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ESG Storytelling and the Words–Action Gap in Indonesian Mining: A Critical Qualitative Analysis through the Lens of Ecologism

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ABSTRACT
This study examines the relationship between ESG storytelling and the words–action gap in Indonesia's mining sector through Andrew Dobson's ecologism. Using a qualitative descriptive-critical approach, the study analyzes sustainability and annual reports alongside independent external evidence from PT Vale Indonesia Tbk (INCO) and PT Bumi Resources Tbk (BUMI) during 2023–2025. Data were analyzed using the Miles, Huberman, and Saldaña interactive model and a Claim–Evidence Matrix (CEM). Eight purposively selected claim–evidence pairs were classified as Aligned (ALG), Gap (GAP), Contradiction (CON), or Insufficient Evidence (INS). The findings reveal that five pairs (62.5%) showed gaps, two (25.0%) were aligned, one (12.5%) had insufficient evidence, and none showed contradictions. These results indicate potential ESG decoupling between corporate sustainability commitments and operational environmental practices. From an ecologism perspective, both companies' ESG narratives tend to reflect managerial environmentalism, emphasizing technical efficiency, regulatory compliance, and symbolic legitimacy over substantive consideration of ecological limits. The study does not establish intentional greenwashing but highlights the importance of evaluating ESG disclosures against operational evidence and ecological realities.
Keywords: *ESG storytelling, words–action gap, ESG decoupling, ecologism, mining.*
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1. INTRODUCTION

The worsening global climate crisis and recurrent ecological disasters—including forest and land fires, floods, landslides, drought, coastal abrasion, and pollution—pose serious challenges to human survival and ecosystem sustainability (Adil Sulthoni & Deni Firmansyah, 2022; Rahmad et al., 2026). In Indonesia, ecological pressures have intensified alongside economic expansion, natural resource exploitation, and land-use change (Fashlih et al., 2025; Juwita et al., 2026). Mining is among the sectors most closely associated with these problems because poorly managed extraction can damage landscapes, reduce forest cover, degrade soil, pollute water, and disrupt ecosystems. Such impacts directly affect surrounding communities, including access to clean water, agricultural land, health, and safety (Lestari et al., 2025; Safitri et al., 2024). Companies are therefore expected not only to pursue profitability but also to communicate their sustainability commitments and performance transparently (Miklosik & Evans, 2021; Santriani & Asfiyah, 2025).

Corporate communication does not merely convey operational and financial information; it also constructs narratives about corporate identity, values, and social purpose (Blau et al., 2022; Menon & Pillai, 2026). Such narratives are disseminated through annual reports, sustainability reports, corporate websites, social media, and public relations activities

(Casalegno et al., 2024; Luisi & Cucaro, 2026). When communicated consistently, they help companies connect business activities with social and environmental responsibility, build stakeholder trust, and maintain organizational legitimacy (Ahmed et al., 2025; Juwita et al., 2026; Miklosik & Evans, 2021).

In sustainability communication, this practice has developed into ESG storytelling: the use of narratives to communicate corporate commitments, actions, and achievements in the Environmental, Social, and Governance (ESG) domains (Bunchabusabong & Satararuji, 2026; Shruthi Priya & Sathish, 2026). ESG storytelling does not simply present sustainability indicators, it frames sustainability information in ways that help stakeholders understand how a company interprets its ESG commitments (Huang et al., 2022; Shruthi Priya & Sathish, 2026). By linking sustainability activities to organizational values and identity, companies can construct an image of responsible environmental, social, and governance performance (Auliya & Herlina, 2026; Menon & Pillai, 2026).

However, ESG storytelling becomes problematic when positive narratives are not fully aligned with operational realities. Such discrepancies may generate stakeholder skepticism regarding the credibility of sustainability claims and create risks of decoupling between communicated ESG commitments and actual socio-ecological impacts (Chan et al., 2025; Krenz et al., 2025; Leonhardt & Guertler, 2025). This issue is particularly important in mining, where companies operate in environments with high ecological and social risks, including land-use change, water use, waste management, and community impacts (Fashlih et al., 2025; Verrier et al., 2022). Mining companies commonly communicate reclamation, rehabilitation, emissions reduction, biodiversity conservation, community empowerment, and governance initiatives through sustainability reports and annual reports (Juwita et al., 2026; Miklosik & Evans, 2021).

Sustainability reporting has become a common practice among Indonesian mining companies listed on the Indonesia Stock Exchange. These reports present information on ESG commitments and performance, but they may also function as strategic narratives that position extractive activities as responsible practices (Juwita et al., 2026; Luisi & Cucaro, 2026). Sustainability reports should therefore be examined not only as sources of performance data but also as narrative constructions that shape stakeholder perceptions of corporate ecological responsibility (Shruthi Priya & Sathish, 2026).

This study focuses on PT Vale Indonesia Tbk (INCO), a nickel mining company, and PT Bumi Resources Tbk (BUMI), a coal mining company, during the 2023–2025 period. The comparison enables an examination of sustainability narratives across two mining subsectors with different ecological risk profiles. Corporate claims in sustainability and annual reports are compared with external evidence, including independent media publications, civil society investigation reports, think-tank studies, government evaluations, and audit documents. This approach allows the study to assess not only what companies communicate but also whether their narratives are supported by external evidence on environmental practices and problems.

Sustainability issues in corporate activities can be critically examined through Andrew Dobson's distinction between environmentalism and ecologism (Dobson, 2001). Environmentalism tends to address environmental problems through technical and managerial solutions without fundamentally questioning existing social and economic systems. In contrast, ecologism questions the human–nature relationship, critiques anthropocentrism, and emphasizes ecological limits and the intrinsic value of nature (Dobson, 2001; Patading, 2020).

In the mining context, this perspective is relevant because extractive activities directly alter landscapes and ecological systems. Accordingly, ESG narratives should not be assessed solely by the presence of environmental programs or claims, but also by whether they reflect substantive changes in corporate relationships with nature (Leonhardt & Guertler, 2025; Ramadhan, 2026).

Previous studies have examined ESG disclosure, greenwashing, and decoupling, but most focus on gaps between formal disclosure and operational practices rather than on the narratives used to frame sustainability discourse (Feix et al., 2026; Juwita et al., 2026; Yiping et al., 2026). Research integrating ESG storytelling, words–action gaps, ESG decoupling, and ecologism remains limited (Leonhardt & Guertler, 2025; Ramadhan, 2026). Juwita et al. (2026) used the Claim–Evidence Matrix to assess the credibility of environmental disclosures among Indonesian coal companies, but their focus was on investor relations rather than actual environmental performance. Therefore, this study contributes to the literature by integrating ESG storytelling, the words–action gap, ESG decoupling, and Dobson's ecologism in a comparative analysis of nickel and coal mining companies in Indonesia. Unlike prior studies that primarily assess the credibility of ESG disclosure, this study examines how corporate sustainability narratives align with external evidence on environmental practices and ecological impacts.

Accordingly, this study examines ESG storytelling in the mining sector by analyzing the content of sustainability communication and the extent to which corporate narratives align with environmental practices and external evidence. The research questions are formulated as follows:

RQ1. How does ESG storytelling in mining companies represent corporate commitments and responsibilities toward the environment?

RQ2. What patterns of ESG decoupling emerge in the gap between ESG narratives and external evidence in INCO and BUMI during the 2023–2025 period?

RQ3. To what extent does the words–action gap in mining companies' ESG storytelling appear when examined through Andrew Dobson's ecologism perspective?

This study aims to examine how mining companies represent environmental commitments through ESG storytelling, identify patterns of decoupling between corporate narratives and operational evidence, and interpret the words–action gap through an ecologism perspective. Theoretically, it contributes to research on ESG storytelling, greenwashing, and ESG decoupling by integrating a critical ecologism perspective. Practically, it provides insights for stakeholders, investors, regulators, and companies in assessing the alignment between ESG claims and actual sustainability practices.

2. LITERATURE REVIEW

ESG and Corporate Accountability

Corporate social responsibility is rooted in the idea that business activities should not merely pursue economic profit but also contribute to social and environmental sustainability (Du, 2026; Kaur et al., 2026). This principle has been formalized in ISO 26000:2010, which emphasizes ethical conduct and organizational contributions to sustainable development (Verrier et al., 2022). Corporate sustainability practices have subsequently shifted from

voluntary Corporate Social Responsibility (CSR) toward a more structured and measurable Environmental, Social, and Governance (ESG) framework (Du, 2026).

ESG is a non-financial assessment framework used to evaluate how corporations manage the impacts of their operations across environmental, social, and governance dimensions (Casalegno et al., 2024). The environmental dimension covers emissions, resource efficiency, waste, and biodiversity; the social dimension concerns relationships with employees, communities, consumers, and other stakeholders; while the governance dimension includes oversight, transparency, ethics, and accountability (Loew et al., 2024; Miklosik & Evans, 2021; Santriani & Asfiyah, 2025). Although related, CSR and ESG differ in emphasis. CSR tends to frame social responsibility as a moral and philanthropic commitment, whereas ESG provides a more measurable framework for identifying, measuring, and disclosing non-financial performance to markets and stakeholders (Du, 2026; Krenz et al., 2025). ESG information is therefore important for investors and stakeholders in assessing non-financial risks and long-term sustainability prospects (Juwita et al., 2026).

In the context of corporate accountability, companies are expected to account openly for the social and ecological impacts of their activities (Rahmad et al., 2026). ESG disclosure and sustainability reporting serve as instruments of public accountability by providing periodic information on sustainability policies and performance (Miklosik & Evans, 2021). However, publishing sustainability reports does not automatically ensure that communicated commitments are substantively implemented in operations (Savin et al., 2026). Discrepancies between public narratives and actual practices form the basis for examining words–action gaps, ESG decoupling, and greenwashing (Feix et al., 2026; Yiping et al., 2026).

ESG Storytelling and Sustainability Communication

ESG storytelling refers to the way corporations construct and communicate ESG information through narratives that connect sustainability performance with corporate values and identity (Leonhardt & Guertler, 2025; Menon & Pillai, 2026). It does not merely present ESG indicators but provides context and meaning for corporate policies, programs, and sustainability commitments (Huang et al., 2022; Shruthi Priya & Sathish, 2026).

ESG communication is conveyed through various channels, including annual reports, sustainability reports, corporate websites, investor relations materials, and climate action transition plans (Aprilia et al., 2022; Miklosik & Evans, 2021). Each channel has different characteristics and audiences. Therefore, ESG storytelling concerns not only the information conveyed but also how companies select, organize, and frame sustainability information within a narrative (Casalegno et al., 2024; Luisi & Cucaro, 2026). Conceptually, ESG storytelling is narrative because sustainability information is selected and organized to construct particular meanings about corporate activities, performance, and commitments (Leonhardt & Guertler, 2025; Yiping et al., 2026). This process allows companies to determine which issues are emphasized, which achievements are communicated, and how challenges or negative impacts are explained. ESG communication is therefore a process of meaning construction rather than a neutral transfer of information (Luisi & Cucaro, 2026; Menon & Pillai, 2026).

Because of this narrative character, ESG storytelling should be examined alongside corporate practices. Sustainability narratives can be compared with actual operational conditions to assess their alignment (Chan et al., 2025; Savin et al., 2026). Discrepancies between narratives and actions provide the basis for discussing words–action gaps and ESG

decoupling, while communication that constructs an image inconsistent with actual conditions may be associated with greenwashing (Feix et al., 2026; Yiping et al., 2026).

Words–Action Gap and ESG Decoupling

The words–action gap, also known as the walk–talk gap, refers to the misalignment between corporate sustainability claims and actual operational practices (Ahmed et al., 2025; Yiping et al., 2026). This gap has become increasingly significant because stakeholders and consumers can access various digital information channels to compare corporate sustainability claims with actual practices (Chan et al., 2025; Krenz et al., 2025).

Discrepancies between narratives and operational practices may reflect symbolic legitimacy strategies, in which ESG communication is directed more toward impression management than substantive business change (Juwita et al., 2026; Menon & Pillai, 2026). Companies in capital-intensive industries may face high costs in implementing environmentally friendly operational transformations, encouraging disproportionate communication in which environmental initiatives are publicized without commensurate green investment (Ho et al., 2024; Jha & Verma, 2022). Chan et al. (2025) developed the Dynamic Authenticity Evaluation Model (DAEM) to evaluate ESG communication authenticity through operational alignment, temporal consistency, and communication specificity. Their findings show that ESG communication authenticity is not significantly related to abnormal stock returns but is more strongly related to employee engagement. This suggests that stakeholder responses to ESG communication authenticity may differ across groups, and that perceptions of authenticity are not necessarily uniform between investors and non-market stakeholders.

The words–action gap can therefore be understood as a form of ESG decoupling, occurring when sustainability narratives are not fully aligned with corporate actions and operational changes (Feix et al., 2026; Savin et al., 2026). This concept is relevant to ESG storytelling because sustainability narratives not only convey non-financial information but also construct public meanings about corporate commitment and authenticity (Leonhardt & Guertler, 2025; Luisi & Cucaro, 2026). When narratives are inconsistent with practices, ESG communication risks being perceived as symbolic action that weakens stakeholder credibility and trust (Chan et al., 2025; Krenz et al., 2025).

Corporate Legitimacy and Greenwashing

Whereas the words–action gap and decoupling describe misalignment between sustainability narratives and operational practices, Legitimacy Theory explains why corporations construct and maintain public sustainability narratives (Juwita et al., 2026; Yiping et al., 2026). Companies seek social acceptance by aligning their actions and disclosures with stakeholder expectations. Legitimacy refers to the general perception that an entity's actions are desirable, proper, and appropriate within prevailing social norms and values (Yiping et al., 2026).

In the mining industry, legitimacy can be understood through pragmatic, moral, and cognitive dimensions (Juwita et al., 2026). Pragmatic legitimacy concerns stakeholder interests, particularly investors and capital markets, where ESG disclosure may reduce information asymmetry and signal the ability to manage transition and environmental risks (Luisi & Cucaro, 2026). Moral legitimacy concerns public judgments of the appropriateness of corporate activities and their environmental and social impacts (Rahmad et al., 2026). Cognitive legitimacy concerns acceptance based on conformity with recognized standards and practices, such as GRI, TCFD, and ISSB (Juwita et al., 2026).

To maintain legitimacy, companies may adopt substantive or symbolic strategies (Juwita et al., 2026; Yiping et al., 2026). Substantive strategies involve real operational changes, such as emissions reduction, environmental impact management, and transparent post-mining reclamation. Symbolic strategies rely on rhetoric, selective disclosure, and sustainability narratives to create perceptions of social conformity without commensurate operational change. When symbolic strategies produce discrepancies between communicated commitments and actual actions, decoupling may occur between formal policies and operational practices.

In conditions of decoupling, greenwashing may be used to maintain a sustainability image before the public (Feix et al., 2026; Juwita et al., 2026). Greenwashing refers to communication practices that create the impression that a company's ecological commitments or performance are better than its actual operational conditions (Leonhardt & Guertler, 2025). It may involve selective disclosure, ambiguous environmental claims, and partial reporting that does not proportionally represent negative impacts. Greenwashing is therefore related not only to inaccurate claims but also to strategies of selecting and framing information to shape stakeholder perceptions (Luisi & Cucaro, 2026; Menon & Pillai, 2026).

ESG storytelling is closely related to greenwashing because sustainability narratives can construct corporate identity and legitimacy while potentially emphasizing achievements without equivalent operational transformation (Juwita et al., 2026; Leonhardt & Guertler, 2025). Therefore, evaluating ESG storytelling requires examining not only the messages conveyed but also how information is framed and whether sustainability narratives align with companies' actual environmental practices (Chan et al., 2025; Yiping et al., 2026).

Ecologism Ideology

In green political thought, Andrew Dobson distinguishes environmentalism and ecologism as two approaches with different foundations in responding to environmental crises (Dobson, 2001). Environmentalism treats environmental problems as technical and managerial issues that can be addressed through regulation, policy reform, and technology without fundamentally changing existing social and economic systems. In contrast, ecologism questions the human–nature relationship and the social and economic structures that contribute to ecological crises (Dobson, 2001; Patading, 2020).

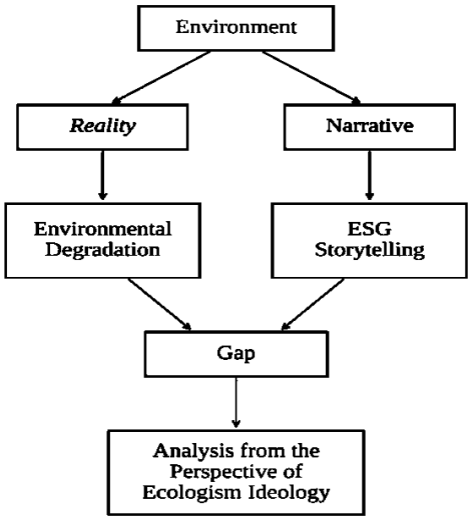
Ecologism critiques anthropocentric views that place human interests at the center of determining the value and use of nature. It emphasizes the intrinsic value of non-human nature and the importance of ecological limits in social and economic activities (Dobson, 2001; Rahmad et al., 2026). From this perspective, ecological crises result not only from technical failures in environmental management but also from production, consumption, and resource-exploitation patterns that exceed ecological capacity (Patading, 2020). Ecologism therefore calls for more fundamental changes in how humans view and interact with nature.

In mining, the ecologism perspective is relevant because extractive activities directly involve natural resource use, landscape alteration, and potential impacts on ecosystems and communities (Fashlih et al., 2025; Verrier et al., 2022). Sustainability efforts should not be assessed only by environmental programs, technology adoption, or regulatory compliance, but also by whether corporate activities consider ecological limits and transform the company's relationship with the environment (Dobson, 2001; Ramadhan, 2026). Approaches focused only on efficiency and impact mitigation may remain within a managerial environmentalism

framework, whereas ecologism demands more substantive changes in production patterns and corporate–nature relations.

The ecologism perspective can be used as a critical lens for analyzing ESG storytelling in mining companies (Dobson, 2001; Leonhardt & Guertler, 2025). ESG narratives should be examined not only through sustainability claims but also through the values and views of the company–environment relationship constructed in those narratives (Luisi & Cucaro, 2026; Ramadhan, 2026). Narratives emphasizing technical achievements, efficiency, or administrative compliance without fundamental changes in extractive practices may reflect managerial sustainability. In contrast, ecologism enables researchers to assess whether narratives reflect substantive ecological commitments or function as symbolic legitimacy strategies to maintain the existing business model (Feix et al., 2026; Juwita et al., 2026). Ecologism thus provides a framework for interpreting the gap between corporate sustainability narratives and the ecological realities of mining activities.

Figure 1. Research Framework



Source: Processed by the researchers, 2026.

3. METHOD

3.1 Research Approach and Design

This study employs a qualitative approach with a descriptive-critical research design. This approach was selected to examine how mining companies construct and communicate Environmental, Social, and Governance (ESG) narratives and how these narratives align with external evidence of environmental practices. Sandelowski (2000) explains that descriptive qualitative research aims to provide a comprehensive description of a phenomenon grounded in empirical data.

The study uses document analysis to systematically examine corporate reports and external information. According to Bowen (2009), document analysis is a qualitative research method that involves reviewing and interpreting documents relevant to the research focus. The critical dimension is applied to identify gaps between corporate environmental claims and external evidence, which are subsequently interpreted through Andrew Dobson's ecologism perspective.

3.2 Data Sources and Data Collection

The research examines PT Vale Indonesia Tbk (INCO), a nickel mining company, and PT Bumi Resources Tbk (BUMI), a coal mining company, during the 2023–2025 period. Data were collected through digital document searches (desk research) and documentation studies, using corporate documents and external sources.

Corporate documents consist of sustainability reports and annual reports, which provide information on environmental commitments, policies, targets, programs, and achievements. External evidence was obtained from media publications, including Mongabay Indonesia and ANTARA News, investigation reports by Wahana Lingkungan Hidup Indonesia (WALHI), studies by the Ember Climate think tank, and official evaluation documents from the Environmental Agency (DLH) and the Audit Board of the Republic of Indonesia (BPK RI).

Documents were purposively selected based on their relevance to the research objectives, company activities, geographical context, and research period. The collected information was then classified and organized into a Claim–Evidence Matrix (CEM) to systematically compare corporate environmental claims with relevant external evidence.

3.3 Data Analysis Technique

Data analysis followed the interactive model of Miles, Huberman, and Saldaña (2014), consisting of data reduction, data display, and conclusion drawing and verification. During data reduction, relevant information from corporate reports and external sources was selected based on its substantive relevance, geographical context, and alignment with the 2023–2025 research period. The selected information was then organized into the Claim–Evidence Matrix (CEM), which serves as the primary analytical instrument for comparing corporate ESG claims with external evidence.

The CEM was adapted from the approach used by Juwita et al. (2026) to examine the credibility of environmental disclosures among Indonesian mining companies. Each claim–evidence pair was classified into four categories: Aligned (ALG), Gap (GAP), Contradiction (CON), and Insufficient Evidence (INS). This classification enables the identification of alignment and discrepancies between corporate narratives and external information based on their substance, context, location, and reporting period.

Table 1. Focus of ESG Storytelling Analysis

No.	Analytical Focus	Observed Aspects
1	ESG narrative	Environmental commitments, targets, programs, and achievements communicated by companies
2	Environmental practices	External information on environmental practices and conditions
3	Narrative versus practice	Alignment or gaps between claims and evidence
4	Words–action gap	Forms of discrepancy between communication and action
5	ESG decoupling	Patterns of separation between sustainability narratives and practices
6	Ecologism	The relationship between corporate economic activities and ecological limits and interests

Source: Processed by the researchers, 2026.

In the conclusion-drawing and verification stage, the identified patterns were interpreted through three analytical perspectives. The words–action gap concept was used to examine discrepancies between corporate narratives and practices, while ESG decoupling was applied to identify the separation between environmental commitments, implementation, and outcomes. Furthermore, Andrew Dobson's ecologism perspective was used to interpret how corporate sustainability narratives position economic interests in relation to ecological limits. Conclusions were verified by examining the consistency between corporate claims, external evidence, and theoretical interpretations.

4. RESULTS AND DISCUSSION

4.1 RESULTS

This section presents the main findings derived from the analysis of corporate sustainability reports, annual reports, and external comparative evidence for PT Vale Indonesia Tbk (INCO) and PT Bumi Resources Tbk (BUMI) during the 2023–2025 period. The findings are organized according to the three research questions: the representation of environmental commitments in ESG storytelling, the relationship between corporate structure and operational gaps, and the interpretation of words–action gaps from Dobson's ecologism perspective.

4.1.1 Representation of Environmental Commitments in ESG Storytelling

The analysis shows that both companies represent their environmental commitments through sustainability narratives that emphasize regulatory compliance, operational programs, emissions management, and contributions to the energy transition.

INCO frames its environmental commitments through the Right Nickel strategy, a target to reduce Scope 1 and Scope 2 emissions by 33% by 2030 relative to the 2017 baseline, and the use of hydroelectric power. In 2025, renewable energy was reported to contribute 30.87% of the company's energy use. The company also presents commitments related to lake conservation, good mining practices, human rights compliance, and water-risk management.

BUMI, in contrast, represents its environmental commitments through decarbonization strategies, operational digitalization, the use of B35 fuel, reclamation programs, and emissions reporting. The company emphasizes efficiency improvements and emissions reduction within its coal-mining operations, particularly through KPC and Arutmin.

The findings indicate that the two companies use different sustainability narratives. INCO emphasizes clean energy, nickel's role in the energy transition, and hydropower-based operations. BUMI emphasizes efficiency, decarbonization, reclamation, and post-mining land utilization. However, the continued emphasis on coal production in BUMI's operations and fluctuations in INCO's absolute emissions indicate that efficiency commitments and renewable-energy initiatives should be distinguished from absolute emissions reductions.

4.1.2 Verification Status of Corporate Claims and External Evidence

The Claim–Evidence Matrix (CEM) was used to compare corporate claims with external evidence from independent media, civil society organizations, government institutions, and research publications. The analysis identified four verification categories: Aligned (ALG), Gap (GAP), Contradiction (CON), and Insufficient Evidence (INS).

Of the eight claim–evidence pairs analyzed, two pairs (25.0%) were categorized as Aligned, five pairs (62.5%) were categorized as Gap, no pairs (0.0%) were categorized as Contradiction, and one pair (12.5%) was categorized as Insufficient Evidence.

Table 2. Distribution of Comparison Results (Verification Status)

Code	Category	Number	Percentage	Methodological Justification
ALG	Aligned	2	25.0%	External evidence supports specific operational indicators, namely the operation of INCO's three hydroelectric power plants and the use of KPC's Telaga Batu Arang void.
GAP	Gap	5	62.5%	There are differences or incompleteness between the scope of corporate claims and the socio-ecological issues reported by external sources.
CON	Contradiction	0	0.0%	No claim–evidence pair met the criteria for a direct contradiction between a specific claim and verified comparative evidence.
INS	Insufficient Evidence	1	12.5%	The KPC embankment incident was reported, but certain aspects, particularly the final status of administrative sanctions could not be confirmed based on the evidence used.
Total data pairs		**8**	**100.0%**	Four INCO pairs and four BUMI pairs.

Source: Processed by the researchers, 2026.

The GAP category was found in five claim–evidence pairs. These pairs relate to INCO's lake conservation and good mining practices, human rights compliance and forest-area utilization permits, and water-risk management; as well as BUMI's post-mining land reclamation and carbon/CMM emissions reporting. The ALG category was found in two pairs. For INCO, external evidence supports the operation of the Larona, Balambano, and Karebbe hydropower plants, which contribute to the renewable-energy mix at the Sorowako facilities. For BUMI, external evidence supports the rehabilitation and productive use of the Telaga Batu Arang void under the PESAT program.

The INS category was assigned to the KPC embankment incident. Although external sources reported the incident, the available evidence was insufficient to confirm certain aspects, particularly the final status of administrative sanctions and follow-up enforcement processes. The distribution of findings should be interpreted as a pattern within the research corpus rather than a statistical generalization of all corporate activities or the entire mining industry. The GAP category indicates inconsistency, limited scope, or issues requiring further examination; it does not automatically prove that corporate claims are false or that the companies have committed legal violations.

Table 3. Distribution of Issuer Entities and Temporal Distribution (2023–2025)

Issuer Entity	Number	Proportion	OB Year	Number of Pairs	Proportion
PT Vale Indonesia Tbk (INCO)	4	50.0%	2023	2	25.0%
PT Bumi Resources Tbk (BUMI)	4	50.0%	2024	4	50.0%
–	–	–	2025	2	25.0%
TOTAL	**8**	**100.0%**	**TOTAL**	**8**	**100.0%**

Source: Processed by the researchers, 2026.

Most data pairs were identified in 2024. Therefore, year-to-year comparisons should consider the unequal number of data pairs analyzed in each year. A higher number of pairs in one year does not necessarily indicate an increase in environmental problems during that year.

4.1.3 Corporate Structure, ESG Decoupling, and Operational Gaps

The analysis of RQ2 shows that differences between corporate-level ESG commitments and operational-level environmental issues can be identified in both companies. In BUMI, the gap is mainly observed between group-level sustainability narratives and environmental issues at the operational subsidiaries, particularly KPC and Arutmin. In INCO, the gap is mainly observed between risk-management narratives and operational evidence related to local environmental and social impacts.

Table 4. Claim–Evidence Matrix

ID	Company	Theme/Issue	Corporate Claim (Words)	External Evidence (Action)	Status
P-01	PT Vale Indonesia Tbk	Lake conservation and GMP	Commitment to good mining practices and protection of the Towuti/Matano lake ecosystems (PT. Vale Indonesia Tbk, 2024, p. 42).	The Tanamalia Block exploration plan was rejected by pepper farmers because it threatens water-catchment forests and ecosystem services worth IDR 3.6 trillion per year (Chandra, 2023b, 2023c)	GAP
P-02	PT Vale Indonesia Tbk	Human rights compliance and forest-area utilization permits	Exploration activities with forest-area utilization permits covering 17,239 ha and commitments to the UN Human Rights Guidelines and FPIC principles (PT. Vale Indonesia Tbk, 2025, p. 88).	Residents of Loeha Raya held protests and expressed objections regarding the inclusiveness of socialization and the presence of security personnel, which they perceived as intimidating (Chandra, 2023a, 2024b).	GAP

P-03	PT Vale Indonesia Tbk	Water risk management	Emergency response to the oil pipeline leak on 23 August 2025, water-quality monitoring, and coordination regarding compensation (PT. Vale Indonesia Tbk, 2026a, 2026b).	External sources reported MFO oil pollution affecting local rice fields and water bodies. The affected area, length of water flow, and pipeline condition require verification through primary sources (Puspadini, 2025; Rusdianto, 2025).	GAP
P-04	PT Vale Indonesia Tbk	Clean energy for smelting	Operation of the Larona, Balambano, and Karebbe hydropower plants with a total capacity of 365 MW to supply electricity to the Sorowako facilities (PT. Vale Indonesia Tbk, 2025, pp. 102–106).	The operation of three active hydropower plants reduces the emissions intensity of the Sorowako smelter and contributes 30.87% renewable energy to the energy mix (Chandra, 2024a).	ALG
P-05	PT Bumi Resources Tbk	Post-mining land reclamation	Cumulative reclamation realization by Arutmin of 9,343 ha, planting of 184,472 trees in 2023, and rehabilitation of a 5,633-ha watershed (PT. Bumi Resources Tbk, 2024).	Media sources reported damage to approximately 369.62 ha of Arutmin reclamation areas in Kintap due to oil palm plantation activities and illegal mining; the company was reported to have reported the incident to the police (Redaktur 5, 2025; Ridhani, 2025).	GAP
P-06	PT Bumi Resources Tbk	Carbon/CMM emissions reporting	Reporting of Scope 1 and Scope 2 emissions, efficiency programs, and B35 biodiesel, with reported emissions reductions for KPC and Arutmin (PT. Bumi Resources Tbk, 2025).	Ember's study highlights limitations in coal mine methane (CMM) emissions reporting in Indonesia (Nugroho, 2024).	GAP

P-07	PT Bumi Resources Tbk	Reliability of KPC wastewater ponds	Claims of wastewater management in accordance with regulations and disclosures related to compliance and material sanctions (PT. Bumi Resources Tbk, 2025, 2026).	External sources reported the collapse of the KPC embankment in 2025 and the transfer or coordination of handling by relevant authorities (Yudistira, 2025).	INS
P-08	PT Bumi Resources Tbk	Rehabilitation of the Telaga Batu Arang void	Utilization of the 270-ha Telaga Batu Arang void for conservation, tourism, and integrated cattle farming under the PESAT program (PT. Bumi Resources Tbk, 2025).	The East Kalimantan Environmental Agency evaluation and ANTARA News verified that TBA water meets Class II/III quality standards and that PESAT cattle farming operates productively (Ramlah, 2026; Yunianto, 2024).	ALG

Source: Processed from corporate reports and external sources listed in the research matrix, 2026.

The findings show that BUMI's ESG disclosure is concentrated at the parent-company level, while several environmental issues emerge at the level of operational subsidiaries. This pattern provides an initial indication of potential ESG decoupling, in which corporate commitments may not fully correspond to operational implementation or outcomes. However, differences in reporting levels do not by themselves prove decoupling; the assessment must consider corporate commitments, implementation, and the availability of information on environmental incidents and follow-up actions.

In INCO, the analysis focuses on the alignment between risk-management commitments and field practices. The oil pipeline leak in Lioka Village, Sorowako, on 23 August 2025 illustrates the need to distinguish between the existence of emergency-response procedures and the effectiveness of prevention, impact control, and recovery. The company was reported to have activated an emergency response and coordinated with relevant parties, but the incident also revealed potential gaps between water-risk-management narratives and operational impacts.

4.1.4 Words–Action Gaps from an Ecologism Perspective

The analysis of RQ3 identifies a tendency for both companies to frame environmental responsibility through technical and managerial approaches. BUMI emphasizes operational efficiency, emissions reduction, reclamation, and social programs. INCO emphasizes hydroelectric energy, emissions targets, and nickel's role in supporting the energy transition.

These narratives demonstrate efforts to manage environmental impacts. However, they do not necessarily indicate a fundamental transformation in the ecological pressures generated by extractive activities. In BUMI, efficiency and reclamation programs must be assessed within

the context of the continued expansion and sustainability of coal mining. In INCO, the contribution of nickel to the energy transition must be assessed alongside mining-related environmental and social impacts.

The CEM findings indicate that several ESG claims are not fully supported by external evidence. From Dobson's ecologism perspective, the sustainability narratives of both companies tend to emphasize technical approaches to environmental management rather than a fundamental reconsideration of ecological limits. Nevertheless, these findings are insufficient to conclude that either company entirely disregards ecologism principles or deliberately engages in greenwashing.

4.2 DISCUSSION

The findings indicate that ESG storytelling in INCO and BUMI functions not only as a medium for communicating environmental commitments but also as a mechanism for constructing corporate environmental responsibility. Both companies present sustainability narratives through targets, programs, compliance statements, technological initiatives, and claims of contribution to broader environmental goals. However, the CEM analysis shows that these narratives are not always fully aligned with external evidence on implementation, impacts, and follow-up actions.

4.2.1 ESG Storytelling and the Words–Action Gap

The predominance of the GAP category, representing 62.5% of the analyzed claim–evidence pairs, indicates a pattern of inconsistency or limited alignment between corporate sustainability narratives and external evidence. This finding supports the concept of the words–action gap, in which corporate commitments expressed through reports and public communication are not always fully reflected in operational practices or measurable outcomes.

The gap does not necessarily mean that corporate claims are entirely false. Rather, it suggests that corporate narratives may emphasize selected achievements, broad commitments, or future-oriented targets, while external evidence highlights localized environmental impacts, community concerns, implementation constraints, or limited verification. This interpretation is consistent with Leonhardt and Guertler (2025), who identify selective disclosure, vague language, and insufficiently specific long-term sustainability targets in mining-company reporting.

The findings also align with Feix et al. (2026), who explain that sustainability communication can create the impression that corporate actions contribute to broader ecological goals even when the relationship between actions and actual impacts is not fully supported. In this study, the GAP category reflects the need to assess ESG claims not only based on reported programs but also on evidence of implementation, impacts, and follow-up actions.

The absence of the CON category indicates that no claim–evidence pair met the criteria for a direct contradiction based on the available evidence. This result does not mean that all corporate claims have been proven true. Instead, it shows that the research corpus did not produce evidence pairs that fulfilled the defined criteria for contradiction. The presence of the INS category also demonstrates the importance of acknowledging evidentiary limitations, particularly when the final status of legal or administrative processes cannot be verified.

4.2.2 ESG Decoupling between Corporate Commitments and Operational Evidence

The findings provide initial indications of ESG decoupling in both companies, although the patterns differ. In BUMI, the decoupling pattern is associated with the relationship between parent-company ESG disclosure and environmental issues at the operational subsidiaries. Corporate-level narratives emphasize decarbonization, reclamation, efficiency, and compliance, while external evidence identifies issues related to reclamation damage, CMM reporting limitations, and the KPC embankment incident.

In INCO, the decoupling pattern is more closely related to the alignment between risk-management commitments and field practices. The company presents commitments to lake conservation, human rights, and water-risk management, but external evidence identifies community objections, concerns over exploration activities, and the impacts of an oil pipeline leak. This pattern suggests that sustainability commitments at the corporate level may not automatically translate into effective prevention, impact control, or recovery at the operational level.

These findings extend the application of ESG decoupling by showing that decoupling may occur not only between corporate commitments and implementation, but also between implementation and outcomes. For example, the existence of emergency-response procedures does not necessarily demonstrate the effectiveness of prevention or recovery. Similarly, reclamation targets do not necessarily guarantee the long-term integrity of reclaimed areas when external disturbances affect those areas.

The findings are consistent with Juwita et al. (2026) in highlighting the importance of ESG transparency in mining companies. However, direct comparisons with their study require caution because differences may exist in indicators, periods, assessment scales, and sample coverage. Therefore, the present study does not claim direct comparability with prior findings, but uses them as a contextual reference for interpreting the observed patterns.

4.2.3 Ecological Limits in Corporate Sustainability Narratives

From Dobson's ecologism perspective, the ESG narratives of both companies tend to reflect environmentalism rather than ecologism. Environmentalism emphasizes managing environmental problems through technical measures, efficiency improvements, compliance, reclamation, and policy instruments. Ecologism, by contrast, questions the human–nature relationship more fundamentally and considers ecological limits as constraints on economic activity.

BUMI's narrative emphasizes efficiency, emissions reduction, reclamation, and post-mining land utilization. These programs may reduce certain environmental impacts, but they remain embedded within a coal-based extractive model. Therefore, from an ecologism perspective, the sustainability of BUMI's operations cannot be assessed solely through efficiency gains or reclamation achievements; it must also consider the ecological limits associated with continued coal extraction.

INCO's narrative emphasizes hydropower, emissions targets, and nickel's role in the energy transition. These initiatives may contribute to reducing emissions intensity and supporting renewable-energy supply. However, nickel production remains an extractive activity with potential ecological and social impacts. Therefore, the contribution of nickel to the energy transition should not be interpreted as evidence that the company's operations are ecologically sustainable in an absolute sense.

The findings suggest that both companies primarily manage environmental impacts within the boundaries of existing extractive business models. This does not mean that their programs are meaningless or that they deliberately disregard ecological concerns. Rather, it indicates that their sustainability narratives tend to prioritize technical solutions and operational improvements, while the deeper question of ecological limits remains less explicitly addressed.

4.2.4 Theoretical and Practical Implications

Theoretically, this study extends the application of the words–action gap and ESG decoupling concepts by integrating them with Dobson's ecologism perspective. The findings show that ESG storytelling should be analyzed not only as corporate communication but also as a representation of how companies position economic interests in relation to ecological limits. Practically, the findings emphasize the importance of verifying ESG claims through external and operational evidence. Investors, regulators, civil society organizations, and communities should not rely solely on sustainability reports or corporate targets. Instead, they should examine the consistency between corporate claims, implementation records, environmental outcomes, community experiences, and independent verification.

For companies, the findings imply that ESG disclosure should be more specific, measurable, and verifiable. Corporate sustainability narratives would be more credible if they clearly explain the scope of commitments, baseline data, implementation mechanisms, monitoring indicators, remediation measures, and follow-up actions for environmental incidents. Finally, the findings do not support a conclusion that INCO or BUMI engages in greenwashing. The evidence shows gaps and areas requiring further verification, but it does not establish intentional misleading communication. Future research should therefore examine primary data, stakeholder interviews, regulatory documents, and longitudinal emissions and operational data to strengthen the assessment of ESG alignment and decoupling.

5. CONCLUSION

This study examined the alignment between ESG storytelling and external evidence in PT Vale Indonesia Tbk (INCO) and PT Bumi Resources Tbk (BUMI) during 2023–2025. Based on the analysis of eight claim–evidence pairs using the Claim–Evidence Matrix, five pairs (62.5%) were categorized as Gap, two pairs (25.0%) as Aligned, and one pair (12.5%) as Insufficient Evidence. No pair met the criteria for Contradiction.

The predominance of Gap findings indicates that several corporate sustainability claims were not fully supported by the external evidence examined. These gaps reflect inconsistencies, limited scope, or issues requiring further verification, rather than definitive proof of false claims or intentional greenwashing. The findings emphasize that ESG disclosure should be assessed not only through corporate narratives, targets, and programs, but also through their alignment with operational evidence, environmental impacts, and independent external sources.

Both companies demonstrated efforts to communicate environmental responsibility through different narratives. INCO emphasized hydropower, emissions-reduction targets, and nickel's role in the energy transition, whereas BUMI emphasized operational efficiency, decarbonization, reclamation, and post-mining land utilization. However, the findings indicate

that such initiatives do not automatically demonstrate absolute emissions reduction, effective impact management, or a fundamental shift away from extractive ecological pressures.

From Dobson's ecologism perspective, the ESG narratives of both companies tend to reflect environmentalism, which emphasizes technical and managerial approaches to environmental management. The ecologism orientation, which recognizes ecological limits and questions the human–nature relationship more fundamentally, was not strongly reflected in the analyzed narratives. Therefore, corporate disclosures on efficiency, impact management, and environmental programs should be interpreted critically within the broader context of extractive activities and ecological constraints.

This study contributes an analytical approach for examining the relationship between corporate ESG claims and external evidence without equating every inconsistency with greenwashing. Practically, the findings highlight the importance of transparent, specific, and verifiable ESG disclosure, particularly regarding implementation, environmental incidents, remediation measures, and follow-up actions.

This study has limitations. It covers only two mining companies, eight selected claim–evidence pairs, and documentary sources from 2023–2025. Therefore, the findings cannot be generalized to the entire mining sector and depend on the availability and scope of the documents analyzed. Future research should expand cross-case comparisons, strengthen triangulation through primary data and independent sources, and incorporate the perspectives of affected communities. Such approaches would provide a more contextual understanding of the relationship between corporate ESG narratives, operational practices, and ecological conditions.

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