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The Role of Belief Systems in Building Sustainability Awareness in Mining Companies (A Case Study of PT Vale Indonesia Tbk)

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ABSTRACT

This study analyzes the role of belief systems in building sustainability awareness at PT Vale Indonesia Tbk using Simons' Levers of Control framework (1995). A qualitative approach with a documentation study method was applied to the Annual Report and Sustainability Report for the 2023–2025 period, which were analyzed using qualitative content analysis techniques with a deductive approach. The results show that PT Vale's belief systems evolved from implicit values in 2023 to explicit CARES statements after the 2024 divestment. Belief systems serve as the foundation for sustainability awareness through five mechanisms: existential legitimacy through purpose, behavioral guidance through CARES values, symbolic reinforcement through a consistent tone from the top, layered value communication, and social legitimacy through external recognition. The impact is evident in significant improvements in Environmental, Social, and Governance (ESG) performance, such as an increase in the Sustainalytics ESG Risk Rating from 29.8 to 23.7, an increase in the ACGS score from 98.68 to 99.53, and recognition as a mining company with the lowest ESG risk in Indonesia and among the top 15 globally. This study also found that strong belief systems do not prevent crises, but rather shape responses that strengthen organizational credibility. This research contributes to the development of Levers of Control theory by strengthening empirical evidence of the role of belief systems in sustainability integration and integrating sustainability awareness as an outcome. Practical implications include the importance of clarity of purpose, integration of values within formal structures, consistent tone from the top, multi-layered value communication, and leveraging external recognition as internal reinforcement to drive long-term sustainability.

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1. INTRODUCTION

Mining companies currently face increasingly complex dual demands [1]. On the one hand, they are required to maintain operational and financial performance amidst commodity price volatility and global market uncertainty [2]. On the other hand, stakeholder expectations for environmentally, socially, and governance (ESG) responsible business practices continue to rise [3]. This pressure comes not only from regulators and

civil society, but also from investors, customers, and business partners who are increasingly selective in choosing sustainable supply chains [4]. In this context, mining companies can no longer view sustainability as an additional agenda, but rather as an integral part of their long-term business strategy, determining business continuity and competitiveness [5].

The nickel mining industry in Indonesia holds a unique strategic position. Indonesia plays a key role in the global supply chain for the energy transition, particularly as a raw material for electric vehicle batteries and renewable energy infrastructure [6]. However, this strategic role comes with significant responsibilities [7]. Nickel mining activities, particularly through pyrometallurgical processes, have a significant environmental footprint, including greenhouse gas emissions, intensive energy consumption, water and waste management, and impacts on biodiversity and local communities [8]. One of the main players in the Indonesian nickel industry is PT Vale Indonesia Tbk (PTVI).

PT. Vale operates an integrated nickel mine and processing plant in Sorowako, South Sulawesi, and is developing growth projects in Morowali and Pomalaa. The period from 2023 to 2025 marks a crucial chapter in PT Vale Indonesia Tbk's transformation journey [9], [10], [11]. This begins with the acceleration of strategic projects amidst the dynamics of global nickel prices. This allows the company to continue strengthening its business foundations towards sustainable growth.

In 2024, the Company successfully completed its third phase of divestment obligations and obtained an extension of its operating permit through a Special Mining Business Permit (IUPK) until 2035 [12]. Furthermore, PT Vale formalized new corporate values through the CARES (Compassion, Accountability, Resilience, Excellence, and Sustainability) principles [12]. This significant change provided a new foundation for the Company to adjust its strategy and redesign its business processes to strengthen its resilience and competitiveness in the national and global nickel industry.

In 2025, PT Vale experienced an oil pipeline leak in Lioka Village, Towuti District, East Luwu Regency, South Sulawesi. In response, PT Vale demonstrated resilience and discipline by forming a joint emergency response team to ensure response, mitigation, and recovery measures. Therefore, PT Vale has implemented environmental accountability to minimize impacts through sustainable recovery [6], [11].

This study aims to analyze the role of belief systems in building sustainability awareness at PT Vale Indonesia Tbk. Using the Levers of Control (LoC) framework developed by Simons (1995), this study will explore how the company's values, vision, and mission, formally communicated through annual reports and sustainability reports, influence internal stakeholders' understanding of and commitment to sustainability principles [14], [15].

A descriptive qualitative approach using document content analysis will be used to explore the representation of belief systems in various company reports during the 2023–2025 period, as well as their consistency with financial and sustainability performance. Therefore, this study is expected to provide a theoretical contribution to enriching understanding of the role of internal control systems in integrating sustainability into corporate strategy, while also providing practical insights for mining company management in designing communication and strengthening sustainability values throughout the organization.

2. LITERATURE REVIEW

2.1 The Concept of Levers of Control and Belief Systems

The Levers of Control (LoC) framework was first developed by Simons, who identified that organizations require four levers of control to effectively manage strategy: belief systems, boundary systems, diagnostic control systems, and interactive control systems [15]. A belief system is a set of explicit organizational

definitions, formally communicated by top management, and systematically reinforced to provide the organization's core values, purpose, and direction [16]. This system serves to communicate core values and provide inspiration and direction.

A belief system is defined as a collection of values, principles, and assumptions that guide employee thinking, behavior, and decisions. The purpose of these values and beliefs is to define the organization's core purpose and inspire commitment from all stakeholders. Research shows that belief systems can be communicated through various channels within an organization, going beyond just statements of vision, mission, and core values. Various control systems can serve as belief systems. As suggested by Mundy (2010), belief systems communicate the organization's core values and mission and serve to reduce ambiguity about purpose [18] .

2.2 *Sustainability Awareness*

Sustainability awareness refers to the level of understanding and concern of individuals or organizations regarding sustainability issues, including environmental, social, and economic dimensions. Recent research investigated the influence of employee understanding of sustainability on corporate sustainability performance, using independent variables such as environmental knowledge, awareness, and concern.

Industry research found that employee environmental concern positively influences ecological behavior, which in turn contributes to corporate sustainability performance across environmental, financial, and social dimensions [19]. These findings suggest that sustainability awareness is not merely cognitive but must be translated into concrete behavior to generate positive impact.

3. METHODS

This research uses a qualitative approach with documentary research or archival analysis. This method was chosen because all data is sourced from secondary corporate documents officially published by PT Vale Indonesia Tbk. This method allows researchers to conduct longitudinal analysis to trace the consistency of organizational messages and commitments across periodic documents (2023–2025) [9], [10], [11], [12], [20], [21], while simultaneously exploring implicit and explicit meanings that reflect belief systems and sustainability awareness. Furthermore, this approach offers the advantage of stable and non-reactive data because the documents are unaffected by the researcher's presence. It also offers cost and time efficiency in covering a wide time span. As emphasized by [22], document analysis allows for stable data acquisition covering a long period.

The primary data sources for this study are the Annual Report and Sustainability Report of PT Vale Indonesia Tbk for 2023–2025. These two types of documents were chosen for strategic reasons: the Annual Report serves as a formal and comprehensive communication tool that outlines the company's vision, mission, values, strategies, and financial and operational performance, while the Sustainability Report is a dedicated document that transparently discloses the company's Environmental, Social, and Governance (ESG) commitments, policies, and performance. Therefore, the combination of these two reports provides comprehensive data coverage to address the research objectives in a structured and in-depth manner. Meanwhile, supporting data sources were used to strengthen the analysis, including Corporate Governance Policies, Codes of Ethics and Conduct, Anti-Corruption Policies, Press Releases, and Awards and Certifications. Supporting evidence reflects formal charters, codes of conduct, and external recognition of the company's commitment to values and sustainability.

The data analysis process began with document identification and inventory through a systematic search of PT Vale

Indonesia Tbk's official website and investor publications. The data analysis process continued with downloading the Annual Reports and Sustainability Reports for 2023–2025, initially classifying them by type, year, and relevance, and verifying their completeness to ensure adequate information coverage. Next, the researcher conducted a close reading of all documents with a focus on explicit statements of vision, mission, values, leadership messages (CEO Letter/Board Letter) as a source of tone from the top, the use of language and narratives that reflect the organization's beliefs and commitments, indicators and metrics for operationalizing values, and consistency of messages between documents and between periods; in the final stage, all data obtained were recorded and categorized into a matrix based on the dimensions of belief systems and sustainability awareness that have been established in the conceptual framework, thus enabling the researcher to conduct a structured and in-depth thematic analysis. Then, data triangulation was conducted to ensure the accuracy and consistency of the findings.

4. RESULTS AND DISCUSSION

4.1 Evolution of Belief Systems at PT Vale Indonesia Tbk

a. Purpose as Existential Foundation.

PT Vale Indonesia Tbk explicitly defines its existential purpose as: "We are here to improve the quality of life and build a better future. Together" (Annual Report 2025, p. 64) [21]. This purpose statement represents the equivalent of vision and mission and serves as the foundation for all organizational activities and strategic decision-making.

This purpose statement demonstrated strong continuity throughout the 2023–2025 period. In the 2023 Sustainability Report, CEO Febriany Eddy emphasized that sustainability commitment is increasingly crucial amidst the era of transformation toward a low-carbon economy. This was reinforced in the 2024 Sustainability Report with the theme "Resourcing for a Greener Future: Leading with Impact through Sustainability," reflecting the company's vision and mission in responding to global challenges toward a greener future. In 2025, the theme was "Integrity in Action: Building Trust and Sustainable Value," emphasizing the translation of integrity into concrete organizational actions.

This purpose statement implicitly contains sustainability dimensions through the phrases "improving quality of life" and "building a better future." This indicates that sustainability is not an additional value or separate initiative, but an integral part of the company's existential essence. Thus, belief systems through purpose create moral legitimacy for sustainability practices every business decision must be considered within the framework of its contribution to improving quality of life and building a better future.

The consistency of this purpose statement throughout the 2023–2025 period demonstrates that despite leadership changes (CEO transition from Febriany Eddy to Bernardus Irmanto in 2025) and post-divestiture structural transformation, the essence of organizational purpose remained intact. This aligns with Simons' (1995) view that belief systems must be stable and sustainable to provide clear direction for the organization

amidst change. This stability of purpose serves as a psychological anchor for employees and stakeholders, providing certainty that sustainability commitment is not situational or dependent on specific leadership.

b. Core Values: CARES as a Transformative Milestone

In 2024, PT Vale Indonesia Tbk launched new corporate values named CARES as part of post-divestiture transformation and strengthening identity as an independent entity. The launch of the CARES values (Compassion, Accountability, Resilience, Excellence, Sustainability) marks a fundamental shift for PT Vale Indonesia Tbk in facing changes in the external environment. Within the framework of belief systems (Simons, 1995), these values serve to reduce uncertainty by providing an explicit organizational definition as a behavioral guide for employees in making inclusive and sustainable decisions.

The CARES values consist of:

Tabel 1. Values Of CARES

Value	Meaning
Compassion	Acting with deep care, prioritizing the safety of workers, assets, and communities, because life is what matters most
Accountability	Taking full responsibility for actions with integrity in creating value and achieving goals for Indonesian society and the world
Resilience	Being resilient in facing challenges, with agility and adaptability
Excellence	Striving for excellence through synergy, innovation, and simplification to drive growth
Sustainability	Committing to sustainability through responsible resource utilization, improving community welfare, and preserving the environment.

Different from conventional approaches that often separate sustainability or CSR programs from core business, PT. Vale integrates Sustainability as one of the main pillars of CARES. This pillar affirms the position of sustainability that is equal to other fundamental business values while simultaneously declaring that it is not just compliance with regulations but a basic value that must be internalized into every aspect of the company's operations.

c. Tone from the Top: Leadership Commitment

Leadership message evolution from year to year reflects the maturation of sustainability awareness at the highest organizational level:

Tabel 2. Leadership Commitment

Year	CEO	Emphasis	Strategic Meaning

2023	Febriany Eddy	Deforestation challenges, carbon emissions, biodiversity; ICMM Framework	Awareness of environmental risks and responsibilities
2024	Febriany Eddy	Nickel's strategic role in energy transition; downstreaming; determination to minimize impacts	Shift from compliance to strategic leadership
2025	Bernardus Irmanto	Integrity, resilience, accountability; recognition of challenges and learning	Maturation of awareness through experience and reflection

Leadership message consistency throughout 2023–2025 is crucial within the belief systems framework because tone from the top serves as the primary reinforcement mechanism for organizational values. When top leaders consistently communicate sustainability commitment, it sends a strong signal that sustainability is a strategic priority, not merely public rhetoric. As Simons (1995) emphasized, belief systems must be "formally communicated by top management and systematically reinforced."

4.2 Sustainability Awareness and ESG Performance

The effectiveness of PT Vale's belief system has proven successful in transforming cognitive awareness into concrete actions across all dimensions of desire:

a. Environmental Awareness: Manifested through a commitment to a 33% decarbonization target by 2030, an allocation of US$43.79 million in environmental investment by 2025, and the utilization of clean energy (hydropower) that supplies up to 30.9% of Sorowako's energy needs.
b. Social Awareness: Manifested through a US$4.7 million Community Empowerment (PPM) program (2025), revitalization of community health services around project areas (such as in Morowali and Kolaka), and a commitment to fair industrial relations.
c. Governance Awareness: Demonstrated by a sustained increase in the ASEAN Corporate Governance Scorecard (ACGS) score from 98.68 (2024) to 99.53 (2025), and the enforcement of ethics through the independently managed Vale Whistleblower Channel.

Overall, this integration of values into long-term operations and investments has gained strong external social legitimacy. This is clearly reflected in the significant improvement in Sustainalytics' ESG Risk Rating, which dropped significantly from 29.8 (moderate risk) to 23.7, positioning PT Vale as one of the mining companies with the lowest ESG risk in Indonesia and among the top 15 globally.

Belief systems serve as decision-makers when organizations face uncertainty. In the Environmental dimension, internalized sustainability values successfully drive long-term investment commitments. Without a strong belief system, large-scale green investments are often viewed as a cost. However, with CARES as a belief system, these expenditures are interpreted by management as value-creating investments to achieve the 2030 decarbonization target.

In the Social and Governance dimensions, belief systems act as a

"moral compass" that guides the company's interactions with external stakeholders and upholds internal integrity. Meanwhile, the near-perfect improvement in the ACGS score (99.53) and the independence of the Whistleblower Channel demonstrate that these belief systems have successfully created self-control and a strong culture of compliance among employees.

Furthermore, the significant reduction in the ESG Risk Rating from Sustainalytics demonstrates that effectively managed belief systems generate external social legitimacy. In the high-impact mining industry, this legitimacy is the most crucial intangible asset. This decrease in risk scores signifies international recognition of PT Vale's operational integrity, where sustainability values are no longer merely a PR tool or minimal regulatory compliance, but have become part of the company's DNA and the primary driving force behind its entire business strategy.

5. CONCLUSION

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