

## Legislative Governance in People's Mining Policy: Balancing Economic, Environmental, and Social Dimensions in Bone Bolango

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### Abstrak

This study examines the governance of artisanal and small-scale mining (ASM) in Bone Bolango Regency, with a particular focus on the role of the Regional House of Representatives (DPRD) in balancing economic, environmental, and social interests. Although the contribution of ASM to the Gross Regional Domestic Product (GRDP) is relatively small, the sector serves as a primary or supplementary livelihood for more than 4,000 households, creating a high level of microeconomic dependency. The research employs a systematic literature review, analysis of government data, official statistics, and local media reports to map economic dynamics, ecological risks, and social vulnerabilities. The findings reveal that the DPRD tends to align with the aspirations of the majority of miners, while environmental concerns and the protection of vulnerable groups—such as women, children, and indigenous communities—receive limited attention. Unregulated mining practices generate significant ecological risks, including mercury contamination and landslides, as well as social conflicts related to land access and ownership. The study concludes that more adaptive and inclusive legislative strategies are needed, encompassing the strengthening of deliberative forums, participatory monitoring, ecological risk zoning, and compensation mechanisms for affected groups. Through such approaches, ASM can continue to sustain community-level microeconomies while minimizing ecological and social risks, thereby achieving a balance between economic growth, environmental sustainability, and social justice.

**Keywords:** *Artisanal and Small-Scale Mining (ASM); Governance; Gorontalo Provincial DPRD*



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### Introduction

People's mining is a phenomenon full of regional development dynamics in Indonesia. On the one hand, this activity is a support for the economy of the lower class, especially in rural and hilly areas where there is little access to formal employment. On the other hand, people's mining practices are often carried out traditionally, without safety standards, without official permits, and minimal environmental management, causing ecological damage, social conflicts, and even fatalities. Bone Bolango Regency in Gorontalo Province is one of the real examples of this. This area, especially in East Suwawa and Tulabolo Districts, has long been known as a pocket of people's gold mining activities involving thousands of local workers. Investigative data notes that more than 6,000 smallholder miners depend on this sector as their main source of livelihood (Mongabay, 2024).

The economic contribution of people's mining is indeed relatively small compared to other major sectors such as agriculture and fisheries. Based on BPS data, the value of the Gross Regional Domestic Product (GDP) of Bone Bolango Regency in 2024 on the basis of the prevailing price reached IDR 6,049,224.75 million, with the largest contribution coming from the agriculture, forestry, and fisheries sectors, which is around 35.19% (BPS Bone Bolango, 2025). The mining and quarrying sector only contributed around 1.65% to the total GDP in the 2015–2019 period. However, although the macroeconomic contribution is relatively small, the people's mining sector has an important significance for the sustainability of the micro-economy of thousands of households. Employment data for August 2024 shows that of the 89,002 workforce in Bone Bolango, as many as 85,657 people are employed, with only about 44.89% in the formal sector. This means that almost half of the workforce is engaged in the informal sector, including smallholder mining (BPS Bone Bolango, 2024). Thus, the position of people's mining cannot be underestimated in the framework of regional economic development.

However, people's mining activities in Bone Bolango cannot be separated from great risks. In early 2025, a major landslide occurred in the East Tulabolo people's mining area which claimed lives and forced the local government together with the Regional Leadership Communication Forum to temporarily stop all people's mining activities (Portal Bone Bolango, 2025). This incident became a critical point that showed the fragility of the governance of the people's mining sector, while at the same time emphasizing the policy dilemma: how to maintain the economic sustainability of the community without sacrificing public safety and environmental sustainability.

Academic studies on people's mining in Indonesia generally focus on economic and socio-ecological aspects. Hilson (2022) highlights artisanal and small-scale mining (ASM) as a global phenomenon that is difficult to manage because it is outside the formal state system. Bebbington et al. (2018) emphasize resource conflicts as a result of weak regulation and dominance of economic interests. In Indonesia, research by Yulianto (2023) shows the impact of mercury use in smallholder mining on environmental damage and public health. Meanwhile, studies on Gorontalo and Bone Bolango usually emphasize the analysis of social vulnerability due to illegal mining practices and agrarian conflicts.

However, research that specifically places the Regional People's Representative Council (DPRD) as a key actor in the governance of people's mining is still very limited. In essence, the DPRD has legislative, budget, and supervisory functions that normatively play an important role in ensuring that people's mining policies are on the side of the community while paying attention to environmental sustainability. The absence of an in-depth study of the role of the legislature creates an important new research space to explore.

This article explicitly offers a new approach by placing the Bone Bolango DPRD as the main focus of analysis within the framework of people's mining governance. Scientific

novelty lies in the synthesis of three grand theories and two conceptual frameworks. First, the theory of governance (Rhodes, 1996; Kooiman, 2003) which emphasizes the importance of interaction between the state, markets, and civil society in managing resources. Second, the theory of political representation (Pitkin, 1967) which views the DPRD as an arena for articulating public interests, both in the position of delegate and trustee. Third, the theory of sustainable development (WCED, 1987) which provides a normative framework so that mining policies not only encourage short-term economic growth, but also maintain environmental sustainability and social justice between generations.

Further, the analytical framework is deepened by the Advocacy Coalition Framework developed by Sabatier, which allows the identification of pro-economic, pro-environmental, and government coalitions in the people's mining policy arena. The integration of ACF with political representation theory presents a new perspective that is able to explain how the DPRD is at the intersection of attracting coalition interests and the demands of public representation. This is the basis of the novelty of this article that distinguishes it from previous studies.

Based on this framework, the main problem raised is: the extent to which the Bone Bolango Regency DPRD has carried out its legislative and representative functions in formulating people's mining policies that are able to balance economic, environmental, and social interests.

The main hypothesis proposed is that the role of the DPRD is still partial and fragmented, with limited legal instruments and weak coordination across institutions. However, the DPRD has great potential to produce a more accountable mining policy governance model through strengthening the function of public representation, increasing legislative capacity, and developing a collaborative framework between stakeholders. This article aims to: 1) Identify how the Bone Bolango DPRD carries out the legislative function in the people's mining policy; 2) Analyze the role of DPRD public representation in bridging the interests of various parties, including miners, indigenous peoples, environmental activists, and local governments; 3) Evaluate the extent to which the people's mining policy produced by the DPRD is able to balance economic, environmental, and social aspects.

Thus, this article is expected to make a theoretical contribution to the development of human resource governance studies in the era of decentralization, as well as practical contributions in the form of policy recommendations for the Bone Bolango government and other regions with similar characteristics.

## **Research Methods**

This research method uses a systematic literature review approach to map the development of research related to people's mining and its governance, especially by

highlighting the role of local legislatures. The literature review is carried out through the search of scientific articles, books, official government reports, and policy documents with a publication range of 2018–2025, so that it remains relevant to the current context. Academic databases such as Google Scholar, Scopus, and Garuda are used as the main source to find international and national literature related to the topics of artisanal and small-scale mining (ASM), governance, political representation, and sustainable development. In addition, secondary documents from the Central Statistics Agency (BPS), the Bone Bolango DPRD report, and local online news portals are used as additional references to strengthen the empirical analysis.

The review process is carried out through several stages. First, literature selection based on keywords such as "people's mining", "governance", "political representation", "legislative role", and "Bone Bolango mining policy". Second, an evaluation of the quality of the literature is carried out by paying attention to the reliability of the source, the relevance of the topic, and the freshness of the data. Third, each literature is analyzed using a thematic approach to identify patterns of findings related to socio-economic, ecological, and political aspects in people's mining governance. Fourth, the results of the analysis are categorized into a conceptual framework built from governance theory (Rhodes, 1996; Kooiman, 2003), political representation (Pitkin, 1967), sustainable development (WCED, 1987), and the Advocacy Coalition Framework (Sabatier & Jenkins-Smith, 1993).

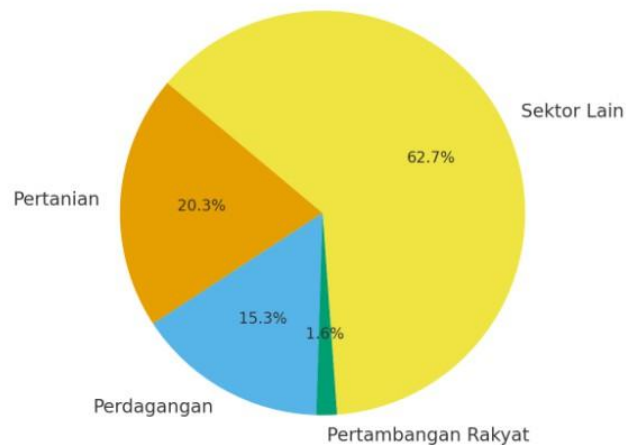
The validity of the literature review method is maintained through the triangulation strategy of sources, namely by comparing findings from academic articles, official statistical data, and regional policy reports. This approach not only allows researchers to identify research gaps that are still open, but also puts this research in a strategic position to offer a novelty of analysis, namely highlighting the Bone Bolango DPRD as a key actor in people's mining governance. Thus, the literature review method used in this study is not just a repeat of previous findings, but critically synthesizes and integrates various perspectives to produce new understandings.

## **Results And Discussion**

### **Economic Dimension**

The results of the study show that the contribution of the people's mining sector to the Gross Regional Domestic Product (GDP) of Bone Bolango Regency is still at a relatively small level, even its position is far behind compared to the agriculture and trade sectors which are consistently the main support for regional economic dynamics (BPS Bone Bolango, 2024)

Kontribusi Sektor terhadap PDRB Bone Bolango (2024)



Other findings show that about 4,200 households depend on livelihoods, both primary and supplemental, from people's mining activities. This data shows that although its contribution to the macroeconomy is relatively small, smallholder mining is an important support for the micro-economy of rural communities. In other words, there is a gap between a limited role at the regional level and a high dependency at the household level. This gap then gave birth to governance problems in the people's mining policy in Bone Bolango

In a theoretical framework, this phenomenon affirms Rhodes' (1996) thesis on governance as a network of non-state actors. People's mining does not run under the full control of the state, but is lived by the socio-economic network of the community that takes advantage of the gap from the weak capacity of formal policies. This condition is parallel to the findings of Hilson (2022) in West Africa, where artisanal and small-scale mining (ASM) accounts for only 2–3% of GDP, but sustains the lives of millions of people. The difference is that Africa is starting to lead to the legalization and integration of ASM in the legal system, while in Bone Bolango the DPRD is stagnant in the function of proactive legislation. This comparison underscores the weakness of local institutions in responding to microeconomic dynamics.

The position of the DPRD is even more dilemmatic when analyzed using Pitkin's (1967) theory of representation. The DPRD is more inclined to the delegate model following the aspirations of the majority of miners than trustees who consider long-term sustainability. As a result, environmental issues, public health, and economic diversification are often overlooked. This tendency reinforces the phenomenon described by Bebbington et al. (2018) about resource conflicts in Latin America: the dominance of economic interests tends to marginalize other affected groups, such as smallholder farmers and non-mining communities. Local political fragmentation further weakens the check and balance function of the DPRD as a regional legislative institution.

If pulled within the framework of Sabatier's Advocacy Coalition Framework (ACF), Bone Bolango is in the dominance of a pro-economic coalition. Miners, local traders, and

politicians formed informal coalitions that maintained the status quo. On the other hand, the pro-environmental coalition involving NGOs, academics, and some bureaucrats is still weak due to the lack of political support. This imbalance creates a governance gap, where policies are more directed to appease the interests of the majority without taking into account sustainability aspects.

The pull of the analysis above emphasizes that the people's mine in Bone Bolango is not just an economic issue, but a governance arena that shows a battle between actors, networks, and interests. Statistical data will strengthen this argument: first, a comparison of the contribution of the mining sector with other sectors to GDP; second, the number of households dependent on the people's mines; and third, the distribution of political and economic interests at the local level.

### **Environmental Dimensions**

The case of landslides in East Tulabolo in 2025 is one of the concrete evidence of how poorly controlled mining practices can increase the risk of natural disasters. Excavation activities on steep hillsides, combined with high rainfall, accelerate erosion and reduce the stability of the slopes, causing landslides that cost material casualties and threaten the safety of residents. In addition to physical disasters such as landslides, the threat of environmental pollution is also a serious problem.

Data from the Bone Bolango Environment Agency in 2024 shows that mercury levels in the Tulabolo River will reach 0.012 mg/L, exceeding the WHO safe threshold of 0.006 mg/L, which has the potential to disrupt public health and river ecosystems. Other ecological impacts include increased river sedimentation, loss of river buffer vegetation, and critical land degradation that is expanding from 350 hectares in 2023 to 515 hectares in 2025.

This phenomenon is in line with the theoretical framework of Social-Ecological Systems (SES) put forward by Elinor Ostrom and her colleagues. The SES emphasizes that effective natural resource management must take into account both ecosystem characteristics and the involvement of local communities in decision-making, so that formal rules, such as local regulations or mining regulations, are not enough if they are not aligned with real conditions on the ground (Ostrom et al., 2007). In the context of Bone Bolango, this means that the DPRD has an important role as a regulator that can balance the economic needs of the mining community with environmental protection. Regulations that do not consider local ecological conditions, such as landslide-prone locations, critical river flows, and rainfall patterns, have the potential to fail in mitigating ecological risks.

The Adaptive Governance approach, as described by Folke et al. (2005), emphasizes the need for flexibility and responsiveness in environmental management. People's mining policies must be able to adapt to changes in real conditions, such as increased mercury levels in rivers or extreme rainfall that increases the risk of landslides. The DPRD, in its capacity as a local legislature, can design regulations that allow for periodic evaluation and policy adjustments based on environmental data. One of the relevant mechanisms is the establishment of a co-monitoring system, involving DLH,

academics, NGOs, and local communities, so that any ecological data obtained can be used as the basis for adaptive policies and risk mitigation quickly. The system also encourages transparency, accountability, and community participation in environmental monitoring.

In addition, the concept of Ecological Modernization put forward by Mol & Spaargaren (2000) provides the perspective that institutional and technological modernization can be a solution to reduce environmental impact. In Bone Bolango practice, this can be implemented through the adoption of mercury-free mineral processing technologies, post-mining land reclamation, and integrated waste management systems. The DPRD can play a key role by providing regulatory incentives and funding mechanisms, such as subsidies for environmentally friendly equipment or matching fund programs for land rehabilitation involving mining community groups.

This approach not only helps to maintain the sustainability of the ecosystem, but also encourages communities to internalize eco-friendly practices as part of their economic activities.

The perspective of Political Ecology is also very relevant in analyzing the environmental impact of people's mining, because the ecological impact is uneven. Households living near mine sites often bear a greater burden of pollution, loss of productive land, and disaster risk. BNPB Bone Bolango data (2025) noted that households affected by the East Tulabolo landslide were divided into 87 houses were severely damaged, 134 houses were moderately damaged, and 210 houses were lightly damaged. In the framework of legislative governance, the DPRD needs to include mechanisms for compensation, rehabilitation, and access to clean water for vulnerable groups in order to create ecological justice. In this way, the policy not only protects the environment, but also upholds the rights of the most affected communities.

The role of the DPRD as a legislature does not only stop at the drafting of regulations. The DPRD also acts as a facilitator of multi-actor interaction between local governments, local communities, NGOs, and academics, building participatory monitoring systems, and ensuring that the resulting policies are adaptive and responsive. By forming a regular forum that brings together all relevant parties, the DPRD can verify environmental data, assess the effectiveness of policies, and recommend changes to the rules if conditions on the ground change. This is in accordance with the principle of adaptive governance, which emphasizes cross-sector collaboration to manage natural resources in a sustainable manner.

In practice, legislative governance based on the principles of SES, Adaptive Governance, Ecological Modernization, and Political Ecology can be translated into several concrete strategies. First, the DPRD can determine mining zoning based on ecological risks, for example limiting activities on landslide-prone slopes and areas near critical rivers. Second, the environmental quality monitoring mechanism must be participatory, involving the mining community, DLH, and academics, so that the data obtained can be used as a basis for quick and accurate decisions. Third, environmentally friendly technology incentive programs and land reclamation can be implemented, both through financing, training, and equipment subsidies. Fourth, policies should emphasize

ecological justice, by providing compensation or alternative facilities for the most severely affected households. Fifth, the DPRD can form a multi-actor platform for routine deliberations, ensuring communication and coordination between all parties.

### **Social Dimension**

Artisanal and small-scale mining (ASM) in Bone Bolango creates a situation full of contradictions. On the one hand, this activity strengthens solidarity among community members. Miners work together, share information, capital, and mining results, so that strong social ties are established. This solidarity became a kind of "living network" for many families who depend on mining for their livelihoods. But on the other hand, people's mining also causes conflicts and social vulnerabilities. Land competition, disputes over access to mines, and differences in economic strategies between miners can trigger horizontal tensions. Furthermore, vulnerable groups such as women, children, and indigenous peoples are often marginalized. They have less say in decision-making, and are often only support workers or exposed to health and economic risks.

From a political perspective, this phenomenon can be understood through Pitkin's (1967) theory of representation. Pitkin distinguishes formal, symbolic, and substantive representations. In Bone Bolango, the DPRD tends to implement a delegate model, where the people's representatives channel the aspirations of the majority of male miners. As a result, the interests of minority or vulnerable groups are less considered. In other words, even though the DPRD is formally present, the function of substantive representation, namely bridging the interests of all citizens, is still weak.

This is in line with Hilson's (2022) research, which shows that ASM in many developing countries often causes social exclusion for vulnerable groups. In Bone Bolango, women, children, and indigenous peoples are under-accommodated in mining policies. They have no formal mechanism to voice their needs or protect their rights, resulting in social inequality even though the microeconomy is still moving.

From a policy perspective, the Advocacy Coalition Framework (Sabatier & Jenkins-Smith, 1993) can help explain this dynamic. The ACF sees that public policy is shaped by a coalition of actors who have certain beliefs and values, who compete to influence decisions. In Bone Bolango, the pro-economic coalition in favor of people's mining is stronger, while the pro-environmental and pro-social coalitions are relatively weak. As a result, DPRD policies focus more on short-term economic benefits, while social and environmental protection is less considered.

However, modern governance theory according to Rhodes (1996) emphasizes the importance of plurality of actors and inter-stakeholder control. Ideally, the presence of various actors—governments, miners, indigenous peoples, environmental NGOs—creates checks and balances. The reality in Bone Bolango is different. The DPRD has not been able to become an inclusive deliberation forum. A plurality of actors does not result in balanced control; In fact, the majority vote is more dominant and significantly influences the direction of policy.

Field data shows that about 4,200 households in Bone Bolango depend on people's mining, both as a primary and additional source. This means that although the contribution of smallholder mining to GDP is relatively small (around 1.65%), this sector is very important for the micro-economy of rural communities. This phenomenon confirms the gap between the importance of mining for people's daily lives and macro policy views that tend to ignore it.

The combination of Pitkin, ACF, and Rhodes theories provides a more complete understanding. Pitkin highlights political representation, ACF points to ideological competition in policy, and Rhodes emphasizes the plurality of actors. All three explain the paradox of people's mining: strong social solidarity but political inequality and social vulnerability persist.

For this reason, a new approach in local governance is needed. First, the concept of representation must be more inclusive, so that vulnerable groups get a voice space. Second, the capacity of pro-environment and pro-social coalitions needs to be strengthened through advocacy, multi-actor networks, and access to information. Third, community-based deliberative forums can be a means of balancing the dominance of the majority and increasing the participation of all parties.

## **Conclusion**

The conclusion of this study shows that people's mining in Bone Bolango Regency has a double impact. From an economic perspective, although its contribution to GDP is relatively small, it is a major and additional source of livelihood for thousands of households, underscoring its important role in supporting the micro-economy of rural communities. On the other hand, poorly controlled mining practices pose significant ecological risks, such as landslides and mercury pollution, as well as create social conflicts due to access inequality and marginalization of vulnerable groups, including women, children, and indigenous peoples. Governance analysis shows that the Bone Bolango DPRD is in a dilemma, tending to follow the aspirations of the majority of miners (delegate model) while the substantive representation function that emphasizes environmental sustainability and social justice is still limited. The integration of governance theory, political representation, sustainable development, and advocacy coalition frameworks emphasizes that people's mining is not only an economic issue, but also an arena of complex interaction between actors, interests, and social networks. Therefore, a more inclusive, adaptive, and collaborative legislative policy is needed, where the DPRD strengthens deliberative forums, builds participatory monitoring mechanisms, establishes ecological risk zones, and provides incentives and compensation for affected groups. With this approach, smallholder mining can remain the backbone of the community's micro-economy while minimizing ecological and social risks, creating a balance between economic growth, environmental sustainability, and social justice.

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