



Local Authority Roles in Waste Management: Evidence from Svay Rieng Municipality, Cambodia

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ABSTRACT

Waste management is a critical challenge in Svay Rieng Municipality, Cambodia, where rapid industrialization and population growth have intensified the problem of uncollected waste. Although national strategies such as the Circular Strategy in Environment Sector 2023–2028 have been introduced, implementation remains limited due to inadequate infrastructure, a small waste collection fleet, weak community participation, and poor coordination among stakeholders. This study employed a qualitative descriptive–interpretive design using a multiple case study approach in Chong Prek and Roup Kor villages. Data were collected through participant observation, semi-structured interviews with twelve key informants, and document analysis, and were validated using triangulation across sources, methods, and investigators. Analysis was guided by the Miles, Huberman, and Saldana model, focusing on the regulatory, facilitative, and dynamizing roles of local authorities. The findings indicate that while regulations exist, enforcement is weak, infrastructure development is delayed by land allocation issues, and outreach efforts are largely reactive. Community engagement remains limited, with participation often triggered only by external pressure or special events. The study concludes that stronger regulatory enforcement, timely infrastructure provision, continuous community education, and institutionalized multi-stakeholder collaboration are essential for advancing a more effective and sustainable waste management system in Svay Rieng Municipality.

Keywords: *Authority; Circular Strategy; Environment; Public Health; Waste Management.*

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INTRODUCTION

Waste management is an essential element of sustainable development because it directly affects environmental quality, public health, and the aesthetics of urban areas (Pheakdey et al., 2022). Despite existing regulations, population growth and industrial activity in Svay Rieng Municipality, Cambodia, have caused a significant increase in waste. This reflects weaknesses in infrastructure and low public awareness. In the past, when the population was smaller, waste was not a serious issue (Kedir, Eliku, & Gebre,

2019). However, lifestyle changes and rising consumption have increased the volume and diversity of waste. If neglected, this threatens human health and environmental sustainability (Mamady, 2016). At the same time, limited land availability makes it difficult for local governments to provide waste facilities such as processing centers, temporary storage (TWS), and final disposal sites (FDS) (Spoann et al., 2019).

According to national regulations, regency and municipal governments are responsible for planning and implementing waste management (Setiawandari & Kriswibowo, 2023). In Svay Rieng, the local government must prepare infrastructure and facilities while sharing responsibilities with businesses and communities (Muchsin & Saliro, 2020). National frameworks such as the Circular Strategy in Environment Sector 2023–2028 and the Circular Economy for Waste Recycling 2021 are designed to improve governance in this sector (NCSD, 2021; MOE, 2022). The aim of these frameworks is to create legal certainty, ensure consistent implementation, and promote sustainability (Manurung, 2019). They also encourage community involvement in environmental management (Jati, 2018), improve public welfare, and promote the 3R principles (Reduce, Reuse, Recycle) to transform waste into resources (Louise, 2021).

In practice, however, many municipalities in Cambodia face systemic and financial barriers. Research shows that inconsistent policies, limited infrastructure, weak public awareness, and inadequate funding remain persistent challenges (Rendy, 2019). National guidelines often vary in application because of low technical capacity and the absence of standardized procedures. The shortage of infrastructure also worsens the problem. Many cities do not have enough waste collection vehicles, transfer stations, or engineered landfills, which pushes them to rely on open dumping and burning, both of which pose risks to health and the environment (Darmanto, 2018).

Svay Rieng Municipality reflects this condition. Industrial zones have accelerated waste generation, and the impacts are visible along the National Highway where garbage piles dominate the view. These piles damage the city's aesthetics, release foul odors, attract pests, and contaminate soil and water (Rahmawati, 2023). The Provincial Department of Environment (PDOE) has limited capacity and focuses most efforts on Sangkat Svay Rieng. As a result, collection schedules are irregular, and many communities feel the authority is only active during events such as Environment Day or when public complaints increase (PDOE, 2022).

Earlier studies confirm these findings. Elizabeth et al. (2025) show that waste management policies often fail to connect with community initiatives, resulting in low public participation and weakening the effectiveness of government programs. Muchsin and Saliro (2020) stress the lack of authority and infrastructure as main obstacles. Gutama and Iresha (2023) found that waste service coverage in many regions remains uneven, with some communes below acceptable levels. Even in areas with relatively high coverage, waste reduction is still low, and national targets such as universal service coverage with 30 percent reduction initiatives are unlikely to be achieved.

Theoretically, Rasyid (2000) explains that local authority has three main functions: regulator, facilitator, and dynamic agent. As a regulator, authority formulates policies and enforces compliance. As a facilitator, it provides infrastructure, subsidies, and resources that enable communities to engage in waste management. As a dynamic agent, authority stimulates collaboration among stakeholders, including communities, the private sector, and civil society, to support participatory development (Latanna, et al.,

2023). Ideally, these functions are interconnected and work together to achieve sustainable outcomes.

Although previous studies highlight challenges in infrastructure, regulation, and public participation, most of them focus on general policy issues at the national or regional level. Very few studies examine in detail how local authorities in Cambodia implement their multiple roles in practice. This creates a critical gap that needs to be addressed, especially in fast-developing municipalities such as Svay Rieng.

This study seeks to address that gap by examining how local authorities in Svay Rieng Municipality implement their roles as regulators, facilitators, and dynamic agents under the Circular Strategy in Environment Sector 2023–2028. The research focuses on institutional, financial, and coordination barriers while documenting community-level experiences in villages such as Chong Prek and Roup Kor. By providing context-specific insights, this study contributes to the academic discussion on environmental governance and offers practical recommendations for improving local waste management.

The findings are expected to strengthen understanding of how local governance can be improved to meet sustainability goals. More specifically, the study emphasizes the need for stronger regulatory enforcement, better infrastructure development, and greater collaboration between communities, local authorities, and private actors. These outcomes are crucial for enhancing environmental quality and public health in Svay Rieng Municipality and may also provide lessons for other urbanizing regions in Cambodia. This focus also aligns with the Sustainable Development Goals (SDGs), particularly Goal 11 on sustainable cities and communities, Goal 6 on clean water and sanitation, and Goal 12 on responsible consumption and production, which highlight waste management as a pathway to long-term sustainability (Sakdiah & Rahmawati, 2021).

LITERATURE REVIEW

Waste management has been widely examined through the lenses of regulation, infrastructure, community participation, and governance. These perspectives provide insights into both the opportunities and challenges faced by municipalities in addressing solid waste issues.

Regulatory Frameworks in Waste Management

Regulation is often considered the foundation of waste governance. Arif (2022) emphasizes that provincial regulations provide legal certainty and enable local governments to enforce standards and accountability. Aji et al. (2023) note that regulatory frameworks are critical for ensuring environmentally friendly waste management, particularly when they incorporate sustainability principles such as the 3Rs (Reduce, Reuse, Recycle). Tunti et al. (2021) further highlight that local regulations can create meaningful opportunities for community participation, linking governance to grassroots initiatives. Despite these efforts, implementation remains weak in many contexts. Muchsin and Saliro (2020) observed that decentralized waste management in Indonesia is hindered by weak institutional authority, resulting in low compliance. This indicates that regulations alone are not sufficient unless accompanied by strong enforcement and institutional capacity.

Infrastructure and Technical Capacity

Infrastructure provision is another key determinant of waste management effectiveness. Arumdani et al. (2021) note that several Southeast Asian countries face persistent shortages of engineered landfills, transfer stations, and waste collection vehicles, which often leads to reliance on unsafe disposal practices. Hoang and Fogarassy (2020) similarly show that rapid urbanization combined with limited financial resources exacerbates infrastructural deficits and undermines program effectiveness, as observed in Hanoi. In Cambodia, the Ministry of Environment (MOE, 2022) reported that municipalities remain constrained by limited facilities, particularly in secondary cities. These findings highlight the importance of physical and technical capacity in ensuring that waste management policies can be successfully implemented.

Community Participation and Behavioral Factors

Community engagement is frequently identified as a decisive factor in waste management outcomes. Elizabeth et al. (2025) found that policies often fail to connect with community initiatives, resulting in limited public participation and weakening the overall impact of government programs. Louise (2021) stresses that reframing waste as a resource through the application of 3R principles requires behavioral change at the community level. Hamka and Afdholy (2022) provide evidence from Malang City, where community-based initiatives such as thematic villages successfully transformed urban spaces and improved environmental sustainability. These examples show that without continuous and genuine community participation, policies are unlikely to succeed.

Governance and the Role of Local Authorities

Governance plays a central role in explaining why waste management often underperforms even when regulations and facilities are present. Naldi, Herdiansyah, and Putri (2021) emphasize that the effectiveness of solid waste management in rural communities depends on the application of good governance principles, including accountability, participation, and transparency. Latanna, Gunawan, Franco-García, and Bressers (2023) further show that governance arrangements must integrate community participation with institutional support to achieve sustainable outcomes. Comparative studies provide additional evidence. Qin, Sun, and Li (2021) show that environmental regulation policies in China improved ecological efficiency when governance capacity was strong and multi-stakeholder collaboration was institutionalized. Kolawole et al. (2018) point out that governance challenges in many developing contexts are linked to weak coordination and insufficient financial support. These studies suggest that waste management effectiveness depends heavily on the quality of governance at the local level.

Although previous studies provide valuable insights into regulation, infrastructure, community participation, and governance, there are still important gaps. Much of the literature focuses on national or regional challenges, while limited attention has been given to how local authorities implement their roles in practice. In Cambodia, empirical studies remain scarce, and most analyses are restricted to policy-level discussions rather than examining village-level realities. The interaction between regulations, infrastructural constraints, and community engagement has not been adequately studied in specific municipal contexts.

The reviewed literature therefore indicates that successful waste management requires more than regulations and facilities. It also depends on community participation and effective governance structures. Weak enforcement, insufficient infrastructure, and limited public awareness continue to hinder implementation, especially in rapidly urbanizing municipalities. This creates a need for empirical studies that examine how local authorities fulfill their roles as regulators, facilitators, and dynamic agents in concrete local settings. Addressing this gap, the present study aims to provide context-specific evidence from Svay Rieng Municipality, thereby contributing both to academic debates and to practical strategies for improving waste management governance in Cambodia.

METHODS

This study employs a qualitative research design with a descriptive and interpretive approach, using a multiple case study method to examine the roles of local authorities in waste management within two villages of Svay Rieng Municipality, namely Chong Prek and Roup Kor. The case study design was chosen because it enables an in-depth exploration of complex social phenomena in their real-life contexts. This approach provides a comprehensive understanding of how local authorities function as regulators, facilitators, and dynamic agents in addressing waste management challenges. In line with qualitative research principles outlined by Sugiyono (2015), this approach emphasizes naturalistic inquiry, allowing phenomena to be studied in their actual settings without external manipulation. Similarly, Adlini et al. (2022) highlight that qualitative research offers flexibility in capturing nuanced social realities, making it suitable for analyzing governance dynamics and community participation in waste management.

A total of twelve key informants were purposively selected based on their direct involvement in or knowledge of local waste management practices and policies. These informants consisted of four community representatives from each village, two village chiefs, two officers from the Svay Rieng Provincial Department of Environment (PDOE), and two municipal officials responsible for environmental coordination. Data were collected through participant observation, semi-structured in-depth interviews, and document analysis, which together provided a rich and nuanced dataset.

To ensure credibility and validity, triangulation was applied across sources, methods, and investigators. Information from community members, local leaders, and government officials was compared. Data were gathered using different techniques, and interpretations were validated through peer debriefing and consultation with academic supervisors. This multi-layered process strengthened the trustworthiness of the results by reducing bias and enhancing analytical rigor.

The analysis followed the four-step framework of Miles, Huberman, and Saldana (2014). The steps included data collection, data reduction, data display, and conclusion drawing and verification. The study is theoretically grounded in Rasyid's (2000) tripartite governance framework, which conceptualizes the role of local authorities through three key functions: regulator, facilitator, and dynamic agent. These functions are viewed as interconnected pillars that guide policy implementation, enable resource provision, and stimulate stakeholder participation.

RESULTS

Waste management is a central responsibility of local authorities and must be carried out properly to prevent negative impacts. It is closely tied to urban development since population growth, expanding economic activities, and changing consumption patterns tend to increase the volume of waste produced.

The findings of this study indicate that the local authority in Svay Rieng Municipality, Cambodia, faces major challenges in fulfilling its roles as regulator, facilitator, and dynamic agent, even though policy frameworks such as the Circular Strategy in Environment Sector 2023–2028 are already in place. Data obtained through triangulation, which combined in-depth interviews, participant observation, and document analysis, consistently show a gap between policy formulation and actual implementation in the field.

Observations conducted in Chong Prek and Roup Kor villages between January and March 2025 revealed persistent waste accumulation along National Road 1. Large piles of uncollected garbage were found in residential alleys and near market areas, producing foul odors and attracting pests. These visual findings were confirmed by daily field notes that recorded irregular garbage truck visits, often limited to once every three to four days, and poor access to narrow lanes that left many households without service.

The responsibility of the local authority to maintain cleanliness in Svay Rieng Municipality is therefore inseparable from its broader duty to provide adequate public facilities for waste management.

The Regulating Function of the Authority

In-depth interviews with twelve key informants, which included two municipal officials, two officers from the Provincial Department of Environment (PDOE), two village chiefs, and six community members, highlighted systemic weaknesses in waste regulation. When asked about enforcement, one PDOE officer (Interviewee #4) explained: *"We issue warnings, but we have no authority to impose fines. There is a draft regulation on waste collection fees, but it has been delayed for two years due to lack of approval from the Provincial Council."* This lack of legal enforcement power severely undermines the authority's regulatory role. A municipal official (Interviewee #2) also admitted: *"Without financial penalties, people ignore the rules. We can only appeal to their awareness, but that is not enough."* These statements confirm that although regulations exist, their enforcement remains weak due to institutional limitations and the absence of operational bylaws at the village level. Residents in Veal Yun and Rong Bonler further confirmed this situation. One respondent (Interviewee #9) stated: *"No one tells us how to dispose of waste properly. Sometimes trucks come, sometimes they don't. There are no rules, no schedules, no consequences."*

The regulatory role of the authority in waste management is fundamental to good governance. The local authority is expected to draft policies and regulations, implement them in accordance with technical standards, and ensure their enforcement. In Svay Rieng Municipality, this mandate is formally supported by the *Circular Strategy in the Environmental Sector 2023–2028*, which grants the local authority the power to define strategies, plan waste management, designate disposal sites, provide supervision and guidance, and conduct biannual evaluations. In practice, however, the PDOE is

responsible for the technical implementation of this strategy, and environmental officers are still drafting specific rules on waste collection fees.

National provisions related to waste reduction, infrastructure development, partnership building, and community participation have not yet met expectations. Despite the existence of articles in strategic plans, waste piles remain visible along National Road 1. This shows that regulations are not being applied effectively. The concept of a circular economy has also not been fully realized. Infrastructure development, such as the establishment of temporary waste storage (TWS) in both villages, has advanced very slowly and remains largely stagnant due to bureaucratic delays and insufficient response to local needs. Weak monitoring and poor enforcement further undermine the intended impact of these policies. In many cases, action is taken only under pressure, such as during visits from the Environmental Agency or when community complaints intensify, even though the regulations require evaluations every six months.

The cases of Chong Prek and Roup Kor illustrate how these shortcomings persist at the village level. Waste heaps along the National Road continue to be a visible reminder of an ineffective system that is not being regulated properly. One significant obstacle identified by this research is the lack of financial resources. Without sufficient funding, waste management programs will inevitably fall short of expectations. Inadequate infrastructure further compounds the problem, since effective waste management cannot be achieved without proper facilities and equipment. Another limitation is public awareness. Many community members remain unaware of the importance of proper waste management, and existing regulations are not supported by adequate education and outreach.

The study also found that no specific waste management regulations currently exist in the villages of Rong Bonler and Veal Yun. A government plan for Rong Bonler includes waste collection fees that are supposed to apply to Veal Yun as well, but this is only enforced in Veal Yun. There are still no clear rules in place regarding waste management or collection fees, and there are no plans in Veal Yun to discuss the establishment of such regulations. This absence of rules is particularly concerning because Veal Yun is one of Sangkat Svay Toeu's industrial hubs. Ideally, a village with this potential should have explicit waste management regulations to address the risks posed by rapid industrial development.

The lack of regulation in Veal Yun not only undermines environmental quality but also directly affects community well-being. Residents continue to live with uncollected waste that disrupts their surroundings, pollutes the landscape, and interferes with daily activities. Clear and enforceable rules could provide structure, improve living conditions, and enhance the environment. If such measures were implemented, Veal Yun could even become a model for other villages in the municipality by demonstrating that effective regulation, supported by infrastructure and awareness programs, can lead to cleaner and more sustainable communities.

The Authority's Function as a Dynamizer

In its role as a dynamizer, the authority is expected to inspire, encourage, and mobilize stakeholders, including government agencies, the community, and the private sector, to actively participate in waste management. Coordination is essential to ensure that policies and programs operate as intended and that all parties provide consistent

support. The authority also contributes to this role through outreach, awareness campaigns, and public guidance. However, in Svay Rieng Municipality, these efforts remain limited and inconsistent.

Interviews revealed that outreach programs tend to be reactive rather than proactive. A community leader (Interviewee #7) explained, *"They only come when there is a problem or a visit from higher officials. On Environment Day, everyone cleans up, but after that, it is back to normal."* This aligns with observations that cleanliness campaigns are usually organized only during special events or in response to public complaints. A municipal officer (Interviewee #3) admitted that, *"Our outreach is limited by budget and personnel. We plan monthly activities, but only manage one or two per year."* Despite good intentions, the lack of sustained engagement limits both public awareness and participation.

The Svay Rieng PDOE occasionally participates in outreach and social service programs organized by the Provincial Administration. Officially, these are scheduled every six months to raise awareness about waste issues. In practice, however, the researcher found that such activities often occur only when environmental conditions attract attention on social media and become a public issue. Stakeholders act quickly once waste piles gain visibility, but this approach is not sustainable. Outreach and social service programs should ideally be conducted regularly and with proper planning, rather than depending on public pressure.

At the village level, both Rong Bonler and Veal Yun have attempted to provide education on waste management, but implementation has fallen short of expectations. The Rong Bonler village chief pledged to conduct monthly sessions and frequently uses public gatherings as opportunities to deliver reminders about waste management. In reality, the sessions are only held once a year. Veal Yun adopted a different approach by announcing weekly education sessions, even targeting boarding house residents. On the ground, however, education is also conducted only once a year, and the boarding houses are never reached. These discrepancies reveal that although plans exist, execution is inconsistent and fails to build long-term community concern.

The researcher also found that social service activities led by local authorities, such as cleanup drives, are typically carried out only during events like Environment Day. For a short period, large groups of people mobilize to collect trash, but once the events conclude, activities quickly return to normal. Literature on the circular economy further reinforces this observation, indicating that while plans and programs are well-intentioned, their implementation is fragmented and episodic rather than continuous.

Although there is some level of coordination among government agencies, communities, and businesses, it remains inadequate. Ideally, the government should serve as the primary catalyst to bring all stakeholders together in addressing waste problems. The actual situation in Svay Rieng Municipality demonstrates that consistent and targeted actions are still lacking. Outreach initiatives by PDOE and the Municipality, often in collaboration with the Provincial Administration, are commendable, but their reliance on special occasions or social media attention undermines their long-term impact.

The same is true at the village level. Both Rong Bonler and Veal Yun have shown commitment by announcing regular educational programs, yet in practice these are rarely implemented as planned. This inconsistency highlights the need for stronger

coordination and better execution. Moving forward, concrete and continuous actions involving all stakeholders are required. Relying solely on isolated activities or symbolic events will not resolve the problem. A cleaner and healthier environment in Svay Rieng Municipality can only be achieved if local authorities, communities, and businesses work together consistently and with shared commitment.

The Authority's Facilitating Role

As a facilitator, the local authority is expected to combine diverse community interests by providing both infrastructure and financial support, thereby enabling the waste management system to function effectively. This role requires the government to supply sufficient facilities such as recycling centers, waste containers, temporary disposal sites, and subsidies for operational costs. In Svay Rieng Municipality, the authority has received support through the Provincial Administration, including thirty-four waste containers, eight garbage trucks, twenty-six three-wheeled vehicles, and nine amrol units. The municipality also contracted with Sophy Sambath Commerce Company to assist in waste handling, while the government allocated funding for fuel and sanitation workers' salaries.

Although these efforts represent an important step, documentation from the PDOE Annual Report (2022) and municipal meeting records shows that land acquisition remains a critical barrier. For example, Chong Prek Village has allocated land for a Temporary Waste Storage (TWS) site, but Veal Yun Village has not, and the planned 20-hectare integrated Waste Processing Site (WPS) has stalled because the land status has not been resolved. A village chief (Interviewee #6) stated: *"The land is classified as 'official use,' but no one has taken the lead to change it. We keep waiting for instructions from above."* This bureaucratic inertia reflects weak inter-agency coordination and delays the construction of essential infrastructure.

The integrated WPS, designed to serve as a central facility for processing waste from across the municipality, demonstrates the government's commitment to solving the growing waste problem. However, the land required must be reclassified from its current designation, a process that is both time-consuming and dependent on coordination between multiple agencies. This issue highlights the importance of closer collaboration among the local authority, villages, and provincial departments. Without immediate action, the project risks remaining a plan rather than becoming a reality.

The situation underscores that waste management is not only about providing physical facilities, but also about ensuring decisive and timely action. Villages that have not yet allocated land must take proactive steps, while the local authority should intensify efforts to resolve land status issues. Overcoming these barriers will require strong commitment and effective coordination between all stakeholders. If procedures are expedited, the planned WPS and TWS facilities could soon benefit residents, although significant effort is still required to make this goal a reality.

At the village level, the role of local leaders in facilitating waste management is also evident. The chief of Rong Bonler Village has attempted to act as a facilitator by supporting efforts to manage growing volumes of waste. The PDOE has also coordinated with village authorities to move accumulated waste along National Road 1. However, waste collection in both Veal Yun and Chong Prek remains far from ideal. Each village depends on a single garbage truck, which cannot serve all households consistently. Narrow residential alleys are often inaccessible, and observations revealed

that piles of waste continue to accumulate despite official claims of daily collection. This discrepancy between policy commitments and ground-level realities demonstrates that the facilitating function of the authority has not yet been fully effective.

The findings of this study reveal several recurring challenges that hinder effective waste management in Svay Rieng Municipality. Although the local authority is expected to function as a regulator, facilitator, and dynamic agent, its roles are constrained by weak regulatory enforcement, inadequate infrastructure, limited community involvement, and insufficient coordination among stakeholders. To provide a clearer overview of these interconnected problems, the key issues are summarized in the following table.

Table 1. Key Challenges in Waste Management in Svay Rieng Municipality

Main Issue	Underlying Causes	Field Evidence	Implications
Weak regulation and law enforcement	Absence of village-level regulations; delay in approving waste collection fee bylaw	Interview with PDOE officer: “We issue warnings, but we have no authority to impose fines”; No local regulations on waste management in Veal Yun and Rong Bonler	Residents do not comply with waste rules, and existing regulations remain largely symbolic
Inadequate infrastructure	Shortage of garbage trucks, containers, and designated land for TWS/WPS	Observation: garbage piles along the main road; trucks operate only every 3–4 days; Veal Yun has not allocated land for TWS	Irregular waste collection, worsening environmental quality and public health
Low community participation	Limited awareness; outreach activities organized only for special events	Residents reported clean-up campaigns only during Environment Day; village education programs occur once a year	Public involvement remains reactive, not embedded in daily waste management practices
Poor stakeholder coordination	Bureaucratic delays and weak collaboration between PDOE, municipal government, and villages	PDOE report (2022): construction of WPS delayed due to unresolved land status	Infrastructure projects stall, and waste management efforts lack sustainability

Limited funding and human resources	Insufficient budget; inadequate number of sanitation workers and vehicles	Field notes: one garbage truck serves an entire village, with no access to narrow alleys	Daily waste accumulation, increased health risks, and declining urban image
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As shown in the table, the challenges in waste management are multifaceted and mutually reinforcing. Weak regulations and irregular enforcement reduce compliance, while inadequate infrastructure and limited funding further exacerbate the accumulation of waste. Community participation remains reactive rather than continuous, and poor coordination between municipal agencies and villages delays infrastructure projects. These findings highlight that addressing waste management in Svay Rieng Municipality requires not only policy reforms but also a more integrated approach that strengthens governance capacity, promotes sustainable infrastructure development, and encourages active public engagement.

A closer comparison between Chong Prek and Veal Yun villages further illustrates how these challenges play out differently at the local level. Chong Prek has made some progress by allocating land for a temporary waste storage site and maintaining relatively more regular waste collection, although the service is constrained by the availability of only one garbage truck. In contrast, Veal Yun has not yet prepared land for a storage facility and continues to experience irregular collection, leaving many households without reliable service. Community participation also varies while leaders in Chong Prek have attempted to incorporate waste management education into public meetings, outreach in Veal Yun remains minimal and usually takes place only during annual events. These contrasts suggest that local conditions and leadership significantly influence waste management outcomes, even under the same municipal policies, and they underscore the need for village-specific interventions that address infrastructure gaps, strengthen public engagement, and enhance regulatory enforcement.



Figure 1. Waste collection in Svay Rieng Municipality (as of June 7, 2025).

Imagine that there are already substantial garbage piles in just one hamlet. Sanitation workers cannot finish collecting waste in one hamlet and then move on to another on the same day due to a lack of time and personnel. Consequently, waste is only collected twice or three times a week in each hamlet. Naturally, this influences the environment. Uncollected garbage builds up, emits disagreeable smells, and becomes an

unsightly issue for the neighborhood. The biggest problem with waste management in both villages is a shortage of personnel and vehicles. The reality on the ground demonstrates that the facilities currently in place are still far from sufficient to handle the daily growing volume of waste, despite the village chiefs' best efforts and well-meaning intentions. As a result, waste management has not been entirely successful despite efforts. For Rong Bonler Village and Veal Yun Village to become cleaner and more comfortable places for their residents, this task must be finished right away.

In fact, help with garbage trucks is a solution to the issue. According to the head of Rong Bonler village, this assistance is enough to deal with the waste issue. The chief of Veal Yun Village made the same statement. However, according to the researcher's findings, these two villages have not yet benefited from the authority's facilities. Meetings will still be held in both villages prior to making use of the facilities. The amount of waste keeps growing every day, even though the village governments are still in the planning and discussion phases. Naturally, this increases the urgency of the situation. Imagine that while the old waste has not yet been collected or adequately managed, new waste continues to accumulate every day. Unattended garbage piles will have a detrimental impact on public health in addition to being an aesthetic issue. It is obvious that these two villages' tardy response is out of step with the current circumstances. The village governments should ideally wrap up their internal deliberations or meetings as soon as possible and concentrate on how to start using these facilities right away. The sooner these facilities are put into service, the more beneficial the environment will be.

Limitations of The Research

This study has several limitations. First, the qualitative approach, while rich in depth, limits the generalizability of findings beyond the two selected villages in Svay Rieng Municipality. Second, the reliance on self-reported data from officials and community members may introduce bias, as respondents might present information in a socially desirable manner. Third, the study was conducted over a limited time frame, which may not capture seasonal variations in waste generation or long-term policy impacts. Fourth, access to certain internal government documents and budgetary details was restricted, potentially affecting the comprehensiveness of the regulatory and facilitative role assessments. Finally, the absence of quantitative data on waste composition, collection rates, or recycling metrics limits the ability to fully measure the effectiveness of current interventions. Future research should adopt mixed-method approaches, expand the geographical scope, and incorporate longitudinal data to provide a more robust evaluation of waste management systems and policy outcomes in Cambodian urban centers.

DISCUSSION

According to the study's findings, the Svay Rieng Municipality's government still faces several obstacles in its waste management operations, including a lack of facilities for support, a lack of public awareness, and a lack of sustainable government initiatives. According to this study, waste management is frequently reactive to public scrutiny or emergency situations because the authority's roles as a regulator, dynamic actor, and facilitator have not been fully optimized. Although there are already regulations in place, their implementation is still far from sufficient.

While the authority has a relatively strong regulatory role, its application in the field is frequently hampered by lax law enforcement and few effective sanctions, as also noted by Aji et al. (2023) in their study of legal policies on waste governance in Indonesia. In contrast to Hamdan's findings, which highlight the significance of consistent enforcement, regulations have been issued in the Svay Rieng Municipality context, but they are essentially a formality due to the absence of regular supervision and evaluation. The lack of infrastructure and low community involvement are the primary challenges in waste management, according to Muchsin & Saliro's (2020) research. These results are consistent with the situation in Svay Rieng Municipality, where there are not enough waste processing sites (WPS) and a small fleet of waste collection vehicles is a significant obstacle. To create more sustainable solutions, this study emphasizes the value of cooperation between the public and private sectors.

However, Gutama and Iresha (2023) observe that waste service coverage in Indonesia remains uneven and often insufficient, indicating that waste management is still inadequate in many regions. This is demonstrated in Svay Rieng Municipality by the discrepancy between waste management initiatives and the amount of waste produced daily. This study differs significantly in that it emphasizes the necessity of a participatory approach, in which the community must actively participate in waste management initiatives.

Future authority procedures and policies will be significantly impacted by the findings of this study. The authority can create more successful data-driven policies by comprehending their functions as a regulator, a catalyst, and a facilitator. Svay Rieng Municipality's waste management policies must be evaluated and modified to better meet local needs, including ensuring sustainability through multi-stakeholder cooperation to meet the Circular Economy implementation.

Given these results, it is anticipated that the authority will be able to enhance the waste management system by taking practical measures like quickening the construction of waste disposal sites, expanding the capacity of waste collection fleets, and educating and training the populace. Public health and environmental quality in Svay Rieng Municipality may benefit from a more effective, sustainable waste management system that is created by raising community awareness of environmental issues.

CONCLUSION

This study examined waste management in Svay Rieng Municipality, where rapid industrialization and population growth have created persistent challenges. Although strategies such as the *Circular Strategy in Environment Sector 2023–2028* have been introduced, implementation is still hindered by inadequate facilities, a limited number of waste collection vehicles, low public awareness, and weak coordination among stakeholders. These findings point to a clear gap between regulatory frameworks and their practical execution at the municipal and village levels.

Addressing these challenges requires a set of strategic measures. Infrastructure development should be accelerated by securing land for waste processing and storage facilities and by expanding the waste collection fleet. Stronger regulatory enforcement is required through the drafting of local bylaws, regular monitoring, and the application

of sanctions for non-compliance. Community engagement must be enhanced through continuous education campaigns, integration of 3R principles into schools and community forums, and regular training. Multi-stakeholder collaboration should be institutionalized through a municipal task force that includes government agencies, private partners, and community representatives, while private sector involvement can be strengthened by offering incentives and promoting eco-friendly investments. Overall, these efforts will help transform regulations into practice, enabling Svay Rieng Municipality to move toward a cleaner, healthier, and more sustainable urban environment.

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