

Strategic Analysis of the Implementation of Stakeholder Involvement in Risk Management in Mining and Mineral Companies

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Abstract

To analyse the Linkage of Stakeholder Engagement in Risk Management Based on Social License to Operate in Mining and Mineral Companies. This research uses a qualitative approach, to analyse the role of stakeholders in good governance seen from the application of ISO 26000 subject no 7 on Stakeholder Involvement and the issues and strategies applied. The subjects of this research are PT Vale Indonesia IGP Morowali located in Morowali district, Central Sulawesi Province and PT Hengjaya Mineralindo in Morowali district, Central Sulawesi Province. The survey respondent is an employee who has worked in the company for more than three years. This research was analysed using content analysis. Primary data was obtained from interviews and questionnaires distributed to members and administrators who responded. Based on the results of the research analysis, each stakeholder has important roles and activities to maintain the balance between environmental, social, and economic sustainability in the mining and minerals industry. Good engagement and collaboration between all parties can help produce a more positive impact on society and the environment and ISO 26000 Core Subject No. 7 underlines the importance of integrating corporate social responsibility principles in mining and mineral activities, including aspects of risk management

Keywords

Challenges; Strategy; Stakeholders; Sustainable Development Goals; Risk Management



I. Introduction

The mining and minerals industry often faces significant risks and challenges related to environmental impacts, community relations, regulatory compliance and reputation management. Securing a Social Licence to Operate has emerged as a critical aspect for companies operating in this sector to effectively mitigate these risks. Stakeholder engagement, as a fundamental component of corporate social responsibility, has the potential to drive SLO and minimise risk exposure (Salvioni, & Gennari, 2019).

Importance of Social License to Operate The concept of Social License to Operate is defined, and its significance for mining and mineral companies is emphasised. The research explores case studies to demonstrate the consequences of gaining and losing an SLO and its impact on risk management. Stakeholder Engagement Strategies This discusses various stakeholder engagement strategies adopted by mining and minerals companies. The role of

early and ongoing engagement, transparent communication, and community involvement are examined, along with examples of successful implementation.

An effective risk management framework tailored to the mining and minerals industry is discussed. The framework considers environmental, social and governance (ESG) factors and aligns them with stakeholder interests to enhance risk mitigation (Senadheera, et al, 2021).

Linkages between Stakeholder Engagement and Management (Risk Torelli, Balluchi & Furlotti, 2020). The essence of this analysis is to explore the linkages between stakeholder engagement and risk management processes. It investigates how meaningful engagement with stakeholders can lead to improved risk identification, assessment, and response planning. Conversely, this research also highlights how inadequate or mismanaged engagement can increase risk and undermine SLOs.

Collaboration and Partnerships: This research advocates for collaborative efforts between mining and minerals companies, governments, local communities and NGOs to strengthen stakeholder engagement and risk management practices. Partnerships can improve understanding of stakeholder concerns and encourage sustainable solutions.

Common challenges faced by mining and minerals companies in stakeholder engagement and risk management are outlined. In addition, best practices are presented to help companies overcome these challenges and improve their performance in securing SLOs.

SLOs should be viewed as an opportunity for companies to strengthen relationships with stakeholders, improve reputation and market competition, and sustainable access to resources.

According to Jartti, Litmanen, Lacey, & Moffat, (2020), SLO refers to the level of acceptance or approval of local communities and stakeholders of the company's operational activities. It is the result of the company's efforts in making agreements or policies such as ethics, labour practices, development sustainability, risk management and stakeholder engagement (Hurst, Johnston & Lane, 2020; Saenz, 2018; Poelzer et al, 2020; Sinner et al, 2020; Baumber, Scerri, & Schweinsberg, 2019).

Mining companies that are members of the ICMM (International Council on Mining and Metals) require the implementation of a sustainable development framework into the performance of each corporation with 10 principles, namely ethical, policy making, human rights, risk management, health and safety, environment, biodiversity conservation, responsible production, social, and stakeholder engagement. In Indonesia, the involvement of communities and stakeholders around the project has also been required with reference to PERMEN LH number 27/2012 concerning environmental permits and PERMEN number 17/2012 concerning guidelines for community involvement in the process of environmental impact analysis and environmental permits, where every company is required to make an EIA (environmental impact analysis) document and must involve the community in the EIA and environmental permit process.

This aims to ensure that each company has the minimum possible negative impact on the environmental ecosystem in the area around the project, and the community knows the project that will enter their area and can be actively involved in providing input on the project plan. Stakeholder involvement, especially in the Master Plan for the Community Development and Empowerment programme (RI PPM) is also regulated in PERMEN number 41/2016, where mining companies are required to prepare RI PPM which is compiled in the EIA document by referring to the Provincial PPM Blue Print and can accommodate input from the company's project area community. In addition, a report from CCSI & RMF (2020), explains that several

programmes carried out by the mining industry are closely related to the issues covered in the 17 Sustainable Development Goals (SDGs). This linkage is regulated in mapping mining to the Sustainable Development Goals (SDGs). Furthermore, according to Gedepuraka et al. (2021), each SDG has a direct link to the ICMM mining principles (Endl et al, 2021; Frederiksen & Banks, 2023; Omotehinse & De Tomi, 2023; Araya et al, 2021; Kumi, Yeboah & Kumi, 2020).

PT Vale Indonesia is a mining company that operates a nickel mine, open nickel mine, open pit and processing plant in Sorowako, East Luwu Regency, South Sulawesi Province. The result in product is nickel laterite/saprolite which is processed into nickel matte.

Information from the Ministry of Energy and Mineral Resources (2019) states that the results of PT Vale Indonesia's mine, which began operating in 1968, contributed 5 percent of the world's nickel supply from a production capacity of 75,000 metric tonnes per year. Through various technologies and additional investment, PT Vale Indonesia targets to increase annual production to 120 thousand metric tonnes of matte nickel in the next five years. PT Vale Indonesia has a mining development programme in Bahodopi Regency with a total investment value of USD 1.8 M and is one of the companies that has long conducted a stakeholder engagement programme to ensure social risks do not occur and support the smooth running of PT Vale Indonesia's investment projects. In 2022, the Project Final Investment Decision was signed and is currently entering the pre-construction phase. Based on this description, it is necessary to analyse stakeholder engagement in Social License to Operate- based risk management in the Community Development and Empowerment program at PT Vale Indonesia, especially the program to strengthen local contractors and workforce.

PT Hengjaya Mineralindo, a PMA company in Indonesia. The remaining 20% stake in PT Hengjaya is owned by the Company's Indonesian partner, the Wijoyo family. PT Hengjaya owns a 100% interest in the Hengjaya nickel project (Hengjaya Mine) located in Morowali Regency, on the east coast of Central Sulawesi province, Indonesia.

The Hengjaya mine is located on an IUP concession of 5,983 hectares. In 2012, PT Hengjaya was granted a 20-year operating/production licence, including a 10-year extension option. On 27 August 2020, Nickel Mines announced an updated JORC compliant resource report for the Hengjaya project concession area. The HM mine is one of the largest high-tonnage, high- grade operations adjacent to IMIP in Central Sulawesi. Using a cut-off grade of 0.8% Ni, HM Mine has a JORC compliant resource of 185 million dry tonnes grading 1.3% Ni and 0.08% Co, containing 2,405,000 tonnes of mined nickel and 148,500 tonnes of mined cobalt.

This research is a modification of research conducted by Lindman, Ranängen & Kauppila (2020). "Guiding corporate social responsibility practice for social license to operate: A Nordic mining perspective" which shows that mining activities can provide benefits to the local economy, although they can also have negative impacts on local communities and the environment. As these negative impacts have led to increased pressure from stakeholders over the past few decades, the mining industry has paid considerable attention to social and environmental impacts by practising corporate social responsibility (CSR) and sustainable development.

The Sustainable Development Goals lead to sustained improvements in people's economies, driven by good governance practices that can sustain people's social lives, quality of life and equity as well as improved societal development. Quality of life from one generation to the next 17 SDGs Goals: No Poverty, No Hunger, Quality Education, Healthy and Prosperous Lives, Gender Equality, Quality Education, Clean and Affordable Energy, Decent Work and Economic Growth, Reduced Inequalities, Industry, Innovation and Infrastructure, Sustainable Cities and Settlements, Responsible Consumption and Production, Addressing climate change, Marine Ecosystems, Terrestrial Ecosystems, Peace, Justice and Resilient Institutions, Partnerships to achieve the goals.

The international social responsibility imperative of mining and minerals companies recognises that social responsibility is an integral part of the strategy of mining and minerals companies, that responsibility and accountability are defined at all levels of the organisation, implemented in decision-making, and taken into account in the execution of activities. Social responsibility is closely linked to sustainable development as it involves mutually supportive and shared economic, social and environmental goals aimed at all Societies (Lu, Liang, Zhang, Rong, Guan, Mazeikaite & Streimikis, 2021).

So that from this background it is interesting to research the Linkage of Stakeholder Engagement in accordance with Core Subject no 7 of ISO 26000 entitled "Analysis of the Linkage of Stakeholder Engagement in Risk Management Based on the Social License to Operate in Mining and Mineral Companies".

1. How to Analyse the Linkages of Stakeholder Engagement in Risk Management Based on Social Licence to Operate in Mining and Mineral Companies?
2. What are the challenges in implementing Stakeholder Engagement Linkages in Risk Management Based on Social Licence to Operate in Mining and Mineral Companies?
3. What are effective strategies in facing the challenges of implementing Stakeholder Engagement Linkages in Risk Management Based on Social Licence to Operate in Mining and Mineral Companies?
4. How does it relate to the Sustainable Development Goals (SDGs)?

II. Review of Literature

2.1 The Concept of Sustainable Development

Sustainable development was defined by the Brundtland Commission in 1987 as development that meets the needs of the present without jeopardising the ability of future generations (UN, 1987).

The Brundtland Commission or World Commission on Environment and Development (WCED) was chaired by Dr Gro Harlem Brundtland, Prime Minister of Norway. Their report defined "sustainable development" at the global level as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987, 1 Part 2, Section 1). There are two key concepts in this definition. So

1. The concept of "needs", particularly the basic needs of the world's poor, must be prioritised.
2. The concept of 'limits' to the environment's ability to meet current and future needs. (World Commission on Environment and Development 1987)

Sustainable development has become a buzzword in development discourse, with many different definitions, meanings and interpretations. Literally, sustainable development means "development that can be continued indefinitely or over a period of time" (Dernbach, 1998, 2003; Lele, 1991; Stoddart, 2011). Structurally, the concept can be seen as a two-word phrase: 'sustainable' and 'development'. Just as the two terms "sustainable" and "development" that make up the concept of SD are defined from different perspectives, so too is the term sustainable development seen from different angles. Definitions vary. Nevertheless, there are many sustainable development and the most frequently cited definition of the concept is the one proposed in the Brundtland Commission report (Schaefer and Crane, 2005).

2.2 The Concept of Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) are an agenda for achieving global sustainable development in three dimensions: economy, society and environment, and an action plan for people, planet, prosperity and world peace. implemented in the form of the SDGs Goals are integrated, inclusive, global in nature, universally applicable, take into account the realities of countries with different capacities and levels of development, and coordinate national policies and priorities. I am considering it. Therefore, the role of the state is very important in formulating a comprehensive strategy between social and environmental development and national characteristics and priorities collectively (UN, 2015; Central Bureau of Statistics, 2016; Panul and Fitri, 2016). The SDGs consist of 17 goals and 169 sub-goals that apply from 2016 to 2030. The SDGs cover a wide range of development challenges and goals to fully achieve each goal. It is a universal state that provides a balanced role for all countries, whether developed, developing or underdeveloped, and is able to fulfil that role. Efforts to achieve the goals and targets of the SDGs must benefit all parties. No one is left behind (Badan Pusat Statistik, 2016; Panuluh and Fitri, 2016).

Indonesia as one of the countries that adheres to the SDGs is very committed to its implementation and success. To that end, several strategic steps have been taken in 2016. Specifically, the development goals and their SDG targets, including national priorities, availability of SDG data and indicators for all SDG goals and targets, compilation of operational definitions for each SDG, draft Presidential regulation no.) 59/2017 on the Implementation of the Sustainable Development Goals) and the Preparation of Regional and National Action Plans for the Implementation of the SDGs (Badan Pusat Statistik, 2016). Most of the SDGs goals and sub goals are listed in the National Medium-Term Development Plan (RPJMN) 2015-2019. As much as 57%, 96 out of 169 SDG targets were achieved, aligned with national development priorities.

2.3 Social License to Operate (SLO)

Social Licence has been defined as existing when a project has sustained approval within local communities and other stakeholders, sustained approval or broad social acceptance and, most often, as sustained acceptance (Van Putten, Cvitanovic, Fulton, Lacey & Kelly, 2018). At the individual project level, Social Licence is rooted in the beliefs, perceptions and opinions held by local residents and other stakeholders about the project. It is therefore granted by the community. It is also intangible, unless efforts are made to quantify these beliefs, opinions, and perceptions. Finally, it is dynamic and not permanent as beliefs, opinions, and perceptions may change as new information is obtained. Social Licence must

therefore be obtained and then maintained (Hurst, Johnston & Lane, 2020; Baumber, Scerri & Schweinsberg, 2019).

The differentiation into approval (having good respect for, agreeing with, or being pleased with) and acceptance (a disposition to tolerate, agree or approve) can be shown to be real and suggests two levels of Social Licence; a lower level of acceptance and a higher level of approval. While the lower level is sufficient to allow the project to continue and enjoy a quiet relationship with its neighbours, the higher level is more beneficial to all parties. Sometimes, Social Licence can go beyond consent when a large portion of the community and other stakeholders incorporate the project into their collective identity. At this level of relationship, it is not uncommon for communities to become supporters or defenders of the project as they consider themselves co- owners and emotionally vested in the project's future, such is the power of self-identification (Hurst, Johnston & Lane, 2020; Baumber, Scerri & Schweinsberg, 2019).

The concept of informal 'social' licences is comfortably compatible with legal norms in countries that operate under common law principles. However, the concept runs into difficulties in countries such as those in Latin America that operate under civil law principles, where only official authorities can grant 'licences'. As a consequence, while communities and civil society are keen to see social licences in terms of dynamic and ongoing relationships between companies and their stakeholders, regulators (and in turn many companies) see 'licences' in terms of formal permissions related to specific tasks and events where regulators play a central role in granting 'licences'. Social licences are typically granted on a site-specific basis (Hurst, Johnston & Lane, 2020)

Therefore a company may have a social licence for one operation but not for another. In addition, the wider the social, economic and environmental impacts of a project, the more difficult it is to obtain a social licence. For example, an independent fisherman who belongs to a customary group will usually get an automatic social licence from his community. A mining company that wants to relocate an entire village faces a much bigger challenge.

III. Research Methods

This research uses a qualitative approach, to analyse the role of stakeholders in good governance seen from the application of ISO 26000 subject no 7 on Stakeholder Involvement as well as the issues and strategies applied. The subjects of this research are PT Vale Indonesia IGP Morowali located in Morowali district, Central Sulawesi Province and PT Hengjaya Mineralindo in Morowali district, Central Sulawesi Province. The survey respondent is an employee who has worked in the company for more than three years. This research was analysed using content analysis.

The population at PT Vale Indonesia is 96 people consisting of Management at the Bahodopi Project. Likewise, PT Hengjaya consists of 104 people consisting of Morowali Regency Management in Central Sulawesi province, Indonesia.

As already mentioned, the selection of the first informant is a very important thing so that it must be done carefully, because this research examines the application of the Stakeholder Involvement Linkage in accordance with Core Subject No. 7 of ISO 26000 in Risk Management at Mining and Mineral Companies in Sorowako Block, East Luwu Regency, South Sulawesi Province and discusses what the challenges are when implementing

and how the strategy is, the researcher decided that the 14 key informants or key informants in this study are as follows

Internal Stakeholders of PT Vale Indonesia: Project Director IGP Project PT Vale Indonesia, Senior Manager CMT and Procurement PT Vale Indonesia, Senior Manager Construction - EPC PT Vale Indonesia, Senior Manager HR PT Vale Indonesia. External Stakeholders of PT Vale Indonesia: Head of Bapedda Morowali, Secretary of Morowali Labour Office, Head of Bahomatefe Village. Internal Stakeholders of PT Hengjaya: PT Hengjaya CSR Manager, PT Hengjaya Civil Manager, PT Hengjaya ESG Forman, PT Hengjaya CSR SPV. External Stakeholders of PT Hengjaya: BPD Tangofa, BPD Makarti Jaya, Sekdes Tangofa.

These key informants were taken for this research because in this company all the responsibilities of decision-making activities of mining and mineral companies.

IV. Result and Discussion

4.1 Analysis of Research Results on Stakeholder Activities of Mining and Mineral Companies

Analysis of research results on stakeholder activities In the mining and mineral industry, there are various parties that have an interest or stakeholder in the operation and sustainability of the company. The activities of these stakeholders involve their interaction and involvement in various aspects, such as environmental, social, economic, and company policies. such as some of the main types of stakeholders in the mining and mineral industry and the activities they usually carry out, namely:

In 2022, capacity building training for village governments and village councils in East Bungku sub-district and household waste management training in Bahodopi sub-district. Year 2023 Bahodopi sub-district household waste management training (continued), Dampala village household waste management training, Lahuafu village PKK administration training.

Government and Regulatory Authorities: Issue mining-related licences and regulations, Monitor and enforce company compliance with environmental and safety regulations, Oversee tax and royalty collection.

Local People and Communities: Monitoring the social and environmental impacts of mining operations, Requesting transparency and involvement in decision-making processes, Raising questions or complaints regarding negative impacts.

Workers and Trade Unions: Make demands regarding wages, working conditions, and worker protection, Conduct strikes or negotiations for better worker rights, Participate in training and development programmes.

Investors and Shareholders: Monitor the Company's financial performance and sustainability, Provide input at shareholder meetings on the Company's strategy, Ask questions related to risk management and financial reporting.

Financial Institutions and Banks: Assess the viability of mining projects for funding, Ensure company compliance with financial covenants, Monitor long-term economic and financial impacts, Environmental and Non-Profit Organisations: Monitor environmental impacts and provide input on sustainable practices, Encourage companies to reduce negative impacts and implement environmentally friendly practices, Advocate for environmental

protection policies.

Media and General Public: Inform the public about mining and mineral related issues, Publicise news about the social, environmental or economic impacts of mining operations, Promote corporate transparency and accountability.

Industry Association: Provide a platform for companies to share industry-related information and experiences, Advocate industry policies to government and relevant agencies, Develop best practice guidelines in mining operations.

Each stakeholder has important roles and activities to maintain the balance between environmental, social and economic sustainability in the mining and minerals industry. Good engagement and collaboration between all parties can help produce a more positive impact on society and the environment. The results of this study are in accordance with those conducted by Litvinenko, Bowbrick, Naumov & Zaitseva, (2022). Which is entitled "Global guidelines and requirements for professional competencies of natural resource extraction engineers: Implications for ESG principles and sustainable development goals" and also in accordance with research conducted by Petavratzi, Sanchez-Lopez, Hughes, Stacey, Ford & Butcher, (2022). "The impacts of environmental, social and governance (ESG) issues in achieving sustainable lithium supply in the Lithium Triangle".

4.2 Analysis of Risk Management Research Results based on ISO 26000 INTI Subject No. 7 Mining and Mineral Company

Analysis of risk management research results based on ISO 26000 is an international guide that provides guidance on corporate social responsibility and related issues, including risk management. ISO 26000 provides guidance on how companies can operate responsibly towards the environment, society and various stakeholders.

Core Subject No. 7 of ISO 26000 addresses corporate social responsibility in the mining and minerals industry. This means companies in this sector are expected to understand and manage the social, environmental and economic impacts of their activities. The following research examines some of the key points relating to risk management in Core Subject No. 7 of ISO 26000 for mining and minerals companies:

1. Identification of Risks and Impacts: Mining and minerals companies should identify the risks associated with their operations and the impacts they may have on the environment, communities and the economy. This involves a comprehensive assessment of the potential risks that may arise from mineral extraction and mining activities.
2. Stakeholder Participation: Companies are expected to involve stakeholders such as local communities, environmental groups, and governments in the process of identifying risks and determining risk management measures. This participation helps identify different perspectives and concerns that need to be considered in risk management.
3. Impact Assessment: Companies must conduct environmental and social impact assessments of their operations. This involves a detailed assessment of how mining and mineral operations may affect ecosystems, water resources, local communities and more. These assessments help companies understand potential impacts and design impact reduction measures.
4. Risk Management: Once the risks and impacts are identified, the company should develop a risk management strategy. This includes developing a plan to reduce or avoid risks that may arise. Concrete steps should be taken to reduce negative impacts on the environment and society and to increase economic benefits.

5. **Transparency and Reporting:** Companies should be transparent in communicating their efforts in risk and impact management. Honest and detailed reporting on risk management measures and outcomes is important for building trust with stakeholders and communities.
6. **Monitoring and Review:** Risk management should be part of an ongoing process. Companies should regularly monitor the impact of their operations, evaluate the effectiveness of risk management measures taken, and conduct periodic reviews of their risk management plans.

Core Subject No. 7 of ISO 26000 highlights the importance of integrating the principles of corporate social responsibility in mining and minerals activities, including aspects of risk management. However, it is important to remember that ISO 26000 is not a mandatory standard to follow, but rather a guide that provides a framework for corporate social responsibility practice. Each company may need to adapt these guidelines to their specific circumstances and context. The results of this study are in accordance with those conducted by Rudakov, Gridina & Kretschmann, (2021). "Risk-based thinking as a basis for efficient occupational safety management in the mining industry". and also in accordance with research conducted by Franken, G., & Schütte, P. (2022). "Current trends in addressing environmental and social risks in mining and mineral supply chains by regulatory and voluntary approaches".

4.3 Analysis of Research Results Challenges of Implementing Stakeholder Engagement Linkages in Risk Management Based on Social Licence to Operate in Mining and Mineral Companies

Analysis of Research Results on challenges Implementing stakeholder linkages and engagement in risk management based on social licences is an important step for mining and minerals companies. Social licence refers to the support and approval given by communities, governments and other groups to companies to conduct their operations. This process involves various stakeholders, such as local communities, local governments, non-governmental organisations, academics, and so on.

The challenges faced in implementing stakeholder linkages and engagement in risk management based on social licences in mining and mineral companies are as follows:

Differences in Interests: Stakeholders have diverse interests, such as environmental, economic, social, and cultural. Managing these differences and finding a point of agreement that benefits all parties can be challenging.

Effective Communication: Communicating with various stakeholders in the right language and manner can be difficult. Companies need to find ways to convey information and listen to feedback well.

Trust and Transparency: Building trust with stakeholders requires transparency in company operations. This challenge may arise if the company has a bad history or if there are doubts about the company's good intentions.

Fulfilment of Expectations: Stakeholders may have high expectations regarding the economic, social, and environmental benefits of company operations. Ensuring that these expectations can be met without disadvantaging others can be difficult.

Resource Limitations: Engaging multiple stakeholders and fulfilling social licence requirements requires human, financial, and technical resources. At times, companies may struggle to allocate sufficient resources to properly execute this process.

Changing Conditions: Social, economic and environmental conditions are always changing. Companies must be able to adapt to these changes and remain responsive to changing stakeholder needs and expectations.

Conflict and Tension: Not all stakeholders always have the same views. Conflict and tension can arise if there is a difference of opinion or if one group feels ignored.

Engagement Too Late: If stakeholder engagement starts too late in the project cycle, it will be difficult to build buy-in and manage risks well.

To address these challenges, companies need to adopt a proactive and comprehensive approach to social licence-based risk management. This includes open communication, collaboration with stakeholders, comprehensive social and environmental impact assessments, implementation of industry best practices, and a commitment to maintaining long-term sustainability in company operations.

4.4 Analysis of Research Results Implementation Strategies of Stakeholder Engagement Linkages in Risk Management Based on Social Licence to Operate in Mining and Mineral Companies

Analysis of research results The application of stakeholder linkages and engagement in risk management based on social licence is critical in the mining and minerals industry. Social licence refers to the support and approval given by communities and various stakeholders to a company's operations. The following is a strategy for implementing stakeholder engagement linkages in risk management based on social licence for mining and mineral companies:

Stakeholder Analysis: Identify all stakeholders related to the company's operations, including local communities, governments, non-governmental organisations (NGOs), academia, and others. Understand the interests, needs, expectations, and concerns of each of these stakeholders.

Open and Transparent Communication: Adopt open and transparent communication with all stakeholders. Convey information about operational plans, potential risks, mitigation measures taken, and anticipated environmental impacts. Consider using various communication channels such as public meetings, company websites, social media, and others.

Stakeholder Participation: Involve stakeholders in the decision-making process regarding mining operations and associated risks. By engaging them in dialogue and consultation, you can gain a broader perspective and can promote mutual understanding.

Partnerships and Collaboration: Form partnerships and collaborations with local communities and other stakeholder organisations. Working together on social, environmental, and economic programmes can strengthen relationships and increase community support for company operations.

Participation-based Risk Management: Involve stakeholders in the process of identifying risks associated with the company's operations. This can help identify risks that may not have been thought of before and build a more effective mitigation plan.

Corporate Social Responsibility (CSR) Programme: Develop and implement CSR programmes that focus on the interests of local communities and the environment. These programmes should help improve the social and economic conditions of local communities, thereby gaining greater support.

Continuous Monitoring and Evaluation: Continuously monitor and evaluate the impact of company operations on stakeholders and the environment. Use stakeholder feedback to

refine and amend existing risk management strategies.

Adaptation and Learning: Make the risk management process and stakeholder interactions a continuous learning process. Continue to receive feedback, adapt to changing conditions, and refine your strategy over time.

Financial Transparency: Ensure transparency in the company's financial reporting. This will help stakeholders understand the expenses, revenues, and economic benefits derived from mining operations.

Crisis and Emergency Response Plan: Prepare emergency response and risk management plans that involve stakeholders in emergency or disaster situations. This can improve coordination and co-operation in situations that require a rapid response.

By implementing this strategy, mining and minerals companies can build strong social licences, minimise the risk of conflict, and create long-term value for both the company and its surrounding communities and environment.

4.5 Analysis of Findings Related to SDGs at PT Vale Indonesia and PT Hengjaya

In July 2016, the Columbia Center on Sustainable Investment, the United Nations Development Programme, the United Nations Sustainable Development Solutions Network, and the World Economic Forum published Mapping Mining to the Sustainable Development Goals: An Atlas, in response to the 2015 global adoption of the 2030 Sustainable Development Agenda that accompanies the Sustainable Development Goals (SDGs).

Achieving the Agenda by 2030 requires unprecedented action and collaboration among stakeholders across all sectors to effectively integrate the SDGs into their businesses and operations, in order to work collectively towards sustainable development. The Atlas serves as an introduction for mining stakeholders to recognise the extensive links between the mining sector and the SDGs, and seeks to encourage mining companies of all sizes to incorporate more of the SDGs, while validating current efforts and sparking innovative steps forward.

Mineral and Coal Companies illustrates how mining can positively influence the achievement of the SDGs, by driving broad-based economic development and by providing minerals essential for technology, infrastructure, energy and agriculture. The Atlas does so while highlighting the ways in which mining contributes to the challenges that the SDGs seek to address, such as human rights abuses, social inequality, environmental degradation and corruption.

The efforts of large-scale mining companies to address economic, environmental, social and governance issues are regularly tracked and reported by the Responsible Mining Foundation (RMI), including in the biennial RMI Reports. As these comprehensive assessments cover all 17 SDGs, they provide an indication of the extent to which large-scale mining companies are taking action to help achieve these global Goals.

With the challenges and strategies, it is hoped that PT Vale Indonesia and PT Hengjaya Mineralindo can carry out sustainable economic development (SDGs) as follows:

1. Clean and Affordable Energy
2. Decent work and economic growth
3. Industry, innovation and infrastructure
4. Responsible consumption and production
5. Addressing climate change
6. Inland Ecosystems

IV. Conclusion

Based on the results of the research conducted, the following conclusions can be drawn:

1. Based on the results of the research analysis, each stakeholder has an important role and activity to maintain the balance between environmental, social and economic sustainability in the mining and mineral industry. Good engagement and collaboration between all parties can help produce a more positive impact on society and the environment and this Core Subject No. 7 of ISO 26000 underlines the importance of integrating the principles of corporate social responsibility in mining and mineral activities, including aspects of risk management.
2. Based on the research analysis, to address these challenges, companies need to adopt a proactive and comprehensive approach to social licence-based risk management. This includes open communication, collaboration with stakeholders, comprehensive social and environmental impact assessments, implementation of industry best practices, and a commitment to maintaining long-term sustainability in company operations.
3. Based on the results of the research analysis, by implementing some of these strategies, mining and mineral companies can build strong social licences, minimise the risk of conflict, and create long-term value for both the company and the surrounding community and environment.
4. With the challenges and strategies, PT Vale Indonesia and PT Hengjaya Mineralindo are expected to be able to carry out sustainable economic development (SDGs).

References

- Ansu-Mensah, P., Marfo, E. O., Awuah, L. S., & Amoako, K. O. (2021). Corporate social responsibility and stakeholder engagement in Ghana's mining sector: a case study of Newmont Ahafo mines. *International Journal of Corporate Social Responsibility*, 6(1), 1- 22.
- Awuah, L. S., Amoako, K. O., Yeboah, S., Marfo, E. O., & Ansu-Mensah, P. (2021). Corporate Social Responsibility (CSR): motivations and challenges of a Multinational Enterprise (MNE) subsidiary's engagement with host communities in Ghana. *International Journal of Corporate Social Responsibility*, 6(1), 1-13.
- Araya, N., Mamani Quiñonez, O., Cisternas, L. A., & Kraslawski, A. (2021). Sustainable Development Goals in Mine Tailings Management: Targets and Indicators. *Materials Proceedings*, 5(1), 82.
- Baumber, A., Scerri, M., & Schweinsberg, S. (2019). A social licence for the sharing economy. *Technological Forecasting and Social Change*, 146, 12-23.
- Barnes, M. M. (2019). The 'social licence to operate': an emerging concept in the practice of international investment tribunals.
- Benaïm, A., Collins, A., and Raftis, L. (2008). Social dimension of sustainable development: guidance and application.
- Brundtland, G. H. (1987). What is sustainable development? Our common future, 8(9).
- Cerin, P. (2006). Bringing economic opportunity into line with environmental influence: A discussion on the Coase theorem and the Porter and van der Linde hypothesis. *Ecological Economics*, 56(2), 209-225

- Defourny, J., and Nyssens, M. (2006). Defining social enterprise. *Social enterprise: At the crossroads of markets, public policies and civil society*, 7, 3-27.
- Defourny, J., and Nyssens, M. (2017). Fundamentals for an international typology of social enterprise models. *VOLUNTAS: International Journal of Voluntary and nonprofit organisations*, 28(6), 2469-2497.
- Dernbach, J. C. (1998). Sustainable development as a framework for national governance. *Case W. Res. L. Rev.*, 49, 1.
- Di Domenico, M., Tracey, P., and Haugh, H. (2009). The dialectic of social exchange: Theorising corporate-social enterprise collaboration. *Organisation studies*, 30(8), 887-907.
- Diesendorf, M. (2000). Sustainability and sustainable development. *Sustainability: The corporate challenge of the 21st century*, 2, 19-37.
- Du Pisani, J. A. (2006). Sustainable development-historical roots of the concept. *Environmental sciences*, 3(2), 83-96.
- Edwards, A. R. (2005). *The sustainability revolution: Portrait of a paradigm shift*. New Society Publishers
- Elkington, J. (1998). Accounting for the triple bottom line. *Measuring Business Excellence*.
- Endl, A., Tost, M., Hitch, M., Moser, P., & Feiel, S. (2021) . Europe's mining innovation trends and their contribution to the sustainable development goals: Blind spots and strong points. *Resources Policy*, 74, 101440.
- Fordham, A. E., Robinson, G. M., & Van Leeuwen, J. (2018). Developing community based models of Corporate Social Responsibility. *The Extractive Industries and Society*.
- Frederiksen, T., & Banks, G. (2023) . Can Mining Help Deliver the SDGs: Discourses, Risks and Prospects. *The Journal of Environment & Development*, 32(1), 83-106.
- Franken, G., & Schütte, P. (2022). Current trends in addressing environmental and social risks in mining and mineral supply chains by regulatory and voluntary approaches. *Mineral Economics*, 35(3-4), 653-671.
- Ghassim, B., & Bogers, M. (2019). Linking stakeholder engagement to profitability through sustainability-oriented innovation: A quantitative study of the minerals industry. *Journal of Cleaner Production*, 224, 905-919.
- Gray, R. (2010). Is accounting for sustainability actually accounting for sustainability... and how would we know? An exploration of narratives of organisations and the planet. *Accounting, organisations and society*, 35(1), 47-62.
- Hák, T., Janoušková, S., and Moldan, B. (2016). Sustainable Development Goals: A need for relevant indicators. *Ecological indicators*, 60, 565-573.
- Hurst, B., Johnston, K. A., & Lane, A. B. (2020) . Engaging for a social licence to operate (SLO). *Public Relations Review*, 46(4), 101931.
- Ivic, A., Saviolidis, N. M., & Johannsdottir, L. (2021). Drivers of sustainability practices and contributions to sustainable development evident in sustainability reports of European mining companies. *Discover Sustainability*, 2, 1-20.
- Jarti, T., Litmanen, T., Lacey, J., & Moffat, K. (2020). National level paths to the mining industry's Social Licence to Operate (SLO) in Northern Europe: The case of Finland. *The Extractive Industries and Society*, 7(1), 97-109.
- Kelly, R., Fleming, A., Pecl, G. T., Richter, A., & Bonn, A. (2019). Social licence through citizen science. *Ecology and Society*, 24(1).

- Kolk, A. (2016). The social responsibility of international business: From ethics and the environment to CSR and sustainable development. *Journal of World Business*, 51(1), 23- 34.
- Kumi, E., Yeboah, T., & Kumi, Y. A. (2020) . Private sector participation in advancing the Sustainable Development Goals (SDGs) in Ghana: Experiences from the mining and telecommunications sectors. *The Extractive Industries and Society*, 7(1), 181-190.
- Lindman, Å., Ranängen, H., & Kauppila, O. (2020). Guiding corporate social responsibility practice for social licence to operate: A Nordic mining perspective. *The Extractive Industries and Society*, 7(3), 892-907.
- Litvinenko, V., Bowbrick, I., Naumov, I., & Zaitseva, Z. (2022). Global guidelines and requirements for professional competencies of natural resource extraction engineers: Implications for ESG principles and sustainable development goals. *Journal of Cleaner Production*, 338, 130530.
- Lu, J., Liang, M., Zhang, C., Rong, D., Guan, H., Mazeikaite, K., & Streimikis, J. (2021). Assessment of corporate social responsibility by addressing sustainable development goals. *Corporate Social Responsibility and Environmental Management*, 28(2), 686-703.
- Morck, R., and Yeung, B. (2013). Agency problems in large family business groups. *Entrepreneurship theory and practice*, 27(4), 367-382.
- Omotehinse, A. O., & De Tomi, G. (2023) . Mining and the sustainable development goals: Prioritising SDG targets for proper environmental governance. *Ambio*, 52(1), 229-241.
- Panuluh, S., and Fitri, M. R. (2016). The development of sustainable development goals (SDGs) implementation in Indonesia. *Biefing Paper*, 2, 1-25
- Petavratzi, E., Sanchez-Lopez, D., Hughes, A., Stacey, J., Ford, J., & Butcher, A. (2022). The impacts of environmental, social and governance (ESG) issues in achieving sustainable lithium supply in the Lithium Triangle. *Mineral Economics*, 35(3-4), 673-699.
- Poelzer, G., Lindahl, K. B., Segerstedt, E., Abrahamsson, L., & Karlsson, M. (2020). Licensing acceptance in a mineral-rich welfare state: Critical reflections on the social licence to operate in Sweden. *The Extractive Industries and Society*, 7(3), 1096-1107.
- Rudakov, M., Gridina, E., & Kretschmann, J. (2021). Risk-based thinking as a basis for efficient occupational safety management in the mining industry. *Sustainability*, 13(2), 470.
- Ruokonen, E., & Temmes, A. (2019). The approaches of strategic environmental management used by mining companies in Finland. *Journal of cleaner production*, 210, 466-476.
- Saenz, C. (2018). The context in mining projects influences the corporate social responsibility strategy to earn a social licence to operate: A case study in Peru. *Corporate Social Responsibility and Environmental Management*, 25(4), 554-564.
- Salvioni, D. M., & Gennari, F. (2019). Stakeholder perspective of corporate governance and CSR committees. Salvioni, D.M. & Gennari F. (2019). Stakeholder Perspective of Corporate Governance and CSR Committees, *Symphonya. Emerging Issues in Management* (symphonya.unicusano. it), 1, 28-39.
- Santiago, A. L. F., & Demajorovic, J. (2016). Social licence to operate: a case study from a Brazilian mining industry. *Latin American Journal of Management for Sustainable Development*, 3(1), 19-34.
- Schaefer, A., and Crane, A. (2005). Addressing sustainability and consumption. *Journal of macromarketing*, 25(1), 76-92.

- Senadheera, S. S., Withana, P. A., Dissanayake, P. D., Sarkar, B., Chopra, S. S., Rhee, J. H., & Ok, Y. S. (2021). Scoring environment pillar in environmental, social, and governance (ESG) assessment. *Sustainable Environment*, 7(1), 1960097.
- Sinner, J., Newton, M., Barclay, J., Baines, J., Farrelly, T., Edwards, P., & Tipa, G. (2020). Measuring social licence: What and who determines public acceptability of aquaculture in New Zealand. *Aquaculture*, 521, 734973.
- Soini, Katriina and Inger Birkeland (2014) Exploring the Scientific Discourse on Cultural Sustainability, *Geoforum*, 51: 213-223
- Torelli, R., Balluchi, F., & Furlotti, K. (2020). The materiality assessment and stakeholder engagement: A content analysis of sustainability reports. *Corporate Social Responsibility and Environmental Management*, 27(2), 470-484.
- Van Putten, I. E., Cvitanovic, C., Fulton, E., Lacey, J., & Kelly, R. (2018). The emergence of social licence necessitates reforms in environmental regulation. *Ecology and Society*, 23(3).
- Verrier, B., Smith, C., Yahyaei, M., Ziemski, M., Forbes, G., Witt, K., & Azadi, M. (2022). Beyond the social licence to operate: Whole system approaches for a socially responsible mining industry. *Energy Research & Social Science*, 83, 102343