorative and intensive have significantly altered the landscape of the Kendeng Mountains. The lack of proper reclamation and environmental management has resulted in land degradation, dust pollution, and infrastructure damage, especially on roads frequently used by heavy mining trucks. Such technical practices not only affect environmental sustainability but also directly impact the daily lives of local residents.

Third, community resistance, which has intensified due to the absence of meaningful community involvement in mining activities, limited compensation, environmental degradation, and the prevalence of illegal mining operations. Many residents feel marginalized in decision-making processes related to resource utilization in their own living environment. Illegal excavation activities carried out by mining actors have caused severe damage to agricultural land surrounding mining sites, leading to reduced soil productivity and even crop failure. Furthermore, irrigation wells used by farmers have reportedly dried up due to excessive excavation and disruption of underground water systems, thereby threatening local food security and livelihoods that heavily depend on agriculture.

Mining operations in Sukolilo are generally conducted using mechanical equipment and tend to be highly explorative, which accelerates environmental degradation and increases air pollution due to dust and transportation activities, as frequently reported in mass media coverage. These environmental and social pressures have eventually triggered both vertical and horizontal conflicts within the community structure.

Horizontal conflict refers to conflicts that occur between individuals or groups with relatively equal social positions, such as between local residents and mining actors. In the context of Sukolilo District, the relationship between the community and miners has become increasingly strained due to perceived environmental damage, loss of agricultural productivity, and the deterioration of public infrastructure. The frequent passage of heavy mining trucks has significantly damaged village roads and created safety risks for residents, particularly schoolchildren. This tension escalated in August 2023 when women from Wegil Village organized a road blockade to protest mining operational hours that coincided with school entry times. They considered the situation dangerous for children and blamed mining transportation for worsening air pollution and traffic hazards along the routes used by mining trucks. This incident illustrates how environmental and safety concerns can transform into collective social action at the grassroots level.

Meanwhile, vertical conflict in the Kendeng Mountains, Sukolilo District, is generally influenced by disharmony between miners and local government authorities. This form of conflict arises from the inconsistency between government regulations and the ongoing mining practices conducted by local residents without official mining business permits. From the government's perspective, mining activities should comply with legal frameworks, licensing procedures, and environmental standards. However, from the miners' perspective, mining is often viewed as a primary source of livelihood that must continue despite regulatory limitations. This divergence of interests has created tension between authority and community actors, reflecting a classic pattern of vertical conflict within governance systems.

This situation is in line with Ralf Dahrendorf's conflict theory, which argues that social conflict emerges from unequal authority relations embedded within social structures. In the case of the Kendeng mining area, the imbalance between regulatory authority held by the government and the economic dependence of local miners on resource extraction has produced structural tensions. As long as regulatory enforcement, community welfare, and environmental sustainability are not harmonized, the potential for prolonged and recurring conflict in Sukolilo District will remain significant. Therefore, an integrative conflict management approach that balances legal enforcement, community participation, and sustainable resource governance is essential to reduce tensions and ensure long-term socio-environmental stability in the Kendeng Mountains region.



Figure 1. Road Access Damage in the Kendeng Mountains, Sukolilo District



Figure 2. Mining Location Directly Adjacent to Community Agricultural Land



Figure 4. Abandoned Mining Land

### **The Government's Role in Conflict Resolution**

The proliferation of illegal rock mining activities in the Kendeng Mountains has triggered conflicts among miners, local communities, and the government, thereby necessitating a comprehensive governmental role in conflict resolution. This conflict is not merely related to economic aspects, but also concerns environmental sustainability and the security of living spaces for communities surrounding the mining areas. Therefore, the government holds a

strategic position in regulating, supervising, and mediating the competing interests between local communities and mining actors.

The government's role in mining management underwent significant changes following the enactment of Law Number 23 of 2014 concerning Regional Government. Through this regulation, the authority to issue permits and supervise mining activities, which was previously under district or municipal governments, was transferred to provincial governments. District governments are now limited to providing recommendations regarding the issuance of Mining Business Permit Areas (WIUP), while the subsequent licensing process falls under provincial authority. This shift in authority reflects the government's effort to improve mining governance to make it more coordinated and controlled.

In efforts to mitigate the conflict occurring in the Kendeng Mountains, the Energy and Mineral Resources Agency (ESDM) of Central Java Province, Kendeng Muria Region, has implemented various strategic measures by collaborating with law enforcement officials and synergizing with both provincial and district governments. These efforts have been manifested through the regulation and enforcement of illegal mining activities using a penal law enforcement approach, which is expected to create a deterrent effect for miners operating without official permits. This measure represents a form of government intervention in controlling conflict while upholding regulations in the mining sector (Kompas, 2023).

In addition to law enforcement measures, the government has also sought to reduce potential conflicts through policies aimed at simplifying the mining business licensing process. This policy is intended to enable miners to operate legally and comply with established governmental regulations, thereby preventing arbitrary mining activities that could disrupt surrounding communities (Muria Pos, 2023). With clear regulations in place, miners are expected to conduct exploration only in designated areas in accordance with applicable provisions. These measures demonstrate the government's efforts in conflict resolution through regulatory approaches, law enforcement, and licensing management. This is further evidenced by actions taken against illegal miners without mining business permits, including the arrest of an illegal mining operator in the area (Kompas.com, 2023). Such enforcement actions signify the tangible presence of the government in controlling mining activities that have the potential to generate social conflict.

However, research findings indicate that the policies issued by the government have not yet fully succeeded in suppressing illegal mining activities in the Kendeng Mountains, particularly in the limestone mountainous area of Sukolilo District. One of the contributing factors is the limited awareness and understanding among mine operators regarding mining business licensing procedures. Insufficient information dissemination and government assistance have also led some miners to continue operating illegally.

This condition demonstrates that the government's conflict resolution efforts still face various challenges, especially in terms of policy implementation at the field level. Therefore, resolving the conflict between miners and communities in the Kendeng Mountains requires not only law enforcement but also a more participatory approach through policy socialization, enhanced supervision, and active community involvement in the sustainable management of natural resources.

## CONCLUSION

This study reveals that the conflict over illegal rock mining in the Kendeng Mountains, Sukolilo District, represents a complex socio-environmental issue involving regulatory weaknesses, environmental degradation, and tensions between miners and local communities. Illegal mining activities have caused various negative impacts, including dust pollution, damage to road infrastructure, declining agricultural productivity, and increased risks of environmental hazards. These impacts have triggered both horizontal conflicts between community groups and miners and vertical conflicts between miners and government authorities due to discrepancies between existing regulations and their implementation in the field.

From a theoretical perspective, this study contributes to the literature on natural resource governance and conflict management by demonstrating that weak supervision and ineffective policy enforcement can intensify socio-environmental conflicts at the local level. The findings highlight that conflict dynamics in mining areas are not solely driven by economic interests but are also shaped by governance capacity, institutional control, and the degree of community participation in natural resource management.

In terms of policy implications, the findings suggest the need for more operational strategies to improve mining governance. These include strengthening monitoring systems through regular field inspections, improving coordination between local governments and law enforcement agencies, enhancing socialization of licensing procedures to miners, and promoting participatory dialogue mechanisms involving communities, miners, and local authorities. Such measures are essential to ensure that mining activities are conducted in accordance with environmental regulations and local development priorities.

However, this study has several limitations. The research focuses on a single case study in the Kendeng Mountains, which may limit the generalizability of the findings to other mining regions with different socio-political contexts. In addition, the study primarily relies on qualitative data from selected informants, which may not fully capture broader institutional dynamics at the regional or national level.

Future research is therefore recommended to incorporate comparative studies across different mining regions and to integrate mixed-method approaches that combine qualitative insights with quantitative data. Such studies may provide a more comprehensive understanding of mining governance challenges and contribute to the development of more effective and sustainable natural resource management policies.

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