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Why Does Hazardous and Toxic Waste Continue to Pose a Threat to Mulya Asri Village?

Corrist Fatihal Salwa Habibah[1*], Siti Mahmudah[2], & Frenki Frenki[3]

[1,2,3]Faculty of Sharia, Universitas Islam Negeri Raden Intan, Lampung, Indonesia

Correspondence

Corrist Fatihal Salwa Habibah, Faculty of Sharia, Universitas Islam Negeri Raden Intan Lampung, Indonesia, Jalan Letnan Kolonel H Jl. Endro Suratmin, Sukarame, Kec. Sukarame, Kota Bandar Lampung, Lampung 35131, e-mail: corristhabibah475@gmail.com

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Original Article

Abstract

The management of household hazardous (B3) waste in rural areas continues to face significant challenges related to regulatory frameworks, public awareness, and the integration of Islamic values. This study aims to analyze the role of the Environmental Service in managing hazardous waste and to offer strategic recommendations grounded in existing regulations and the principles of *Fiqh Siyasah Tanfidziyah* to enhance B3 waste management in Mulya Asri Village, West Tulang Bawang Regency. A qualitative descriptive method was employed, utilizing interviews, observations, and document analysis. The findings reveal that the implementation of regional policies remains suboptimal, hindered by inadequate infrastructure, limited public education, and insufficient integration of Islamic principles concerning environmental stewardship. The study concludes that improving B3 waste management requires the integration of regional policies with a religiously informed welfare-based approach. It recommends strengthening regulatory frameworks, promoting Islamic-based environmental education, and fostering cross-sector collaboration at the village level.

Keywords: *Hazardous and Toxic Waste, Fiqh Siyasah Tanfidziyah, Environmental Policy*

Abstrak

Pengelolaan limbah B3 rumah tangga di wilayah perdesaan masih menghadapi tantangan serius dalam aspek regulatif, kesadaran masyarakat, dan implementasi nilai keislaman. Penelitian ini bertujuan untuk mengkaji peran Dinas Lingkungan Hidup dalam pengelolaan limbah Bahan Berbahaya dan memberikan rekomendasi strategis berbasis regulasi dan nilai-nilai *Fiqh Siyasah Tanfidziyah* guna meningkatkan kualitas pengelolaan limbah B3 di Desa Mulya Asri, Kabupaten Tulang Bawang Barat. Metode yang digunakan adalah kualitatif deskriptif melalui wawancara, observasi, dan studi dokumentasi. Hasil penelitian menunjukkan bahwa implementasi kebijakan daerah belum optimal akibat keterbatasan fasilitas, minimnya edukasi publik, serta kurangnya internalisasi nilai-nilai Islam tentang pelestarian lingkungan. Kesimpulannya, peningkatan pengelolaan limbah B3 memerlukan integrasi kebijakan daerah dengan pendekatan religius berbasis kemaslahatan. Penelitian ini merekomendasikan penguatan regulasi, edukasi berbasis keislaman, dan kolaborasi lintas sektor di tingkat desa.

Kata kunci: *Limbah B3, Fiqh Siyasah Tanfidziyah, Kebijakan Lingkungan*

1. INTRODUCTION

The environment is a fundamental element that underpins the continuity of life for all living organisms on Earth. Within the framework of Indonesia's national regulations, Government Regulation No. 22 of 2021 on the Implementation of Environmental Protection and Management defines the environment as a spatial unit encompassing all objects, forces, conditions, and living beings—including humans and their behavior—that influence nature, human survival, and the well-being of other living creatures.[1] This definition underscores the inextricable link between human activity and ecosystem sustainability, wherein every form of exploitation, consumption, and disposal of residual materials has a direct impact on environmental quality.

One of the pressing environmental challenges today is the management of hazardous and toxic materials (B3) waste generated from household activities. Unlike industrial B3 waste, which is typically subject to standardized management protocols, household B3 waste frequently receives inadequate attention in terms of regulatory oversight and operational enforcement. Common types of household B3 waste—such as used batteries, fluorescent lamps, detergent containers, bleach, and personal care products—can significantly contaminate soil, water, and air if not properly managed, thereby posing serious risks to public health and environmental sustainability.[2]

In Indonesia, the management of household B3 waste continues to face various structural and cultural barriers. Key factors contributing to its ineffectiveness include inadequate waste management infrastructure, limited public awareness regarding the classification and hazards of B3 waste, and weak enforcement by relevant authorities.[3] Mulya Asri Village in West Tulang Bawang Regency serves as a representative case of this issue. Residents commonly dispose of household B3 waste alongside general waste without appropriate sorting or pre-treatment. This problem is further exacerbated by population growth and increasing consumption of household chemical products, which contribute to a rising volume of B3 waste.

In this context, the role of the Environmental Service becomes critical, as stipulated in Article 201 Paragraph (2) Letter c of West Tulang Bawang Regency Regional Regulation No. 1 of 2024 on the Implementation of Environmental Protection and Management. This regulation mandates that B3 waste must be managed

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1 Pemerintah Republik Indonesia, "Peraturan Pemerintah (PP) Nomor 22 Tahun 2021 Tentang Penyelenggaraan Perlindungan Dan Pengelolaan Lingkungan Hidup," Pub. L. No. 22, 1 (2021), https://peraturan.bpk.go.id/Details/161852/pp-no-22-tahun-2021.

2 Tatia Chikhladze et al., "Effects of Mercury on Human Health," *Junior Researchers* 1, no. 1 (2023): 78–93, https://doi.org/10.52340/2023.01.01.11.

3 Gatot P. Soemartono, *Mengenal Hukum Lingkungan Indonesia*, 1st ed. (Jakarta: Sinar Grafika, 1991).

through a systematic and technically compliant mechanism to minimize negative environmental impacts.[4]

The issue of household B3 waste management has been addressed in various prior studies due to its significant implications for environmental and public health. For instance, Nurwanti reported that in Pontianak City District, household B3 waste remains unsegregated and is not managed in accordance with existing regulations. Their findings highlight the need to measure the rate of B3 waste generation and its characteristics, alongside developing comprehensive management plans.[5] Cahyandari and Pradana further emphasized the pivotal role of local governments in managing B3 waste during the COVID-19 pandemic in Sidoarjo Regency. Utilizing a descriptive qualitative method, their study illustrated how government actors functioned as stabilizers, innovators, and policy implementers in addressing the surge of infectious waste during the health crisis.[6]

Additional studies, such as that conducted by Yurnalisdel , have reviewed B3 waste management across Indonesia using a literature-based approach. These studies emphasize that B3 waste management requires a safe, structured process encompassing sorting, storage, transportation, and treatment.[7] Hasibuan and Yuliza have specifically examined household waste management in terms of its regulatory and implementation dimensions. Yuliza also introduced a religious normative framework by incorporating the principles of Fiqh Siyasah Tanfidziyah.[8] Similarly, Prayugo analyzed the role of the Environmental Service within the broader agenda of sustainable development in Bandar Lampung City through a normative and Islamic jurisprudential lens.[9]

Although numerous studies have examined B3 (Hazardous and Toxic Materials) waste management at the municipal and district levels—highlighting the roles of both government and the public—there remains a significant lack of research specifically focusing on the role of Environmental Services in managing household B3 waste in

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4 Pemerintah Kabupaten Tulang Bawang Barat, "Peraturan Daerah (Perda) Kabupaten Tulang Bawang Barat Nomor 1 Tahun 2024 Tentang Penyelenggaraan Perlindungan Dan Pengelolaan Lingkungan Hidup" (2024), https://peraturan.bpk.go.id/Details/281751/perda-kab-tulang-bawang-barat-no-1-tahun-2024.

5 Ega Nurwanti, Suci Pramadita, and Govira Christiadora Asbanu, "Perencanaan Sistem Pengelolaan Sampah B3 Rumah Tangga Di Kecamatan Pontianak Kota, Kota Pontianak," *Jurnal Teknologi Lingkungan Lahan Basah* 11, no. 1 (2023): 228–37, https://doi.org/10.26418/jtllb.v11i1.61364.

6 Alifiah Tri Setya Cahyandari and Galih Wahyu Pradana, "Peran Pemerintah Daerah Dalam Pelaksanaan Urusan Wajib Lingkungan Hidup: Studi Upaya Pengelolaan Limbah B3 Di Kabupaten Sidoarjo," *Jurnal Publika* 10, no. 1 (2022): 159–74, https://doi.org/10.26740/publika.v10n1.p159-174.

7 Yurnalisdel Yurnalisdel, "Analisis Pengelolaan Limbah Bahan Berbahaya Dan Beracun (B3) Di Indonesia," *Jurnal Syntax Admiration* 4, no. 2 (2023): 201–8, https://doi.org/10.46799/jsa.v4i2.562.

8 Rosmidah Hasibuan, "Analisis Dampak Limbah/Sampah Rumah Tangga Terhadap Pencemaran Lingkungan Hidup," *Jurnal Ilmiah Advokasi* 4, no. 1 (2016): 42–52, https://doi.org/10.36987/jiad.v4i1.354; Rina Yuliza, "Tinjauan Fiqh Siyasah Tanfidziyah Terhadap Implementasi Peraturan Daerah (PERDA) Kabupaten Lampung Selatan Nomor 2 Tahun 2015 Tentang Pengelolaan Sampah: Studi Di Dinas Lingkungan Hidup Kabupaten Lampung Selatan" (Universitas Islam Negeri Raden Intan Lampung, 2023), https://repository.radenintan.ac.id/30454/.

9 Muhamad Hudi Prayugo, "Analisis Fiqh Siyasah Tanfidziyah Terhadap Peran Dinas Lingkungan Hidup Dalam Mewujudkan Pembangunan Berkelanjutan: Studi Pada Dinas Lingkungan Hidup Kota Bandar Lampung" (Universitas Islam Negeri Raden Intan Lampung, 2024), https://repository.radenintan.ac.id/34864/.

small, rural communities such as Mulya Asri Village. Furthermore, no existing study has provided an integrative analysis from the perspective of Fiqh *Siyasah Tanfidziyah*, a normative-religious framework that underscores the principles of welfare, justice, and social order in the stewardship of natural resources.

This gap in the literature is also evident in the contextual analysis of the implementation of West Tulang Bawang Regency Regional Regulation (Perda) No. 1 of 2024, which specifically governs B3 waste management. The regulation's application at the village level presents distinct challenges, including limited infrastructure, low levels of public awareness, and inadequate oversight from local authorities. Accordingly, this study offers a significant degree of originality by concentrating on a micro-level rural setting—Mulya Asri Village—rather than a large urban area. It employs the *Fiqh Siyasah Tanfidziyah* framework to analyze the role of local governmental institutions, particularly the Environmental Service, and it assesses the concrete implementation of the newly enacted regional regulation, West Tulang Bawang Regency Regulation No. 1 of 2024.

The objectives of this study are fourfold: (1) to identify the specific roles played by the Environmental Service in the management of household B3 waste in Mulya Asri Village; (2) to evaluate the effectiveness of the implementation of Regional Regulation No. 1 of 2024 at the village level; (3) to assess the extent to which current waste management practices reflect the principles of Fiqh Siyasah Tanfidziyah, including community welfare, environmental justice, and societal order; and (4) to propose strategic recommendations grounded in both legal and Islamic normative values to enhance the quality of B3 waste management in rural areas.

2. RESEARCH METHODOLOGY

This study employs a qualitative-descriptive approach to describe, analyze, and evaluate the role of the Environmental Service of Tulang Bawang Barat Regency in managing household Hazardous and Toxic Materials (B3) waste, while also examining its implementation through the lens of *Fiqh Siyasah Tanfidziyyah*. This methodological approach was chosen for its capacity to capture complex social realities, including shifts in public policy and the underlying Islamic values that inform decision-making processes. The research site was purposively selected in Mulya Asri Village, located in Tulang Bawang Tengah District, based on its high level of household activity contrasted with the absence of a standardized B3 waste management system. The study focuses on Environmental Service (DLH) policies and programs, as well as community participation in managing household B3 waste.

Data were collected through multiple techniques, including in-depth interviews, participatory observation, and document analysis. Key informants included Environmental Service officials, village authorities, religious leaders, and local residents. Observations concentrated on actual waste management practices, while

documentation encompassed local regulations—such as Regional Regulation No. 1 of 2024—and relevant literature on *Fiqh Siyasah*. Data sources were categorized into primary and secondary types to enhance both the validity and breadth of the analysis. The data analysis process involved data reduction, data display, and interpretive conclusion drawing. A content analysis method was used to link field findings with public administration theory, environmental governance principles, and the values of *Fiqh Siyasah Tanfidziyyah*, such as *amanah* (trustworthiness), *maslahah* (public interest), and the responsibilities of *Waliyul Amri* (governmental authority).

3. RESEARCH RESULT AND DISCUSSION

3.1. The Role of the Environmental Agency in Household Hazardous and Toxic Waste Management

This study explores the roles undertaken by the Environmental Agency of Tulang Bawang Barat Regency (DLH) in managing household Hazardous and Toxic Materials (B3) waste, with a particular focus on challenges, strategies, and the effectiveness of policy implementation at the community level, especially in Mulya Asri Village. The findings reveal a complex and, at times, contradictory dynamic within local government-driven environmental policy. Although the DLH has introduced several strategic programs, the implementation process remains hindered by structural and cultural barriers, leading to a significant gap between regulatory frameworks and on-the-ground practices.

An interview with the Head of the Waste and B3 Waste Management Division at the DLH revealed that the agency's formal responsibilities include the formulation of technical policies, infrastructure development, public education, and supervision of B3 waste management. However, in practice, the DLH lacks an independent B3 waste processing facility and remains dependent on third-party service providers licensed to handle waste transportation and processing.[10] These institutional limitations contribute to the low effectiveness of environmental interventions, particularly at the village level.

Household B3 waste—such as used batteries, expired pharmaceuticals, chemical cleaning agents, and pesticides—poses serious toxicological risks to soil, water, and air.[11] Proper management requires stringent systems for waste sorting, storage, and treatment.[12] Nevertheless, field observations and interview data indicate that residents of Mulya Asri Village continue to dispose of B3 waste indiscriminately alongside general

[10] Ni Made Karni, "An Interview Conducted with the Head of Waste and B3 Waste Management at the Environmental Service (DLH) Regarding the Availability and Effectiveness of Waste Processing Facilities."

[11] Teddy Prasetiawan, "Permasalahan Limbah Medis Covid-19 Di Indonesia," *Info Singkat: Kajian Singkat Terhadap Isu Aktual Dan Strategis* 7, no. 9 (2020): 13–18.

[12] Sillak Hasiany et al., "Toxic and Hazardous (B3) Solid Waste Management at Abdul Moeloek General Hospital: An Implementation Assessment in 2022 and Recommendations," *Indonesian Journal of Environmental Management and Sustainability* 7, no. 1 (2023): 32–37, https://doi.org/10.26554/ijems.2023.7.1.32-37.

household waste. Respondents expressed a lack of awareness regarding waste categorization and the environmental and health implications of improper disposal. This reflects the limited reach of public education efforts led by the DLH, which, although supported by digital media, have not been uniformly disseminated throughout the community.

These findings are consistent with previous studies that identified poor environmental literacy and limited access to waste management infrastructure as primary barriers to effective B3 waste management in rural settings.[13] This contrasts with findings from urban areas, such as Jakarta, where higher community participation has been facilitated by the active engagement of local stakeholders and community leaders.[14] In contrast, such structured community involvement remains largely absent in West Tulang Bawang.

Interestingly, the DLH has adopted five primary strategies for managing household B3 waste: (1) classification and identification based on waste type and hazard, (2) safe storage procedures, (3) transportation via authorized third parties, (4) the use of environmentally sound technologies, and (5) public education. However, these strategies remain predominantly top-down in nature, with minimal active participation from the community. According to a young expert on environmental impact control, the DLH is currently in the process of drafting new regional regulations aimed at providing a more targeted legal framework and fostering cross-sectoral coordination.[15] Nonetheless, regulations developed without a participatory foundation risk becoming merely symbolic instruments, detached from actual community practices.

To address these limitations, policy innovations rooted in the principles of *Fiqh Siyasah Tanfidziyyah* are essential. This normative-religious framework emphasizes governance grounded in *maslahah* (public interest), *amanah* (accountability), and *syura* (participatory consultation). Under this framework, the DLH should not merely function as an executor of regulations but also act as a facilitator and catalyst for behavioral change within communities. Practical examples may include the establishment of B3 waste drop boxes at the neighborhood (RT) level, the engagement of religious leaders in values-based environmental education, and the development of

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[13] Cahyandari and Pradana, "Peran Pemerintah Daerah Dalam Pelaksanaan Urusan Wajib Lingkungan Hidup: Studi Upaya Pengelolaan Limbah B3 Di Kabupaten Sidoarjo"; Hasibuan, "Analisis Dampak Limbah/Sampah Rumah Tangga Terhadap Pencemaran Lingkungan Hidup"; Nurwanti, Pramadita, and Asbanu, "Perencanaan Sistem Pengelolaan Sampah B3 Rumah Tangga Di Kecamatan Pontianak Kota, Kota Pontianak"; Yurnalisdel, "Analisis Pengelolaan Limbah Bahan Berbahaya Dan Beracun (B3) Di Indonesia."

[14] Yosica Mariana, "Keterlibatan Masyarakat Urban Dalam Pengolahan Sampah Rumah Tangga," *ComTech: Computer, Mathematics and Engineering Applications* 3, no. 2 (2012): 729–739, https://doi.org/10.21512/comtech.v3i2.2301.

[15] Dwi Supriyanto, "An Interview Conducted with a Junior Environmental Impact Controller Regarding the Formulation of Regional Regulations as a More Structured and Implementable Legal Framework."

village-level environmental cadres to promote social control and enhance program effectiveness.[16]

Another critical finding of this study is the presence of a digital divide, which poses a substantial barrier to the effective dissemination of environmental education through digital platforms. Rural communities, particularly those with limited familiarity and access to information technology, are unable to optimally engage with digital content. As a result, educational initiatives tend to reach only a limited segment of the population. This highlights the necessity of incorporating interpersonal and community-based communication strategies, which have been shown to be more effective in fostering collective environmental awareness.[17]

The implications of these findings extend beyond the local context and may serve as valuable input for the development of more inclusive and participatory national policies on household B3 waste management. It is imperative to strengthen the institutional capacity of the Environmental Agency (DLH) through increased budget allocations, targeted human resource development, and strategic partnerships with educational institutions, civil society, and the private sector. A synergistic integration of structural and cultural approaches is essential to establish a resilient and sustainable environmental governance ecosystem.

This study demonstrates that while the Environmental Service of Tulang Bawang Barat Regency operates within a relatively well-defined regulatory framework, its practical implementation is hindered by significant challenges—particularly in terms of infrastructure, institutional capacity, and active community participation. Achieving effective household B3 waste management requires a strategic reorientation of public policy that empowers communities as proactive stakeholders in environmental protection. In addition, cross-sectoral collaboration grounded in ecological efficiency and sustainability principles is crucial for long-term success.

3.2. Effectiveness of the Implementation of West Tulang Bawang Regency Regional Regulation Number 1 of 2024 at the Village Level

This section evaluates the effectiveness of the implementation of West Tulang Bawang Regency Regional Regulation (Perda) Number 1 of 2024, with a particular focus on the management of household Hazardous and Toxic Materials (B3) waste at the village level. The case study centers on Mulya Asri Village, located in the Central Tulang Bawang

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[16] Fadila Ikke Nuralita and Abad Badruzaman, "Tafsir Ilmi Perlindungan Lingkungan Terhadap Ekologi Dan Keadilan Lingkungan," *Journal of Qur'an and Hadith Studies* 14, no. 1 (2025): 245–60, https://doi.org/10.15408/quhas.v14i1.39957; Syaifuddin Syaifuddin, "Pendampingan Tata Kelola Modern Untuk Pengurus Dewan Kemakmuran Masjid: Meningkatkan Kapasitas Manajerial Dan Kepemimpinan," *Society: Jurnal Pengabdian Masyarakat* 3, no. 2 (2024): 47–54, https://doi.org/10.55824/jpm.v3i2.388.

[17] Chintamy Rizky Prastiwi et al., "Peran Komunikasi Interpersonal Dalam Membentuk Persepsi Generasi Muda Terhadap Masa Depan Pertanian Indonesia," in *Proceedings of Universitas Muhammadiyah Yogyakarta Graduate Conference*, vol. 3, 2024, 242–48, https://doi.org/10.18196/umygrace.v3i2.640.

District—an area considered strategic for regulatory implementation due to its high domestic consumption and the absence of a standardized household B3 waste management system.

The effectiveness of environmental policy implementation is generally influenced by three core factors: (1) the clarity of the regulatory framework, (2) the institutional capacity of implementing bodies, and (3) the degree of public participation.[18] In the context of household B3 waste, several studies have highlighted persistent challenges, including low public awareness and inadequate infrastructure.[19] However, a notable contribution of the present study is its focus on village-level implementation—often overlooked despite being the frontline of environmental service delivery. Previous research has predominantly emphasized macro-level policies or urban case studies, neglecting rural areas, which are equally critical for sustainable development.

Findings from the field reveal that, although Regional Regulation Number 1 of 2024 offers a relatively comprehensive policy framework, its practical implementation in Mulya Asri Village remains suboptimal. A central point of concern is the significant disparity between the regulatory provisions and the actual conditions on the ground. The following key issues were identified:

1) Inadequate Supporting Infrastructure
   Interviews with the Head of the Waste and B3 Waste Management Division indicate that the Environmental Agency (DLH) lacks its own facilities for B3 waste processing and currently relies on third-party contractors for transportation and treatment (Karni, 2024). This dependence undermines institutional control and limits the overall effectiveness of waste management efforts.
2) Limited Access to Information and Environmental Education
   The village population exhibits a limited understanding of the types and environmental risks associated with B3 waste. Resident testimonies confirm the routine disposal of used batteries and expired medications alongside regular household waste. Although the DLH has implemented digital outreach initiatives, these programs have not effectively reached marginalized or technologically underserved segments of the community.
3) Persistence of a Top-Down Implementation Approach

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[18] Marsuyetno Marsuyetno and R. Hamdani Harahap, "Analisis Implementasi Kebijakan Pengelolaan Lingkungan Hidup Di Sumatera Utara: Studi Pada Badan Lingkungan Hidup Provinsi Sumatera Utara," *Jurnal Administrasi Publik* 3, no. 2 (2013): 271–92, https://doi.org/10.31289/jap.v3i2.1349; Theresia Wilmince Nahak et al., "Analisis Implementasi Kebijakan Tata Ruang Di Kota Yogyakarta," *Moderat: Jurnal Ilmiah Ilmu Pemerintahan* 10, no. 1 (2024): 788–805, https://doi.org/10.25157/moderat.v10i4.4049.

[19] Cahyandari and Pradana, "Peran Pemerintah Daerah Dalam Pelaksanaan Urusan Wajib Lingkungan Hidup: Studi Upaya Pengelolaan Limbah B3 Di Kabupaten Sidoarjo"; Hasibuan, "Analisis Dampak Limbah/Sampah Rumah Tangga Terhadap Pencemaran Lingkungan Hidup"; Nurwanti, Pramadita, and Asbanu, "Perencanaan Sistem Pengelolaan Sampah B3 Rumah Tangga Di Kecamatan Pontianak Kota, Kota Pontianak"; Yurnalisdel, "Analisis Pengelolaan Limbah Bahan Berbahaya Dan Beracun (B3) Di Indonesia."

> The regulatory implementation process remains highly bureaucratic and top-down, with minimal community engagement. The lack of participatory mechanisms has hindered the internalization of sustainable waste management practices among residents. As a result, local communities are often passive recipients rather than active stakeholders in environmental governance.

In a follow-up interview with a junior environmental impact assessor, it was explained that the Environmental Agency (DLH) had drafted regional regulations and initiated various community coaching programs. However, the official acknowledged a significant gap between policy formulation and its translation into concrete actions at the village level.[20]

Moreover, interviews with residents of Mulya Asri Village revealed a very limited understanding of B3 waste. Many villagers were unaware of the environmental and health risks associated with disposing of B3 waste into rivers or mixing it with organic household waste. This finding aligns with previous research which identified weak institutional structures at the local level as a key factor contributing to the low effectiveness of B3 waste management in rural areas.[21]

However, this study further highlights that the existence of regional policies alone does not guarantee effective implementation. Successful outcomes require the support of adequate resources, continuous public education, and essential physical infrastructure. These findings underscore the critical need to reformulate environmental management strategies at the village level. The evaluation indicates that the effectiveness of implementing the Regional Regulation is strongly dependent on the establishment of a robust support system and the adoption of a participatory governance model.

3.3. The Application of *Fiqh Siyasah Tanfidziyah* Principles in the Management of Household Hazardous and Toxic (B3) Waste in Mulya Asri Village

This study explores the extent to which the management of household Hazardous and Toxic Materials (B3) waste in Mulya Asri Village aligns with the principles of *Fiqh Siyasah Tanfidziyah*, particularly those emphasizing public welfare (maslahah), environmental justice, and social order. Within this normative-religious framework, the role of the Tulang Bawang Barat Regency Environmental Service (DLH) is examined in relation to Article 201, Paragraph (2), Letter (c) of West Tulang Bawang Regency Regional Regulation No. 1 of 2024, which explicitly mandates the DLH to oversee waste management, pollution control, and the enhancement of environmental capacity.

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[20] Supriyanto, "An Interview Conducted with a Junior Environmental Impact Controller Regarding the Formulation of Regional Regulations as a More Structured and Implementable Legal Framework."

[21] Dwi Rizky Rahmadhani Khoirunnisa and Eny Haryati, "Efektivitas Pengawasan Pengolahan Limbah Medis Kategori Limbah B3 (Bahan Berbahaya Dan Beracun) Di Provinsi Jawa Timur," *Soetomo Administration Reform Review* 1, no. 5 (2022): 865–78, https://ejournal.unitomo.ac.id/index.php/sar/article/view/5357.

Findings from interviews with DLH officials, village leaders, and residents of Mulya Asri Village suggest notable progress in community education and capacity-building programs concerning the risks associated with household B3 waste, such as used batteries, pesticides, and chemical cleaning agents. The DLH routinely organizes outreach initiatives in village halls and has established a local monitoring team in collaboration with community leaders.

Despite the presence of a comprehensive regulatory framework and a strong commitment to public outreach, the implementation on the ground remains suboptimal. For instance, only 40% of residents reported being aware that household B3 waste requires specialized sorting and disposal procedures. Furthermore, significant barriers persist regarding the availability of essential infrastructure, such as designated B3 waste containers and standardized temporary storage facilities.

From the perspective of *Fiqh Siyasah Tanfidziyah*, also known as *al-Sulṭah al-Tanfiziyyah* (executive authority), such policies represent a governmental obligation to uphold the public good (maslahah 'ammah) through responsible environmental stewardship.[22] This principle is supported by the Qur'anic mandate:

اِنَّ اللّٰهَ يَأْمُرُكُمْ اَنْ تُؤَدُّوا الْاَمٰنٰتِ اِلٰٓى اَهْلِهَاۙ وَاِذَا حَكَمْتُمْ بَيْنَ النَّاسِ اَنْ تَحْكُمُوْا بِالْعَدْلِۗ اِنَّ اللّٰهَ نِعِمَّا يَعِظُكُمْ بِهٖۗ اِنَّ اللّٰهَ كَانَ سَمِيْعًاۢ بَصِيْرًا ﴿٥٨﴾

"Indeed, Allah commands you to render trusts to whom they are due, and when you judge between people, to judge with justice. Excellent is that which Allah instructs you. Indeed, Allah is All-Hearing and All-Seeing.[23]"

This verse underscores the imperative of justice and accountability in fulfilling entrusted duties. In this context, the Environmental Service (DLH) of Tulang Bawang Barat Regency, as a representative of *al-sulṭah al-tanfiziyyah* (executive authority), has partially fulfilled its mandate by formulating relevant regulations, conducting oversight, and promoting community participation in environmental governance. The principles of *Fiqh Siyasah Tanfidziyah* highlight environmental justice as a core aspect of maintaining ecological equilibrium. This is grounded in the divine injunction to avoid corruption and destruction on Earth after it has been set in order. As stated in the Qur'an:

وَلَا تُفْسِدُوْا فِى الْاَرْضِ بَعْدَ اِصْلَاحِهَا وَادْعُوْهُ خَوْفًا وَّطَمَعًاۗ اِنَّ رَحْمَتَ اللّٰهِ قَرِيْبٌ مِّنَ الْمُحْسِنِيْنَ ﴿٥٦﴾

"Do not cause corruption on the earth after it has been set in order. And invoke Him with fear and hope. Indeed, the mercy of Allah is near to the doers of good.[24]"

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[22] Saifudin Nur, *Ilmu Fiqih: Suatu Pengantar Komprehensif Kepada Hukum Islam* (Bandung: Tafakur, 2016).
[23] Qur'an, "Surah An-Nisa (4:58)," 625.
[24] Qur'an, "Surah Al-A'raf (7:56)," 622.

This verse highlights that environmental stewardship, including waste management, is not merely an administrative duty but a form of worship rooted in the broader objective of *rahmatan lil'alamin* (mercy to all creation). Therefore, waste management policies must integrate principles of distributive justice and prioritize the protection of vulnerable populations who are disproportionately affected by environmental degradation. The findings of this study align with previous research which underscores the importance of spiritual frameworks and justice-oriented values in shaping environmental policy.[25] Similarly, Community participation in waste management significantly increases when initiatives are grounded in Islamic ethical principles. However, in contrast to studies conducted in urban contexts—where infrastructure and environmental literacy are generally more developed—this research identifies limited financial resources, human capacity, and public awareness as persistent challenges in rural settings.[26]

The West Tulang Bawang Environmental Agency (DLH) has made notable progress in several key areas, including enhancing public awareness, fostering collaboration with village governments, and establishing a waste bank that partially manages inorganic and household hazardous and toxic (B3) waste. Nevertheless, the implementation of these policies remains uneven. Regular program evaluations and dedicated funding for household B3 waste management are urgently required.

The principle of *maslahah* (public interest), which serves as a foundational pillar of *Fiqh Siyasah Tanfidziyah*, has yet to be fully realized. A significant portion of the population continues to suffer from water and soil pollution due to the improper disposal of B3 waste. These findings carry strategic and long-term implications. First, if the principles of *Fiqh Siyasah Tanfidziyah* are comprehensively internalized in policy design, waste management systems can evolve beyond technocratic models into spiritually and ethically grounded frameworks. Second, this opens avenues for institutionalized collaboration between religious leaders, Islamic institutions, and environmental agencies in advancing eco-theological advocacy at the village level. Third, this study reinforces the argument that active, systemic community engagement in environmental policy represents a tangible expression of the Islamic principle of *al-amr bi al-ma'ruf wa al-nahy 'an al-munkar* (enjoining good and forbidding evil) in the contemporary context.

Both Surah An-Nisa (4:58) and Surah Al-A'raf (7:56) emphasize that environmental governance is not the sole responsibility of the state but a collective obligation. In this regard, the residents of Mulya Asri Village should not merely be treated as passive recipients of policy but must be engaged as active stakeholders. This

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[25] Muhamad Januaripin, Kartimi Kartimi, and Yayan Rahtikawati, "Membangun Etika Ekologi Berbasis Nilai-Nilai Islam," *Journal on Education* 7, no. 1 (2024): 7350–61, https://doi.org/10.31004/joe.v7i1.7445.

[26] Muhamad Nazar and Sitti Zahra Aulia Nazar, "Peran Komunitas Agama Islam Terkait Recycling Pengelolaan Sampah: Ditinjau Dari Perspektif Hukum Islam," *Halu Oleo Law Review* 8, no. 2 (2024): 224–241, https://doi.org/10.33561/holrev.v8i2.122.

approach is also consistent with Surah An-Nisa (4:59), which frames obedience to leaders and regulations as an expression of faith in Allah and the Last Day.

يٰٓاَيُّهَا الَّذِيْنَ اٰمَنُوْٓا اَطِيْعُوا اللّٰهَ وَاَطِيْعُوا الرَّسُوْلَ وَاُولِى الْاَمْرِ مِنْكُمْۚ فَاِنْ تَنَازَعْتُمْ فِيْ شَيْءٍ فَرُدُّوْهُ اِلَى اللّٰهِ وَالرَّسُوْلِ اِنْ كُنْتُمْ تُؤْمِنُوْنَ بِاللّٰهِ وَالْيَوْمِ الْاٰخِرِۗ ذٰلِكَ خَيْرٌ وَّاَحْسَنُ تَأْوِيْلًا ۝٥٩

> "O you who believe, obey Allah and obey the Messenger and those in authority among you. And if you disagree over anything, refer it to Allah and the Messenger, if you truly believe in Allah and the Last Day. That is better and more suitable for final determination.[27]"

The effectiveness of household hazardous and toxic (B3) waste management, when guided by the principles of Fiqh Siyasah Tanfidziyah, should be evaluated not only by administrative outputs but also by the quality of public participation, policy transparency, and environmental sustainability. While the efforts of the West Tulang Bawang Environmental Agency (DLH) are progressing in the right direction, further enhancement is necessary through a maslahah ammah (public interest) approach that is more adaptive to social dynamics at the village level.

3.4. Strategic Recommendations Based on Regulations and Islamic Values to Enhance the Quality of B3 Waste Management

This study offers strategic recommendations grounded in regulatory frameworks and Islamic values to improve the management of household hazardous and toxic materials (B3) waste in rural areas, with a particular focus on Mulya Asri Village, West Tulang Bawang Regency. The findings reveal several notable and, in some respects, controversial issues—especially concerning institutional roles, limited community participation, and the disconnect between formal regulatory approaches and cultural dimensions, including religious and social values, in household B3 waste management.

The results indicate that the majority of residents in Mulya Asri Village lack comprehensive awareness of the hazards associated with household B3 waste, such as used batteries, expired medications, and household cleaning products containing harsh chemicals. Although the Regency Government enacted West Tulang Bawang Regency Regional Regulation No. 1 of 2024, which mandates systematic management of B3 and other waste, its implementation at the village level remains suboptimal. Additionally, religious leaders have expressed concerns that Islamic values related to cleanliness, environmental protection (ḥifẓ al-bi'ah), and the prevention of harm (mafsadah) have yet to be embraced collectively in everyday community behavior. This highlights a gap

[27] Qur'an, "Surah An-Nisa (4:59)," 625.

between normative Islamic teachings and actual social practices regarding environmental stewardship in rural settings.

Yusuf underscores the critical role of integrating religious values into environmental management[28], while studies by Fajar et al. and Holilah suggest that rural communities possess significant potential to apply ecological principles rooted in local and religious values—provided they receive supportive regulatory frameworks and institutional assistance.[29] However, the present study diverges from these findings, demonstrating that although regulations exist, supervision is minimal and the practical internalization of Islamic values remains insufficient.

Normatively, West Tulang Bawang Regency Regional Regulation No. 1 of 2024 provides a robust foundation for technical and administrative regulations governing B3 and household waste management. Article 201, Paragraph (2), Letter c explicitly assigns the Environmental Service (DLH) responsibility for comprehensive B3 waste management, ranging from facility provision to supervision. Nevertheless, the study reveals that this regulation has not effectively addressed the fundamental challenges at the village level, namely low environmental literacy, inadequate processing infrastructure, and weak cross-sector coordination among village authorities, service providers, and the community.

From the perspective of *Fiqh Siyasah Tanfidziyyah*, these conditions indicate an imbalance in executing the mandate of executive authority. The government, as *ulil amri* (those in authority), is obliged to uphold ecological justice and prevent *fasad fi al-ardh* (damage to the earth's surface), as commanded by Allah in Qur'an Surah Al-A'raf (7:56). The insufficient assertiveness in supervising B3 waste management contradicts the Islamic legal principles of *maslahah* '*ammah* (public interest) and *adl* (justice). Moreover, a significant finding is that community involvement in B3 waste management is still perceived primarily as a government responsibility rather than a collective societal obligation. This underscores the necessity of adopting a bottom-up approach that recognizes communities as active agents rather than passive recipients in environmental governance.

Based on the research findings, the following strategic recommendations are proposed:

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[28] Muhammad Yusuf, "The Influence of Religious Values on Participation in Environmental Initiatives," in *Prosiding Fakultas Agama Islam Universitas Dharmawangsa*, vol. 4 (Medan: Universitas Dharmawangsa, 2024), 1–14, https://proceeding.dharmawangsa.ac.id/index.php/PFAI/article/view/333.

[29] Adam Hafidz Al Fajar et al., "The Role of Islamic Values in Sustainable Development Innovation to Support the SDGs in Rural Communities," *Jurnal Paradigma* 16, no. 1 (2024): 40–61, https://doi.org/10.53961/paradigma.v16i1.203; Mina Holilah, "Kearifan Ekologis Budaya Lokal Masyarakat Adat Cigugur Sebagai Sumber Belajar IPS," *Jurnal Pendidikan Ilmu Sosial* 24, no. 2 (2015): 163–78, https://doi.org/10.17509/jpis.v24i2.1453.

1) It is necessary to establish Village Regulations (Perdes) as derivatives of West Tulang Bawang Regency Regional Regulation No. 1 of 2024 to regulate technical aspects of sorting, collecting, and storing household B3 waste.
2) Integrating environmental topics into Friday sermons and religious study sessions can deepen the embedding of Islamic values related to environmental preservation within the community.
3) Implementing a localized curriculum grounded in environmental *fiqh* in elementary schools and madrasas can cultivate environmental awareness from an early age.
4) Communal Incentive System: Introducing an award program for neighborhood associations (RT/RW) that effectively manage B3 waste can foster collective responsibility and healthy competition.
5) Developing dedicated temporary storage sites (TPS) for household B3 waste at the village level, coupled with a reliable transportation system to safe final processing locations, is essential.

This study contributes significantly to the discourse on environmental management by integrating Islamic spirituality and local policy frameworks. It confirms that regulations devoid of *ruḥ al-qānūn* (the spirit of the law) are unlikely to effect meaningful change, while a purely religious approach lacking institutional and regulatory support remains symbolic and impractical. Therefore, the synergy of robust regulatory frameworks and deeply internalized Islamic values forms the foundational basis for establishing a sustainable B3 waste management system in rural communities.

4. CONCLUSION

This study aims to provide strategic recommendations grounded in regulations and Islamic values to improve the quality of household B3 waste management in rural areas, with Mulya Asri Village, West Tulang Bawang Regency, serving as a case study. The findings indicate that B3 waste management at the village level continues to face multiple challenges related to regulatory frameworks, institutional capacity, and socio-religious factors. Although regional regulations, such as West Tulang Bawang Regency Regional Regulation No. 1 of 2024, are in place, their implementation remains suboptimal. Community ecological awareness regarding the hazards of household B3 waste is insufficient, and no systematic approach for waste segregation and handling has been established. Furthermore, Islamic values pertaining to environmental preservation have not been fully internalized within community practices, limiting their ability to drive meaningful collective change.

This study is limited by its geographic scope, focusing on a single village, and by its primarily descriptive-qualitative approach, which cautions against generalizing findings to other contexts. Additionally, the roles of other stakeholders, such as the

private sector and non-governmental organizations, were not examined in depth. Therefore, it is recommended that the Regional Government foster cross-sector collaboration in the formulation and implementation of B3 waste management policies, while integrating Islamic values as a foundational element for environmental education and motivation. Future research should broaden the study area, incorporate quantitative methods to evaluate policy effectiveness, and explore opportunities for collaboration among government agencies, civil society, and religious institutions to promote sustainable and value-based household B3 waste management.

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