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Household Waste Management Practices in Orumba South Local Government Area of Anambra State

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Abstract

The study investigated household waste management practices in Orumba South L.G.A. Anambra state. A descriptive survey design was adopted and guided by three objectives. The Population of the study was 7,723 households in Orumba South L G A. A simple random sampling was used to select a sample of 270 households for the study. Questionnaire titled "Household Waste Management Practices (HWMP)' was used for data collection. Percentage, Mean and standard deviation were used for data analysis. The results of the study showed that nylon and polythene (28.15%) are most generated than other categories of waste and Plastic with (16.30 %). Six problems were encountered in waste management and disposal, they include: Low policy enforcement, Deficient infrastructures, Low level of community participation, large families, far location of dumpsites and Poverty. Households in Orumba South local government practice open waste dumping and waste burning. It was therefore recommended that the government and private institutions should organize enlightenment programs to educate the people on the hazards associated with improper disposal of waste. Provision of infrastructure necessary for waste management and waste recycling to the people of Orumba South local government such as incinerators was also recommended.

Keywords: Waste Management, depletable Resources, Waste Generation, Waste Recycling, Waste Management Practices

Introduction

Wastes are those things that are not needed anymore and are likely to cause danger to human health. Wastes are generated universally and are direct consequence of human activities. According to United States Environmental Protection Agency Human (USEPA, 2017), activities on earth give rise to residual materials which are not of immediate use. Given increasing rates of population growth in most countries of the world, the management of waste becomes more and more an urgent problem. Waste is defined as unwanted or undesired materials accumulating after the completion of a process. Wastes are also characterized as items that are no longer used for any significant function and are classified as items with hazardous properties. Such hazardous wastes include household dump items, sewage, sludge, waste from manufacturing industries (Obeka, 2015). The United Nations Environmental Program (2016) defines waste as those materials which the initial user has no further use for either purposes of production, transformation or consumption and of which can be disposed, however, contrary to the United Nation's definition of waste; some or most of these so called wastes can actually be recycled through appropriate methods and be put to good use, thereby reducing the quantity of waste being

generated. Wastes are generally classified as solid, liquid and gas. Liquid waste are free flowing such as fluids, waste water, fats, oil, or grease, usually generated from industrial activities like refineries, textile industries, wastewater treatment plants. These wastes are emitted and disposed on land thereby causing land pollution and also at times in water bodies causing water pollution. Solid wastes include household refuse, agricultural remnants, food leftovers, plastic bags, tin, cans, ash and packaging, such as cartons and used sacks. Refuse, garbage, litter and street sweepings describe solid wastes in various situations. Observation shows that this category of waste is generated in abundance in Orumba South L.G.A. Gaseous waste on the other hand comprises gases and small particles emitted from open fires, incinerators and vehicles, or produced by agricultural and industrial processes. Once released, the effects of these gases and particles are hard to control. These wastes include gases like carbon dioxide, carbon monoxide, sulphur and chlorofluorocarbon.

Household Waste, also known as domestic waste or residential waste, is refuse generated by households, often made up of food scraps, newspapers, bottles, cans, plastic bags and parts of these wastes can be recycled (Brunner and Rechberger, 2014). Wastes generated from home could be liquid or solid wastes, both can be hazardous. Liquid and solid waste types can also be grouped into organic, re--usable and recyclable waste. Some solid waste can also be converted to liquid waste for disposal such as wastewater. Solid waste predominantly, is any garbage, refuse or rubbish derived from homes and other workplaces. These include old car tires, old newspapers, broken furniture and even food waste. Solid waste dumps, apart from creating eyesore, are a major health hazard in most urban areas in Nigeria.

Wilson (2007) revealed the sources waste can be generated in homes, such as Leftover food and food items, wastewater from cooking, bath, laundry, cleaning, sachets from convenience foods and sachet water, human excrete known as sewage, broken household items such as bucket, glass and chairs. Personal belongings such as sanitary pads, human hair, old clothing materials are also wastes generated from homes.

Waste management is the process of collecting, transporting, processing or disposing, managing and monitoring of waste materials; management relates to materials produced by human activity and the process undertaken to reduce the effect on health, the environment or aesthetics of the home and the community, (Adogu Uwakwe, Egenti, Okwuoha, and Nkwocha, 2015).

Waste management is a global issue that is a growing source of concern in developed and developing countries due to increase urbanization; changes in consumer pattern and industrialization, which all directly influence solid waste generation (Kadafa *et al.*, 2013). Abila & Kantola (2013) are of the view that municipal waste management problems in Nigeria cut across concern for human health, air, water and land pollution. A large portion of waste management practices deal with municipal solid waste (MSW) which is the bulk of the waste that is created by household, industrial, and commercial activity.

Waste management is intended to reduce adverse effects of waste on human health, the environment or aesthetics. Adewole (2009) argues that continuous indiscriminate disposal of municipal solid waste is accelerating and is linked to poverty, poor governance, urbanization, population growth, poor standards of living and low level of environmental awareness.

Walker, (2018) shows that waste management deals with all types of waste, including industrial, biological and household. Waste management practices are not uniform among countries (developed and developing nations); and regions (urban and rural areas). Residential and industrial sectors can all take different approaches.

Waste management hierarchy according to Albert, (2011), refers to the "3 Rs" Reduce, Reuse and Recycle, which classifies waste management strategies according to their desirability in terms of waste

minimization. The waste hierarchy is the cornerstone of most waste minimization strategies. The aim of the waste hierarchy is to extract the maximum practical benefits from wastes and to generate the minimum amount of end wastes. The waste hierarchy is represented as a pyramid with the basic premise being policies that should promote measures to prevent the generation of waste. The next step or preferred action is to seek alternative uses for the waste that has been generated (re-use), and the cycle continues. Following this step is material recovery and waste-to-energy. The final action is disposal, in landfills or through incineration without energy recovery. This last step is the final resort for waste which has not been prevented, diverted or recovered. The waste hierarchy represents the progression of a product or material through the sequential stages of the pyramid of waste management. Waste management has become one of the biggest challenges confronting developing countries, including Nigeria.

The biosphere has the capacity to transform many wastes over time, either into harmless products or into nutrients which can be used again; this is nature's way of purifying our environment and maximizing our scarce resources through natural recycling. However, the natural assimilative capacity of the environment can easily be exceeded if waste particularly from man's activities is not controlled.

The environment is all what we have therefore, it is an obligation to keep it safe and clean. In homes, all sort of goods for consumption or daily use is purchased. These goods come in wraps in various types of materials, most times these generate waste. The challenges of solid waste becomes aggravated in the community during the rainy season due to numerous farms produce available during that season example: maize wraps usually litter everywhere. This makes the study relevant at this time of rapid urbanization without any commiserate measure on waste management mechanisms.

Objective of the Study

The study was guided by the following objectives:

1. Identify the different types of waste generated in Orumba South Local Government Area, Anambra State.
2. Identify the different sources of waste generated in Orumba South Local Government Area, Anambra State.
3. Determine the problems encountered in waste management in Orumba South Local Government Area, Anambra State.

Methodology

Research Design

The study adopted descriptive survey design.

Area of the Study

The study was carried out in Orumba South LG.A., Anambra State, Nigeria. Orumba South Local Government area of Anambra State comprises of fifteen autonomous communities with its headquarter at Umunze. The three major commercial towns of the local government were selected namely: Umunze, Ihite and Nawfija. This area was chosen because these towns represents the bulk of the population as well as houses, major institutions, markets, and the Local Government Headquarter. It was also observed that there was a lot of refuse and wastes carelessly disposed/dumped in the area.

Population for the Study

The population for this study consisted of 7,723 households in Orumba South L.G.A., Anambra State.

Sample and sampling technique

The sample size for the study was 270 households. Random sampling technique was used to select the sample of 90 households each from the three towns.

Method of Data Collection

The instrument for data collection was a questionnaire titled 'household waste management practices (HWMP)'. It was

divided into two parts: part one provided demographic data of the respondents while part two contains items arranged into sections to provide information on the research questions for the study. The instrument was face validated by two experts from Faculty of Vocational and Technical Education, University of Nigeria, Nsukka. Cronbach Alpha was used to determine the internal consistency of the instrument.

Method of Data Analysis

Data collected was analyzed using SPSS version 13 using percentages, means and standard deviations. The mean was used to check the level of agreement or disagreement while the standard deviation was used to determine the closeness or otherwise of the responses from the mean. An item with a mean score of 2.50 and above was accepted as agreement and item with mean score below 2.50 was taken as disagreement.

Results and Discussions

Table 1 shows that nylon and polythene wastes are generated most frequently (28.15%) plastic (16.30%), food debris (14.81%) followed closely by metallic wastes (11.15 %) and wastewater category (8.85%).

Table 1: Frequency, percentage and ranking of types of waste in Orumba South L.G.A. Anambra State

S/N	Items	Frequency	Percentage	Rank
1.	Nylon and polythene	76	28.15	1st
2.	Plastics	44	16.30	2nd
3.	Food debris	40	14.81	3rd
4.	Metallic wastes	31	11.15	4th
5.	Waste water	24	8.89	5th
6.	Grassy/vegetable wastes	17	6.30	6th
7.	Wood and Ashes	11	4.07	7th
8.	Sewage	10	3.70	8th
9.	Automobile Gaseous emission	8	3.06	9th
10.	Glass/ceramic wares	6	2.22	10th
11.	Chemicals and oil spillages	3	1.11	11th

Out of the nine items presented, seven met the cut-off mean of 2.50 were accepted and two rejected

Table 2: Frequency, Mean rating and Standard deviation of respondents on sources of waste generation in Orumba South L.G.A. Anambra State

S/N	ITEMS	SA	A	D	SD	X	RA	DEC
1.	Homes/Households	112	92	40	26	3.46	1.09	Accepted
2	Schools	106	81	46	37	2.88	1.22	Accepted
3.	Hotels	111	96	33	30	2.96	0.76	Accepted
4	Market places	120	87	33	20	3.61	1.21	Accepted
5.	Banks	63	56	59	92	2.15	1.07	Rejected
6	Industries	89	70	52	59	2.54	1.29	Accepted
7.	Farmlands	101	76	43	50	2.93	1.08	Accepted
8	Business centers	84	80	35	71	2.63	1.17	Accepted
9.	Churches/Mosques	54	60	107	79	2.22	1.45	Rejected
	Grand mean					**2.82**		

Table 3 shows eleven items presented to the respondents, six of the items met the cut-off mean of 2.50, five of the items were rejected.

Table 3: Frequency, mean rating and Standard deviation on Problems encountered in waste management and disposal in Orumba South L.G.A.

SIN	ITEMS	SA	A	D	SD	X	RA	DEC
1.	Low policy enforcement	99	95	40	36	2.95	1.07	Accepted
2	Deficient infrastructures	108	86	41	35	2.98	1.34	Accepted
3.	Low level of community Participation	109	90	35	36	3.00	0.89	Accepted
4.	Illiteracy	60	76	39	95	2.37	1.18	Rejected
5	Lack of planning	49	74	48	99	2.14	1.07	Rejected
6	Large families	99	70	45	56	2.78	1.16	Accepted
7	Ignorance	54	75	40	101	2.17	1.37	Rejected
8	Far location of dumpsites	74	100	57	39	2.77	1.07	Accepted
9.	Poverty	99	75	40	56	2.68	1.07	Accepted
10.	Low motivation	57	38	77	98	2.12	1.35	Rejected
11.	Lack of skilled personnel	60	76	39	95	2.02	1.18	Rejected
	Grand mean					**2.55**		

Key: SD = strongly disagree, SA = strongly agree, D = disagree, A = agree, X =mean, RA = standard deviation, Dec. = decision

Discussion of findings

It was observed that nylon and polythene wastes are most generated frequently than other categories of waste. This is in agreement with Adedibu, (1993). This category of waste comprises of about 28% and their non-biodegradable nature might explain why they are much in quantity compared to other categories of waste. Secondly, the study revealed that plastic comprises of about 16% ranking second. Plastic is also non-biodegradable and can come in form of cans, buckets, electronic gadget cases, food debris is the third in rank and comprised about 14%. Other types of waste generated include metallic wastes (11.15%), waste water (8.85%), grass/ vegetable waste (6.30%), wood/ashes (4.05%), and automobile gasses (3.06%); the findings implies that these categories of waste are generated only in small amount. Ceramic/glass category and chemical/oil spillages category have the least ranking showing that these category of waste are generated in very little or no quantity in Orumba South Local Government Area. This finding is related to Adewole, (2009) who observed that plastic is a major type of waste. The study also revealed that the problem of low community participation and deficient infrastructure are very severe in Orumba South L.G.A. and could have the major contribution to poor waste management.

According to Kadafa, Latifa, Abdullahi & Suleiman (2013), Low level of community participation and deficient infrastructures are problems in waste management. Inadequate waste management is a major environmental problem in Nigeria in general and in Orumba South L.G.A, Anambra State in particular. The contributing factors range from technical problems, to financial and institutional constraints. There is an absence of any properly designed solid waste disposal facility, therefore posing contamination risk to both ground and surface water, air pollution and a serious eyesore to human comfort. It is not uncommon, to find refuse dumps along major roads, community centers, market, and congesting the drainage in the area.

Conclusion and Recommendations

This study investigated household waste

management practices employed in Orumba south local government area. Poor management of waste has always been the problem and not the generation of it. Therefore, it is possible to reduce or even eliminate completely the hazardous effect of wastes in Orumba south local government area. Based on this conclusion, the following recommendations are made:

1. Evacuation of waste dumps by the waste management authority from locations that are close to residential areas.
2. Provision of infrastructure by the Government for waste management and waste recycling to the people of Orumba South Local Government.
3. The government and private institutions should organize sensitization programs on the hazards associated with improper disposal of waste as well as how to manage waste.
4. Use of nylon, polythene or plastic based materials by food companies and product vendors for packaging should be prohibited.
5. Standard landfills (not the ordinary dug earth) should be constructed by the waste management authority at specific locations to minimize the impact of hazardous waste.

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