



Eighteen Years Under the Shadow of Mining: Environmental Justice and Citizens' Rights in Rantau Bakula, South Kalimantan

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Abstract

Long-term conflicts between local communities and extractive industries reveal that environmental injustice is not only a consequence of isolated incidents but can become a prolonged condition of everyday life. This article examines the eighteen-year experience of residents in Rantau Bakula, South Kalimantan, in relation to coal mining and its social and environmental consequences. The study focuses on residents' claims concerning environmental degradation, disruption of livelihoods, access to a healthy environment, and the limited effectiveness of available mechanisms for obtaining justice. By examining the community's efforts to bring its grievances to state institutions, including legislative and human rights bodies, the article explores the relationship between environmental harm and institutional accountability. The Rantau Bakula case demonstrates how prolonged exposure to environmental risks can produce cumulative forms of vulnerability while simultaneously creating fatigue, uncertainty, and unequal access to legal and political remedies. The article employs an environmental-justice framework to examine distributive, procedural, and recognition dimensions of the conflict. It argues that environmental justice cannot be reduced to compensation after damage occurs. It also requires meaningful participation, effective grievance mechanisms, institutional accountability, and recognition of citizens' rights to a safe and healthy environment. The case illustrates the structural challenges faced by communities confronting powerful extractive interests over extended periods.

[Konflik jangka panjang antara masyarakat lokal dan industri ekstraktif menunjukkan bahwa ketidakadilan lingkungan bukan hanya konsekuensi



dari insiden terisolasi, tetapi dapat menjadi kondisi kehidupan sehari-hari yang berkepanjangan. Artikel ini mengkaji pengalaman delapan belas tahun penduduk di Rantau Bakula, Kalimantan Selatan, terkait dengan penambangan batubara dan konsekuensi sosial serta lingkungannya. Studi ini berfokus pada klaim penduduk mengenai degradasi lingkungan, gangguan mata pencaharian, akses terhadap lingkungan yang sehat, dan keterbatasan efektivitas mekanisme yang tersedia untuk memperoleh keadilan. Dengan meneliti upaya masyarakat untuk menyampaikan keluhan mereka kepada lembaga negara, termasuk badan legislatif dan hak asasi manusia, artikel ini mengeksplorasi hubungan antara kerusakan lingkungan dan akuntabilitas kelembagaan. Kasus Rantau Bakula menunjukkan bagaimana paparan risiko lingkungan yang berkepanjangan dapat menghasilkan bentuk kerentanan kumulatif sekaligus menciptakan kelelahan, ketidakpastian, dan akses yang tidak setara terhadap solusi hukum dan politik. Artikel ini menggunakan kerangka kerja keadilan lingkungan untuk mengkaji dimensi distributif, prosedural, dan pengakuan dari konflik tersebut. Artikel ini berpendapat bahwa keadilan lingkungan tidak dapat direduksi menjadi kompensasi setelah kerusakan terjadi. Hal ini juga membutuhkan partisipasi yang bermakna, mekanisme pengaduan yang efektif, akuntabilitas kelembagaan, dan pengakuan hak warga negara atas lingkungan yang aman dan sehat. Kasus ini menggambarkan tantangan struktural yang dihadapi oleh masyarakat dalam menghadapi kepentingan ekstraktif yang kuat selama periode waktu yang panjang.]

Keywords: coal mining, environmental justice, community rights, South Kalimantan, extractive industries

Introduction

The expansion of extractive industries is commonly associated with economic development, employment generation, fiscal revenues, and regional growth. Yet the benefits of extraction are rarely distributed evenly among the populations living in and around mining areas. Communities located close to extraction sites may bear disproportionate environmental and social costs, including changes in land use, environmental degradation, disruption of livelihoods, and prolonged uncertainty concerning the protection of their rights. These unequal outcomes have made extractive industries an important field of inquiry within environmental justice scholarship, particularly because environmental conflicts involve not only the distribution of environmental benefits and burdens but also questions of political participation, recognition, institutional accountability, and access to remedies (Bullard 2000; Schlosberg 2007; Martinez-Alier 2002).

Environmental justice provides a particularly useful framework for understanding conflicts in resource-dependent regions because it moves analysis beyond the question of whether environmental damage has occurred.

Environmental justice asks who bears environmental risks, who benefits from resource extraction, whose knowledge and interests are recognized, and whether affected populations are able to participate meaningfully in decisions that affect their lives. Schlosberg (2007) conceptualizes environmental justice through interconnected dimensions of distribution, recognition, participation, and capabilities. These dimensions are important in extractive-industry conflicts because communities may experience injustice simultaneously through material exposure to environmental risks, exclusion from decision-making, insufficient recognition of their experiences, and limited institutional capacity to secure effective remedies.

The Indonesian context illustrates the importance of these questions. The country has experienced extensive expansion of extractive activities alongside increasing public concern over environmental degradation, land conflicts, and the rights of communities affected by natural-resource development. South Kalimantan is particularly significant because coal mining constitutes an important component of the province's resource economy. However, the economic importance of coal extraction does not eliminate the distributional and political questions generated by mining activities. Instead, it creates a context in which local communities, companies, and state institutions may possess markedly unequal economic and political resources.

The conflict in Rantau Bakula, South Kalimantan, provides an important case through which these dynamics can be examined. Residents have experienced an extended period of interaction and conflict with coal-mining activities in their surrounding environment. Public reports concerning the area document community complaints regarding environmental disturbance and the consequences of mining activities, while the community has also sought institutional responses through governmental and representative bodies. The case is therefore not simply a question of environmental impact. It concerns the longer relationship between local citizens, extractive interests, and institutions responsible for environmental governance.

The temporal dimension of the case is particularly significant. Environmental conflicts are frequently examined through discrete events such as the establishment of a mining operation, a pollution incident, a protest, or a legal dispute. Such an approach can obscure the cumulative consequences of prolonged exposure to environmental uncertainty. An eighteen-year trajectory provides an opportunity to examine environmental injustice as a process through which environmental concerns, livelihood disruption, institutional encounters, and community responses accumulate over time. Prolonged conflict may produce forms of vulnerability that are not captured by measurements of environmental quality at a single point in time. It may also affect citizens' trust in public institutions and their perceptions of whether formal mechanisms of grievance and redress are capable of producing meaningful outcomes.

This study therefore treats Rantau Bakula as a case of prolonged environmental-justice conflict, rather than as an isolated dispute over mining impacts. This approach is consistent with scholarship emphasizing that environmental conflicts frequently involve broader struggles over access to resources, political recognition, and the distribution of decision-making power (Martinez-Alier 2002; Temper et al. 2015). It also responds to an important limitation in conventional environmental-impact approaches. While environmental assessment is essential for determining whether particular regulatory thresholds have been exceeded, it does not by itself explain why communities may continue to perceive injustice even when particular environmental measurements remain contested or fall within formally established standards. Environmental justice requires attention to the social and institutional dimensions of environmental harm in addition to its technical measurement.

The question of recognition is particularly relevant. Environmental governance frequently privileges technical and administrative forms of knowledge, while the experiential knowledge of residents may receive less institutional weight. Yet local communities are often the actors who experience environmental changes continuously and over extended periods. Recognition, in this context, does not mean automatically accepting every community allegation as scientifically established fact. Rather, it requires institutions to treat community experiences as legitimate claims requiring transparent investigation, meaningful engagement, and accountable responses. This distinction is crucial for avoiding both uncritical acceptance of community claims and an overly technocratic approach that dismisses community experience whenever formal environmental thresholds are not exceeded.

The issue is also connected to the growing recognition of environmental rights. The United Nations General Assembly recognized the human right to a clean, healthy, and sustainable environment in Resolution 76/300 in 2022. This development reinforces the understanding that environmental quality is closely connected to the enjoyment of fundamental human rights and that environmental governance cannot be separated from questions of human dignity, participation, and state responsibility (United Nations General Assembly 2022). From this perspective, environmental grievances are not merely administrative complaints. They may also represent claims concerning citizens' ability to enjoy rights associated with health, livelihood, participation, information, and a safe environment.

Although environmental-justice scholarship has extensively examined the unequal distribution of environmental burdens and the political dimensions of extractive conflicts, less attention has been given to the longitudinal institutional experience of communities whose environmental grievances remain unresolved over extended periods. Much of the existing literature concentrates on the emergence of conflicts, the distribution of environmental costs, or particular moments of resistance. Less attention is directed toward what happens when

communities repeatedly engage with state institutions while environmental uncertainty and perceived injustice persist.

This study addresses that gap by connecting three analytical dimensions that are often examined separately: environmental distribution, citizens' procedural and recognition rights, and institutional accountability. The analysis asks not only whether mining creates environmental burdens but also how those burdens are experienced, interpreted, communicated to institutions, and addressed through available mechanisms of governance. The study is guided by three research questions:

1. How has prolonged mining activity affected the environmental, livelihood, and social conditions experienced by residents of Rantau Bakula?
2. How do residents' experiences reflect distributive, procedural, and recognition dimensions of environmental injustice?
3. How have state institutions responded to community grievances, and what do these responses reveal about the accessibility and effectiveness of environmental-justice mechanisms?

The article argues that environmental justice cannot be reduced to compensation following environmental damage. A more comprehensive conception requires fair distribution of environmental risks, meaningful participation, recognition of affected communities, transparent institutional processes, and effective mechanisms of accountability and remedy. Where these elements remain weak, environmental conflict may persist even when formal regulatory processes continue to operate.

The study employs a qualitative case-study approach centered on Rantau Bakula as a prolonged environmental-conflict case. The case was selected because of the extended duration of community engagement with mining activities and the repeated involvement of governmental and representative institutions in responding to residents' concerns. A longitudinal case perspective is particularly appropriate because the central analytical concern is not a single environmental incident but the accumulation of environmental, social, and institutional experiences over time.

The analysis draws on documentary and secondary sources, including publicly available governmental documents, statements and reports from representative institutions, environmental and civil-society organizations, media reports, and relevant scholarly literature. These sources are read comparatively rather than treated as equally authoritative. Official regulatory findings are distinguished from community allegations, while civil-society claims and media accounts are used to reconstruct the evolution of the conflict and the responses of relevant actors. Where different sources provide conflicting interpretations, the analysis retains the disagreement rather than treating one account as automatically conclusive.

The empirical material is analyzed through three interconnected dimensions derived from environmental-justice scholarship: distribution, procedure, and recognition. Distribution concerns the allocation of environmental risks, livelihood consequences, and benefits associated with mining. Procedural justice concerns

access to information, participation, institutional responsiveness, and opportunities to seek remedies. Recognition concerns whether residents' experiences, knowledge, interests, and status as rights-bearing citizens are adequately acknowledged within environmental governance processes. These dimensions are then connected to institutional accountability to examine whether existing mechanisms provide meaningful avenues for addressing grievances.

This approach also imposes an important analytical limitation. The study does not independently establish the scientific causation of every environmental condition reported by residents. Instead, it examines how environmental claims are experienced, contested, documented, institutionalized, and responded to. This distinction is essential because the existence of environmental injustice cannot be inferred solely from allegations, but neither can community experience be dismissed solely because particular technical measurements do not establish a regulatory violation. The analytical focus is therefore on the relationship between environmental conditions, community claims, institutional processes, and the availability of effective remedies.

Eighteen Years of Mining Conflict in Rantau Bakula

The conflict in Rantau Bakula cannot be understood through a single environmental incident or a recent disagreement between residents and a mining company. Its significance lies in the length of time over which the community has lived alongside mining activities and in the gradual transformation of the relationship between residents, the company, and public institutions. By 2026, residents described their experience as approximately eighteen years of living alongside the underground coal-mining activities of PT Merge Mining Industri (MMI), tracing the beginning of the company's operations to 2007. The eighteen-year period is therefore analytically important because it captures not merely the persistence of environmental concerns but also the accumulation of community responses and institutional encounters over time.

The historical trajectory of the mining operation is somewhat more complex than the eighteen-year formulation initially suggests. Publicly available information from environmental organizations reports that exploration activities in the area had occurred since the 1990s, while PT MMI obtained a production-operation permit in 2016 covering approximately 1,170 hectares. Corporate records also indicate that PT MMI had been established as an Indonesian subsidiary involved in mining and the holding of exploration and mining permits. Consequently, the year 2007 should not be interpreted as the beginning of all mining-related activity in the area. Rather, it marks the beginning of the operational period from which residents and their representatives retrospectively construct the eighteen-year experience examined in this article.

This distinction matters because environmental conflicts often have histories that precede the formal issuance of a production permit. Exploration, land acquisition, infrastructure development, geological investigation, and preparatory

activities can alter relationships between communities and extractive projects before commercial production formally begins. A regulatory chronology that starts with the production permit may therefore provide only a partial account of the social history of extraction. In Rantau Bakula, the distinction between exploration, formal licensing, and subsequent operational activity helps explain why residents' understanding of the conflict is longer than the formal administrative history of the production permit.

The corporate history of PT MMI also situates the Rantau Bakula operation within a wider transnational extractive structure. Corporate documentation associated with Agritrade Resources Limited identifies PT MMI as an Indonesian mining and trading subsidiary, with a controlling interest held within the corporate group. The available corporate records further indicate that PT MMI was incorporated in Indonesia in 2008 as a company associated with exploration and mining permits. This structure is relevant to the environmental-justice analysis because the actors involved in local environmental conflicts do not necessarily possess equivalent institutional resources. A village community confronts a corporate entity operating within a broader investment and regulatory network, while responsibility for environmental governance is distributed among local, provincial, and national institutions.

During the earlier stages of the relationship, available accounts indicate that relations between residents and the company were not uniformly characterized by open conflict. Residents interviewed in 2025 described a period in which they considered themselves capable of living alongside the mining operation before environmental concerns became increasingly prominent. This historical detail is significant because it challenges an interpretation of the Rantau Bakula conflict as an inherently adversarial relationship between the community and the company. Instead, the conflict appears to have developed through a process in which residents' perceptions of environmental and social impacts changed over time.

The subsequent escalation of grievances centered on a range of environmental and residential concerns. In early 2025, residents reported problems involving water quality, dust, noise, damaged or cracked houses, declining plant conditions, and alleged health effects. These claims were presented to the South Kalimantan Provincial Parliament in a formal meeting involving PT MMI, government agencies, and community representatives. The February 26, 2025 meeting was particularly important because it moved the dispute from the sphere of community complaint into a formal legislative and administrative process. Residents were not simply expressing dissatisfaction with mining activity; they were seeking institutional recognition of claims concerning environmental conditions and their everyday living environment.

The institutional response in 2025 illustrates both the availability and the limitations of formal grievance mechanisms. Following the February meeting, the Provincial Parliament's Commission III established a process for examining the concerns raised by residents. On May 8, 2025, an investigative team visited the PT

MMI mining area and collected samples related to air, water, and noise. The investigation involved representatives of the provincial parliament, the Ministry of Energy and Mineral Resources' mining inspectorate, the provincial energy and mineral resources authority, the forestry authority, and the environmental agency. The presence of multiple institutions indicates that the conflict had become a matter requiring inter-institutional examination rather than a purely private dispute between a company and local residents.

The results announced in July 2025 introduced an important complication into the conflict. Based on the laboratory examination of samples obtained during the field investigation, the provincial parliament reported that the measured impacts did not exceed applicable environmental quality standards. The statement referred specifically to the examination of environmental samples collected in relation to the residents' complaints. At the same time, the parliament acknowledged that the dispute remained dependent on communication between the company and the community.

This episode is analytically important because it demonstrates why environmental justice cannot be reduced to the question of regulatory compliance. A finding that sampled environmental parameters remain within applicable standards does not necessarily resolve the broader social conflict. Regulatory compliance addresses a specific technical question: whether measured conditions exceed established legal or environmental thresholds at the time and locations examined. The residents' claims, however, concern a broader lived experience that includes changes in water access, dust, noise, property conditions, livelihood conditions, and the perceived deterioration of their living environment. The coexistence of these two forms of knowledge—technical measurement and community experience—creates an important institutional challenge. Environmental governance must be capable of assessing scientific evidence without rendering community experience institutionally invisible.

The distinction is particularly relevant in a longitudinal conflict. Environmental measurements are generally temporally and spatially bounded, whereas residents experience environmental conditions continuously. A sampling exercise may establish the condition of air or water at particular locations and times, but it cannot by itself reconstruct eighteen years of environmental experience. This does not mean that community claims should automatically be accepted as evidence of causation. Rather, it means that a comprehensive grievance process must allow different forms of evidence to be examined together, including regulatory measurements, historical records, community testimony, environmental monitoring, and evidence concerning changes in livelihoods and access to resources.

The events of 2025 did not, however, end the dispute. In July 2026, representatives of the Rantau Bakula community, together with the Rantau Bakula Community Alliance and WALHI South Kalimantan, traveled to Jakarta to submit complaints to the national parliament and national human-rights institutions. The

complaints were directed to Commission XII and Commission XIII of the House of Representatives, the National Human Rights Commission (Komnas HAM), and the National Commission on Violence Against Women (Komnas Perempuan). The community framed its grievances not only as environmental concerns but also as issues involving social conditions and human rights.

The escalation from village-level complaints to provincial legislative institutions and subsequently to national institutions is itself significant. It suggests that residents did not regard the earlier institutional responses as sufficient to resolve their concerns. The movement of a grievance across institutional levels can be understood as an indicator of the perceived effectiveness—or ineffectiveness—of available access-to-justice mechanisms. Rather than assuming that institutional escalation represents successful participation, it may instead indicate that lower-level mechanisms have failed to provide an outcome regarded by affected communities as adequate.

The 2025 developments further broadened the institutional character of the dispute. Commission XIII of the House of Representatives requested that Komnas HAM investigate the complaints submitted by the Rantau Bakula community. The parliamentary response referred to allegations concerning environmental pollution, foreign workers, and alleged criminalization of residents. The significance of this development lies not in establishing the truth of each allegation—those matters require independent investigation—but in demonstrating that the conflict had evolved beyond an environmental-management complaint into a dispute framed partly through the language of rights and state responsibility.

The trajectory from local grievance to provincial investigation and finally to national rights institutions reveals an important institutional pattern. At each stage, residents sought recognition from a different public authority: first through local and provincial mechanisms, then through legislative investigation, and ultimately through national parliamentary and human-rights bodies. The repeated movement between institutions suggests that access to a formal complaint channel should not automatically be equated with access to justice. A grievance mechanism may be procedurally available while remaining substantively ineffective if it does not produce timely investigation, transparent findings, meaningful participation, or an effective remedy.

The Rantau Bakula case therefore illustrates a form of institutional accumulation alongside environmental accumulation. Environmental concerns are experienced over time, but so are encounters with institutions. Meetings, complaints, investigations, sampling exercises, and referrals create an institutional history that becomes part of the conflict itself. For residents, the question gradually shifts from whether they can report an environmental problem to whether public institutions are capable of responding to a persistent problem in a way that they perceive as credible and just.

This distinction is central to understanding the eighteen-year character of the conflict. The duration of the dispute should not be interpreted simply as evidence

that mining activity has continuously violated environmental standards for eighteen years; the available evidence does not establish such a conclusion. Rather, the eighteen-year period represents the duration of the community's coexistence with the mining operation and the persistence of grievances and institutional efforts surrounding that relationship. This more cautious interpretation allows the case to be analyzed without converting community allegations into established empirical facts.

The chronology also demonstrates why environmental conflict should be understood as relational. The relevant actors are not limited to residents and the mining company. Provincial and national governments, environmental authorities, mining regulators, legislative institutions, human-rights bodies, civil-society organizations, and other actors have all become involved at different stages. The conflict consequently reflects the structure of environmental governance itself: authority is dispersed, information is produced by multiple institutions, and responsibility for remedy may be divided across administrative levels.

The central issue was therefore no longer simply whether residents had experienced environmental disturbance. The more consequential question was whether the institutional architecture surrounding mining was capable of transforming competing claims into a credible process of investigation, recognition, accountability, and remedy. The movement of the Rantau Bakula community from local complaints to provincial investigations and then to national rights institutions suggests that the struggle for environmental justice had become simultaneously a struggle over institutional recognition.

Environmental Injustice: Distribution, Livelihoods, and Ecological Risk

The distributive dimension of environmental justice provides the first substantive lens through which the Rantau Bakula conflict can be understood. At its core, distributive justice asks how environmental benefits, risks, costs, and opportunities are allocated across social groups (Schlosberg 2007; Walker 2012). In extractive settings, this question is particularly important because the economic benefits of mining are often realized at scales beyond the immediate host community, whereas environmental risks are geographically concentrated among people living closest to extraction sites. Environmental injustice therefore emerges not simply when environmental harm occurs, but when the burdens of development are disproportionately imposed on communities that have limited control over the decisions producing those burdens.

The Rantau Bakula case illustrates this tension. Coal mining generates economic value that is incorporated into broader regional and national systems of production, energy, investment, taxation, and trade. The environmental consequences of mining, by contrast, are experienced locally. Residents do not encounter the mining industry as an abstract contribution to economic growth; they encounter it through changes in the physical environment in which they live, work, cultivate land, obtain water, and maintain their homes. This spatial asymmetry is

central to environmental justice because it raises the question of whether those who bear localized environmental risks receive commensurate benefits and decision-making power.

Research on extractive industries has repeatedly demonstrated that mining can transform the material conditions on which rural livelihoods depend. Brain's (2017) review of mining communities in the Andes, for example, shows that mining can alter water quantity and quality, land tenure arrangements, and access to livelihood resources, while simultaneously generating new employment opportunities. The implication is important: mining does not simply replace one economic activity with another. It can restructure the ecological and institutional conditions under which multiple livelihood strategies operate. Such restructuring can become unjust when the benefits generated by extraction are concentrated while the environmental costs are distributed disproportionately among residents with fewer economic alternatives.

This distinction is relevant to Rantau Bakula because residents' concerns extend beyond a single environmental medium. Community reports have referred to water conditions, dust, noise, damage to houses, agricultural impacts, and perceived effects on health and everyday life. These claims should not be treated as independently established causal findings. Indeed, the environmental sampling conducted following the 2025 legislative investigation was subsequently reported by the South Kalimantan Provincial Parliament as showing that the examined parameters did not exceed applicable environmental quality standards. Nevertheless, the persistence of community complaints demonstrates that the distributive question cannot be reduced to whether a particular sample exceeded a regulatory threshold. The relevant issue is also how environmental risks are experienced over time and how those risks interact with livelihood dependence and residential vulnerability.

1. Water as a Material and Justice Issue

Water occupies a particularly important position within the Rantau Bakula conflict because it connects environmental quality with everyday livelihood security. For rural communities, water is not merely an environmental resource measured through chemical parameters. It can simultaneously constitute drinking water, a resource for household activities, an input into agriculture, and part of the ecological basis of local production. Consequently, changes in the availability, quality, accessibility, or perceived safety of water may have consequences that extend well beyond environmental regulation.

The relationship between mining and water has long presented a difficult governance problem. Mining requires substantial quantities of water and can alter hydrological systems, while communities surrounding mining operations may depend on the same water systems for basic needs and productive activities. Bebbington and colleagues therefore argue that the relationship between mining, water, and human rights must be considered simultaneously rather than through

disconnected regulatory and corporate frameworks. Access to water is directly related to human dignity and the realization of basic rights, while mining operations can create competing demands for the same resource (Bebbington et al. 2010).

This perspective changes the analytical significance of residents' water-related complaints in Rantau Bakula. The question is not simply whether laboratory analysis demonstrates contamination above a legally prescribed threshold. It is also whether mining-related activities have altered the community's relationship with water and whether residents possess adequate information and institutional capacity to establish, contest, or verify those changes. A community may experience a loss of confidence in a water source even when a particular test does not demonstrate regulatory exceedance. Conversely, a perception of contamination should not itself be treated as scientific proof of contamination. Environmental justice requires institutions to hold these two propositions together: community experience deserves recognition, while claims of environmental causation require appropriate evidence.

This distinction is particularly important in a conflict that has lasted many years. Short-term environmental sampling can provide valuable evidence concerning conditions at a particular moment, but it cannot necessarily capture cumulative or intermittent exposure. Research on cumulative impacts has emphasized that environmental, health, and social effects can interact in ways that are not adequately represented by isolated measurements. In their analysis of resource extraction, Brisbois et al. (2017) show that impacts across environmental, health, and social dimensions may amplify one another rather than simply accumulate independently.

For Rantau Bakula, the implication is methodological as well as substantive. If residents' concerns involve water, dust, noise, agricultural productivity, and household conditions simultaneously, environmental assessment based on a narrow set of parameters may provide only one component of the evidence required to understand the conflict. A justice-oriented assessment must also examine how different environmental changes interact with household livelihoods and whether affected residents have sufficient access to information to understand the risks they face.

2. Livelihood Disruption and Unequal Exposure

The distributive character of mining becomes more apparent when environmental change is examined through livelihoods. Rural households commonly rely on combinations of agricultural production, small-scale trade, wage labor, natural resources, and household-based economic activities. Such livelihood systems can be highly sensitive to environmental changes because they depend on the continued availability of land, water, soil fertility, and other ecological resources. Consequently, environmental degradation can produce economic effects even when residents are not directly employed in the mining sector.

Brain (2017) emphasizes that mining-induced livelihood change cannot be reduced to a simple comparison between agricultural employment and mining employment. Mining may create jobs while simultaneously transforming land tenure, water access, and other resources that support pre-existing livelihood strategies. This observation is important for evaluating the frequently invoked development justification for extractive activities. The creation of employment or local economic activity does not automatically compensate for the loss or deterioration of other livelihood resources, particularly where access to mining employment is unevenly distributed.

The same issue appears in broader research on mineral extraction. Shiquan et al. (2022), examining communities surrounding mining activities, find that extraction can produce negative effects on income and health and that vulnerable groups may experience substantially greater losses than the average population. Their findings are particularly relevant to environmental justice because they demonstrate that mining impacts are not necessarily distributed uniformly within host communities. Social and economic vulnerability can mediate the ability of households to absorb environmental shocks.

This suggests that distributive justice should not be evaluated solely at the community level. A village may appear to benefit economically from mining while particular households experience declining livelihood security. Conversely, some residents may obtain employment or business opportunities while others bear environmental costs without receiving comparable economic benefits. The relevant analytical unit is therefore not simply “the community” versus “the mine,” but the differentiated distribution of benefits and burdens among households and social groups.

This is especially important in Rantau Bakula because the community's complaints concern environmental conditions that potentially affect multiple livelihood domains. Reported concerns regarding plants, water, dust, noise, and residential structures suggest that residents perceive mining impacts as interconnected rather than compartmentalized. Even where individual impacts cannot yet be attributed conclusively to mining, their combination can influence perceptions of livelihood security. The distributive question consequently becomes one of cumulative exposure: how many environmental risks are experienced by the same population, how frequently they occur, and what economic capacity residents possess to adapt to them?

The concept of cumulative exposure is particularly valuable because conventional environmental regulation often evaluates individual pollutants, impacts, or activities separately. Environmental justice scholarship, however, has increasingly emphasized that communities can experience multiple environmental pressures simultaneously and that these pressures may interact with pre-existing social inequalities. Brisbois et al. (2017) argue that environmental, health, and social effects associated with resource extraction may reinforce one another,

producing consequences greater than those suggested by considering each impact independently.

Rantau Bakula therefore demonstrates why the distributive analysis of mining must move beyond a binary question of whether the community is “affected” or “not affected.” The more useful questions concern which risks are distributed to whom, through which pathways, over what period, and with what capacity for adaptation or compensation. These questions allow environmental justice to be connected to vulnerability rather than simply exposure.

3. Residential Environment and the Everyday Experience of Risk

Environmental injustice also operates through the transformation of everyday residential space. Residents' reports concerning dust, noise, and damage to houses are important because they locate the mining conflict within the spaces where people conduct their ordinary lives. Environmental harm is not necessarily experienced only as a dramatic event. It can take the form of recurring disturbances that gradually alter perceptions of safety, comfort, and security.

The significance of these everyday experiences is consistent with research demonstrating that mining conflicts are often disputes over place as much as disputes over natural resources. Extractive projects can transform landscapes, relationships to place, and the temporal rhythms of community life. Research on mining-induced landscape change in Peru, for instance, demonstrates how extractive development can generate temporal disruptions in women's relationships with place and attachment to changing landscapes (Emard and Nelson 2022). The implication is that environmental impacts cannot always be fully represented through conventional economic valuation because places may possess social, cultural, and relational meanings that are difficult to monetize.

In Rantau Bakula, reported concerns about housing damage are particularly significant from this perspective. A house is not merely a physical asset with a market value. It is also a site of family life, security, social identity, and long-term investment. If residents perceive that mining activities threaten the structural integrity or peaceful use of their homes, the resulting harm may extend beyond repair costs. It may affect their sense of permanence and security in the place where they have established their lives.

This observation does not imply that reported structural damage should automatically be attributed to mining. Establishing causation requires technical investigation of geological conditions, construction quality, vibration levels, mining methods, and other possible causes. Nevertheless, the fact that residents raise such concerns is itself relevant to the environmental-justice analysis because it demonstrates how the mining conflict enters the sphere of everyday citizenship. The dispute becomes a question of whether residents can feel secure in their homes and whether public institutions respond credibly when that security is questioned.

4. From Environmental Exposure to Unequal Vulnerability

The concept of vulnerability helps integrate these different dimensions. Environmental exposure does not produce identical consequences for all people. The ability to respond to environmental change depends on income, livelihood diversification, access to alternative resources, social networks, political representation, and institutional support. Consequently, two households exposed to the same environmental disturbance may experience very different consequences.

This insight challenges an assumption embedded in some conventional approaches to environmental regulation: that equal application of an environmental standard necessarily produces an equitable outcome. A uniform regulatory threshold may be administratively equal while its social consequences remain unequal. Environmental justice therefore requires attention not only to whether standards are met but also to the social distribution of vulnerability surrounding the regulated activity (Walker 2012).

Research on extractive industries and poverty similarly indicates that the relationship between mining and local welfare is strongly mediated by governance and by the time horizon through which impacts are evaluated. A major review of empirical research found that industrial mining is frequently associated with poverty exacerbation, particularly when longer-term effects and relative deprivation are taken into account, while also emphasizing substantial variation across contexts (Bebbington et al. 2018). This finding is significant for Rantau Bakula because the relevant comparison is not necessarily between mining and an idealized pre-mining economy. Rather, it is between the actual distribution of mining-related benefits and the actual environmental and livelihood burdens borne by residents over time.

A distributive analysis therefore requires asking whether the community has sufficient resources to adapt to environmental change and whether those who bear the greatest risks have meaningful access to the economic benefits associated with extraction. If environmental risks are localized while economic benefits are distributed across wider geographic and institutional scales, an inherent distributive tension emerges. This tension does not establish injustice automatically, but it creates a strong basis for examining whether the distribution of benefits, burdens, and decision-making power is considered legitimate by affected residents.

5. The Problem of Regulatory Thresholds

The Rantau Bakula case also demonstrates a crucial distinction between environmental compliance and environmental justice. Regulatory standards are indispensable because they provide measurable criteria for identifying unacceptable levels of environmental harm. Without such standards, environmental governance would become vulnerable to arbitrary decision-making. Yet compliance with a particular standard cannot by itself answer every question raised by environmental justice.

The South Kalimantan Provincial Parliament reported that laboratory results from samples collected during its investigation did not exceed the applicable environmental quality standards. This finding should be treated as an important component of the evidentiary record. It provides a reason not to characterize the Rantau Bakula conflict as a scientifically established case of regulatory environmental violation on the basis of the available samples alone.

At the same time, the finding does not eliminate the justice question. Environmental justice concerns distribution, participation, recognition, and the institutional capacity to address grievances (Schlosberg 2007; Walker 2012). A community can therefore remain dissatisfied even after an environmental test produces a formally compliant result, particularly if residents believe that the test did not capture the conditions they experience or did not adequately address the broader consequences of mining.

The distinction can be expressed analytically as follows: Regulatory compliance asks: *Did the measured environmental parameter exceed the applicable standard?* Environmental justice asks additionally: *Who is exposed, who benefits, whose experience is recognized, who participates in the assessment, how uncertainty is handled, and what remedy is available when competing claims remain unresolved?* These are different but complementary questions. Treating them as identical would create two analytical errors. The first would be to assume that every community complaint constitutes proof of environmental violation. The second would be to assume that regulatory compliance conclusively establishes justice. A rigorous environmental-justice analysis must avoid both.

This distinction is supported by the broader literature on environmental justice and natural-resource extraction. Environmental justice has been conceptualized through distributive, procedural, recognition, and restorative dimensions precisely because environmental conflicts involve more than the measurable distribution of environmental hazards (Schlosberg 2007; Walker 2012). Research on extractive governance likewise emphasizes that conflicts emerge from interactions among power, access to resources, institutional authority, and competing conceptions of environmental value.

6. The Distributive Meaning of the Rantau Bakula Conflict

Viewed collectively, the Rantau Bakula experience demonstrates that distributive environmental injustice should be understood as a question of unequal exposure combined with unequal capacity to respond. Residents' concerns regarding water, dust, noise, agriculture, housing, and livelihood conditions represent different manifestations of the same underlying issue: the possibility that the local costs of extraction are concentrated within a community whose economic and institutional capacity to absorb those costs is comparatively limited.

This does not require assuming that every reported impact is caused by mining. Nor does it require concluding that the company has violated environmental standards. Instead, the environmental-justice perspective directs attention toward

the structure through which risks and benefits are produced and distributed. The central question becomes whether the existing system provides sufficient mechanisms to identify differentiated exposure, account for cumulative effects, and ensure that communities bearing environmental risks have meaningful access to information, participation, and remedy.

The distributive dimension also reveals why the eighteen-year duration of the Rantau Bakula conflict matters. A short-term environmental disturbance may be absorbed through temporary adaptation. A prolonged period of uncertainty, however, can create a different form of vulnerability. Repeated concerns about water, residential conditions, livelihood resources, or environmental quality may gradually constrain the community's ability to plan for the future. The burden therefore lies not only in the physical impact of a particular event but also in the continuing uncertainty surrounding the environmental conditions on which everyday life depends.

The case consequently supports a broader understanding of environmental injustice as cumulative and relational. Cumulative, because multiple environmental and livelihood concerns may interact over time; relational, because the significance of those concerns depends on the unequal distribution of resources, political power, and institutional access among the actors involved. This perspective is consistent with wider research showing that mining impacts are multidimensional and that environmental, social, economic, territorial, and health consequences frequently intersect rather than operate independently. A recent systematic review of 57 empirical studies, for example, identifies economic, environmental, and social impacts as recurring dimensions of mining's effects on communities and emphasizes the need for longer-term approaches to cumulative and post-operational vulnerability. For Rantau Bakula, the distributive question therefore cannot be resolved by determining whether a single environmental parameter falls within a regulatory threshold. It requires a broader assessment of how mining-related risks, benefits, uncertainty, and adaptive capacities are distributed across the community and across time. Such an assessment moves the analysis from environmental impact toward environmental justice.

Procedural Justice, Recognition, and Citizens' Rights

The environmental conflict in Rantau Bakula cannot be adequately understood through the distribution of environmental burdens alone. Even where environmental risks are unevenly distributed, the question of justice remains incomplete unless the people who bear those risks are able to influence the processes through which environmental decisions are made. Environmental justice therefore has an inherently procedural dimension. It concerns who is permitted to participate, whose knowledge is considered relevant, what information is made available, how competing claims are evaluated, and whether affected communities possess meaningful opportunities to challenge decisions that shape their living environment (Schlosberg 2007; Walker 2012). Procedural justice is consequently

not synonymous with the existence of consultation procedures. A process may be formally open while remaining substantively unequal if participants lack information, resources, institutional standing, or genuine influence over outcomes.

This distinction is especially important in extractive conflicts because environmental decision-making is characterized by significant asymmetries of expertise and institutional power. Mining projects are embedded in licensing systems, environmental assessments, technical monitoring, corporate reporting, and regulatory procedures that require specialized knowledge. Mining companies generally possess greater access to technical experts, lawyers, financial resources, and administrative networks than rural communities confronting the consequences of extraction. The resulting asymmetry is not merely a difference in resources; it can shape whose interpretation of environmental reality becomes institutionally authoritative. Procedural inequality may therefore arise even when affected communities possess a formally recognized right to attend meetings, submit complaints, or provide information.

The distinction between formal participation and meaningful participation is central to this problem. Formal participation treats consultation primarily as a procedural event: residents are informed, invited, heard, or given an opportunity to submit objections. Meaningful participation requires considerably more. It implies that affected populations can obtain relevant information before decisions are finalized, understand the implications of technical assessments, question the assumptions underlying those assessments, contribute alternative forms of evidence, and influence the substance or implementation of decisions (Schlosberg 2007; Walker 2012). The difference is consequential because participation that has no capacity to affect decision-making may provide procedural legitimacy without redistributing decision-making power.

This problem has particular relevance to Indonesia's mining governance. Scholarship on the country's mineral and coal-mining regime has identified a persistent gap between formal commitments to public participation and the practical capacity of communities to influence mining-related decisions. Although the legal framework provides avenues for consultation, complaints, and community involvement, the institutional architecture continues to privilege state and corporate authority in important aspects of mining governance. Problems of transparency, procedural clarity, implementation, and community empowerment can therefore prevent formally available participatory mechanisms from becoming substantive instruments of environmental democracy (Safitri 2018).

The Rantau Bakula experience illustrates this distinction. Residents have repeatedly brought their concerns into formal institutional arenas, including legislative and governmental forums. The subsequent investigation involving multiple public institutions demonstrates that the community was not entirely excluded from the institutional process. Yet the existence of an investigation does not, by itself, establish procedural justice. The more important question is what happened to the community's claims once they entered the institutional system:

how were those claims translated into investigable questions, what forms of evidence were considered authoritative, how were residents involved in determining the scope of inquiry, and how were the resulting findings communicated and explained to them?

These questions become particularly important when community testimony and technical findings do not produce the same interpretation of environmental conditions. The institutional investigation produced environmental measurements that were reported as remaining within applicable regulatory standards, while residents continued to express concerns about their lived environment. This divergence should not be interpreted simplistically as a conflict between “truthful residents” and “unresponsive authorities,” nor should the technical findings automatically invalidate community experience. Rather, the divergence reveals a deeper problem of epistemic translation: how can institutions translate lived environmental experience into forms of evidence that are capable of entering technical and regulatory decision-making without reducing that experience to whatever can be measured through a limited set of standardized indicators?

The problem of epistemic translation is important because environmental harm is not experienced exclusively through measurable concentrations of pollutants. Residents encounter their environment through changes in water use, agricultural practices, noise, dust, mobility, residential security, and perceptions of safety. Some of these experiences can be quantified; others require longitudinal observation or contextual interpretation. Environmental governance nevertheless tends to privilege forms of knowledge that are standardized, measurable, and administratively legible. This can create a hierarchy of evidence in which technical measurement receives greater institutional weight than situated community knowledge.

Such a hierarchy does not mean that scientific evidence should be displaced by community testimony. Environmental decisions require credible scientific assessment, particularly when causal relationships are contested. The issue is instead whether the institutional process permits different forms of knowledge to interact rather than establishing one form of knowledge as inherently superior. Recognition justice provides a useful framework for this problem because recognition concerns more than respectful treatment. It concerns whether individuals and groups are regarded as legitimate subjects whose experiences, identities, interests, and forms of knowledge deserve consideration in the processes that affect them (Schlosberg 2007; Fraser 2000).

1. Recognition as a Condition of Environmental Justice

Recognition is therefore not an additional concern that can be addressed after distributive and procedural questions have been resolved. It is constitutive of both. Schlosberg's conception of environmental justice is particularly useful in this regard because it treats recognition, participation, distribution, and capabilities as interconnected dimensions of justice rather than independent categories (Schlosberg 2007). If a community is not recognized as a legitimate political

subject, its capacity to participate is weakened. If its participation is weakened, its ability to influence the distribution of environmental burdens is also constrained.

Recognition in environmental conflicts has at least three dimensions. First, there is political recognition: affected residents must be treated as legitimate participants rather than as obstacles to development. Second, there is social recognition: their livelihood practices, attachments to place, and everyday experiences must be considered relevant to environmental decision-making. Third, there is epistemic recognition: their observations and knowledge must be capable of entering the evidentiary process on terms that do not automatically subordinate them to institutional or corporate expertise.

The third dimension is particularly significant in Rantau Bakula. Residents have accumulated knowledge through prolonged residence in an environment affected by mining. Such knowledge cannot automatically establish scientific causation, but its duration and situated character make it relevant to environmental monitoring and assessment. A resident who observes recurring changes in water conditions, agricultural productivity, dust levels, or noise may possess information about temporal patterns that a periodic technical inspection cannot easily capture. The institutional question is therefore not whether local knowledge should replace scientific monitoring, but whether environmental governance is capable of incorporating it as a complementary source of evidence.

This issue can be understood through the concept of epistemic injustice. Fricker (2007) distinguishes between forms of injustice that occur when individuals are unfairly disadvantaged in their capacity as knowers. In environmental conflicts, this can occur when the testimony of affected residents is treated as inherently less credible because of their social position, lack of technical credentials, or distance from formal institutions. It can also occur when institutional categories are insufficient to express the kinds of harm that communities experience. In such circumstances, the problem is not simply that citizens lack information; they may lack institutional recognition as legitimate producers and interpreters of environmental knowledge.

Environmental justice scholarship increasingly recognizes this epistemic dimension. Recognition involves not merely acknowledging that affected groups exist but challenging institutional structures that systematically privilege some forms of knowledge over others. Recent work on environmental injustice similarly emphasizes that procedural, distributive, and recognition dimensions are mutually reinforcing: durable distributive outcomes are difficult to achieve without procedural inclusion and recognition, while procedural reforms themselves can remain inadequate if they fail to address whose experiences and identities are institutionally valued.

For Rantau Bakula, this suggests that the persistence of community grievances should not be interpreted only as a disagreement over environmental measurements. It may also reflect a disagreement over what counts as an adequate account of environmental harm. Residents may understand environmental change

through accumulated experience, while regulatory institutions may approach the issue through discrete measurements and legal thresholds. Neither perspective is sufficient on its own. The challenge of environmental justice lies in constructing an institutional process capable of evaluating both without collapsing one into the other.

2. Information as a Distribution of Institutional Power

Access to information is a central mechanism through which procedural inequality can either be reproduced or reduced. Environmental information has value not merely because citizens have a general right to know, but because information determines their ability to understand environmental risks, evaluate institutional decisions, challenge corporate claims, and participate meaningfully in environmental governance. Without access to relevant information, participation becomes largely reactive: citizens can respond to decisions but lack the capacity to interrogate the premises upon which those decisions were constructed.

Safitri's analysis of Indonesian mining litigation demonstrates precisely this problem. Access to information concerning mining planning, licensing, and environmental decision-making has frequently been contested, while public authorities have at times relied on formal-procedural approaches to consultation and disclosure. Judicial interventions in mining-related disputes have consequently played an important role in reinforcing the substantive significance of the public's right to environmental information (Safitri 2018).

The implication for Rantau Bakula is substantial. Access to information should not be reduced to the disclosure of a final environmental finding. Meaningful environmental participation requires access to the information architecture behind the decision: the relevant permits, environmental assessments, monitoring methodologies, sampling locations, laboratory results, compliance records, environmental management commitments, and explanations of how institutional conclusions were reached.

This distinction is particularly important when environmental findings are contested. If residents are told only that environmental parameters remain within applicable standards, they receive an outcome but not necessarily the evidentiary reasoning necessary to evaluate that outcome. Procedural justice requires greater transparency: what was measured, where was it measured, why were those parameters selected, what temporal limitations existed, and what uncertainties remain?

This is where the relationship between information and power becomes apparent. Information does not merely enable participation; it structures the distribution of power within participation. An actor possessing technical information can define the terms of debate, while an actor lacking that information may be forced to respond to categories established by others. In this sense, information asymmetry can reproduce substantive inequality even where formal participation is available.

Environmental governance literature has long recognized the importance of procedural environmental rights in addressing this problem. The three commonly associated procedural rights—access to environmental information, public participation, and access to justice—are not independent administrative conveniences. They are mutually reinforcing mechanisms through which environmental decision-making can become more accountable and substantively oriented toward environmental protection (Barritt 2024).

For Rantau Bakula, the implication is that access to information should be evaluated as a precondition of meaningful participation, not as a separate administrative entitlement. A resident cannot effectively challenge a monitoring result without knowing how it was produced. A community cannot evaluate the adequacy of environmental management without access to relevant commitments and monitoring data. Nor can citizens assess institutional accountability if the reasoning underlying official decisions remains opaque.

3. Participation Beyond Consultation

The distinction between consultation and participation is also critical in evaluating the community's engagement with state institutions. Consultation generally implies that authorities seek views from affected populations. Participation, by contrast, implies a more substantive relationship in which community input can influence decision-making. The difference may appear semantic, but it has major consequences for environmental justice.

A consultation process can be entirely compatible with an unequal distribution of power. Authorities may listen to community concerns while retaining complete control over the definition of the problem, the evidentiary standards, the timing of the process, and the final decision. Participation becomes more meaningful when affected populations can influence these dimensions. This does not require communities to possess veto power over every development decision. It requires that their participation has a demonstrable relationship to the substance of environmental governance.

Recent research on mining-community participation demonstrates how participatory structures can themselves become sites of conflict. Corporate participation mechanisms may confer legitimacy on selected representatives while simultaneously creating information asymmetries, transferring the burden of engagement onto community leaders, and generating mistrust when representatives are perceived as insufficiently accountable to the wider community (Hofmeyr 2025). The lesson is particularly relevant to Rantau Bakula: the mere presence of community representatives in institutional meetings does not guarantee that the broader community possesses meaningful participatory power.

This raises an additional issue concerning representation. Who speaks for the community? How are representatives selected? Do they have a mandate from residents? How are information and decisions communicated back to households? Are dissenting voices accommodated? These questions are frequently overlooked

when participation is measured simply through attendance or the existence of community representatives.

The problem becomes more complex as conflicts move from village to provincial and national institutions. Institutional escalation can increase political visibility while simultaneously increasing the distance between decision-makers and the affected community. Residents may gain access to more powerful institutions but encounter increasingly technical, legal, and bureaucratic procedures. Thus, institutional escalation is not necessarily equivalent to empowerment. The Rantau Bakula trajectory illustrates this paradox. Moving from local engagement to provincial legislative scrutiny and then toward national institutions expands the number of institutional actors involved in the dispute. Yet the multiplication of institutions can also produce fragmentation. Each institution may address a different dimension of the complaint according to its mandate, while no single institution possesses responsibility for integrating the environmental, livelihood, procedural, and rights dimensions of the conflict. This produces a distinction between institutional access and institutional integration. Citizens may have access to several institutions while still lacking access to a coherent process through which their claims are comprehensively assessed. Environmental justice requires the latter because environmental conflicts rarely respect administrative boundaries.

4. The Citizen as Rights-Bearer Rather Than Stakeholder

The procedural dimension of the Rantau Bakula conflict becomes more consequential when examined through the language of rights. Conventional environmental governance often conceptualizes local residents as “stakeholders.” Although stakeholder language recognizes that communities have interests in development decisions, it can be insufficient from a rights-based perspective. A stakeholder participates because an institution considers the stakeholder's interests relevant. A rights-bearer participates because the state has obligations toward that person's rights.

The distinction is normatively significant. If residents are treated merely as stakeholders, their concerns can be balanced against corporate investment, regional development, employment, and fiscal interests through a discretionary policy process. If they are treated as rights-bearing citizens, however, public institutions acquire stronger obligations concerning information, participation, protection, accountability, and remedy.

The recognition of a human right to a clean, healthy, and sustainable environment strengthens this rights-based interpretation. The right should not be understood as an absolute guarantee against every environmental alteration caused by economic activity. Rather, it establishes a normative connection between environmental quality and the conditions necessary for the enjoyment of human rights. Procedural rights are essential to this relationship because citizens require

information, participation, and access to justice in order to hold institutions accountable for environmental decisions (Barritt 2024).

This perspective is particularly useful for the Rantau Bakula case because the community's claims have progressively acquired a rights-oriented character. The significance of this development is not that every allegation necessarily constitutes a human-rights violation. Rather, it indicates a transformation in the political meaning of the dispute. Residents are not simply asking whether mining is economically beneficial or whether a company complies with a particular environmental standard. They are asking whether the institutions governing mining adequately protect their status as citizens living in an environment shaped by extractive activity. The rights-based perspective also changes the meaning of institutional responsibility. A state institution does not discharge its responsibility simply by forwarding a complaint to another agency. Nor is responsibility necessarily satisfied by conducting a technical investigation. Where multiple institutions possess relevant authority, the state must still ensure that citizens can navigate the system in a meaningful way. Fragmented mandates should not become fragmented responsibility.

5. Procedural Justice and the Burden of Proof

One of the most consequential aspects of environmental conflict is the allocation of the burden of proof. When residents allege that mining activities have harmed their environment, they may be required to provide evidence establishing the existence and source of harm. Yet the information necessary to establish causation may be held primarily by companies or state agencies.

This creates a structural dilemma. The community experiences an environmental condition but may lack the technical resources required to establish its cause. The company possesses technical information but has an interest in defending the legality or safety of its operations. Government institutions are expected to act as neutral regulators but may themselves depend on information supplied by regulated entities. Under such conditions, the distribution of evidentiary resources can become an important dimension of environmental justice.

The problem is not solved simply by saying that scientific evidence should prevail. Scientific evidence is indispensable, but the conditions under which evidence is produced matter. Who designs the sampling protocol? Who chooses the sampling locations? How frequently are samples taken? Which variables are measured? Who controls the raw data? Can affected residents independently verify the results? These questions determine whether scientific assessment functions as an instrument of accountability or merely as an institutional closure mechanism.

This is why community participation in environmental monitoring can have substantive value. Collaborative monitoring does not mean lowering scientific standards. Properly designed, it can increase transparency concerning sampling, provide additional observations, identify temporal patterns, and improve public

confidence in the evidentiary process. Recent Indonesian scholarship similarly argues that community-based monitoring can strengthen mining supervision by integrating community involvement into environmental oversight rather than treating residents solely as complainants (Mina et al. 2026).

The distinction is particularly important in a prolonged conflict. If residents must repeatedly initiate complaints and independently produce evidence every time an environmental concern arises, the burden of monitoring effectively shifts from the regulator to the affected population. Such an arrangement risks producing participatory exhaustion: the community must continually mobilize time, money, knowledge, and political resources simply to keep an unresolved issue visible.

This concept is particularly relevant to the Rantau Bakula experience. Prolonged engagement with multiple institutions can itself become a burden. Residents must organize, travel, prepare complaints, obtain supporting information, attend meetings, respond to institutional requests, and continue mobilizing when earlier processes do not produce an outcome they consider satisfactory. The cost of participation is therefore not evenly distributed. A community may possess a formal right to participate while bearing disproportionate practical costs for exercising that right.

6. From Procedural Exhaustion to Environmental Injustice

This dynamic allows procedural justice to be connected to the temporal dimension of the conflict. The longer a grievance remains unresolved, the more demanding participation can become. Initial participation may require attending a meeting; subsequent participation may require collecting evidence, engaging experts, communicating with multiple institutions, and sustaining political pressure. Procedural participation therefore has a temporal cost.

This temporal cost is rarely captured in formal assessments of participation. Institutions may record that a community has been consulted, a hearing has been held, or an investigation has occurred. Such records provide evidence of procedural activity but not necessarily of procedural effectiveness. The number of institutional encounters does not reveal how much effort the community has invested in maintaining its claim.

This is where the Rantau Bakula case offers a broader contribution to environmental-justice analysis. Prolonged environmental conflict can generate not only cumulative environmental vulnerability but also cumulative procedural burden. Each additional institutional process may impose new demands on the affected community. If the process repeatedly requires residents to restate their grievances without generating a satisfactory resolution, participation risks becoming an additional burden rather than a mechanism of empowerment.

The distinction between participation and exhaustion also helps explain why institutional escalation should not automatically be interpreted as evidence of democratic success. The movement of residents from one institution to another may demonstrate political agency, but it may simultaneously reveal the inadequacy of

existing remedies. A community that repeatedly escalates its complaint is politically active, but its activism may be a response to institutional failure rather than an indication that the system is functioning effectively.

This argument resonates with research on environmental litigation and extractive conflicts. Akchurin's analysis of mining-related environmental litigation shows that legal mobilization can make environmental compliance problems more visible while remaining constrained by narrow procedural and technical interpretations. Courts and specialized environmental institutions may address particular legal questions without resolving broader conflicts concerning recognition, participation, distribution, and community control (Akchurin 2023).

The implication is that procedural resolution is not necessarily substantive resolution. A government agency may close a complaint because no regulatory violation was established. A court may dismiss a case because procedural requirements were not satisfied. A legislative body may conclude an investigation. Yet the broader environmental-justice conflict may persist if the underlying distribution of risks, recognition of community concerns, or institutional trust remains unresolved.

7. Recognition, Participation, and the Production of Institutional Trust

Trust is therefore an important but often neglected dimension of environmental justice. Communities are more likely to regard environmental decisions as legitimate when they believe that institutions have acted transparently, listened seriously, used credible evidence, and treated competing interests fairly. Conversely, repeated experiences of exclusion, inadequate information, or unexplained decisions can undermine institutional trust even where authorities believe they have complied with formal procedures.

Trust should not be confused with agreement. Environmental justice does not require residents to agree with every regulatory conclusion. A community may disagree with an institutional finding while still accepting the legitimacy of the process if the process is transparent, evidence-based, participatory, and open to review. The deeper problem arises when citizens perceive that the process itself is inaccessible, predetermined, or incapable of incorporating their concerns.

This distinction is crucial for Rantau Bakula because the continuation of community mobilization following institutional investigations suggests that the dispute cannot be reduced to disagreement over a single technical result. The persistence of grievances may indicate that the community seeks not merely a particular finding but a credible institutional relationship in which environmental concerns can be raised, investigated, explained, and revisited when necessary.

Recognition is central to such a relationship. To recognize a community is not to endorse every claim it makes. It is to recognize its members as legitimate participants whose concerns warrant reasoned institutional engagement. This form of recognition can coexist with scientific disagreement. Indeed, a mature environmental-governance system should be capable of saying, in effect, that a

community's concern is legitimate and deserving of investigation even when the investigation ultimately does not substantiate the alleged causal relationship. Such an approach avoids two opposite failures. The first is dismissal, in which community claims are treated as unscientific simply because they originate outside formal expertise. The second is uncritical validation, in which every community claim is accepted without evidentiary scrutiny. Environmental justice requires neither. It requires a process in which different forms of knowledge are recognized, evaluated, and connected to institutional reasoning.

8. Access to Justice as More Than Access to Institutions

The final implication concerns the meaning of access to justice. In a narrow legal sense, access to justice may mean the ability to bring a complaint before an administrative body or court. From an environmental-justice perspective, this definition is insufficient. Access must encompass the practical capacity to obtain information, participate meaningfully, challenge decisions, and secure an effective remedy.

The three dimensions are mutually dependent. Without information, participation is weakened. Without participation, recognition becomes largely symbolic. Without recognition, institutions may fail to understand the full nature of distributive harm. Without a credible remedy, the entire process may become procedural rather than transformative. This integrated conception is consistent with broader international environmental-rights frameworks. The procedural environmental rights associated with access to information, public participation, and access to justice are increasingly understood not as administrative accessories but as mechanisms through which substantive environmental protection can be pursued (Barritt 2024).

For Rantau Bakula, this means that the effectiveness of environmental governance should be evaluated through the entire chain of institutional interaction rather than through isolated procedural events. The relevant question is not simply whether residents were allowed to complain. It is whether they could understand the decision-making process, influence it, challenge its evidentiary basis, receive a reasoned response, and obtain a meaningful remedy where harm was established.

The case therefore reveals a form of environmental injustice that is less visible than physical environmental degradation: procedural inequality in the capacity to transform lived experience into an institutionally consequential claim. Residents may possess substantial knowledge of their environment but limited capacity to translate that knowledge into the technical, legal, and administrative language through which environmental governance operates. Conversely, institutions may possess substantial regulatory authority but limited mechanisms for incorporating long-term community experience into their assessments.

This gap between lived experience and institutional legibility is one of the central challenges of environmental justice. It is not resolved by choosing between community knowledge and scientific expertise. It requires institutional designs

capable of bringing the two into a transparent relationship while preserving standards of evidence and accountability.

The Rantau Bakula conflict consequently demonstrates that citizens' environmental rights depend upon more than the existence of environmental laws. Rights become meaningful when institutions are structured to recognize affected communities, provide accessible information, enable meaningful participation, and offer credible pathways toward remedy. Where these conditions remain incomplete, procedural mechanisms may exist without producing substantive access to justice. The significance of the case therefore extends beyond the immediate dispute between residents and a mining company. It raises a broader governance question: what happens when responsibility for an environmental conflict is dispersed among multiple institutions, while no single institution assumes responsibility for ensuring that the citizen's grievance is ultimately resolved? The answer to this question requires examination of institutional fragmentation, regulatory authority, grievance mechanisms, and accountability—the focus of the following section.

Conclusion

The Rantau Bakula case demonstrates that prolonged conflict between local communities and extractive industries cannot be adequately understood as a dispute over environmental impacts alone. The eighteen-year trajectory of the conflict reveals a more complex form of environmental injustice in which distributive burdens, procedural inequalities, failures of recognition, and difficulties in obtaining effective remedies interact over time. The significance of the case therefore lies not simply in whether particular environmental parameters comply with regulatory thresholds, but in how environmental governance responds to citizens who experience, interpret, and contest changes in their living environment.

The analysis demonstrates that environmental injustice may persist even when formal regulatory institutions are functioning and legally prescribed procedures are available. Environmental regulation can establish standards for pollution, environmental quality, licensing, and corporate compliance, but compliance with individual standards does not necessarily resolve broader questions of justice. As Schlosberg (2007) argues, environmental justice encompasses interconnected dimensions of distribution, recognition, participation, and capabilities. In Rantau Bakula, these dimensions cannot be separated. Environmental burdens affect livelihoods and everyday security; limited participation constrains the community's ability to influence environmental decision-making; inadequate recognition can marginalize local experience as a legitimate form of knowledge; and weak or fragmented remedies can prolong vulnerability rather than resolve it.

One of the central findings is that procedural access should not be equated with procedural justice. The residents' engagement with governmental, legislative, and human-rights institutions demonstrates that institutional channels are available. However, the existence of these channels does not automatically ensure meaningful

participation or effective remedy. Procedural justice requires more than the opportunity to submit complaints or attend meetings. It requires access to relevant information, meaningful influence over investigative processes, transparency concerning the production and interpretation of environmental evidence, and the possibility of challenging institutional conclusions. As Safitri (2018) demonstrates in the Indonesian mining context, access to information is closely connected to the capacity of citizens to participate meaningfully in decisions concerning extractive activities. Without informational equality, formal participation can reproduce rather than reduce existing power asymmetries.

The case also highlights the importance of recognition and epistemic justice. Residents possess forms of environmental knowledge generated through prolonged interaction with their surroundings. Such knowledge should neither automatically override scientific assessment nor be dismissed as anecdotal. The relevant issue is whether institutional processes are capable of considering community experience alongside technical evidence. Fricker's (2007) concept of epistemic injustice is useful in this regard because it directs attention to the unequal credibility assigned to different social actors as knowers. In environmental conflicts, communities may possess extensive experiential knowledge while lacking the institutional authority, technical resources, or professional credentials necessary to transform that knowledge into formally recognized evidence. Environmental justice consequently requires institutions to create mechanisms through which local knowledge can be examined, corroborated, and incorporated without compromising scientific standards.

The Rantau Bakula experience further demonstrates that time itself can become a dimension of environmental injustice. Prolonged conflict generates cumulative burdens that are not captured by conventional environmental assessments. Communities must repeatedly mobilize, communicate with different institutions, provide information, seek technical assistance, and sustain political attention. The longer a grievance remains unresolved, the greater the procedural resources required to keep that grievance visible. This produces a form of *procedural exhaustion* in which the costs of seeking justice are progressively transferred to those who are already experiencing environmental and socioeconomic vulnerability. Consequently, the effectiveness of an environmental grievance mechanism should be evaluated not merely by whether citizens can enter the system, but by whether the system can process their claims in a timely, transparent, and credible manner.

The case also exposes the limitations of fragmented institutional responsibility. Environmental conflicts involving mining rarely fall entirely within the jurisdiction of a single institution. Environmental regulation, mining governance, local administration, legislative oversight, human rights, land use, and community welfare may involve different authorities. Institutional pluralism can potentially strengthen accountability by providing multiple avenues for redress. However, without effective coordination, it can also create a situation in which responsibility

is distributed so widely that no institution assumes responsibility for the overall trajectory of the grievance. Citizens may therefore experience institutional multiplication without institutional resolution. Access to several institutions does not necessarily constitute access to justice if each institution addresses only a narrow component of a multidimensional conflict.

This finding has broader implications for environmental governance in Indonesia and other resource-dependent jurisdictions. Environmental grievance mechanisms should be designed around the experiences of affected citizens rather than around the administrative boundaries of government institutions. A more effective framework would integrate access to information, participatory monitoring, independent investigation, transparent communication of findings, inter-agency coordination, and accessible mechanisms for review and remedy. Community-based monitoring can contribute to this process by complementing official regulatory systems with locally generated observations and longitudinal knowledge, provided that such mechanisms operate under credible methodological and institutional safeguards (Mina et al. 2026).

The findings also suggest that the protection of environmental rights should move beyond a narrow conception of post-harm compensation. Compensation may be necessary in particular circumstances, but it cannot substitute for prevention, participation, recognition, accountability, and restoration. A rights-based approach requires institutions to address environmental risks before they become entrenched and to ensure that affected communities have meaningful opportunities to influence decisions concerning those risks. The recognition of the right to a clean, healthy, and sustainable environment reinforces this orientation by connecting environmental protection with broader obligations concerning human dignity, participation, information, and access to justice (Barritt 2024).

Theoretically, the Rantau Bakula case contributes to environmental-justice scholarship by demonstrating the importance of examining the interaction between distributive, procedural, recognition, and temporal dimensions of injustice. The case shows that environmental injustice is not necessarily produced through a single harmful event or a single institutional failure. It can emerge cumulatively through the interaction of environmental exposure, unequal political capacity, epistemic asymmetry, fragmented governance, and prolonged difficulty in obtaining remedy. This perspective extends conventional analyses that focus primarily on where environmental burdens are located. It directs attention instead to how communities are positioned within the institutional processes that define, investigate, and respond to those burdens.

The case further suggests that the concept of environmental citizenship deserves greater attention in studies of extractive governance. Residents of mining-affected areas should not be treated merely as stakeholders whose interests must be balanced against economic development. They are citizens and rights-bearers whose relationship with the state includes legitimate claims to information, participation, environmental protection, accountability, and effective remedy.

Environmental governance becomes more legitimate when citizens are recognized not simply as recipients of regulatory decisions but as participants in the production of those decisions.

Ultimately, the Rantau Bakula conflict demonstrates that environmental justice is not achieved when a complaint reaches an institution; it is achieved when institutions possess the capacity to hear, investigate, explain, respond, and remedy in ways that affected citizens can regard as credible and fair. The persistence of the conflict illustrates the gap that can emerge between formal environmental governance and lived environmental citizenship. Closing that gap requires more than stronger environmental standards. It requires institutional arrangements capable of reducing information asymmetries, recognizing community knowledge, ensuring meaningful participation, coordinating fragmented authorities, and providing effective remedies.

The broader lesson is therefore clear: the legitimacy of extractive governance depends not only on whether mining activities comply with formal regulatory requirements, but also on whether the citizens who live with their consequences are meaningfully recognized within the processes that govern them. For communities such as Rantau Bakula, environmental justice must ultimately be measured not by the number of procedures completed, but by whether those procedures produce meaningful protection of rights, institutional accountability, and a credible pathway toward resolution.

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