

## Effects of Solid Waste Disposal on the Occurrence of Common Diseases in Sabon Gari Local Government Area of Kaduna State, Nigeria

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### ABSTRACT

The problem of environmental sanitation has remained unresolved over the years particularly in the few urban centers arising from increased population density, commercial and industrial activities. The study examined the effect of solid waste disposal on common health diseases in Sabon Gari local government area (LGA) of Kaduna State. Questionnaire is a major research instrument and was administered to 418 purposively selected samples in the six metropolitan areas having solid waste dump sites. The areas include: Samaru, Basawa, Sabon Gari Town, Palladan, Dogarawa and Bomo. Descriptive statistics, including frequencies, percentages, tables, and charts, were used to characterize and summarize the study data. The result shows that papers (26.1%) and broken bottles (21.3%) were the solid waste types generated mostly in the study area of which paper waste was mostly present in Bomo (38.5%). Weekly (43.3%) removal of solid waste was mostly practiced in the study area. The commonest diseases were malaria (30.4%) and Diarrhea (24.4%) in the study area. The periodic evacuation of solid waste (43.5%) and regular sanitation (25.8%) recorded the most measures used to combat the occurrence of common diseases which was practiced most in Bomo (82.1%) and Sabon Gari town (52.4%) respectively. The government (59%) plays the key role in managing domestic solid waste in the study area. The study recommends that regulatory laws governing waste disposal and management should be strengthened through public enlightenment campaign which will minimize indiscriminate dumping of waste and reduce environmental related health problems.

**Keywords:** Solid Waste, Waste Disposal, Public Health, Disease, Sanitation.

### 1.0 INTRODUCTION

The growth in the nation industrialization and globalization has resulted into increase in population and generation of solid waste. Nigeria been the most populous in the continent of Africa and ninth in the world makes her one of the largest wastes producing country generating more than 32 million tons of waste per annual in which only 20-30% is collected and the rest are dumped in unsafe places (Castellani, 2025). Solid waste management in Nigeria is characterized by insufficient coverage of the disposal in most cities coupled with inefficient method of collection of waste in which co-disposal of both municipal and hazardous waste takes place in unlined dump sites, open space, drainages and other unauthorized places that promotes indiscriminate disposal. This act put humanity at risk by aiding the spread of infectious diseases such as covid-19 that have shock the entire world since its discovery in late December 2019 killing thousands of thousands of people. Historically, human advancement has been intrinsically linked to the management of solid waste due to its effect on both public and environmental health. Solid waste management (SWM) has a long and convoluted history (Singh *et al.*, 2026). Systems of SWM can trace their roots all the way back to ancient times. One of the first instances of waste management occurred in the 4th century A.D.

with the Ancient Greeks. The Greeks had to deal with the multiple challenges of aligning waste removal systems with a growing population, lack of space, and sanitation problems. Waste management practices were very rudimentary with trash just being collected and transported to pits outside the city. However, it was not until urban populations boomed that garbage was viewed as a threat to human and environmental health. Cities began to grow rapidly to accommodate the growing population and conditions began to worsen for these cramped communities. The plagues that affected Europe between the 14th and 16th centuries were often perpetrated by vermin that thrived in the unsanitary urban conditions that were common during this time. Early waste-management techniques were developed during this period to combat the spread of disease but the political and social problems of the time did not see great strides in waste management (Örün and Erkmen, 2019).

Environmental health problems associated with poor solid management has become increasingly one of the local, state, national and international problem in the world, where by government and nongovernment organization have become much concerned the problem that create serious damage which tent to ruin the environment to a greater extent. However, the



### 2.3 Reconnaissance Survey

It involves familiarization tour of the study area in order to identify communal waste collection skips, the dump sites and land fill sites. The researcher interacted with the residents around the dump sites. Also, some spot assessments and field observations were made on the waste disposal. The researcher met with the Sabon Gari Waste Management Board officials with a bid to gather some information on the research problem.

### 2.4 Types of data used

- (i) Data on the socio-economic characteristics of the respondents
- (ii) Data relating to types of the wastes generated in Sabon Gari LGA
- (iii) Data on the methods being adopted in wastes disposal
- (iv) Data concerning the types of diseases caused by wastes in the study area
- (v) Data relating to influence of waste disposal on common diseases
- (vi) Data on policies governing the waste disposal in the study area
- (vii) Data regarding sources of the solid wastes
- (viii) Data on the agency responsible for solid waste management
- (ix) Data on techniques adopted to manage solid waste in the study area

### 2.5 Sources of Data

The sources of data for this study were from primary and secondary sources. The primary data were obtained from the field through various data collection techniques, including questionnaire survey, interviews, and field observation.

#### 2.5.1 Primary Source

Data were primarily source using questionnaire as a major research instrument for the study. The questionnaire was designed to collect data on the stated objectives and also the research questions. The research conducted Focus Group Discussion (FGD) among the residents in the study and in order to collect additional information on the research problem. Data collected through questionnaire survey were on the following variables: place of disposal, method of disposal, availability of bins for storing waste, mode of collection and payment for collection and risk of improper management.

#### 2.5.2 Secondary Data

Secondary data were obtained from relevant documents: books, articles, internet sources newspapers, journals, paper presentations and related relevant documents especially from the ministry of environment, Kaduna North Metropolitan Development Board (JMDB).

### 2.6 Sample Size and Sampling Techniques

The study area has a population of 53,501 (NPC, 2006). More recent projections suggest that the population has increased to approximately 97,488 as of 2026, (JMDB), reflecting rapid urban growth and rural–urban migration. It covers six settlements where solid wastes are located namely: Samaru, Basawa, Sabon Gari town, Palladan, Dogarawa, Bomo.

The population of the study area is estimated using exponential projection because of errors in data collection, which is given as: -

$$P_t = Pe^{rt}$$

where:

- $P_t$  = projected population in 2026,
- $P$  = population in the base year (2006),
- $e$  = exponential constant,
- $r$  = annual growth rate,
- $t$  = time interval between the base year and projection year.

The projected population of the study area was estimated at 97,488 persons. The sample size was determined using the Yamane (1976) formula:

$$n = \frac{N}{1 + N(e)^2}$$

where:

- $n$  = sample size,
- $N$  = projected population (97,487),
- $e$  = margin of error (0.05).

Substituting into the formula:

$$n = \frac{97,487}{1 + 97,487(0.05)^2}$$

$$n = \frac{97,487}{244.72}$$

$$n = 398 \text{ samples}$$

To compensate for non-response and improperly completed questionnaires, an additional 5% contingency was added:

$$n = n + (n \times r)$$

where:

- $r$  = expected non-response rate at 5%

$$\text{If } n = 398$$

5% non-response:  $398 \times 0.05 = 19.9 \approx 20$   
a contingency of 20 questionnaires was added, bringing the total sample size to 418 respondents, which were proportionately distributed among the selected settlements.

The sample size for each settlement was determined using proportionate allocation:

$$n_h = \frac{N_h}{N} \times n$$

where:

- $n_h$  = sample size for settlement  $h$
- $N_h$  = projected population of settlement  $h$
- $N$  = total projected population (97,488)
- $n$  = total sample size (418)

Table 3.1: Sample size by settlement dump site

Settlement	Population (2006)	Projected Population (2026)	Percentage of Total Population (%)	Sample Size
Samaru	5,389	9,820	10.07	43
Basawa	11,035	20,108	20.63	86
Sabon Gari Town	8,209	14,958	15.34	64
Palladan	8,337	15,191	15.58	65
Dogarawa	10,522	19,173	19.67	82
Bomo	10,009	18,238	18.71	78
Total	53,501	97,488	100.00	418

Source: Field survey (2026)

The purposive sampling techniques will be adopted to sample the respondents in each settlement. This technique is found appropriate for identifying respondent that are knowledgeable about the research problem under investigation.

### 2.7 Methods of Data Analysis

The study will make use of descriptive statistics such as the calculation of mean, frequency distribution, and percentages to summarize the data in tabular forms for easy analysis and interpretation. Hence, Available data was presented using tables simply constructed in rows and columns. In addition, statistical mapping of the data will be produced such as graphs and charts that will produce these results of research clearly.

### 3.0 RESULTS AND DISCUSSION

This chapter presents the data analysis and discussion of the results regarding the effect of solid waste

disposal on the occurrence of common diseases in Sabon Gari local government area, Kaduna State, Nigeria. It includes the analysis of socio-economic characteristics of the respondents, types of domestic solid wastes generated in the study area, frequency of solid waste removal from dumpsites domestic solid waste management principles employed in the study area, common diseases arising from solid waste disposal effectiveness of the domestic solid waste management principles employed in the study area as well as a comparison of the types of domestic waste management principles and their effectiveness in the study area.

### 3.1 Socio-economic Characteristics of the Respondents

The socio-economic characteristics of respondents such as gender, age, marital status, level of education and occupation were examined and presented in Table 1. The results show that 63.2% of the respondents are males, while 36.8% are females. This pattern could be traced in part to social and religious factor as a result of less dominant role performed by women especially in Northern Nigeria. This is expected to have negative impact on solid waste management given the view of Issa (2023) that women play a key role in managing their natural surroundings and adopt several mechanisms to deal with the kinds of environmental crisis they face. In addition. Assega *et al.*, (2021) noted that women are generally responsible for human waste disposal of children and cleanliness of latrines and other facilities.



Table 1: Socio-economic Characteristics of the Respondents in Sabon Gari LGA

Variable	Samaru		Basawa		Sabon Gari Town		Palladan		Dogarawa		Bomo		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Gender														
Male	26	60.5	48	55.8	55	67.1	49	76.6	38	58.5	48	61.5	264	63.2
Female	17	39.5	38	44.2	27	32.9	15	23.4	27	41.5	30	38.5	154	36.8
Total	43	100	86	100	82	100	64	100	65	100	78	100	418	100
Age (years)														
Less than 20	17	39.5	15	17.4	23	28.0	20	31.2	7	10.8	37	47.4	119	28.5
21-40	17	39.5	29	33.7	23	28.0	32	50.0	25	38.5	25	32.1	151	36.1
41-60	5	11.6	26	30.2	26	31.7	5	7.8	24	36.9	8	10.2	94	22.5
Above 60	4	9.3	16	18.6	10	12.2	7	10.9	9	13.8	8	10.2	54	13.0
Total	43	100	86	100	82	100	64	100	65	100	78	100	418	100
Marital status														
Single	14	32.6	13	15.1	43	52.4	15	23.4	13	20.0	19	24.4	117	28.0
Married	19	44.2	42	48.8	10	12.2	22	34.3	23	35.4	23	29.5	139	33.3
Separated	6	14.0	16	18.6	10	12.2	9	14.1	15	23.0	17	21.8	73	17.5
Widow	2	4.6	8	9.3	10	12.2	9	14.1	8	12.3	11	14.1	48	11.5
Divorced	2	4.6	7	8.1	9	11.0	9	14.1	6	9.2	8	10.3	41	9.8
Total	43	100	86	100	82	100	64	100	65	100	78	100	418	100
Education														
Informal	3	7.0	5	5.8	19	23.2	15	23.4	6	9.2	19	24.4	67	16.0
Primary	3	7.0	15	17.4	17	20.7	8	12.5	11	16.9	11	14.1	65	15.6
Secondary	10	23.3	25	29.1	25	30.5	32	50.0	9	13.8	20	25.6	121	29.0
Tertiary	27	62.8	41	47.7	21	25.6	9	14.1	39	60.0	28	35.9	165	39.5
Total	43	100	86	100	82	100	64	100	65	100	78	100	418	100
Occupation														
Farming	7	16.3	21	24.4	24	29.3	5	7.8	12	18.5	10	12.8	79	18.9
Civil servant	18	41.9	18	21.0	39	47.6	38	59.4	28	43.1	30	38.5	171	41.0
Trading	9	21.0	19	22.1	8	9.7	9	14.1	18	27.7	25	32.1	88	21.1
Other	9	21.0	28	32.6	11	13.4	12	18.8	7	10.8	13	16.7	80	19.1
Total	43	100	86	100	82	100	64	100	65	100	78	100	418	100

Source: Field survey (2026)



The age distribution of the respondents reveals that majority of youths are within active age group as about 64.6% of the respondents are in the age ranges of below 40 years, while respondents between the age ranges of 41-60 years accounted for 22.5% and the least were those in the ranges of above 60 years with 13.0%. This implies that information provided by the respondents for this study is reliable given the assertion of Zhang *et al.*, (2026) noted that adults can speak authoritatively on behalf of their family members on issues relating to waste generation and management.

Similarly, the result shows that 39.5% of the respondents have tertiary level of education, followed by those with secondary school which constitutes 29.0% of the respondents. This shows that the high level of literacy in the study area. This could be attributed to the high concentration of schools and higher institutions of learning in the study area and this could have a positive impact on the peoples' perception of solid waste and its management.

Also, the occupational distribution of the respondents as shown in Table 1 reveals that about 41.0% of them were employed with the civil service, followed by 21.1% engaged in trading while the least 19.1% accounted for others like carpentry, driving and welding. This shows that they are engaged in one form of activity or the other that could generate waste. The level of income an individual earns could greatly influence the amount of waste generated. Thus, information on the respondent's monthly income showed that about 12% of the respondents earn below N30,000; 24%, 42% and 19% of the respondents earn between N30,000-N50,000, N50,000- N70,000 and earn above N70, 000 respectively. Their income levels show that over 50% of the respondents earn above

N70,000 and therefore have the capacity to generate household solid wastes. The purchasing power of the populace determines the amount of waste generated in the study area. According to Jagun *et al.*, (2023) personal income influences waste generation due to its impact on individual consumption pattern. In addition, the rate of solid waste generation per capita increase as the standards of living improves (Zambrano-Monserrate *et al.*, 2021).

### 3.2 Characterization of Solid Waste Generated in Sabon Gari LGA

The study examined the categories of solid wastes generated in the study area and is shown in Table 2. The result shows that most respondents agreed that papers (26.1%) and broken bottles (21.3%) were the solid waste types generated mostly in the study area. Much of papers in the study area could be attributed to the presence of more offices and other paper utilizing outlets. This waste type is re-useable and recyclable and if adhered to can reduce solid waste significantly in the municipality. The result implies that most solid waste generated in the study area were non-biodegradable as such might pose serious environmental and health challenge to the residents when not properly managed. This result disagrees with the findings of Bassey, (2023), that majority of the wastes generated in Calabar are biodegradable waste compared to non- biodegradable waste which when decomposed can be harmful to human health. It also revealed that for papers solid waste type, its presence was much in Bomo (38.5%) and Dogarawa (30.8%) respectively whereas Basawa (31.4%) and Samaru (23.3%) accounted same for broken bottles solid waste type in the study area. The location of Samaru adjacency to bottle water industries might be the possible explanation for this result.



**Table 2: Characterization of solid waste generated in Sabon Gari LGA**

Variable	Samaru		Basawa		Sabon gari		Palladan		Dograwa		Bomo		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Broken bottles	10	23.3	27	31.4	16	19.5	8	12.5	15	23.1	13	16.7	89	21.3
Nylon	8	18.6	10	11.6	22	26.8	8	12.8	7	10.8	8	10.3	63	15.1
Metal	5	11.6	6	7.0	8	9.8	12	18.8	6	9.2	9	11.5	46	11.0
Plastics	5	11.6	5	5.8	13	15.9	19	29.7	11	17.0	10	12.8	63	15.1
Aluminium	3	7.0	19	22.1	5	6.1	7	11.0	6	9.2	8	10.3	48	11.5
Paper	12	28.0	19	22.1	18	22.0	10	15.6	20	30.8	30	38.5	109	26.1
Total	43	100	86	100	82	100	64	100	65	100	78	100	418	100

Source: Field survey (2026)

**Table 4: Frequency of Solid Waste Removal from Dump Sites**

Variable	Samaru		Basawa		Sabon gari		Palladan		Dogarawa		Bomo		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Daily	8	18.6	27	31.4	24	29.3	18	28.1	3	4.6	14	18.0	94	22.5
Weekly	20	46.5	40	46.5	26	31.7	16	25.0	54	83.1	25	32.1	181	43.3
Monthly	6	14.0	7	8.1	15	18.3	14	21.9	6	9.2	22	28.2	70	16.8
Quarterly	6	14.0	6	7.0	9	11.0	10	15.6	1	1.5	9	11.5	41	9.8
Annually	3	7.0	6	7.0	8	9.8	6	9.4	1	1.5	8	10.3	32	7.6
Total	43	100	86	100	82	100	64	100	65	100	78	100	418	100

Source: Field survey (2026)

**Table 5: common diseases associated with solid waste disposal**

Variable	Samaru		Basawa		Sabon gari		Palladan		Dogarawa		Bomo		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Cholera	0	0.0	15	17.4	0	0.0	0	0.0	14	21.5	0	0.0	29	7.0
Malaria	17	39.5	38	44.2	0	0.0	26	40.6	11	17.0	35	44.9	127	30.4
Hepatitis	0	0.0	0	0.0	0	0.0	0	0.0	15	23.1	0	0.0	15	3.6
Diarrhea	10	23.8	17	19.8	28	34.1	24	37.5	9	13.8	14	18.0	102	24.4
Dysentry	10	23.8	8	9.3	0	0.0	0	0.0	0	0.0	29	37.2	47	11.2
Typhoid	6	14.3	8	9.3	54	65.9	14	21.9	16	24.6	0	0.0	98	23.4
Total	43	100	86	100	82	100	64	100	65	100	78	100	418	100

Source: Field survey (2026)

About 11.0% agreed to metal solid waste type being the least dumped in the study area (Table 2). Within this category, Palladan (18.8%), followed by Bomo (11.5%) represented the highest in the study area. Metals waste can also be reused or recycled for value added and the safety of the environment. This result implies that scavenging activities is expected to be a common practice given the view of (Franklin-Wallis, 2023) that the most scavenged wastes were scrap metals, tins, cans, glass bottles, polyethylene products, plastics bottles, aluminum, ceramics, paper, wood, textiles, batteries, computer accessories and foams. They often serve as source of raw materials for the construction industry, bottling plants and plastic manufacturers.

### 3.3 Solid Waste Management Techniques in Sabon Gari Local Government

The solid waste management practice in the study area is presented in table 3. About 56.2% of the respondents dump their wastes in the open space (Table 3). This is a clear indication that no government waste facilities abounds in the area and again waste are dropped at any available space including uncompleted buildings, road sides. Also 18.9% of the respondents bury their wastes little a deep mining spoils, while 14.4% burn their wastes. This result corroborates Aweto *et al.*, (2023) that there were no authorized dumpsites in Ughelli and the major method of waste disposal are open dumping, land filling and dig and bury.

**Table 3: Solid Waste Management Practice in Sabon Gari LGA**

Principles	Frequency	Percentage%
Burning	60	14.4
Burying	79	18.9
Open dumping	235	56.2
Others	44	10.5
<b>Total</b>	<b>418</b>	<b>100.0</b>

Source: Field survey (2026)

### 3.4 Frequency of Solid Waste Removal from Dump Sites

The study investigated the frequency of solid waste removal from the various dump sites in the study area and presented in Table 4. This indicates that the 43.3% of the respondents agreed that solid waste was removed on weekly basis, followed by daily removal which accounted for 22.5%. This was mostly practiced in Dogarawa (83.1%), Basawa (46.5%) and Samaru (46.5%) among the areas in the study area. Though there are individual waste managers that collect token amount to dispose waste to dumpsites while others at any available open dumps since there are no enough

waste dumping sites or roadsides bin for collections from the primary sources. The frequency of dump waste removal from site is on pay as you throw (PAYT) some three days, seven, or fourteen days.

Daily removal of solid waste from dump sites accounted for the most (31.4%) among the respondents from Basawa. Table 4 further indicates that annual (7.6%) removal of solid waste from the dump sites accounted for the least in the study area. This is an indication that waste decays especially biodegradables and the particles percolates into sources of public drinking water for the inhabitants which could led to disease outbreak such as cholera, housefly as a vector, mosquitoes breeding ground (malaria), dysentery, diarrhea and typhoid fever caused by an organism called *Salmonella typhi*.

### 3.5 Perception of Respondents on Diseases Associated with Waste Disposal

The occurrence of some common diseases like cholera, malaria, hepatitis, diarrhea as well as dysentery and typhoid fever is often perceived to be associated with improper management of solid waste in any given area. Table 5 shows the respondents perceived diseases associated with waste disposal in the study area. It reveals that malaria (30.4%), typhoid (23.4%) and diarrhoea (24.4%) were the most common diseases perceived by the respondents associated with improper waste disposal. This agrees with Mamidi (2024) that studies have shown that uncollected waste have contributed to flooding, breeding of insects and rodents vectors which spread diseases such as cholera, typhoid fever, lassa fever, diarrhoea, dysentery and schistosomiasis. The occurrence of malaria was relatively high across the locations (Samaru, Basawa, Palladan and Bomo) in the study area except in Dogarawa (17.0%) and none in Sabon Gari. Also, Bomo has no recorded occurrence of typhoid and cholera diseases.



**Table 6: Measures Adopted to Alleviate Common Diseases**

Variable	Samaru		Basawa		Sabon gari		Palladan		Dogarawa		Bomo		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Area disinfection	7	16.3	17	19.8	2	2.4	9	14.0	4	6.2	2	2.5	41	9.8
Regular sanitation	11	25.6	14	16.3	15	18.3	16	25.0	46	70.8	6	7.7	108	25.8
Good drainage system	11	25.6	25	29.1	22	26.8	11	17.2	12	18.5	6	7.7	87	20.8
Periodic evacuation of the waste	14	32.6	30	34.9	43	52.4	28	43.8	3	4.6	64	82.1	182	43.5
Total	43	100	86	100	82	100	64	100	65	100	78	100	418	100

Source: Field Survey (2026)

Among the common diseases, hepatitis (3.6%) was the least perceived by the respondents in the study area (Table 5). This was only perceived among the respondents from Dogarawa area. Again, Basawa respondents perceived the occurrence of all the mentioned diseases except for hepatitis. This is an indication that there is high prevalence of these common diseases associated with improper solid waste in Basawa area Sabon Gari LGA.

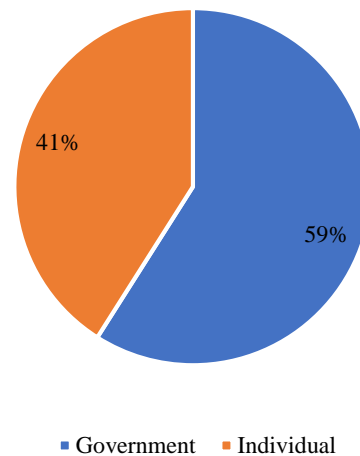
### 3.6 Measures Adopted to Combat the Occurrence of Common Diseases

The study examined the various measures being adopted in the study area toward controlling common diseases arising from solid waste disposal. The result is presented in Table 6. The periodic evacuation of solid waste (43.5%) and regular sanitation (25.8%) were the most measures used to combat the occurrence of common diseases perceived by the respondents to be associated with improper solid waste disposal. It practice was much in Bomo (82.1%), Sabon Gari (52.4%) and Palladan (43.8%) with Dogarawa (4.6%) accounting for the least.

Table 6 further indicates that area disinfection (9.8%) was the least adopted measure by the respondents in controlling the occurrence of common diseases in the study area. Also, the practice of regular sanitation was mostly among the respondents from Dogarawa area. It shows varying degree of respondents' view on the measures used to combat health problems arising from solid waste dump. This indicates that the respondents agreed that there is regular sanitation as well as good drainage system and periodic evacuation of solid waste in Samaru, Basawa, Sabon Gari, Palladan as well as Dogarawa and Bomo measure used to combat common diseases arising from solid waste dump in their area. Households play the key role in managing domestic solid waste in the study area through different avenues like the use of trucks and wheel barrows. This shows that the private sector participation in managing domestic solid wastes is not totally absent in the study area.

### 3.7 Agency responsible for waste management in Sabon Gari LGA

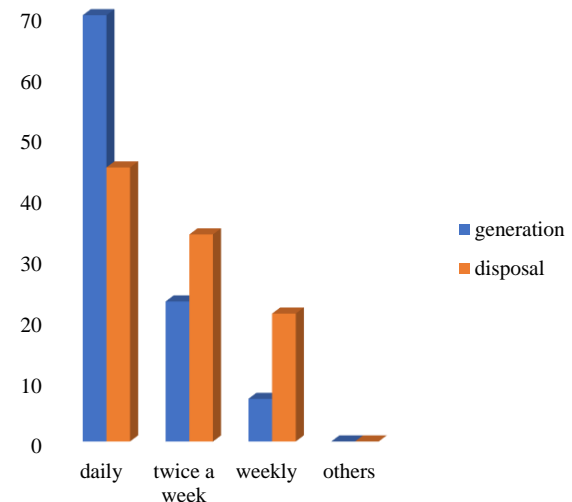
Figure 1 shows the involvement of the individuals and government agency in the management of solid waste in the study area. Figure 1 shows that 59.0% of the respondents reported that the government plays the key role in managing domestic solid waste in the study area. While 41.0% of the respondents reported that individual household play the key role in managing domestic solid waste in the study area through different avenues like the use of trucks and wheel barrows. This show that the private sector participation in managing domestic solid wastes is not totally absent in the study.



**Figure 1: Agency Responsible for waste management in Sabon Gari LGA**  
Source: Field survey (2026)

### 3.8 Frequency of Solid Waste Disposal

The study examined the frequency of solid waste disposal in the study area and result is presented in Figure 2. It revealed that about 70.0% of the respondents generate their wastes daily, about 23.0% and 7.0% generate their wastes twice a week and weekly respectively. Also, about 45% of the respondents dispose their wastes daily while about 34.0% and 21.0% dispose their wastes twice a week and weekly.



**Figure 2: The frequency of Waste Generation and Disposal in Sabon Gari LGA**  
Source: Field survey, 2026

This implies that the rate of waste generation is greater than the rate of waste disposal. This shows that the residents in the study area are exposed to domestic solid wastes for longer periods of time than necessary. According to Lau, (2024), these wastes could provide

breeding grounds for pathogenic organisms, attract insects and rodents and cause health problems to the residents.

According to a similar study by Aribigbola and Oladehinde (2022), problems in cities have become burdensome despite efforts being made by city authorities and governments in the country. The problems of solid waste such as inadequate service coverage, inadequate finance, and irregular waste collection, available technical personnel to effectively manage the waste, waste spill over from bins and storage containers, and nonchalant attitude of people towards indiscriminate disposal on unauthorized places and waste littering are common.

Slyvester and Ikudayisi (2021) suggested that modern waste management presents a high level of complexity that requires many aspects to be considered for a suitable solution that encapsulates both the current state of the environment as well as its potential to provide support for future generations. Similarly, Botchway *et al.*, (2023) noted that problems in cities have become burdensome despite efforts being made by city authorities and governments. Sustainable development according to World Commission on Environment and Development, Hajian and Kashani (2021) refers to development that meets the needs of the present generation without compromising the ability of future generations to meet their needs. For sustainable development to take place, it means that wastes need to be managed effectively. Thus, it entails a sustainable solid waste management system that is environmentally, financially, and socially appropriate and acceptable.

#### 4.0 CONCLUSION

In the light of the information presented in this study, it can be concluded that solid waste management would continue to be a challenge in Sabon Gari, as long as the population continues to thrive. Based on the analysis more than half of the population is not conversant with the laws governing solid waste management and also not fully informed about waste treatment methods. In addition, analysis indicates that majority of the respondents are not fully aware of the effects of waste disposal on human health. Neglecting to strengthen bylaws pertaining to waste management coupled within adequate awareness of waste management handling would only be tantamount to an increase in quality environmental degradation. There is the need to upgrade current solid waste management practices in Sabon Gari LGA in particular and in the entire country at large with a bid to reduce human related diseases from waste disposal in to the environment.

#### 5.0 RECOMMENDATION

- i. There should be adequate measures put in place to ensure that wastes are properly and adequately

collected as well as handled appropriately at the onsite stage.

- ii. With the modern technology, wastes of all sorts can be re-cycled to generate energy as well as converting the wastes into organic fertilizer. This method will go a long way to boost agricultural productivity.
- iii. Laws governing solid waste management should be strengthened and fully expressed to the community. Public awareness campaigns of solid waste management handling should be carried out by the local government council through radio hard bills, local newspapers, posters, workshops, schools, and work places. The campaigns should address issues, such as waste reduction methods, separation at generation points as well as encouraging recycling and composting.

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