

Toward Sustainable Waste Management: Assessing the Potential Implications of Sabah's Solid Waste and Public Cleansing Management Enactment 2022

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Abstract

The Solid Waste and Public Cleansing Management Enactment 2022 marks a legislative milestone for sustainable waste management in Sabah. This study applies document analysis to assess its potential impacts, focusing on institutional frameworks, waste minimization strategies, financial mechanisms, and enforcement provisions. Unlike previous research that mainly described Malaysia's federal legislation, this paper highlights how the Enactment offers a state-driven model tailored to Sabah's local governance context. The findings suggest that while the Enactment has strong potential to strengthen institutional clarity and funding mechanisms, its success will depend on overcoming challenges such as limited municipal budgets, enforcement capacity, and public participation. This study contributes to policy discourse by situating Sabah's approach within broader Southeast Asian waste governance trends. Limitations include reliance on documentary sources; future studies should incorporate stakeholder interviews to deepen practical insights.

Keywords: Sustainable waste management, Legislative framework, Waste minimization, Institutional frameworks, Financial support mechanisms, Enforcement measures

INTRODUCTION

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Solid waste management is one of the most pressing environmental issues in Malaysia, particularly in Sabah where governance and policy frameworks have historically been weaker than in Peninsular Malaysia. Unlike Peninsular states, which are guided by the Solid Waste and Public Cleansing Management Act 2007 (Act 672) and the Solid Waste Management and Public Cleansing Corporation Act 2007 (Act 673), Sabah continues to operate under the Local Government Ordinance 1961. This framework provides only general powers to local councils and does not mandate waste separation at source, resulting in fragmented responsibilities and continued reliance on landfilling (Fatma Sabariah, Manaf, & Mariani, 2013; Dusim, 2021; Moh & Manaf, 2017). Despite the introduction of certain by-laws, such as the Anti-Litter By-Law of 2005 and the Conservancy and Hygiene By-Law of 1984, the state has struggled to address persistent challenges of illegal dumping, low recycling, and over-dependence on landfill disposal (MHLG, 2007).

Malaysia as a whole has experienced a dramatic increase in waste generation, with daily solid waste rising from 18,000 tonnes in 2007 to more than 38,000 tonnes in 2021 (MIDA, n.d.). The national recycling rate remains low at 17.5 percent, and around 82.5 percent of total waste is disposed of in landfills (MIDA, 2021). Previous studies have noted that while policies and legislation such as Acts 672 and 673 have improved institutional clarity in Peninsular Malaysia, their scope does not extend to Sabah and Sarawak (Moh & Manaf, 2017; Abas & Wee, 2014a, 2014b). This has left Sabah without the benefit of a comprehensive and enforceable state-wide framework.

Research Gap: Past research has largely focused on Malaysia's federal legislation and waste management in Peninsular states (Agamuthu, Fauziah, & Kahlil, 2009; Fernando & Zutshi, 2023; Izidoro & Trevizan, 2025; Moh & Manaf, 2014, 2017). Limited attention has been given to Sabah's unique governance context and the adequacy of its own legal provisions. The passing of the Solid Waste and Public Cleansing Management Enactment 2022 is therefore significant, as it represents Sabah's first comprehensive state-level law dedicated to solid waste management and public cleansing. Yet, its potential impacts and implications have not been systematically analyzed in academic research.

This study aims to fill that gap by examining the Enactment through four key dimensions identified in the literature: institutional framework, financial support, waste minimization, and enforcement. By focusing on these themes, the paper seeks to assess how far the new Enactment can address existing shortcomings in Sabah's waste management system and what challenges may arise in its implementation.

LITERATURE REVIEWS

Effective management of solid waste requires clear policies, adequate financial resources, sustainable waste minimization practices, and credible enforcement mechanisms. The literature highlights that countries with strong institutional arrangements, such as Japan, Denmark, Switzerland, Germany, and the United States, have been able to establish comprehensive frameworks that ensure long-term sustainability (Guerrero, Maas, & Hogland, 2013; Moh & Manaf, 2017, 2014). In contrast, many developing countries continue to face difficulties because of fragmented institutions, financial limitations, weak enforcement, and insufficient emphasis on waste reduction (Fernando & Zutshi, 2023; Agunwamba, 1998). These challenges are evident

in Malaysia, where rapid increases in waste generation have not been matched with equally effective governance mechanisms (MIDA, n.d.; Mohamed Osman et al., 2009; Nasir et al., 2023; Omran et al., 2009)

Institutional Framework

Institutional clarity is central to effective waste governance. In Peninsular Malaysia, the establishment of the National Solid Waste Management Department (JPSPN) and the Solid Waste and Public Cleansing Management Corporation (SWCorp) under Acts 672 and 673 provided a dedicated structure for managing waste (MHLG, 2006). These agencies oversee waste separation, collection, and enforcement, making the governance process more coordinated. However, Sabah and Sarawak remain under the Local Government Ordinance 1961 and the Local Authority Ordinance 1996, respectively, which grant only general powers to local authorities without creating dedicated institutions (Dusim, 2021; Fatma Sabariah, Manaf, & Mariani, 2013). As a result, waste management in these states remains fragmented and dependent on local councils with limited capacity. The literature suggests that without a clear institutional framework, responsibilities become dispersed and policies lose effectiveness (Abas & Wee, 2014a, 2014b).

Financial Support

The financial dimension is another recurring theme. Solid waste management is expensive, consuming a large share of municipal budgets, and weak financing has been linked to inefficiency in collection, storage, transfer, and disposal (Agunwamba, 1998; Fernando & Zutshi, 2023). In Malaysia, waste generation rose from 18,000 tonnes daily in 2007 to more than 38,000 tonnes by 2021, reflecting both population growth and urbanisation (MIDA, n.d.). This rapid increase has placed pressure on local authorities that already face financial constraints. Studies show that while policies such as Acts 672 and 673 provided enforcement tools, they did not resolve the issue of long-term financial sustainability (Moh & Manaf, 2017; Abas & Wee, 2014a). In Sabah, reliance on limited council budgets and outdated by-laws such as the Anti-Litter By-Law 2005 has restricted the scope of waste management programmes (MHLG, 2007). The literature thus indicates that financial support is a prerequisite for sustainable waste management, and without it, even strong legal frameworks struggle to succeed.

Waste Minimization

Waste minimization through reduction, reuse, and recycling is identified as a cornerstone of sustainable waste systems (Moh & Manaf, 2017). Developed countries have embedded waste minimization into policy and practice, but in Malaysia progress has been uneven. The mandatory source separation introduced in Peninsular Malaysia under Act 672 aimed to increase recovery rates and extend the life of landfills. However, recycling rates remain low at 17.5 percent, and compliance has been inconsistent (MIDA, n.d.; Moh & Manaf, 2014). In Sabah, where mandatory separation has not been introduced, recyclable materials still account for a significant proportion of landfill waste, indicating that waste minimization policies have not been effectively adopted (Fauziah & Agamuthu, 2012; Fatma Sabariah et al., 2013). These patterns demonstrate that waste minimization policies require more than legislative provisions; they depend on effective enforcement, infrastructure, and long-term behavioural change. From the perspective of governance theory, waste minimization is not only a technical issue but also an institutional and policy challenge.

Enforcement

The final theme is enforcement, which is critical in ensuring compliance with waste management laws. Research shows that many developing countries rely heavily on open dumping and burning due to weak enforcement (Ferronato & Torretta, 2019; Hassan et al., 2001; Idris, Inanc, & Hassan, 2004). In Malaysia, Act 672 introduced penalties for illegal dumping, ranging from heavy fines to imprisonment, while Act 673 established agencies to oversee compliance. Yet, enforcement capacity has varied, and many councils continue to struggle with manpower and resources (Abas & Wee, 2014a, 2014b). In Sabah, the reliance on by-laws such as the Anti-Litter By-Law 2005 has not been sufficient to deter violations, and illegal dumping remains widespread (MHLG, 2007). From a governance perspective, enforcement requires not only laws but also adequate training, monitoring systems, and political will to ensure compliance.

Synthesis

The literature converges on four interconnected themes: institutional frameworks, financial support, waste minimization, and enforcement. Each of these is essential for effective solid waste management. In Malaysia, progress has been more

visible in Peninsular states where federal legislation provides structure and authority. In Sabah, however, weak institutions, limited funding, low recycling, and insufficient enforcement have constrained progress. Previous studies on solid waste management in Malaysia have largely focused on federal legislation and national policy frameworks (Agamuthu, Fauziah, & Kahlil, 2009; Moh & Manaf, 2017; Abas & Wee, 2014a, 2014b). However, little attention has been given to state-level initiatives such as those in Sabah, where governance structures and legal provisions differ significantly from Peninsular Malaysia (Fatma Sabariah et al., 2013; Dusim, 2021). This gap highlights the need for research that examines state-specific policies through a systematic review of legislative texts and related documents. Guided by the four themes identified in the literature—institutional frameworks, financial support, waste minimization, and enforcement—this study employs document analysis as the most appropriate method for evaluating the implications of the Solid Waste and Public Cleansing Management Enactment 2022.

METHODOLOGY

This study employed a qualitative approach using document analysis to examine the Solid Waste and Public Cleansing Management Enactment 2022 and related policy materials. Document analysis was considered appropriate, as it allows for a systematic review of legislative texts and supporting documents to understand their implications for solid waste governance (Moh & Manaf, 2017; Abas & Wee, 2014a, 2014b). The primary sources included the full text of the Enactment as well as relevant state-level policy documents, government reports, and official statements issued between 2007 and 2022. In total, one enacted law and five supporting documents were reviewed, covering legislative provisions, local government by-laws, and national policy guidelines that provide the broader framework for waste management in Malaysia (Dusim, 2021; MHLG, 2006; MHLG, 2007; Fatma Sabariah, Manaf, & Mariani, 2013).

The analysis followed a thematic strategy. Based on insights from the literature review, four analytical categories were identified: (i) institutional framework, (ii) financial support, (iii) waste minimization, and (iv) enforcement. Each document was carefully read and coded according to these themes, with particular attention given to how the Enactment addressed long-standing challenges identified in prior studies, such as fragmented governance structures, low recycling rates, and weak enforcement (Agamuthu, Fauziah, & Kahlil, 2009; Moh & Manaf, 2014, 2017). The process

involved iterative reading, comparison, and synthesis, ensuring that provisions were not only described but also assessed in relation to Sabah's waste management context.

To strengthen the credibility of the findings, triangulation was applied by cross-checking the provisions of the Enactment against policy reports and previous studies on Malaysia's waste management system. This helped to verify whether the institutional, financial, and enforcement mechanisms proposed in the Enactment align with broader waste management practices in Malaysia, while also highlighting areas where Sabah diverges from the experience of Peninsular Malaysia (Abas & Wee, 2014a, 2014b; Moh & Manaf, 2017).

FINDINGS AND DISCUSSIONS OF THE STUDY

The analysis of the Solid Waste and Public Cleansing Management Enactment 2022 was structured around four themes derived from the literature review: institutional framework, financial support, waste minimization, and enforcement. These themes guided the coding and interpretation of legislative provisions and supporting policy documents. The findings presented below examine not only the content of the Enactment but also its feasibility, potential impact, and alignment with past waste management practices in Malaysia. Where relevant, comparisons are drawn with experiences in Peninsular Malaysia to highlight both similarities and gaps in Sabah's governance context.

Institutional Framework

The Enactment provides a clearer institutional framework for solid waste management in Sabah by formally assigning responsibilities to local authorities and establishing state-level oversight. This is a significant improvement compared to the fragmented governance under the Local Government Ordinance 1961 and older by-laws such as the Conservancy and Hygiene By-Law of 1984 and the Anti-Litter By-Law of 2005 (MHLG, 2007). Unlike Peninsular Malaysia, where Acts 672 and 673 created specialized agencies such as SWCorp and the National Solid Waste Management Department (JPSPN), Sabah has chosen to retain responsibility within existing local councils. While this approach maintains local autonomy, it may also risk overstressing already resource-constrained municipal authorities, which have historically struggled

with enforcement and service delivery (Fatma Sabariah, Manaf, & Mariani, 2013; Dusim, 2021).

Financial Support

One of the central provisions of the Enactment is the creation of a dedicated Solid Waste Management Fund to finance waste management operations. This represents an important step, given that inadequate funding has been identified as a recurring challenge in Malaysia's waste management system (Abas & Wee, 2014a, 2014b). However, the feasibility of sustaining such a fund in Sabah remains uncertain. Unlike Peninsular Malaysia, which benefits from federal allocations under Act 672, Sabah must rely on its own financial capacity. Municipal budgets in the state are often limited, and the cost of expanding waste collection, treatment, and disposal services is expected to rise as waste generation continues to grow (MIDA, 2021). Without stable long-term financing mechanisms, there is a risk that the fund could face underutilization or fail to meet its intended objectives.

Waste Minimization

The Enactment introduces provisions on waste minimization, including requirements for waste reduction and recycling initiatives. This marks progress compared to the past, where Sabah lacked mandatory waste separation and official recycling guidelines (Moh & Manaf, 2017, 2014). In Peninsular Malaysia, source separation has been legally enforced since 2016 under Act 672, leading to gradual improvements in recovery rates, though challenges remain (Fauziah & Agamuthu, 2012). Sabah's move to include waste minimization within its Enactment provides an opportunity to improve recycling and reduce reliance on landfills, which currently receive more than 80 percent of Malaysia's waste (MIDA, 2021). However, the effectiveness of these measures will depend on public awareness and participation, which remain low across Malaysia. Previous studies highlight that community compliance cannot be guaranteed without continuous education and enforcement (Agamuthu, Fauziah, & Kahlil, 2009).

Enforcement

The Enactment strengthens enforcement powers by enabling local councils to impose penalties for illegal dumping, littering, and non-compliance with waste regulations. This

aligns Sabah with provisions already enforced in Peninsular Malaysia, where Act 672 prescribes fines and imprisonment for illegal dumping (Fauziah & Agamuthu, 2012). However, enforcement capacity in Sabah remains a challenge. Local authorities often lack sufficient manpower and technical expertise to monitor compliance effectively (Fatma Sabariah et al., 2013). Past experiences with by-laws suggest that even when penalties exist, weak institutional capacity and limited political will can undermine enforcement outcomes (Dusim, 2021). The risk is that the Enactment may remain strong on paper but weak in practice, particularly if municipal enforcement units are not adequately resourced or trained.

Overall Discussion

Taken together, the Enactment represents a major step forward in providing Sabah with a dedicated legal framework for solid waste management. It introduces clearer institutional roles, creates a financial support mechanism, promotes waste minimization, and strengthens enforcement provisions. However, its success will depend on how these provisions are implemented in practice. Compared to Peninsular Malaysia, Sabah still faces greater financial constraints, weaker enforcement capacity, and lower levels of public participation. Unless these challenges are addressed, there is a risk that the Enactment will replicate the same limitations that earlier by-laws failed to overcome.

CONCLUSION

The Solid Waste and Public Cleansing Management Enactment 2022 represents a milestone in Sabah's efforts to establish a comprehensive framework for solid waste management. The findings show that the Enactment strengthens institutional arrangements, introduces a dedicated financial mechanism, incorporates waste minimization provisions, and enhances enforcement powers. Collectively, these measures have the potential to improve Sabah's waste management system, which has long struggled with fragmented responsibilities, insufficient recycling, and overdependence on landfill disposal (Fatma Sabariah, Manaf, & Mariani, 2013; Dusim, 2021; MHLG, 2007).

However, the study also highlights several risks and limitations. The success of the financial fund depends on Sabah's fiscal capacity, which is more limited than in Peninsular Malaysia (Abas & Wee, 2014a, 2014b). Enforcement may remain weak if

municipal councils are not adequately resourced or trained, reflecting past challenges where penalties existed in law but were poorly implemented (Moh & Manaf, 2017, 2014). Similarly, waste minimization efforts will require public participation, yet past experience in Malaysia shows that low awareness and limited compliance continue to hinder recycling initiatives (Agamuthu, Fauziah, & Kahlil, 2009; Fauziah & Agamuthu, 2012).

To address these challenges, several recommendations can be drawn. First, enforcement officers at the local level should be provided with structured training programs to improve their monitoring and compliance capacity. Second, community education campaigns on waste separation should be developed and sustained, ensuring that citizens are not only aware of but also motivated to practice waste minimization. Third, the state should establish monitoring frameworks that regularly assess the performance of the Enactment, particularly in relation to recycling rates, enforcement outcomes, and financial sustainability.

By combining strong legal provisions with practical measures of capacity building, public engagement, and continuous monitoring, Sabah can move closer to achieving a more sustainable and effective waste management system. The Enactment provides the legal foundation, but its long-term impact will depend on whether the state can translate these provisions into consistent, well-resourced, and inclusive implementation sustainable future for Sabah.

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