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PATTERNS OF HOUSEHOLD SOLID WASTE MANAGEMENT IN OTO-AWORI COUNCIL DEVELOPMENT AREA OF LAGOS STATE

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ABSTRACT

In many Nigerian communities, environmental pollution, as a result of poor solid waste management, is becoming more and more difficult to deal with as the day go by. This study investigated the patterns of household solid waste management in Oto-Awori LCDA, Lagos State. It also delved into factors responsible for such patterns. Thus, 368 heads of household selected from two major communities in the LCDA participated in the study. A self-developed questionnaire, with a 0.71 r-value, was used for data collection and the data were analysed using percentage and weighted mean score (WMS). The findings revealed that indiscriminate solid waste disposal is common among households in the area, and the major factors responsible for this included growing population, poor environmental laws, high monetary charges, inefficiency and insufficiency on the part of private sector participators, and the lack of access to approved waste disposing sites.

INTRODUCTION

Waste management is the collection, transport, processing (waste treatment), recycling or disposal of waste materials, usually those produced through human activity, in an effort to reduce their effect on human health or local aesthetics or amenity (Wikipedia, 2006). Solid wastes have become a problem that continues to grow with the development of nations in

industries and human resources. Since the beginning of time, people have needed to find a way of disposing of solid wastes. According to Bassis (2006), in the 18th century, carters were paid by individuals to carry trash and discard it at the outskirts of the town. Disposal in open pits however became routine as Benjamin Franklin initiated the firstmunicipal cleaning programme in Philadelphia in 1757. Since then, several countries have embraced some efficient waste management methods (Bassis, 2006).

But in Nigeria, the situation grows worse by the day (Ayotamuno and Gobo, 2004; Adedibu, 2004; Owojaiye, 2002; Agunwamba, 1998; and Sangodoyin, 1993). Owojaiye (2002) laments the level of sanitation degradation in Nigerian major cities — as sanitation requirement grows in a geometric progression, sanitary control and measurement grow in arithmetical levels. Owojaiye (2002) asserts that the lifestyles of Nigerians promote environmental pollution. There is the habit of indiscriminate dumping of waste products in undeveloped lands and uncompleted buildings. Other factors identified include technological advancement, lawlessness and illiteracy (Owojaiye, 2002).

According to Sangodoyin (1993), in a few developing areas in the nation, much is being done to provide for the collection and healthy disposal of household wastes; yet the problem of solid waste management still persists in many cities. Owojaiye (2002) mentions that urban pollutants are now common in sub-urban and rural areas in Nigeria. This indicates that environmental pollution, due to poor solid waste management, is becoming an epidemic in the country.

Oto-Awori Local Council Development Area (LCDA) is one of the 37 development areas recently created by the Lagos State Government. This LCDA comprises of two major towns (Oto and Ijanikin) and other smaller communities. Adeniran Ogunsanya College of Education (formerly Lagos State College of Education) and a few industries are located at Oto-Awori LCDA. This could in part explain for the rapid population growth in the area. In this LCDA, like in other LCDA in the state, private sector participators (PSP) are authorized and encouraged by the government to management household solid wastes in the communities. It is expected that this is. welcomed by residents and, in turn, reduce the stress of solid waste

management in Oto-Awori LCDA. This study therefore was designed to investigate the patterns of household solid waste management in Oto-Awori LCDA, Lagos State. It also discussed factors responsible for such patterns.

Household as used in this study consists of a person or a group of persons living together usually under the same roof or in the same building/compound. They share common foods and recognize themselves as a social unit with a head, whom other members of the household recognize as such (National Population Commission, 2006).

Answers were sought for the following research questions:

1.   What are the patterns of household solid waste management in Oto-Awori LCDA?

2.   What factors are responsible for the pattern of household solid waste management in Oto-Awori LCDA?

METHODOLOGY

The participants in this study include 368 heads of household that were selected from the two major communities (Oto and Ijanikin) in Oto-Awori LCDA. They were selected through a purposive sampling technique. Three hundred and ten (84.2%) of them were males, while fifty-eight (15.8%) were females; their ages ranged between 26 and 64 years. Also, 46 (12.5%) of the participants had no formal education, while 139 (37.8%) of them attended primary school; 119 (32.3%) had secondary education, while 64 (17.4%) studied up to tertiary level.

INSTRUMENTATION

A structured questionnaire was used for data collection. The questionnaire had three parts: the first dealt with demographic data of participants, which included sex, age and educational level; the second had 'Yes' and 'No' options on information on patterns of household solid waste disposal; while the third part, which was concerned with factors that are responsible for

the patterns of household solid waste disposal, was developed with four option scale (i.e., Not Responsible, Slightly Responsible, Averagely Responsible and Highly Responsible). The instrument was given to four colleagues for the purpose of validation. Their corrections and contributions were considered in the final draft of the instrument. Test-retest method was used to determine its reliability, and this gave an r value of 0.71. The instrument was further pilot-tested in Morogbo, a community in Olorunda LCDA, Lagos State.

DATA COLLECTION

The selected households were visited during weekdays and weekends between 5:00pm and 7:00pm for administration of instrument. These hours were chosen for convenience and easy access to participants whose consents were sought before administration of instrument. Nine (2.4%) of the 377 administered copies of the questionnaire were not returned properly filled; hence, they were not used. The process of data collection took two weeks.

DATA ANALYSIS

The data collected for this study were coded and analyzed using descriptive statistical tools of frequency counts, simple percentage, mean, and weighted mean score (WMS). The results were presented in bar charts.

Table 1: Mean and percentage distributions of responses by patterns of waste disposal

Pattern	Yes (X)	%	No	(X)	Total
PSP	78.4	21.3	289.6	78.7	368
Personal landfill	14.1	3.8	353.9	96.2	368
Indiscriminate disposal	275.5	74.9	92.5	25.1	368

The results in table one show that a great percentage (74.9%) of the households disposes their solid waste indiscriminately. The mean response of 78.4 (21.3%) indicates the use of PSP by households in management of the solid waste; while 14.1 (3.8%) shows utilization of personal landfill by some households. Figure 1 further describes this result.
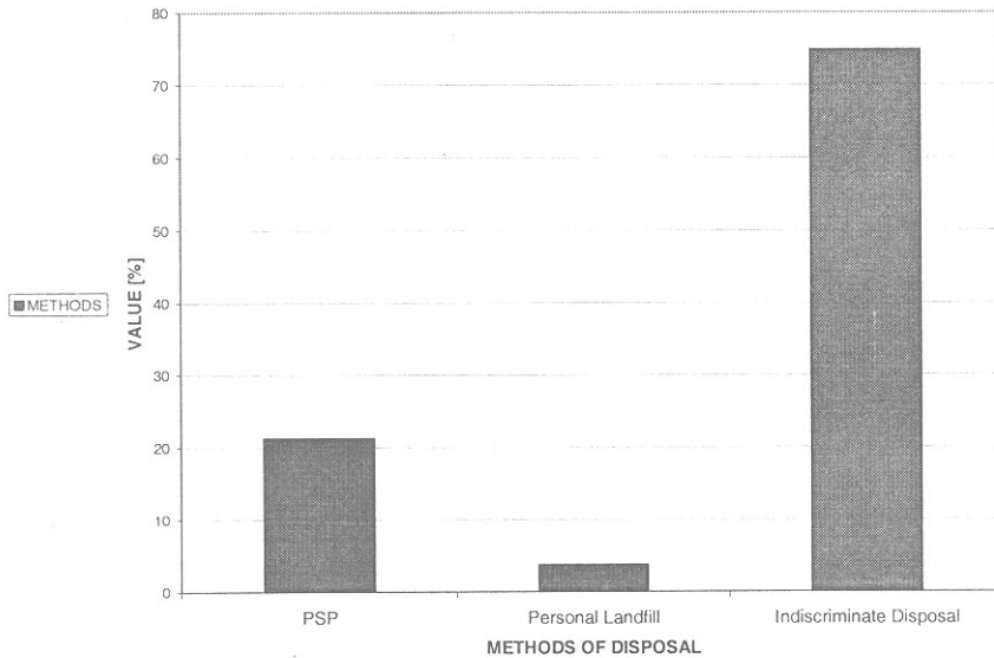
Figure 1: Component bar chart on methods of solid waste management of households (the highest percentage of households disposes their waste indiscriminately)

Table 2: Percentage and weighted mean score (WMS) on contributory factors to patterns ofwaste management

FACTORS	NR	SR	AR (%)	HR	WMS
Over-growing population	31	48	113	176	*
	(8.4)	(13.1)	(30.7)	(47.8)	3.18
Poor sanitary law enforcement	12	33	105	218	*
	(3.3)	(9.0)	(28.5)	(59.2)	3.44
PSP monetary charges	19	70	96	183	*
	(5.2)	(19.0)	(26.1)	(49.7)	3.20
PSP inefficiency	28	40	93	207	*
	(7.6)	(10.9)	(25.3)	(56.2)	3.30
Insufficiency PSP	63	. 85	95	125	*
	(17.1)	(23.1)	(25.8)	(34.0)	2.78
Lack of access to approved disposing sites	24	3.6	81	227	*
	(6.5)	(9.8)	(22.0)	(61.7)	3.39
Average	29.5	52.0	97.2	189.3	*
	(8.0)	(14.1)	(26.4)	(51.5)	3.22

* = Greater than 2.50 criteria value

The results in table 2 shows the greatest average percentage of 51.5 per cent, which indicates that all the identified factors are responsible for the patterns of household solid waste management. The table also shows that the weighted mean score values for all factors were greater than 2.50 criteria value set for this study. This also indicates that all the factors identified greatly contribute to the poor patterns of household solid waste management in OtoAwori LCDA. Figure 2 further shows that all factors identified for waste management in Oto-Awori LCDA have high value for the poor management patterns.

Discussion

The results of this study indicate that indiscriminate solid waste disposal is the most widely used method of household solid waste management in the major communities of Oto-Awori LCDA. Similar studies reported the same trend in other parts of Nigeria (Ayotamuno and Gobo, 2004; Adedibu, 2004; Agunwamba, 1998; Sangodoyin, 1993). Ayotamuno and Gobo (2004) reported that in Port Harcourt, the presence of piles of refuse from indiscriminate dumping of wastes dotted the entire city.

Further findings of this study show that overgrowing population in the communities is one of the major factors responsible for poor pattern of household solid waste management. This could be so because the greater the size of a household (or community), the greater the solid wastes generated. In line with this, Bassis (2006) attributed difficulty in management of solid waste to overgrown population. Bassis (2006) mentioned that America generates almost 208 million tons of solid wastes each year at the average of 4.3 pounds of waste per person, everyday. As a result of this, the US generates more solid wastes than any other country, but has better ways of management.

Poor sanitary law enforcement by concerned authorities is also identified as a major factor responsible for poor household solid waste management. This finding agrees with previous ones that reported poor enforcement and noncompliance with environmental sanitation rules and regulations (Owojaiye, 2002; Agunwamba, 1998). According to Owojaiye (2002), people deliberately break environmental sanitation rules and regulation and do not comply with the order of dumping wastes into official bins, incinerators or dumpsites.

This study also identifies three factors in relation with private sector participators (PSP), which are also responsible for poor pattern of household solid waste management in Oto-Awori LCDA. These factors include high monetary charges by PSP, inefficiency, and the lack of access to approved dumpsites. Owojaiye (2002) however identified the consequences of poor wastemanagement on human life along the lines of health and economy. He thus suggested the need for a more efforts towards solid waste management. This is to ensure that the environment is pollution-free, to a large extent.

Conclusion and Recommendations

Based on the findings of this study, it is concluded that household solid wastes generated in Oto-Awori LCDA are poorly managed, as they are indiscriminately disposed. The main factors responsible for this include overgrowing population in the LCDA. and poor sanitary law enforcement by agencies involved with enforcement. It is also concluded that private sector participators (PSP) in solid waste management in Oto-Awori LCDA are inefficient in their duties and the number that is available is not sufficient. More so, their monetary charges are not affordable for most households, and the approved disposing sites are difficult to access by residents. The following are therefore recommended:

1.   Government should endeavour to organize reorientation programmes for law enforcement agencies. This is to enable them to be more efficient in enforcing environmental sanitation rules and regulations.

2.   Public enlightenment programmes on solid waste management should be organized by government to ensure a change in the negative attitude of people in solid waste management.

3.   Sufficient number of private sector participators (PSP) should be registered and encouraged by government to participate in household waste management. This could bring about healthy competition among PSP and, hence, efficiency and a reduction in charges.

4.   Government should also approve solid waste disposing sites that are a close the people in the LCDA. This will enable residents to have easy access to the sites.

5.   This study should be extended to other local government areas and local council development areas to ascertain the trends and patterns of household solid waste management in such areas.

REFERENCES

Adedibu A.A. (2004). Spatial pattern of solid waste generation of Ilorin. Nigeria. www.springerlink.com. Retrieved 10 October 2006.

Agunwamba J.C. (1998). Solid Waste Management in Nigeria: problems and issues (online). Available: www.springerlink.com. Retrieved 10 October 2006.

Ayotamuno J.M. and Gobo, A.E. (2004). Municipal solid waste management in Port Harcourt, Nigeria: Obstacles and prospects. http://www.emeraldinsight.com. Retrieved 10 October 2006.

Bassis L. (2006). Waste disposal. http://www.umich.edu. Retrieved 10 October 2006.

National Population Commission. (2006). 2006 Population and housing census: Enumerator's manual. Abuja: NPC.

Owojaiye S.O. (2002). The polluted Nigerian environment: Causes and consequences on human safety. Nigerian School Health Journal 14(12):67-72.

Sangodoyin A.Y. (1993). Domestic waste disposal in southwest Nigeria. www.emeraldinsight.com. Retrieved 10 October 2006.

Wikipedia encyclopedia. (2006). Waste management. en.wikipedia.org. Retrieved 10 October 2006.