



Original Article

A Study of Community Strategies for Mitigating Social Change in the Mining Industry in Gampong Balee, Meurebo District, West Aceh Regency, Indonesia

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Abstract: This study examines the strategies employed by the Gampong Balee community in Meurebo District, West Aceh Regency, to mitigate social changes caused by the mining industry. Additionally, it seeks to identify the forms of social change resulting from inadequate mitigation efforts in the community. Mitigation refers to a series of actions aimed at reducing disaster risk, which includes both physical development and the enhancement of public awareness, as well as strengthening response capacities. Informants were selected using a random sampling technique, which is appropriate when the population is considered homogeneous (sharing similar characteristics). This research employs a qualitative method with a descriptive approach to analyze the issue. The findings reveal that the mining industry's presence has led to significant social changes in the Gampong Balee community. The community expresses a need for mitigation measures to address environmental degradation and other changes. The mitigation strategies implemented by the community include planning, mapping, and socialization/counseling efforts. The study also identifies several forms of social change resulting from the lack of effective mitigation by the mining industry, including: the acquisition of agricultural land, erosion of traditional social habits, damage to road infrastructure, and environmental pollution.

Keywords: Mitigation strategies; Mining industry; Social changes; Community awareness; Environmental degradation



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1. Introduction

West Aceh is a region rich in natural resources, currently experiencing rapid development across various sectors, including technology, social welfare, economics, and industry. One of the driving forces behind this growth is the presence of numerous industries operating within the area, which highlights the high quality of the region's natural resources. Among these industries, the mining sector plays a significant role, particularly in Meulaboh, where mining activities are concentrated. According to the Central Statistics Agency (BPS) of West Aceh, the Gross Regional Domestic Product (GRDP) from the mining and quarrying sector was recorded at 1.898 trillion rupiahs, with the industrial

management sector contributing 116.01 billion rupiahs in 2023 (BPS West Aceh, June 24, 2024). As reported by the Ministry of Energy and Mineral Resources (2021), Indonesia's coal reserves currently total 38.84 billion tons, with an annual production of approximately 600 million tons. Additionally, the country holds 143.7 billion tons of coal resources. The government has been focusing on utilizing these resources to promote national welfare, with Sumatra and Kalimantan being the primary coal production regions. Kalimantan accounts for 62.1% of Indonesia's coal reserves, while Sumatra holds 55.08 billion tons of resources and 12.96 billion tons of reserves (Energy and Mineral Resources Department, 2021).

The mining industry, as defined by Government Regulation No. 142 of 2015 on Industrial Zones, is responsible for managing raw materials sourced from mining operations. The regulation emphasizes objectives such as accelerating the equitable distribution of industrial development, enhancing industrial competitiveness, and ensuring environmental sustainability. In line with this, Law No. 3 of 2020 on Mineral and Coal Mining was enacted to regulate mining activities, with a focus on attracting foreign investment through the Work Contract (KK) model, wherein investors assume the role of contractors and the government acts as the principal. Despite its economic contributions, coal mining can have adverse environmental and social impacts. According to Hesperian (cited by Fachlevi et al., 2015), mining operations can lead to significant environmental degradation, such as deforestation, soil erosion, and air pollution. In response to these challenges, companies are expected to engage in Corporate Social Responsibility (CSR) initiatives, which are mandated by law, including regional regulations like the Aceh Government Law (UUPA) and the West Aceh Qanun on CSR.

West Aceh, particularly, holds substantial coal reserves. Data from the West Aceh Mining Service in 2019 indicates a potential of 350.90 million tons. Recognizing this resource as an asset for regional economic development, the West Aceh government has issued Mining Business Permits to national mining companies such as PT Mifa Bersaudara (Aceh Energy and Mineral Resources Service, 2019). The presence of such companies significantly benefits the local economy and society, with mining concessions impacting five villages, including Balee Village, which is considered a "ring one" area most affected by mining activities. The mining industry in Gampong Balee, located in Meureboh District, has profound social consequences for the local community. While mining activities are often viewed as catalysts for socio-economic progress, they also bring about environmental degradation, pollution, and shifts in local social structures. The community's ability to cope with these changes depends on effective mitigation strategies. These strategies are essential to address the social impacts of mining, including changes in livelihoods, social mobility, and public health, as well as environmental concerns such as air, water, and land pollution.

The mining industry's presence in Gampong Balee has led to various social changes, both positive and negative. Positive impacts include job creation and improved living standards, while negative effects, such as environmental destruction and increased social conflicts, have also been observed. As the mining industry continues to expand, it is crucial to implement mitigation strategies to minimize its harmful impacts. These strategies should aim to address both the social and environmental challenges posed by the industry, fostering a more sustainable and equitable development model for the region. This study explores the community strategies employed to mitigate social changes caused by the mining industry in Gampong Balee, Meureboh District, West Aceh. Specifically, it seeks to answer the following research questions: What strategies has the mining industry implemented to mitigate social change in Gampong Balee? What forms of social change have occurred due to insufficient mitigation by the mining industry in this community? The primary objective of this research is to analyze and identify the strategies for mitigating social change, as well as to assess the consequences of inadequate mitigation on the community.

2. Materials and Methods

This study was conducted in Gampong Balee, a village located in the Meurebo District of West Aceh Regency. The primary reason for selecting this location is that it is the residence of our informants. Additionally, the proximity of the village facilitated field research and observation efforts. An equally significant factor is the presence of an urgent research issue that requires prompt resolution to alleviate concerns within the local community. Consequently, the research aims to circumvent potential challenges such as remote location, unpredictable weather conditions, and limited transportation, which could hinder the fieldwork process. The research adopts a distinct approach compared to a descriptive analysis, which typically examines various perspectives. In contrast, this approach seeks to understand an event by utilizing visualizations, conjectures, or representations of the current reality. By employing this method, the researchers aim to provide a more comprehensive and factual presentation of the material. The intention is for the readers to gain a deeper understanding and broaden their perspectives, potentially inspiring new ideas or ways of thinking. This qualitative approach is particularly suited for offering a detailed account of the "Community Strategies in Mitigating Social Change in the Mining Industry in Gampong Balee, Meurebo District, West Aceh Regency."

The researchers exercised great care in selecting informants to ensure they were appropriately suited to the study's needs. Informant selection followed the Random Sampling technique, where participants were chosen randomly from the population. According to Idrus (2009), random sampling is employed when the population is assumed to be homogeneous, meaning it shares a common characteristic, allowing for the random selection of samples. In this

method, every individual in the population has an equal chance of being chosen. Random sampling can be implemented using simple random sampling, such as selecting samples via a lottery system. The research informants included: (i) Key informants, which consisted of the Keuchik (village head) of Gampong Balee, the Gampong Secretary, and other village officials and (ii) Supporting informants, individuals who are directly affected by the mining industry's impact in the Gampong Balee area.

3. Results and Discussion

The findings of this study reveal that the introduction of the mining industry has led to significant social transformations within the Gampong Balee community. These changes have raised concerns among residents, prompting a call for effective mitigation strategies to prevent further environmental degradation and social disruption. The community has responded by implementing various strategies to address these issues, namely: planning strategies, mapping strategies, and socialization or counseling strategies. The observed forms of social change in Gampong Balee due to the mining industry include: (1) the acquisition and loss of agricultural land, (2) the erosion of traditional practices and social norms, (3) the deterioration of road infrastructure, and (4) environmental pollution. These developments are discussed in greater detail in the following sections.

3.1. Overview of Gampong Balee and the Development of the Mining Industry

The mining industry was first introduced in Gampong Balee in 2007 and has expanded rapidly since then. Gampong Balee, located in Meureubo District, West Aceh Regency, spans an area of approximately 3,212.57 hectares (SIGAB Balee). It is geographically bordered by:

- **North:** Gampong Reudeup, Paya Baro District
- **South:** Gampong Buloh
- **West:** Gampong Tumpok Ladang
- **East:** Gampong Sumber Batu

As of 2022, Malek Ahmad has served as the Keuchik (village head) of Gampong Balee. The village comprises three hamlets: Dusun Mulia (57 households), Dusun Setia (44 households), and Dusun Bahagia (104 households). Prior to the advent of mining, the local economy was predominantly agricultural, involving rice cultivation, secondary crops, palm oil farming, and small-scale trade. The arrival of the mining industry has led to a gradual shift in livelihoods and environmental conditions, accompanied by the erosion of long-standing cultural values and practices. Agricultural land has diminished due to widespread land acquisition for industrial purposes, fundamentally altering the socio-economic fabric of the community.

3.2. Community Strategies for Mitigating Social Change

The residents of Gampong Balee have initiated several strategies in response to the social and environmental challenges posed by mining activities. These include:

1. Planning Strategy

The planning strategy emphasizes the need for comprehensive planning by both the mining industry and government bodies, covering the pre-operational, operational, and post-operational phases. Particular attention must be given to the well-being of the local population, which consists primarily of traditional communities unfamiliar with industrial dynamics. A critical component of this strategy involves the implementation of Corporate Social Responsibility (CSR) programs, which are further elaborated in subsequent sections.

2. Mapping Strategy

Mapping plays a vital role in effective mine planning and environmental management. This strategy involves the systematic collection of data on topography, geology, hydrology, and mineral reserves. Such information is essential for designing sustainable mining operations, managing natural resources, and ensuring occupational health and safety. In addition, mapping aids in the identification of potential environmental risks and the development of mitigation measures to reduce air, water, and noise pollution, as well as the management of mining waste.

3. Socialization and Counseling Strategy

This strategy focuses on community outreach and education to foster public understanding of mining activities. It aims to secure the social license to operate by providing transparent information on both the benefits and drawbacks of mining. Awareness campaigns help mitigate misconceptions and conflicts by informing residents of government regulations, environmental standards, and the rights and responsibilities of all stakeholders. This strategy also supports community oversight of mining operations and strengthens collaboration between companies, government agencies, and the public.

3.3. Manifestations of Social Change Due to Inadequate Mitigation Efforts

The absence of effective mitigation measures has led to several forms of social change in Gampong Balee:

1. Agricultural Land Acquisition

Historically, the residents of Gampong Balee had access to substantial agricultural land, which formed the backbone of their livelihoods. However, the emergence of the mining industry triggered a significant shift in land ownership patterns. The rapid expansion of mining activities led to widespread land sales, often at prices far below market value. This influx of cash, while providing immediate financial relief to some, led to impulsive spending on consumer goods rather than investing in sustainable ventures or future-proofing their economic stability (Haryanto & Pratama, 2019). Many residents, without sufficient understanding of the long-term economic consequences of selling their land, found themselves unable to sustain their livelihoods once the mining boom subsided. The mining industry's failure to provide adequate education or guidance on the implications of land sales is a key contributing factor to this issue. Despite the potential for long-term community resilience through investment in agriculture or local businesses, the lack of support for financial literacy and sustainable planning has left many individuals vulnerable to economic instability (Taufik et al., 2016). This oversight has had lasting consequences on the economic well-being of the community, as the loss of agricultural land undermines both food security and income stability.

2. Erosion of Social Norms and Traditions

The industrialization of Gampong Balee has brought about significant changes in the community's social fabric, particularly in terms of traditional practices and cultural norms. One of the most noticeable shifts is the disruption of the customary Friday rest day, which was traditionally observed by the local population. However, with the advent of the mining industry, workers no longer adhere to this practice. Instead, their schedules are now structured around work, with breaks limited to Friday prayers, reflecting the industry's prioritization of productivity over cultural observance (Sihombing & Harahap, 2017). Additionally, the duration of leave during major religious celebrations, such as Eid, has been drastically reduced, with employees granted only two days off. This limitation on time off for religious observances undermines the community's long-held traditions of honoring important cultural and religious events. These shifts in work culture reflect a broader erosion of respect for local customs and interfaith tolerance, as the demands of industrial work take precedence over religious and cultural practices (Mulyadi, 2018). The mining sector's influence has led to an increasing disconnect between the community's religious and cultural identity and the demands of the industrial economy, raising concerns about the long-term implications for social cohesion and cultural preservation.

3. Deterioration of Road Infrastructure

Mining operations in Gampong Balee have had a profound impact on local infrastructure, particularly in terms of road usage and public safety. Roads that were once primarily used for community mobility are now shared with heavy industrial vehicles, such as trucks and excavators, which are essential for transporting mined materials. This increased vehicular traffic has not only led to severe road damage but also created significant safety risks for local residents. The deterioration of road conditions, coupled with the presence of large industrial vehicles, has raised concerns about the safety of pedestrians and motorists alike (Setiawan & Mahmud, 2019). In addition to the physical damage to roads, the heightened traffic flow has resulted in longer travel times and greater risks of accidents, further exacerbating public dissatisfaction. Local communities have expressed frustration over the lack of adequate infrastructure development to accommodate the increased demands of the mining industry. This situation reflects a broader issue of insufficient planning and investment in public infrastructure to mitigate the negative consequences of industrialization (Simamora, 2018). The failure to address these infrastructural challenges has contributed to growing safety concerns and a decline in the quality of life for residents.

4. Environmental Pollution

The most significant impact of mining activities in Gampong Balee has been environmental degradation, particularly in the form of water and air pollution. Water pollution from mining operations has severely disrupted local irrigation systems, decreased access to clean water, and contributed to crop failures, rendering many agricultural plots unproductive (Sukmana et al., 2018). This has led to significant economic hardship for local farmers who rely on these resources for their livelihoods. Additionally, mining-related air pollution, primarily from the dust generated by mining operations and transportation, has been linked to an increase in respiratory illnesses among residents. The pervasive air pollution exacerbates existing health problems and contributes to a decline in the overall quality of life for those living in proximity to mining sites (Arias et al., 2017). Despite numerous complaints from the community regarding these environmental hazards, there has been a conspicuous lack of governmental response. This inaction has led to growing frustration and a sense of powerlessness among the residents. Allegations that water quality reports have been manipulated or falsified to downplay the severity of contamination further compound the community's distrust of

authorities and regulatory bodies. The perceived lack of transparency and accountability in environmental monitoring has heightened the feeling of neglect and reinforced the notion that local concerns are not taken seriously by either industrial operators or government officials (Fachlevi et al., 2015).

3.4. Barriers to Effective Mitigation

Efforts to mitigate the social and environmental impacts of mining in Gampong Balee have encountered numerous challenges. A significant issue is the lack of proactive government oversight, which has allowed mining-related problems to persist without adequate intervention. Complaints regarding environmental pollution, such as contamination of water sources and air quality degradation, have failed to prompt effective governmental responses. This inaction has led to growing public disillusionment and increasing mistrust in governmental institutions. The failure to enforce regulations and address community concerns has deepened skepticism about the capacity of local authorities to ensure sustainable development (López et al., 2020). One of the primary responsibilities of the West Aceh Regency Environmental Agency (DLH) is the supervision of the Environmental Impact Assessment (AMDAL), which is crucial for ensuring that mining operations comply with environmental standards. However, the agency's oversight has been ineffective, as evidenced by the failure to conduct regular inspections and enforce environmental management plans (Hutagalung & Aryanthi, 2018). According to local village leaders, this negligence has allowed mining activities to continue without significant accountability or corrective measures. As a result, environmental degradation has escalated, adversely affecting both local ecosystems and public health.

Additionally, the aspirations of the Gampong Balee community have often been disregarded, exacerbating feelings of marginalization. Despite repeated appeals to both industrial operators and government authorities, the concerns of residents have remained largely unaddressed. This lack of responsiveness has led to a sense of exclusion and a weakening of the social fabric within the community (Sihombing & Harahap, 2017). Another critical issue is the misallocation of Corporate Social Responsibility (CSR) funds, which are intended to support community development and mitigate the adverse impacts of mining. Unfortunately, these funds have not been effectively distributed. Instead of benefiting the broader community, CSR initiatives have disproportionately favored individuals with close ties to mining operators. Reports of mismanagement, broken promises, and a lack of transparency have led to further frustration and a diminished sense of trust in both mining companies and local authorities (Fauzi & Maulana, 2019). In response, the Gampong Balee community has called for more targeted, accountable, and transparent CSR initiatives that prioritize sustainable livelihoods and long-term community welfare, particularly in the post-mining era.

4. Conclusions

The findings of this study indicate that the presence of the mining industry in Gampong Balee has led to significant conflicts within the local community. Notably, efforts to mitigate the social impacts of the mining industry in the area have been largely ineffective. The primary mitigation strategies employed in Gampong Balee include planning strategies, mapping strategies, and socialization/counseling efforts. The social changes resulting from the inadequate mitigation of the mining industry's effects in Gampong Balee, located in Meureubo District, West Aceh Regency, including the loss of agricultural land, the erosion of community traditions, the destruction of road infrastructure, and environmental pollution. Additionally, several challenges hinder the community's ability to address these social changes. These consist of insufficient oversight, ineffective environmental impact assessment (AMDAL) monitoring, the disregard of community concerns, and the misallocation of Corporate Social Responsibility (CSR) funds.

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