WASS
Waste, Society and Sustainability
WASS 3(1): 1–16
ISSN 3062-8202

Institute for Advanced Science, Social and Sustainable Future
MORALITY BEFORE KNOWLEDGE

Household waste management, community behavior, and sustainability challenges in urban areas

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Received Date: December 9, 2025 Revised Date: January 26, 2026 Accepted Date: January 30, 2026

ABSTRACT

Background: The paper is an analysis of household waste management in the Awutu Senya East District of Ghana with a focus on the challenges that have been presented by the accelerated urbanisation, population increase and changing consumption components. Since the volume and complexity of waste is compounded by these factors, it is becoming important that proper management is maintained with respect to the health of people and environmental sustainability. **Methods:** The research design employed in the study utilises a quantitative descriptive approach, surveying 1,500 households to determine the types of waste produced, disposal practices, and the attitudes of households towards the available waste management services. **Findings:** Food scraps constitute the largest proportion of household waste in the district. More than 60% of respondents rely on open dumping at landfills and informal dumpsites due to limited and inconsistent formal collection services. This practice contributes to environmental pollution and increased public health risks, particularly vector-borne diseases. Although most households regularly dispose of their waste, dissatisfaction remains high because of irregular collection schedules, inadequate infrastructure, and weak management systems, indicating a gap between waste generation and service effectiveness. **Conclusion:** The study highlights the urgent need for integrated waste management strategies involving improved infrastructure, reliable collection services, community education, and active public participation. These efforts are necessary to enhance environmental health and promote sustainable waste management. However, the findings are based solely on self-reported survey data without observational validation. **Novelty/Originality of this article:** Despite this limitation, the findings provide practical guidance for promoting sustainable waste practices, including reducing open dumping, encouraging recycling, and strengthening community participation in environmentally responsible waste management.

KEYWORDS: environmental health; household practices; liquid waste; urbanisation; waste management.

1. Introduction

The management of household waste has emerged as a significant developmental and health issue in most of the developing nations, such as Ghana, as a result of the growing population, urbanisation, and shifting consumption. Waste, as solid, liquid, or gaseous wastes, is an inevitable by-product of human activity, produced as a result of domestic, commercial, institutional, agricultural, and industrial processes (Cunningham & Cunningham, 2004). The most visible and difficult category is solid waste, which consists of materials that have lost usefulness and is often called garbage, refuse or rubbish (Aforo, 2010). Liquid waste, which could occur during bathing, washing, cooking, or sanitation, is a

Cite This Article:
Ebo, P. (2026). Household waste management, community behavior, and sustainability challenges in urban areas. *Waste, Society and Sustainability, 3* (1), 1-16. https://doi.org/10.61511/wass.v3i1.2026.2513

by-product that is poorly handled in most societies because of poor drainage systems and small-scale facilities (Environmental Protection Agency, 2018). According to McAllister (2015), waste management between its production and disposal is critical in protecting human health and ensuring the quality of the environment.

In Ghana, national policies such as the Environmental Sanitation Policy of 2010 and the Sanitation and Waste Management Expansion Programme require that by 2030, all municipal authorities in Ghana must be able to achieve a minimum of 80 percent safe collection and processing of household solid waste (Environmental Protection Agency, 2019).Ghana, in accordance with the United Nations Sustainable Development Goal 11.6, is also committed to ensuring that the negative environmental impact of cities is significantly mitigated by enhancing waste management and sanitation (United Nations Statistics Division, 2017). Against these policy standards, there are still a number of municipalities that fail to meet these standards, and this indicates a failure to bridge the policy intent and implementation gap.

The problem of waste management in Ghana needs to be explained in the context of global modernisation and economic transformation. Migbodzi (2023) note that due to the pursuit of modern lifestyles in society, household wastes have risen drastically in quantity and complexity, and this has strained the limits of local governments. The Ghana Statistical Service (2012) indicates that the amount of municipal solid waste that is collected and safely disposed of in the country has only achieved 55 percent of the targets set by the EPA of 80 percent by 2030. In comparison, the rate of recycling within the country is lower than that in the West African region, with only about 12% (Adu-Boahen et al 2014). Ahmed & Ali (2004) also note that, although waste disposal was of little concern in the previous decades because of low populations and land availability, in the current urbanisation era, disposal methods using conventional technology are no longer adequate and may harm the environment. The consequence has been increased uncontrolled dumping, inconsiderate littering and use of poor open spaces to dispose of their refuse, which has been reported in both urban and rural societies within Ghana (Oteng-Ababio, 2010). Regional statistics provided by the West African Sanitation Forum indicate that in the major cities, on average, 30 to 50 percent of the population is not regularly collected (USAID, 2021). In this greater context, municipalities such as Awutu Senya East tend to show even greater rates of uncontrolled dumping and inconsistency of services.

The household waste is commonly dumped in gutters, open drains, street systems and bare land in many Ghanaian towns and districts, including Awutu Senya East, where the condition is not sanitary, and this is a breeding ground for various vectors like mosquitoes, flies and rodents. It has been studied that the practices are a major cause of such diseases as malaria, diarrhoeal infections, respiratory tract diseases, and skin infections (Fewtrell et al., 2005). According to Aforo (2010), in most municipalities, more than 90 percent of the household wastes are burnt, discarded in the open fields or deposited at the open dumpsites with little or no supervision. Likewise, Bayor (2018) discovered that over three-quarters of households in the Awutu Senya East District were using public dumpsites, with others resorting to crude dumping using gutters, markets and backyards, a situation that is also common in other expanding districts.

This is aggravated by the fact that the infrastructure is limited, the frequency of waste collection is low, people have not been sensitised appropriately, and the implementation of environmental sanitation laws is weak. As Manga et al. (2008) note, most of the waste management in Ghana is still primitive and is more concentrated on collection and dumping as opposed to the use of integrated waste management, such as recycling, composting, or recovery of the resource. Zhu et al., 2007 attributed these inadequacies to a lack of financial resources, low institutional capacity, bad governance structures, as well as ineffectiveness of sanitation policies. Mosler & Martens (2006) also note that low general awareness, lack of environmental knowledge, and poor attitude at home are other factors that hinder better waste management behaviour. Akolgo-Azupogo (2025) and Sharma et al. (2025) further contribute that poor household storage, poor compliance, and poor participation of

communities are the four elements that diminish the effectiveness of waste collection services despite their existence.

In addition to infrastructural and institutional limitations, socio-economic traits and behavioural inclinations at the household level influence household waste management results to a large degree. The literature shows that income, education level, family size and house status play a crucial role in contributing to the rate of waste production and the method of garbage disposal (Fewtrell et al., 2005). Households with low income are also prone to informal disposal of their wastes because they have less access to formal waste collection services, as compared to households with better educational attainment, who will have better waste management behaviours, such as storage in safe containers and meeting the required collection systems.

Environmental awareness, attitudes to sanitation and perceived responsibility to waste management are other behavioural aspects that further mediate household practices. In situations where waste management is mostly considered the responsibility of the local governments, domestic involvement in waste disposal is usually poor, especially when sanitation bylaws are unevenly enforced (Akolgo-Azupogo, 2025). Failure to follow the compliance schedule due to irregular collection schedules is also a way of facilitating indiscriminate dumping and open burning when there is a lack of storage facilities.

Institutional issues, such as poor coordination among municipal governments, contractors, and informal service providers, as well as fragmented governance structures, continue to limit effective service delivery (Bayor, 2018). This ineffectiveness erodes the population's confidence and hinders prolonged domestic participation in waste management programs. All these socio-economic, behavioural, and institutional factors highlight the importance of combined waste management strategies to go beyond collection and disposal to include community education, community involvement, and regulatory action. These factors are therefore subtle, and a careful appreciation of these factors is essential in coming up with context-sensitive household waste management approaches.

The case of the Awutu Senya East District, which is an enclave that is rapidly growing as an urban area, is no exception. High population density, development of residential settlements and commercial activity have led to large populations of domestic waste. However, access to containers of refuse, regular collection, drainage systems, and waste disposal systems at the household level is still inadequate. The scenario is reflective of trends at the national level as outlined by the World Bank (2018), which estimates increases in the level of municipal waste generated by the globe, with the developing countries carrying the biggest management load. According to Miezah et al. (2015), Ghana has a capacity of waste production of 0.47 kg per person/day, which, when expressed in terms of loads, creates significant dumps of waste per day per person, which have to be properly handled to avoid environmental destruction. Similar to other municipalities that Aforo (2010) and Bayor (2018) researched, Awutu Senya East demonstrates a high level of open dumping, inconsistent collection, pouring of liquid waste into gutters, and discontent with current waste management practices among the residents.

The gap between the production of waste and the management of the waste still increases, although there are constant interventions as they collaborate with other waste management firms and national sanitation programmes. In the absence of clear knowledge about the nature of waste produced, household behaviour and approaches that can be adopted to manage waste, household policy responses may end up being misplaced and ineffective. It is consequently important that empirical research is conducted to analyse the household waste management behaviour in the particular situation of the Awutu Senya East District. Furthermore, this study aims to describe the waste produced by people in the Awutu Senya East District, examine the waste management activities used by the Awutu Senya East District households, and identify strategies that enhance waste management in the Awutu East District.

2. Methods

2.1 Research design

This research design was a quantitative descriptive research design where the researcher looked into the practices of household waste management at the Awutu Senya East District. Descriptive research is useful in making a true picture of the current situation, activities and attitudes in a real-life environment (Blanche et al., 2006; Ampem et al., 2025). The quantitative methodology was used since it enables the creation of numerical data to interpret them statistically and to generalise them to a broader population (Monfared & Derakhshan, 2005). This method was suitable in responding to the three research questions that aimed at quantifying the types of waste, analysing the household waste practices, and identifying the strategies that would be used to improve waste management within the district.

2.2 Population and sample

The population was all permanent residents of Awutu Senya East District who are the generators of household waste and who are directly influenced by the waste management practices in line with the definition of population by Punitha et al. (2025). The total number of household respondents was one thousand five hundred (1,500), taking into consideration that this sample was sufficient to make conclusions concerning waste disposal behaviours and waste management practices in the district. In order to have more statistical sufficiency and representativeness of the sample in terms of household waste management practices within the district, the study adopted a large household sample selected from a variety of residential environments. The sample size made the findings more robust and minimised sampling error, hence increasing the generalisability of the findings in the context of the district.

2.3 Sampling procedure

A multi-stage sampling method that is close to that of Bayor (2018) was applied, which combined purposive and convenience sampling to provide a wide representation. The places were purposely chosen with high population density and varying features, since waste is usually greater there (Asiamah, Mensah & Oteng-Abayie, 2017). In the sampled communities, the household heads were sampled conveniently, and the reasoning was that household heads have sufficient information about the waste generation and disposal habits (Nyatsanza & Ndebele, 2016). Irrespective of these advantages, the research acknowledges some methodological limitations. The use of self-reported information can be subject to recall bias and social desirability bias, especially on sensitive waste disposal practices that are environmental in nature. Also, convenience sampling at the household level, although feasible, can restrict complete representativeness beyond the sampled communities. However, the large sample size, use of structured instruments, and rigorous validation procedures enhanced the empirical strength of the study.

2.4 Data collection instrument

A structured questionnaire was used to collect data; this questionnaire was patterned on the literature and in accordance with the objectives of the study (Opoku-Mensah, 2023). The questionnaire recorded demographic information, waste generated, waste disposed of, frequency of waste collection, and views on approaches to enhancing waste management. Questionnaires can be structured in a way that is efficient for collecting quantitative data regarding practices, conditions, and perceptions (Cohen, Manion & Morrison, 2000; Ogah, 2013). The instrument was pre-tested on a similar population to make it more reliable and valid (Ogah, 2013).

Questionnaires were administered face-to-face with trained research assistants who were conversant with the local setting and languages. This method was useful in reducing non-response bias, clarifying questionnaire items where needed, and enhancing response accuracy, especially among respondents who had low formal education. Fieldwork was conducted within a specified time to achieve consistency in responses and to minimise time-based changes in waste generation patterns that can occur due to seasonal or festive processes.

2.5 Validity and reliability

The questionnaire was systematically validated to achieve methodological rigour. First, the items were created based on the research objectives and available empirical research on household waste management practices. Content and face validation of the first draft of the instrument was done by three environmental science experts in research methodology and waste management. Their comments centred on the clarity of wording, suitability of the items to the study objectives, and appropriateness of response options. According to their recommendations, ambiguous items were amended, unnecessary items were eliminated, and new items were introduced to enhance content coverage. This step ensured that the instrument adequately captured the constructs of interest and increased its content validity. The questionnaire was further pre-tested among 50 households in a neighbouring community with similar socio-demographic attributes before the main data collection. The pre-test determined the clarity of items, the average time taken to complete the questionnaire, and respondents' understanding of the questions. The pilot responses were analysed to determine internal consistency reliability of the multi-item scales. Cronbach's alpha ranged between 0.72 and 0.84 among the major sections of the questionnaire, which is higher than the recommended value of 0.70 in social science research (Bayor, 2018). Items with low item-total correlation were edited or dropped before final administration. The pre-test therefore ensured that the instrument was valid and reliable for the main study.

2.6 Data analysis

The data collected were verified for completeness, coded, and analysed using descriptive statistics such as frequencies and percentages, in line with Olufade George et al. (2023) on quantitative data processing. For Research Question 1 (types of waste generated), frequency counts and percentages were used. Research Question 2 (household waste management practices) underwent similar analysis to identify common behaviours and patterns. Research Question 3 (strategies to improve waste management) was summarised using frequency and percentage distributions. This method ensured that all research questions were addressed using appropriate quantitative techniques aligned with the measured variables.

2.7 Ethical considerations

The research was conducted using ethical standards to preserve the rights of participants and the integrity of the research process. Before data collection, relevant institutional and district authorities were approached, and community leaders were informed about the purpose and rationale of the study. Study participation was completely voluntary, and the objectives and procedures were explained to respondents, including their rights to refuse or withdraw at any time without adverse effects. Informed consent was obtained prior to questionnaire administration. The pilot study did not include participants in the main study to avoid contaminated responses, and the same ethical principles applied during pre-testing, including anonymity and voluntary participation.

Confidentiality and anonymity were ensured by not collecting personal identifiers on the questionnaires. Data were safely stored, accessible only to the researcher, and

processed in aggregate form so that individual households could not be identified. Respondents were assured that their answers would not affect their access to municipal services or community benefits. These ethical considerations ensured adherence to the universally accepted principles of respect, beneficence, and justice in quantitative research.

3. Results and Discussion

3.1 Types of waste generated in Awutu Senya East District

The type of household waste produced in the Awutu Senya East District was established using frequency and percentage distribution in order to determine the relative composition of waste streams within the district. The results indicate that food scraps constituted the largest proportion of household waste, accounting for 661 responses (44%). This was followed by plastic waste, 378 (25%), tin cans, 187 (13%), cardboard, 88 (6%), packaging materials, 81 (5.0%), and waste papers, 65 (4%). The smallest quantity of waste generated by participants was clothing materials, 40 (3%). To further illustrate the distribution of waste types generated in the Awutu Senya East District, the results are presented in figure 1 below.

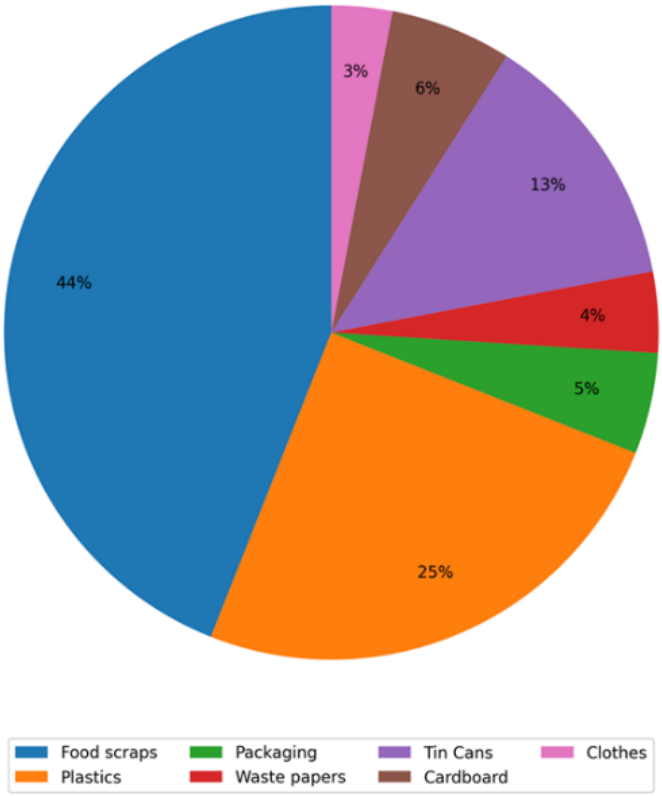

Fig. 1 Distribution of types of waste generated in Awutu Senya East District

The findings clearly demonstrate that food scraps represent the most dominant type of waste generated in the district. The observation further revealed that the key waste categories produced were food scraps, plastic waste, and packaging materials, which together account for a significant majority of the total household waste stream. The predominance of organic waste suggests that daily food preparation, consumption patterns, and post-harvest activities contribute substantially to household waste generation.

This observation is consistent with Denteh et al. (2018), who observed that biodegradable organic waste is largely driven by food consumption patterns, particularly in communities with agrarian characteristics. The Awutu Senya East District is largely agricultural in nature and therefore generates high amounts of food waste (Awutu Senya

East District Analytical Report, 2010). This situation may also be explained by the fact that the district is not a metropolitan or highly industrialised area; hence, large-scale industrial, hazardous, or gaseous waste associated with mass manufacturing processes is relatively minimal.

Plastic waste also contributed significantly to the overall waste composition. This may be attributed to lifestyle changes and increasing modernisation within the district. The finding aligns with Singh and Sharma (2002), who argue that rising plastic waste is linked to population growth and shifts in consumption patterns, particularly the increased reliance on plastic packaging instead of traditional reusable containers such as bowls and baskets. The growing use of sachet water, packaged food items, and single-use plastics may further intensify the accumulation of plastic waste in the district.

The implications of these waste patterns are substantial for environmental management and public health. Food debris disposed of indiscriminately may lead to clogged drainage systems, thereby increasing the risk of flooding during the rainy season (Yusof et al., 2002). In addition, decomposing organic waste may create breeding grounds for rodents and insects, which can facilitate the transmission of parasitic and zoonotic diseases (Abeyewickreme et al., 2012). Sanitation reports released by the Awutu Senya East District Assembly (2014) further indicated that improperly dumped waste in open areas comprises leftover food, broken bottles, general garbage, faecal matter, and wastewater. This underscores the need for improved waste segregation, enhanced community education, and stricter enforcement of sanitation regulations.

3.2 Waste management activities used by the Awutu Senya East District households

To discuss the waste management activities used by the Awutu Senya East District households, the results can be seen in the table 1. Calculations of frequency and percentage distribution were carried out to determine the disposal site being used by households in the Awutu Senya East District. Table 1 illustrates that most of the respondents, 900 (60%), could dispose of their waste at dumpsites, hence it was the most popular disposal technique. This was then trailed by disposal in the backyard, picked up by 360 respondents (24%). The residents, in smaller proportions, used the roadside (5.27%), gutter (3.9%), open spaces (3.53%), or public skips (3.3%) as the disposal points. Such results suggest that even with the existence of official waste management systems, open dumping at crude dumpsites is still the prevailing action. This is in agreement with Dhanuja (2006), who reported that dumping sites have become the most effective way through which most developing nations dispose of waste. In the same manner, Adu-Boahen et al. (2014) established that a significant percentage of households still use refuse dumps as the major mode of waste disposal.

Table 1. Frequency and percentage of places of waste disposal

Disposal site	Frequency	Percentage
Backyard	360	24.0
Dumpsite	900	60.0
Roadside	79	5.27
Skip	50	3.3
Near gutter	58	3.9
Open spaces	53	3.53
Total	1,500	100

The survival of dumpsites, roadside dumping, and disposal against gutters present serious threats to the health and environment of the people, including the contraction of diseases, polluting the water bodies, and breeding of vectors such as flies, mosquitoes and rodents (Aderemi & Falade, 2012). Such practices imply poor knowledge of households of optimal management of waste (Nixon & Saphores, 2009) and a lack of adequate access to well-organised disposal sites. The field study also found that in some homes, small piles of

refuse were kept in the backyard of their houses, and they would, at times, burn the refuse. According to the previous findings, such practices are prevalent in places where waste collection services are inconsistent, expensive or inaccessible (Adepoju & Salimonu, 2010; Boadi & Kuitunen, 2003).

There was a frequency and percentage analysis to establish the frequency with which the households in the study area would collect and dispose of their waste every week (table 2). The findings showed that the most common effect was disposing of their waste on a day-to-day basis, with 779 (51.9%) people disposing of their waste every day. Further, 301 respondents (20.1%) waste collection and disposal were done once a week, whereas 204 (13.6%) respondents reported more frequent or less frequent disposal, like when cooking or disposal of bins. A smaller percentage, 123 (8.2%), discarded their garbage twice a week, and 43 (2.9%) three times. It is important to note that 50 respondents (3.3%) presented that they disposed of no waste whatsoever during the week.

Table 2. Frequency and percentage of waste collection and disposal times in a week

Number of times	Frequency	Percentage
Daily	779	51.9
Once	301	20.1
Other	204	13.6
Twice	123	8.2
Thrice	43	2.9
Not at all	50	3.3
Total	1,500	100

The results indicate that disposal on a daily basis is the mainstream activity in the district. This is in line with Eshun (2013), who indicated that the majority of the residents in the KEEA Municipality disposed of waste daily in the morning to avoid both adverse environmental and health effects. Considering the fact that the number of biodegradable elements in the household waste in Ghanaian societies is high, long storage can result in decomposition, bad smell and exposure to diseases like cholera and diarrhoea. It can also provide breeding areas to vectors such as flies, mosquitoes and rodents (Zhu et al., 2007).

In addition to the dominance of daily disposal, the distribution also indicates the underlying access to services, household size and behavioural determinants on the practice of waste management. Homes that indicate weekly or other inconsistent disposal could be limited by access to the availability of shared containers, collection, or transportation encouragement temporary household garbage storage. Though these practices may be unavoidable at times, they may increase the risk of sanitation particularly in overcrowded neighbourhoods. On the other hand, the comparatively low percentages of households that dispose waste once or twice a week imply that the intermediary collection patterns are not as institutionalised in the district. The minor yet significant group that claimed to have not discarded any waste whatsoever during the week could represent such practices as backyard dumping, burning, reuse or use of informal collectors. These trends underscore the importance of the differentiated waste management interventions, which involve the integration of routine collection services with the community education in the disposal behaviour safety, which should empower the local health outcomes and sustainable urban sanitation planning and long-term policy practice among the local authorities. Therefore, disposal on a regular or daily basis is important to mitigating health risks as well as the state of the environment. The same authors observe that frequent cleaning up of the waste will avoid vermin, smell and overall unpleasantness (Adepoju & Salimonu, 2010).

The frequency and percentage distribution were used to analyse the level of satisfaction of the residents with waste management institutions in Awutu Senya East District. The statistics indicated that 678 respondents (45.2%) were either content or extremely contented with the performance of waste management organisations (Zoomlion) and Environmental Health Officers. On the contrary, 822 participants (54.8%) were not

satisfied with this, meaning that waste management services offered by these institutions are not considered satisfactory (see table 3).

Table 3. Frequency and percentage distribution of the level of satisfaction with the work of the waste management companies

Level of Satisfaction	Frequency	Percentage
Very satisfied	469	31.3
Satisfied	209	13.9
Unsatisfied	790	52.7
Very unsatisfied	32	2.1
Total	1,500	100

The causes of this discontent must have been the poor quality of waste collection and disposal services in the Tain District. The locals have also complained of abnormal waste collection patterns, which corroborates the findings of Burntley (2007) on the management department problems. Yoada et al. (2014) also made similar conclusions and reported a widespread dissatisfaction even in such urban centres as Accra, where irregular waste collection and high prices available through private services were commonly noted as problems. This discontent can be explained by the fact that waste management services in the district have been privatised recently.In the past, waste management in Ghana was the responsibility of the Metropolitan, Municipal and District Assembly (Yoada et al., 2014). The collection of the waste in Awutu Senya District is currently shared between Zoomlion, the Environmental Health Management Department, and the District Assembly. Zoomlion also offers shared bins as well as the Assembly (Assembly Awutu Senya East District Assembly / Zoomlion, 2025).

Observations made during the field revealed that there were overflowing skips with uncollected trash that led to dissatisfaction in the community. These circumstances may cause health hazards such as typhoid and cholera. This is similar to the argument by EPA (2017) states that the waste management services of most developing nations do not satisfy the needs of the community. According to Manga et al. (2008), the waste services are, in most cases, primitive, only looking at collection and dumping without proper management policies. Conversely, Denteh et al. (2018) have discovered that households in Vittin were pleased with their waste management services because of the frequency of collection. The anomalies could be the result of inefficiency in operation and poor management skills (Ogwueleka, 2009). Other issues, like a lack of equipment, expertise, and the social orientations of people on environmental health, also complicate the waste management situation in Ghana (Ranjan et al., 2025).

3.3 Strategies that enhance waste management in the Awutu Senya East District

To discuss strategies aimed at improving waste management in the Awutu Senya East District, the results are presented in Table 4 below. In order to identify viable and community-driven solutions for enhancing waste management practices, respondents were asked to indicate the strategies they believed would most effectively improve the current system. Their responses provide valuable insight into local perceptions and priority interventions. The statistics reveal that the highest proportion of respondents (590, 39.3%) indicated the need for sufficient waste collection bins and communal containers. This finding suggests that the availability and accessibility of designated dumping points are perceived as a fundamental requirement for improving waste management in the district. For many residents, inadequate infrastructure remains a major barrier to proper waste disposal practices.

The provision of adequate bins and communal containers is essential because their absence often results in indiscriminate dumping and littering within neighborhoods. This observation aligns with Cointreau (2006), who argues that insufficient waste storage facilities at the household and community levels significantly contribute to environmental sanitation challenges. Similarly, Puopiel & Owusu-Ansah (2014), as well as Adu-Boahen et

al. (2014), affirm that the provision of bins and containers ranks among the most preferred and practical interventions households support to enhance solid waste management. Overall, these findings highlight the critical role of infrastructure development in strengthening waste management systems. Beyond behavioral change initiatives, tangible improvements in waste collection facilities appear to be a necessary first step toward achieving sustainable environmental sanitation in the Awutu Senya East District.

Table 4. Frequency and percentage distribution of strategies to improve the waste management situation in Awutu Senya East District

Strategies	Frequency	Percentage
Supply of waste collection bins/ containers.	590	39.3
Zoomlion sweeps and collects daily.	300	20.0
Sanitation education and implementation of byelaws.	320	21.3
Hire additional Zoomlion workers.	151	10.1
Minimise waste generation/ use of polythene bags at home	64	4.3
Daily burning of house waste.	24	1.6
Free collection of waste by Zoomlion workers.	2	0.1
Frequent organising of communal labour	34	2.3
Sufficient toilet facilities for the community.	10	0.7
Dumping sites away from town.	5	0.3
Total	1,500	100

The results show that 300 respondents (20%) believed that daily sweeping and waste collection by Zoomlion would significantly improve sanitation effectiveness, while 151 respondents (10.1%) stated that employing more workers would improve the waste management system. The problem of limited staffing has long been known, with poor human resources being one of the factors that lead to slow waste collection and uncontrollable waste disposal (Boadi & Kuitunen, 2003). Such scholars also opine that the lack of enough staff can result in refuse bins not being picked up and dumping sites being used, which are not approved, particularly in hard-to-reach places.

It was also emphasised that 320 respondents (21.3%) had to mention education on sanitation and enforcement of bye-laws, which demonstrated the necessity of behavioural change and stricter regulation. This is in line with the results of Asomanin & Worlanyo (2015) and Obiageli et al. (2016), who observe that the laxity in the enforcement of sanitation rules permits the practice of improper disposal acts to continue. Obiageli et al. also found that, unless the stringent enforcement is carried out, residents tend to adhere less to correct waste disposal norms. A very limited percentage of the respondents supported other measures like reduction of household waste (4.3%), frequent communal labour (2.3%), adequate toilets (0.7%), and dumping out of town (0.3%). Free collection of waste was only proposed by a very small number (0.1%) of them, but high user charges have been found to drive poor disposal elsewhere (Asomanin Anaman & Bernice Nyadzi, 2015).

The results in table 4 show that there is a very high rate of awareness among the respondents on the health hazards of poor management of household waste. A huge majority that the poor management of waste is correlated with malaria and diarrhoeal outbreaks (95.9%), this indicates that respondents have a clear understanding of the relationship between poor maternal waste control, breeding mosquitoes, and transmission of vector-borne diseases. In the same way, 98.5 % acknowledged that rodents, animals and birds in waste dumps transmit diseases, thus showing the understanding of routes of zoonotic transmission and contamination. Nearly all respondents (99.3%) also concurred that residents living near dumpsites are at a high risk of respiratory-related, eye irritation, water-based infections, and that there was a high awareness of environmental-health externalities. Lastly, 99.2% responded in the affirmative that improper waste disposal pollutes food and water sources, indicating that most people have significant knowledge of the correlation between waste, sanitation, and gastrointestinal diseases.

Table 5. Analysis of knowledge on waste management practices and subjective health effects

Statement	Agree		Disagree	
	N	%	N	%
Improper management of waste is responsible for epidemics like malaria and diarrhoea.	1,438	95.9	62	4.1
Rodents, animals and birds scavenging through waste dumps spread diseases.	1,478	98.5	22	1.5
People living near waste dumps suffer more from respiratory problems, eye diseases and water-borne diseases.	1,489	99.3	11	0.7
Improper disposal of household waste can lead to contamination of food and water.	1,488	99.2	12	0.8

All the findings indicate that the community is highly informed in regard to the health consequences of improper management of waste. This is in line with a study conducted in Ghana and other developing environments where residents who lived close to the dumpsites complained of a high rate of malaria, diarrhoea and respiratory diseases due to substandard environmental sanitation (Aforo, 2010). The same research in Nigeria and India reported that people were highly aware of the relationship between unthoughtful dumping and outbreaks of diseases, although the actual waste management behaviour was poor (Akafia, 2014). The high level of concurrence on all the statements in this study justifies the perception that exposure to badly managed waste inflates risk perception, particularly among communities that are faced with high rates of having difficulties in waste collection.

Nonetheless, these findings are reminiscent of a widely accepted paradox in the literature on waste management: the knowledge level does not necessarily correlate with appropriate practice. Research in Accra, Lagos, and Nairobi revealed that behaviour change is hampered by structural elements like inconsistent collection services, a deficit of bins, poverty and lax enforcement despite health risks being understood by residents (Ranjan et al., 2025). Thus, although the respondents are well aware of the health hazards, waste management involves more than awareness; it involves infrastructure, enforcement, and long-term education campaigns by the government to the people. In general, the outcomes indicate that the population is aware of the health outcomes of improper waste management, which align with the past studies, and the necessity of translating this awareness into more effective household and city waste management.

4. Conclusions

The results of this research indicate that there exist significant problems with respect to household waste management in the Awutu Senya East District. The excessive dependence on informal disposal of waste, especially at dumpsites, is a great environmental and human health hazard. These risks are further worsened by the large amounts of organic waste produced, which is mainly in the form of food scraps, creating unsanitary conditions which encourage the invasion of vectors like mosquitoes and rodents. Moreover, most of the households, which dispose of waste daily, indicate dissatisfaction with the current waste management services, in part, because of inconsistent waste collection and lack of disposal facilities. This dissatisfaction shows the severe mismatch between waste production and proper disposal, which shows the inefficiency of the existing system of waste management.

These activities put the residents at great health risks. Organic waste causes flies, rodents and mosquitoes, thereby adding risks of malaria, cholera, diarrhoea and other diseases which are caused by vectors or water. Backyard burning is also a source of smoke that causes respiratory irritation to children and the elderly.

The paper reveals that the existing measures are inadequate to tackle the difficulties in contemporary waste production, and a paradigm shift is necessary. With increased urbanisation, there is a need to adopt combined waste management strategies that take into

consideration not only the health, but also the environmental sustainability of people. Unless these challenges are addressed, communities will continue to experience the negative impacts of waste mishandling, including health crises among the population, environmental degradation, and a poor quality of life.

The effects are not only environmental but also those on the health of the people. Uncontrolled dumping and irregular collection pollute the water channels, diminish the quality of the air and cause more diseases, increasing the burden on the already scarce health facilities locally. Increasing the strength of waste management in the district is therefore not just an environmental issue but a very important issue of public health.

Acknowledgement
The author would like to express their sincere gratitude to the anonymous reviewers for their invaluable comments and insightful suggestions, which greatly contributed to improving the quality and clarity of this manuscript.

Author Contribution
Contributed to the literature search, interpretation, writing, and proofreading of the manuscript. All author has read and agreed to the published version of the manuscript.

Funding
This research received no external funding.

Ethical Review Board Statement
Not available.

Informed Consent Statement
Not available.

Data Availability Statement
Not available.

Conflicts of Interest
The author declares no conflict of interest.

Artificial Intelligence Use Statement
The author declare that no Artificial Intelligence (AI) tools were used in the design, data collection, data analysis, or interpretation of results in this study. AI-assisted tools were only utilized for language refinement and grammatical editing to improve clarity and readability of the manuscript. All substantive intellectual contributions, including research design, analysis, and conclusions, are solely the responsibility of the author.

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