



COMPANY RESPONSIBILITY FOR DAMAGE TO COMMUNITY AGRICULTURAL LAND RESULTING FROM INDICATED GAS LEAKAGE IN ROBURAN DOLOK VILLAGE FROM THE MAQASHID SYARIAH PERSPECTIVE

Ishaq London Lubis¹, Rahmad Efendi²

^{1,2}Universitas Islam Negeri Sumatera Utara, Indonesia

*Corresponding Author: Ishaq0204212043@uinsu.ac.id

Article Info

Article history:

Received :

Revised :

Accepted :

Available online

<http://jurnal.uinsu.ac.id/index.php/analytica>

E-ISSN: 2541-5263

P-ISSN: 1411-4380



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ABSTRACT

This study analyzes the legal liability of PT Sorik Marapi Geothermal Power (SMGP) for damage to agricultural land and environmental impacts in Roburan Dolok Village, Mandailing Natal Regency, and evaluates it through the perspective of Maqashid Syariah. The urgency of this research stems from a series of incidents of hydrogen sulfide (H₂S) gas leaks and hot mud eruptions suspected to be related to geothermal drilling activities, which resulted in fatalities, health problems, and damage to dozens of areas of community agricultural land. This study uses a normative legal method with a descriptive-analytical approach through a review of laws and regulations, specifically Article 88 of Law Number 32 of 2009 concerning Environmental Protection and Management, as well as a conceptual analysis of the strict liability doctrine integrated with the principles of Maqashid Syariah. The results of the study indicate that geothermal activities are categorized as high-risk activities that are legally subject to the principle of absolute liability. Despite changes in norms following the Job Creation Law, the strict liability doctrine remains relevant as long as the causal relationship between business activities and losses can be proven. From the perspective of Maqashid Syariah, the resulting impacts reflect the occurrence of mafsadah (delinquency) that violates the principles of life protection (hifz al-nafs), property protection (hifz al-mal), and environmental protection (hifz al-bi'ah). The integration of positive law and the Islamic ethical framework in this study offers a more comprehensive analytical model for assessing corporate accountability, not only legally but also morally and normatively. This research contributes to the development of Islamic environmental law and provides conceptual recommendations for strengthening law enforcement against high-risk industries in Indonesia.

Keywords: corporate responsibility, strict liability, environmental damage, Maqashid Syariah, hifz al-bi'ah

1. INTRODUCTION

Geothermal energy development as part of the national energy transition strategy is often framed within the public interest and sustainable development framework. However, in practice, high-risk industrial activities such as geothermal exploration and exploitation also carry the potential for significant ecological and social impacts. From a modern environmental law perspective, any business activity that has a significant impact on the environment must be subject to a strict accountability regime, including the principle of strict liability as stipulated in Article 88 of Law Number 32 of 2009 concerning Environmental Protection and Management (Ritonga et al., 2022). This principle is intended to strengthen victim protection by reducing the burden of proving fault.

The case in Roburan Dolok Village, Mandailing Natal Regency, presents a concrete reality regarding the complexity of corporate accountability in the energy sector. A series of hydrogen sulfide (H₂S) gas leaks and hot mudflows suspected to be related to the activities of PT Sorik Marapi Geothermal Power (SMGP) have resulted in fatalities, mass health problems, and damage to dozens of agricultural lands. Empirically, the damage affected rice fields and plantation commodities such as rubber, cocoa, and durian, which form the economic basis of agrarian communities. This situation demonstrates the tension between the interests of energy development and the protection of local communities' rights to a healthy environment.

Within the framework of positive law, strict liability serves as a preventive and repressive protection instrument against environmental impacts caused by high-risk business activities (Zulham, 2013). However, changes to norms through Law Number 11 of 2020 concerning Job Creation, which removed the phrase "without the need to prove fault" from Article 88 of the Environmental Management Law (UUPPLH), have sparked debate regarding the effectiveness of victim protection (Putri Faizal, 2021). Theoretically, this change has the potential to shift the burden of proof back to affected communities, thereby weakening the victims' position in environmental disputes.

On the other hand, in the context of Muslim communities such as Mandailing Natal, the analysis of legal accountability cannot be separated from the ethical-normative dimension of Islam. Maqasid Sharia, as the framework for the objectives of Islamic law, places the protection of life (hifz al-nafs), the protection of property (hifz al-mal), and the protection of the environment (hifz al-bi'ah) as part of the public interest that must be maintained (Auda, 2011; Khuluq & Asmuni, 2025a). Environmental damage that threatens health and eliminates people's livelihoods is not merely an administrative violation but can be categorized as mafsadah because it contradicts the fundamental objectives of sharia (Nurhayati & Sinaga, 2018).

Previous studies have shown that research on corporate liability from an environmental law perspective tends to be sector-specific. Some studies emphasize the conceptual aspects of strict liability in environmental disputes (Hanum et al., n.d.), while others analyze corporate liability from a Maqasid Sharia perspective in different sectors (Nasution & Hasanah, 2025). Studies on PT SMGP have focused more on socio-economic aspects and CSR controversies, rather than on the integration of strict liability doctrine and Maqasid Sharia in the context of agricultural land degradation. Thus, there is a research gap in the literature in constructing an analytical model that integrates positive

law and an Islamic ethical framework to assess corporate accountability in concrete environmental cases.

This study aims to analyze corporate legal accountability under the strict liability regime and examine its relevance within the Maqasid Sharia framework. The theoretical contribution of this research lies in the development of an integrative analytical model between positive environmental law and Islamic legal ethics. This approach broadens contemporary Islamic environmental law discourse by utilizing maqasid as an evaluative tool for modern corporate practices. Practically, the results of this study are expected to provide a conceptual foundation for strengthening law enforcement in high-risk industries and serve as a reference in formulating policies oriented toward the welfare and ecological justice.

2. RESEARCH METHOD

This research is classified as normative legal research with a descriptive-analytical approach, which is directed at examining corporate accountability for environmental damage based on applicable legal provisions (Jonaedi Efendi & Johnny Ibrahim, 2018). The research data is sourced from primary legal materials, namely Law Number 32 of 2009 concerning Environmental Protection and Management, specifically Article 88 which regulates the principle of absolute liability, as well as secondary data in the form of news reports from mass media that have high credibility as a representation of the facts of environmental damage caused by business activities. The data collection process is carried out through literature searches and collection of news documents, then analyzed normatively-descriptively by placing positive legal norms as the basis for the study and Islamic legal principles through the maqashid sharia approach as a normative basis in assessing the legal consequences of actions that cause environmental damage.

3. RESULT AND ANALYSIS

Legal Basis for Corporate Liability (Strict Liability)

The principle of strict liability is a legal accountability regime that places responsibility on business actors without requiring proof of fault (fault-based liability). In the context of environmental law, this principle arose from the need to provide effective protection for victims of environmental damage resulting from high-risk activities that inherently carry the potential for substantial and cumulative harm (Zulham, 2013). Thus, the focus of proof is no longer on the presence or absence of fault, but rather on the existence of losses and the causal relationship between business activities and the resulting impacts.

In the Indonesian legal system, this principle is explicitly regulated in Article 88 of Law Number 32 of 2009 concerning Environmental Protection and Management (UUPPLH), which states that every business actor whose activities cause a significant impact on the environment is strictly liable for the losses incurred (Ritonga et al., 2022). This norm reflects a paradigm shift from fault-based liability to risk-based liability, where the risks of industrial activities serve as the basis for imposing responsibility. Theoretically, this approach aligns with the precautionary principle and the polluter pays principle.

However, regulatory dynamics following the enactment of Law Number 11 of 2020 concerning Job Creation have given rise to normative debate. The removal of the phrase "without the need to prove fault" from Article 88 of the Environmental Management Law (UUPPLH) has led to the interpretation that the burden of proof potentially shifts to the victim (Putri Faizal, 2021). Conceptually, this change risks weakening the effectiveness of strict liability, particularly in technically and scientifically complex environmental cases, where affected communities often lack sufficient evidentiary capacity against large-scale corporate activities.

In the context of the geothermal activity of PT Sorik Marapi Geothermal Power (SMGP) in Roburan Dolok Village, geothermal drilling activities are categorized as high-risk activities that inherently carry the potential for gas leaks and geological disturbances. Therefore, doctrinally, these activities are subject to the strict liability regime. When agricultural land damage and public health disruptions occur due to H₂S gas leaks and hot mud eruptions, legal liability should not depend on proving subjective corporate fault, but rather on the existence of losses and a factual causal relationship between drilling activities and the resulting impacts.

Causal analysis in environmental cases does not always require absolute certainty; instead, it can be based on a reasonable causal connection approach. In environmental law practice, the presence of industrial activity geographically close to the location of the damage and the temporal correlation between operations and the incident can form the basis for a causal argument. This aligns with the doctrine of risk-based liability, which aims to progressively protect the public interest (Hanum et al., n.d.). Therefore, a company's claim that the incident was a "natural phenomenon" must be tested using a standard of proof that considers the inherent risks of the business activity.

The application of strict liability is also supported by developments in jurisprudence that demonstrate that courts can impose civil liability on corporations without waiting for a criminal verdict. Precedents in forest fire and environmental pollution cases demonstrate that courts tend to strengthen the victims' position through progressive interpretations of Article 88 of the Environmental Management Law (Putri Faizal, 2021). This confirms that despite regulatory changes, the spirit of environmental protection remains the primary focus of law enforcement.

Normatively, strict liability functions not only as a compensation mechanism but also as a deterrence mechanism. By placing the risk entirely on the business actor, the law encourages companies to improve safety standards, risk management, and operational oversight. In the context of the geothermal industry, this obligation includes comprehensive risk assessments, leak mitigation systems, and information transparency to the surrounding community. Failure to meet these standards can be seen as a disregard for the precautionary principle, the foundation of modern environmental law.

Therefore, from a legal perspective, the application of strict liability in the case of agricultural land damage and health impacts in Roburan Dolok Village has a strong legal basis in the Environmental Management Law (UUPPLH) and is supported by contemporary environmental law doctrine. This regime emphasizes that in high-risk industrial activities, corporate liability should not depend solely on proving subjective fault, but rather on effectively protecting the community's right to a healthy and safe environment. Therefore, within the framework of Indonesian positive law, companies

continue to bear legal responsibility as long as the losses and causal relationship can be demonstrated rationally and proportionally.

The Impact of the Gas Leak on Agricultural Land and the Community of Roburan Dolok Village from a Maqasid Sharia Perspective

Within the Maqasid Sharia framework, every socio-economic policy and activity must be measured based on the extent to which it maintains the public interest (*maslahah*) and prevents harm (*mafsadah*). The hydrogen sulfide (H_2S) gas leak and the hot mudflow that impacted agricultural land and the health of the Roburan Dolok Village community indicate a serious disruption to the fundamental objectives of Sharia. Maqasid Sharia, as developed by al-Ghazali and systematized by al-Syathibi, places the protection of life (*hifz al-nafs*), the protection of property (*hifz al-mal*), and the protection of the elements of life that support human survival as part of the primary needs (*al-dharuriyyat*) (Auda, 2011; Nurhayati & Sinaga, 2018). Thus, environmental damage caused by industrial activity is not only understood as an ecological problem, but also as an ethical and normative issue from an Islamic legal perspective.

From the perspective of *hifz al-nafs* (protection of life), toxic gas leaks that cause loss of life and mass health problems constitute the most fundamental form of *mafsadah* (obligatory right). Within the *maqasid* (obligatory right), protection of life holds a very high hierarchical position because without it, other rights cannot be fully realized. Exposure to toxic gas that causes respiratory problems, unconsciousness, and even death indicates that the activity has exceeded the ethically justifiable risk tolerance limit. Al-Syathibi emphasized that any action that directly threatens human existence is considered a violation of the primary objectives of sharia (Auda, 2011). Therefore, the resulting health impacts cannot be viewed as merely technical consequences, but rather as a failure to uphold the *maqasid* (obligatory right).

In addition to the threat to life, gas leaks and agricultural pollution significantly disrupt *hifz al-mal* (protection of property). From a *maqashid* perspective, wealth encompasses not only material possessions but also all productive means that support the survival of individuals and communities (Mahmud Yunus Lubuk Lintah et al., 2023). Agricultural land damaged by hot mudflows and soil contamination loses its economic function as a primary source of income for agrarian communities. The loss of land productivity means the loss of the ability of farming families to meet basic needs, thus, such damage constitutes a form of *mafsadah* (inflict on the community's economic stability).

Normatively, the Qur'an prohibits all forms of unlawful confiscation or deprivation of the value of others' property (Qur'an Al-Baqarah: 188). Within the *maqashid* framework, land destruction that eliminates its economic value and productive function can be considered a form of wrongful deprivation of property, even if it is not carried out through a direct transaction. This principle is reinforced by the view that sharia aims to maintain social balance and prevent inequality resulting from exploitation that harms the vulnerable (Nurhayati & Sinaga, 2018). Thus, damage to agricultural land due to corporate activities can be understood as a violation of *hifz al-mal* which has a systemic impact on the welfare of society.

Furthermore, in the development of contemporary *maqashid* (environmental protection), environmental protection (*hifz al-bi'ah*) is understood as a logical extension

of the classical objectives of sharia. A healthy environment is a prerequisite for the protection of life, property, intellect, and descendants. Land damage, air pollution, and ecosystem degradation due to gas leaks indicate a disruption of the ecological balance that underpins human life. Contemporary studies emphasize that *hifz al-bi'ah* is a crucial dimension of *maqashid* because without a sustainable environment, welfare cannot be maintained sustainably (Khuluq & Asmuni, 2025a).

The Qur'anic verse in Surah Al-A'raf: 56, which prohibits acts of *fasa* (destruction) on the earth after Allah has repaired it, serves as a normative basis for understanding human ecological responsibility. In this context, industrial activities that cause pollution and land destruction can be categorized as forms of *fasa* (destruction) that contradict humanity's mandate as *khalifah* (vicegerent) on earth. *Maqasid Sharia* does not reject the development or utilization of natural resources, but emphasizes that such activities must be within the bounds of public interest and not cause greater damage than benefits (Auda, 2011).

The long-term impact on the Roburan Dolok Village community also needs to be analyzed within an intergenerational framework. Land degradation and environmental pollution not only affect the current generation but also have the potential to reduce the quality of life of future generations. Within the *maqasid*, protecting descendants (*hifz al-nasl*) is implicitly linked to the sustainability of a healthy environment. A polluted environment can trigger chronic health problems and a reduced quality of life for children and future generations. Therefore, ecological damage must be understood as a multidimensional threat to the overall objectives of sharia.

Overall, from a *Maqasid Sharia* perspective, the impact of the gas leak on agricultural land and the Roburan Dolok Village community is a manifestation of *mafsadah* (objectives) that violate the principles of *hifz al-nafs* (self-interest), *hifz al-mal* (goodness of character), and *hifz al-bi'ah* (objectives). This analysis strengthens the argument that corporate accountability is not only juridical within the framework of positive law, but also moral and normative within the framework of Islamic ethics. Thus, the integration of *maqasid* (obligatory rights) in the evaluation of this case broadens the legitimate basis for accountability demands, as it places the protection of life, property, and the environment as the primary orientation of just and sustainable development.

The damage caused by the gas leak in Roburan Dolok Village must be understood within the framework of *Maqasid Sharia*, a form of *mafsadah* (obligatory rights) that addresses the most fundamental dimension of the objectives of sharia, namely the protection of life (*hifz al-nafs*). In al-Syathibi's construction, the protection of life falls under the category of *dharuriyyat* (essential rights), which are primary and non-negotiable because they serve as the foundation for the realization of other rights (Auda, 2011). Exposure to toxic gases that cause health problems and even loss of life is not simply a technical industrial risk but a direct threat to human existence. In the *maqasid* (Islamic principles), any action or policy that has the potential to endanger the physical safety and health of the community is considered contrary to the objectives of sharia, which prioritizes human safety (Yoga Pratama, 2024; Rus Yandi et al., 2024). Therefore, if corporate activities contribute to collective health risks, they have normatively violated the principle of protecting life, which is at the heart of public welfare.

At the same time, damage to agricultural land due to gas pollution and soil degradation indicates a violation of *hifz al-mal* (protection of property). From a *maqasid* perspective,

property is not only defined as individual wealth but also includes productive means that support community survival (Mahmud Yunus Lubuk Lintah et al., 2023). When agricultural land, a source of livelihood, loses its economic function, the loss is not merely material value, but also social stability and family economic sustainability. The Al-Qur'an's prohibition against consuming other people's property in vain (Q.S. Al-Baqarah: 188) is the normative basis that the loss of the economic value of a productive asset due to irresponsible activities can be categorized as a form of violation of maqashid (Nurhayati & Sinaga, 2018). Therefore, in this context, damage to agricultural land is not only an environmental issue, but also a form of harm to the social welfare structure.

More broadly, land degradation, air pollution, and ecosystem disruption reflect violations of *hifz al-bi'ah* as a dimension of contemporary maqashid (obligatory actions) that emphasize the importance of environmental protection as a foundation for public welfare (Khuluq & Asmuni, 2025a). The Qur'anic prohibition against causing damage to the earth (Q.S. Al-A'raf: 56) emphasizes that economic activity must be within the limits of ecological balance. A damaged environment will have a systemic impact on lives, property, and even the sustainability of future generations, making environmental protection a prerequisite for the realization of the overall goals of sharia (Auda, 2011). Thus, from the perspective of Maqashid Syariah, corporate accountability is not merely legal-formal, but also a moral obligation to prevent the domination of mafsadah and ensure that energy development does not sacrifice human safety, economic well-being, and intergenerational ecological sustainability.

4. CONCLUSION

Based on a positive legal analysis and a Maqashid Syariah perspective, this study confirms that PT Sorik Marapi Geothermal Power's operational activities in Roburan Dolok Village have serious and ongoing environmental and social impacts. The gas leak and damage to agricultural land not only reflect technical industrial issues but also demonstrate the inherent risks of high-risk activities that require strict legal accountability. Within the framework of Indonesian environmental law, the principle of strict liability retains normative relevance as an instrument for victim protection as long as the losses and causal relationship can be proven rationally and proportionally.

From a Maqashid Syariah perspective, the resulting impacts constitute a form of mafsadah (harmful act) that violates the fundamental objectives of sharia, specifically the protection of life (*hifz al-nafs*), protection of property (*hifz al-mal*), and protection of the environment (*hifz al-bi'ah*). The threats to public safety, the loss of productive agricultural land, and ecosystem degradation demonstrate that development without adequate risk management contradicts the principle of public benefit. Therefore, corporate liability is not merely legal but also has moral and ethical dimensions that cannot be ignored.

This research demonstrates the importance of integrating positive environmental law and the Maqasid Sharia ethical framework in evaluating corporate accountability. This integrative approach provides a more comprehensive, legitimate basis for demanding accountability from high-risk industries, while enriching contemporary Islamic environmental law discourse. Moving forward, strengthening regulations, oversight, and corporate commitment to the principles of prudence and sustainability is necessary to

ensure that energy development does not compromise human safety, the economic well-being of local communities, and the ecological balance of future generations.

References

- Agnes Tugiyono. (2024, February 23). "H2S Bocor Lagi, NGO: Setop Operasi Geothermal PT SMGP". "betahita.Id".
- Anggraini, D., & Efendi, R. (2024). THE RESPONSIBILITY OF PT KERETA API INDONESIA DUE TO CROSSING ACCIDENTS FROM THE PERSPECTIVE OF MAQASHID SYARIAH (CASE STUDY OF THE PADANG ROAD RAILWAY CROSSING, MEDAN TEMBUNG). *JHSS (Journal of Humanities and Social Studies)*, 08(3), 795–800. <https://doi.org/10.33751/jhss.v8i3.10880>
- Anshari, M., & Permata, C. (2024). Deforestasi Hutan Lindung dalam Proyek Strategis Nasional Food Estate: Perspektif Maqashid Syariah. *Al Qalam: Jurnal Ilmiah Keagamaan Dan Kemasyarakatan*, 18(3), 2031. <https://doi.org/10.35931/aq.v18i3.3499>
- Auda, J. (2011). *Maqashid Al-Shariah: Dalil lil-Mubtadi*. IIIT (International Institute of Islamic Thought).
- Hanum, P. ... Rahayu, M. I. F. (n.d.). The Principle Of Strict Liability In Legal Responsibility For Environmental Pollution: A Conceptual Analysis. *International Journal of Educational Research & Social Sciences*, 259–261.
- Implikasi+Penegakan+Hukum+Lingkungan+Upaya+Mewujudkan+Berkelanjutan. (n.d.).
- Jonaedi Efendi, & Johnny Ibrahim. (2018). *Metode Penelitian Hukum: Normatif dan Empiris (pertama)*. kencana.
- Khuluq, M. K., & Asmuni, A. (2025a). Hifz Al-Bi'ah as Part of Maqashid Al-Shari'ah and Its Relevance in the Context of Global Climate Change. *Indonesian Journal of Interdisciplinary Islamic Studies*, 7(2). <https://doi.org/10.20885/ijiis.vol7.iss2.art3>
- Khuluq, M. K., & Asmuni, A. (2025b). Hifz Al-Bi'ah as Part of Maqashid Al-Shari'ah and Its Relevance in the Context of Global Climate Change. *Indonesian Journal of Interdisciplinary Islamic Studies*, 7(2). <https://doi.org/10.20885/ijiis.vol7.iss2.art3>
- Laksana, A. W. ... Sari, R. M. P. (2025). Integrating Maqasid al-Shari'ah in Contemporary Islamic Legal Reform on Drug Policy. *MILRev: Metro Islamic Law Review*, 4(1), 416–439. <https://doi.org/10.32332/milrev.v4i1.10665>
- Mahmud Yunus Lubuk Lintah, J. ... Islam Negeri Imam Bonjol Padang Jl Mahmud Yunus Lubuk Lintah, U. (2023). PEMIKIRAN IMAM AL-SYHATIBI TENTANG MAQASHID AL-SYARIAH.
- Nasution, W. S., & Hasanah, U. (2025). Company Responsibility Towards Community Affected by Palm Oil Waste Perspective of Maqashid Sharia (PT Karya Agung Sawita in Padang Lawas Regency). *AL-IKTISAB: Journal of Islamic Economic Law*, 7(2), 229–240. <https://doi.org/10.21111/aliktisab.v7i2.13617>
- Nurhayati, & Ali Imron Sinaga. (2018). *Fiqh dan Ushul Fiqh*. Prenadamedia Group.
- Purwanti, C. M., & Zulham, Z. (2023). Perlindungan terhadap Lembaga Consumer Finance atas Wanprestasi yang Dilakukan oleh Konsumen. *AL-MANHAJ: Jurnal*

- Hukum Dan Pranata Sosial Islam, 5(1), 649–658.
<https://doi.org/10.37680/almanhaj.v5i1.2643>
- Putri Faizal, Z. (2021). Strict Liability in Environmental Dispute Responsibility Before and After the Enabling of Omnibus Law. *Administrative and Environmental Law Review*, 2(1), 53–60. <https://doi.org/10.25041/aclr.v2i1.2318>
- Ritonga, J. S. ... Dedi Harianto. (2022). Pertanggungjawaban Mutlak Korporasi Sebagai Pelaku Pembakaran Hutan Dan Lahan Yang Mengakibatkan Pencemaran Dan/Atau Kerusakanlingkungan Hidup. *Locus: Jurnal Konsep Ilmu Hukum*, 2(4), 156–167. <https://doi.org/10.56128/jkih.v2i4.32>
- Rus Yandi ... UPGRISBA. (2024). 1Rus+Yandi (3). *Ekasakti Jurnal Penelitian Dan Pengabdian.*, 05(1), 64–72.
- Yoga Pratama, P. (2024). Urgensi Label Halal dalam Makanan Sebagai Manifestasi Hifz Nafs. *Jurnal Ekonomi Syariah*, 4(1). <https://e-journal.iainptk.ac.id/index.php/qusqazah/>
- Zulham. (2013). *Hukum Perlindungan Konsumen (1st ed.)*. Kencana.