

Challenges Affecting the Effectiveness of Corporate Social Responsibility Initiatives in Promoting Environmental Sustainability in Mining Communities: Evidence from North-Western Zambia

Christopher J. Chisi^{1*}

¹ School of Business Studies, Mulungushi University, Zambia

* Corresponding Author

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Abstract

This study examined the challenges affecting the effectiveness of Corporate Social Responsibility (CSR) initiatives in promoting environmental sustainability within mining-affected communities in Solwezi and Kalumbila districts of North-Western Zambia. Despite substantial CSR investments by mining companies, environmental degradation continues to affect local communities, raising concerns regarding the effectiveness of such initiatives. A descriptive cross-sectional mixed-methods design was employed. Quantitative data were collected from 190 household respondents using structured questionnaires, while qualitative data were obtained through 30 key informant interviews and six focus group discussions. Quantitative data were analyzed using descriptive statistics and Ordinary Least Squares (OLS) regression, while qualitative data were analyzed thematically. The findings revealed that CSR initiatives positively and significantly influence environmental sustainability ($\beta = 0.460$, $p < 0.001$), although the model explained only 21.2% of the variation in environmental sustainability outcomes. The study identified seven major challenges affecting CSR effectiveness, namely inadequate community participation, weak monitoring and evaluation systems, insufficient transparency and accountability, short project implementation periods, inadequate funding, weak regulatory enforcement, and unequal distribution of CSR benefits. The study concludes that CSR alone cannot effectively address environmental challenges associated with mining activities and should be complemented by strong governance systems, stakeholder participation, and long-term environmental investments. The study recommends enhanced community engagement, mandatory CSR reporting, stronger environmental regulation, and robust monitoring systems to improve sustainability outcomes in mining regions.

1. Introduction

Mining remains one of the most important drivers of economic growth in developing countries endowed with mineral resources. In Zambia, the mining sector contributes significantly to export earnings, employment creation, foreign direct investment, and government revenue. North-Western Province has become a major mining hub following the expansion of large-scale mining operations such as Kansanshi Mine, Lumwana Mine, and Sentinel Mine. These investments have stimulated economic growth and infrastructural development while simultaneously generating significant environmental challenges including deforestation, biodiversity loss, water pollution, land degradation, and ecosystem disruption.

The environmental impacts associated with mining have increased expectations on mining companies to contribute to sustainable environmental management beyond legal compliance. Consequently, Corporate Social Responsibility (CSR) has emerged as an important mechanism through which mining companies seek to address environmental concerns and maintain their social licence to operate. Environmental CSR initiatives commonly include reforestation campaigns, land rehabilitation programmes, biodiversity conservation, environmental awareness campaigns, waste management systems, and water resource management projects.

Despite increasing investment in CSR initiatives, environmental concerns persist in mining communities. Existing literature suggests that CSR investments often face implementation challenges that limit their effectiveness in achieving long-term environmental sustainability outcomes. While CSR implementation has been extensively studied in developed economies and established mining jurisdictions, relatively little empirical evidence exists regarding the institutional, governance, participatory, and financial challenges affecting environmental CSR effectiveness in Zambia's rapidly expanding mining regions.

Study Objectives

- To examine the influence of CSR initiatives on environmental sustainability in mining communities.
- To identify challenges affecting the effectiveness of CSR initiatives.
- To assess how these challenges influence environmental sustainability outcomes.

2 Literature Review

2.1 Theoretical Framework

This study was guided by four complementary theoretical perspectives:

Stakeholder Theory

Stakeholder Theory argues that organizations must consider the interests of all stakeholders affected by corporate activities rather than focusing solely on shareholders. Effective CSR requires meaningful participation of communities, government institutions, traditional leaders, civil society organizations, and environmental regulators.

Legitimacy Theory

Legitimacy Theory suggests that corporations seek societal approval through responsible behavior. CSR initiatives are often used to strengthen corporate reputation and maintain social acceptance. However, critics argue that some CSR programmes risk becoming symbolic exercises rather than mechanisms for genuine environmental improvement.

Institutional Theory

Institutional Theory emphasizes the importance of regulatory frameworks, governance structures, and institutional environments in shaping organizational behavior. Strong institutions improve CSR effectiveness through enhanced monitoring, enforcement, and accountability mechanisms.

Sustainable Development Theory

Sustainable Development Theory emphasizes balancing environmental protection, social equity, and economic growth. In mining contexts, environmental sustainability requires long-term investment, ecological restoration, stakeholder collaboration, and continuous monitoring beyond the operational life of mining projects.

2.2 Research Gap

Although previous studies have examined CSR implementation in extractive industries across Africa, limited empirical evidence exists regarding the institutional, governance, participatory, and financial constraints affecting CSR effectiveness in promoting environmental sustainability in Zambia's mining communities. Existing studies have largely focused on CSR expenditure, philanthropy, and community development outcomes. This study therefore contributes important evidence by examining the specific factors limiting environmental CSR effectiveness in North-Western Province.

3 Methodology

A descriptive cross-sectional mixed-methods design was adopted. Quantitative data were collected from 190 household respondents using structured questionnaires. Qualitative data were collected through 30 key informant interviews and six focus group discussions involving government officials, traditional leaders, CSR managers, civil society representatives, and community members.

The study was conducted in Solwezi and Kalumbila districts of North-Western Province, Zambia, which host major large-scale mining operations and have experienced significant environmental and socioeconomic transformations associated with mining development.

Quantitative data were analysed using descriptive statistics and Ordinary Least Squares (OLS) regression analysis in SPSS Version 27. Qualitative data were analysed using thematic analysis guided by Braun and Clarke's six-stage framework.

4 Research Results

4.1 Awareness of CSR Initiatives

The study revealed high awareness of environmental CSR initiatives. Tree planting programmes (78.9%), borehole construction (74.2%), and educational support infrastructure (68.4%) were the most frequently recognized CSR interventions by respondents.

4.2 Environmental Sustainability Outcomes

Respondents acknowledged moderate positive environmental outcomes associated with CSR initiatives.

Table 1: CSR Associated Environmental Outcomes

Environmental Intervention	Mean Score
Borehole projects	3.91
Tree planting programmes	3.86
Environmental awareness campaigns	3.72
Conservation agriculture	3.45

However, respondents generally felt that environmental degradation remained more visible than environmental restoration initiatives.

4.3 Major Challenges Affecting CSR Effectiveness

Seven key challenges emerged:

- Inadequate community participation.
- Weak monitoring and evaluation systems.
- Insufficient transparency and accountability.
- Short duration of CSR projects.
- Insufficient funding.
- Weak regulatory enforcement.
- Unequal distribution of CSR benefits.

4.4 Regression Results

Table 2: OLS Regression Results

Variable	β	t-value	p-value
CSR Initiatives	0.460	5.57	<0.001

Table 3: Model Summary

Statistic	Value
R	0.460
R ²	0.212
Adjusted R ²	0.205

CSR initiatives demonstrated a statistically significant positive influence on environmental sustainability. However, CSR accounted for only 21.2% of the variation in environmental outcomes, indicating that broader governance, regulatory, institutional, and socioeconomic factors explain the remaining variation.

4.5 Discussion

The results demonstrate that CSR initiatives contribute positively to environmental sustainability but are insufficient as standalone interventions capable of addressing the complex environmental challenges associated with mining operations. The findings support Stakeholder Theory by emphasizing the importance of meaningful community participation, which emerged as one of the most significant determinants of CSR effectiveness.

The findings further support Institutional Theory by demonstrating that weak regulatory enforcement, limited monitoring systems, and inadequate institutional capacity reduce the effectiveness of environmental CSR investments. Furthermore, Legitimacy Theory helps explain concerns regarding transparency and accountability, where some initiatives may be perceived more as mechanisms for reputational enhancement than substantive environmental transformation.

The results suggest that environmental sustainability in mining communities depends on integrated governance involving mining companies, regulators, local authorities, communities, traditional leadership structures, and civil society organizations. CSR should therefore be viewed as a complementary mechanism within broader environmental governance systems rather than as a substitute for effective environmental regulation.

5 Conclusion and Recommendations

5.1 Conclusion

The study established that CSR initiatives have a statistically significant positive influence on environmental sustainability within mining-affected communities of North-Western Zambia. Nonetheless, CSR initiatives alone are inadequate for addressing the environmental impacts associated with industrial mining activities.

The effectiveness of CSR initiatives is constrained by inadequate community participation, weak monitoring and evaluation systems, limited transparency, short project implementation periods, inadequate funding, weak regulatory enforcement, and unequal distribution of benefits.

Achieving sustainable environmental outcomes therefore requires stronger governance frameworks, enhanced stakeholder participation, mandatory CSR reporting mechanisms, and long-term environmental investments that extend beyond short-term project cycles.

5.2 Practical and Policy Recommendations

Recommendations for Mining Companies

- Strengthen community participation throughout project planning, implementation, monitoring, and evaluation.
- Increase transparency through public disclosure of CSR budgets and environmental performance indicators.
- Integrate environmental CSR programmes into mine closure planning.
- Establish measurable sustainability indicators for environmental restoration projects.

Recommendations for Government

- Increase funding and technical capacity for environmental regulatory agencies.
- Establish mandatory CSR reporting requirements.
- Strengthen environmental monitoring and compliance enforcement mechanisms.
- Develop a national CSR policy framework for the mining industry.

Recommendations for Communities

- Strengthen participation in environmental monitoring activities.
- Promote local ownership of conservation and environmental restoration programmes.
- Participate actively in stakeholder consultation and governance structures.

Recommendations for Civil Society Organizations

- Enhance advocacy for transparency, accountability, and environmental justice.
- Support community capacity-building efforts in environmental governance and sustainability monitoring.

Declaration of Competing Interests

The author declares no conflict of interest.

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Data Availability

The datasets generated and analysed during the current study are not publicly available due to confidentiality obligations and ethical commitments made to study participants and participating institutions. However, anonymized datasets supporting the findings of this study are available from the corresponding author upon reasonable request and subject to applicable ethical and institutional requirements.

Ethical considerations

Ethical approval was obtained from the Mulungushi University Research Ethics Committee (MUREC) under Certificate Number MU/DRI/REC/2026/077, issued on 07 May 2026. All participants provided informed consent prior to participating in the study, and confidentiality and anonymity were maintained throughout the research process

References

- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, 35(4), 216–224.
- Banerjee, S. B. (2008). Corporate social responsibility: The good, the bad and the ugly. *Critical Sociology*, 34(1), 51–79.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp0630a>
- Bridge, G. (2004). Contested terrain: Mining and the environment. *Annual Review of Environment and Resources*, 29, 205–259. <https://doi.org/10.1146/annurev.energy.28.011503.163434>
- Brundtland Commission. (1987). *Our common future*. Oxford University Press.
- Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons*, 34(4), 39–48. [https://doi.org/10.1016/0007-6813\(91\)90005-G](https://doi.org/10.1016/0007-6813(91)90005-G)
- Christian Aid. (2004). *Behind the mask: The real face of corporate social responsibility*. Christian Aid.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative and mixed methods approaches* (5th ed.). Sage.
- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). Sage.
- Daly, H. E. (1996). *Beyond growth: The economics of sustainable development*. Beacon Press.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147–160.
- Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st century business*. Capstone.
- Entwistle, J. A., Hursthouse, A. S., Marinho Reis, P. A., & Stewart, A. G. (2019). Metalliferous mine dust: Human health impacts and the potential determinants of disease in mining communities. *Environmental Pollution*, 249, 18–27.
- Esteves, A. M. (2008). Mining and social development: Refocusing community investment using multi-criteria decision analysis. *Resources Policy*, 33(1),

39–47.

- Fraser, A., & Lungu, J. (2007). For whom the windfalls? Winners and losers in the privatization of Zambia's copper mines. *Civil Society Trade Network of Zambia*.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
- Gamu, J. K., Le Billon, P., & Spiegel, S. (2015). Extractive industries and poverty: A review of recent findings and linkage mechanisms. *The Extractive Industries and Society*, 2(1), 162–176. <https://doi.org/10.1016/j.exis.2014.11.001>
- Garvin, T., McGee, T. K., Smoyer-Tomic, K. E., & Aubynn, E. A. (2009). Community-company relations in gold mining in Ghana. *Journal of Environmental Management*, 90(1), 571–586.
- Goodland, R. (1995). The concept of environmental sustainability. *Annual Review of Ecology and Systematics*, 26, 1–24.
- Government of Zambia. (2011). *Environmental Management Act No. 12 of 2011*. Government Printer.
- Government of Zambia. (2015). *Mines and Minerals Development Act No. 11 of 2015*. Government Printer.
- Hamann, R. (2003). Mining companies' role in sustainable development: The “why” and “how” of corporate social responsibility from a business perspective. *Development Southern Africa*, 20(2), 237–254.
- Hilson, G. (2012). Corporate social responsibility in the extractive industries: Experiences from developing countries. *Resources Policy*, 37(2), 131–137.
- Hilson, G., & Murck, B. (2000). Sustainable development in the mining industry: Clarifying the corporate perspective. *Resources Policy*, 26(4), 227–238.
- Jenkins, H. (2004). Corporate social responsibility and the mining industry: Conflicts and constructs. *Journal of Cleaner Production*, 12(3), 271–284. [https://doi.org/10.1016/S0959-6526\(03\)00061-0](https://doi.org/10.1016/S0959-6526(03)00061-0)
- Kapelus, P. (2002). Mining, corporate social responsibility and the “community”: The case of Rio Tinto, Richards Bay Minerals and the Mbonambi. *Journal of Business Ethics*, 39(3), 275–296.
- Kemp, D. (2010). Community relations in the global mining industry: Exploring the internal dimensions of externally orientated work. *Corporate Social Responsibility and Environmental Management*, 17(1), 1–14.
- Kesselring, R. (2017). The electricity crisis in Zambia: Blackouts and social stratification in new mining towns. *Journal of Southern African Studies*, 43(3), 497–515.
- Kitula, A. G. N. (2006). The environmental and socio-economic impacts of mining on local livelihoods in Tanzania. *Journal of Cleaner Production*, 14(3–4), 405–414.
- Křibek, B., Majer, V., Kněl, I., Nyambe, I., & Ertler, V. (2019). Heavy metal contamination in mining and processing areas of Zambia. *Environmental Earth Sciences*, 78(9), 1–16.
- Limpitlaw, D. (2011). Mine closure and rehabilitation in South Africa. *Journal of the Southern African Institute of Mining and Metallurgy*, 111(10), 771–780.
- Lungu, J. (2008). *Corporate social responsibility in Zambia's mining sector*. Civil Society Trade Network of Zambia.
- Lungu, J., & Mulenga, C. (2017). *Corporate social responsibility practices in the extractive industry in Zambia*. Zambia Institute for Policy Analysis and Research (ZIPAR).
- McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, 26(1), 117–127.
- Mudd, G. M. (2010). The environmental sustainability of mining in Australia: Key mega-trends and looming constraints. *Resources Policy*, 35(2), 98–115.
- Mwitwa, J., German, L., Muimba-Kankolongo, A., & Puntodewo, A. (2017). Governance and sustainability challenges in Zambia's forestry and mining sectors. *Environmental Monitoring and Assessment*, 189(3), 118.
- Mzembe, A. N., & Meaton, J. (2014). Driving corporate social responsibility in the Malawian mining industry. *Journal of Cleaner Production*, 84, 1–10.
- Nabulo, G., Black, C. R., & Craigon, J. (2012). Soil contamination and food security in urban agriculture systems. *Environmental Pollution*, 160, 77–84.
- Ndemena, T. (2025). *Corporate social responsibility outcomes in Zambian mining communities*. Copperbelt University Research Series.
- Negi, R. (2014). Counting communities: The politics of community development in Zambia's mining sector. *Journal of Contemporary African Studies*, 32(4), 441–456.
- Owen, J. R., & Kemp, D. (2015). Mining-induced displacement and resettlement: A critical appraisal. *Journal of Cleaner Production*, 87, 478–488.
- Phiri, M. (2020). Environmental impacts of mining in Zambia. *Journal of Sustainable Development in Africa*, 22(3), 45–60.
- Porter, M. E., & Kramer, M. R. (2011). Creating shared value. *Harvard Business Review*, 89(1–2), 62–77.
- Sakalunda, C., & Dar, K. (2024). Corporate social responsibility effectiveness in North-Western Province of Zambia. *Zambian Journal of Development Studies*, 12(2), 77–94.
- Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.
- Sinkala, T., Mudenda, D., & Zulu, L. (2018). Heavy metal contamination in Zambian mining regions. *Environmental Monitoring and Assessment*, 190(2), 1–12.
- Sonter, L. J., Ali, S. H., & Watson, J. E. M. (2018). Mining and biodiversity conservation: Exploring the future. *Nature Sustainability*, 1(11), 624–631.

- Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3), 571–610.
- Tischew, S., Kirmer, A., Tóthmérész, B., & Valkó, O. (2014). Ecosystem restoration in post-mining landscapes. *Ecological Engineering*, 73, 59–69.
- United Nations Environment Programme. (2022). Mine tailings storage: Safety and environmental risks. UNEP.
- UN-REDD Programme. (2025). Forest loss drivers in Zambia. UN-REDD Programme.
- Van Marrewijk, M. (2003). Concepts and definitions of CSR and corporate sustainability. *Journal of Business Ethics*, 44(2–3), 95–105.
- World Bank. (2023). Zambia economic brief: Mining sector overview. World Bank.
- Yabe, J., Nakayama, S. M. M., Ikenaka, Y., Muzandu, K., Ishizuka, M., & Umemura, T. (2015). Metal contamination in Zambia's mining areas and implications for human health. *Chemosphere*, 119, 941–945.
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.
- Zambia Environmental Management Agency. (2026). Environmental and social incident impact assessment report for the Sino Metals tailings dam failure. ZEMA.
- Zambia Extractive Industries Transparency Initiative. (2022). ZEITI annual report 2022. ZEITI.