

Challenges of Solid Waste Management in Ado-Ekiti, Nigeria

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Abstract

The nature of waste generated through human activities assume more complex forms with industrial revolution and subsequent steady rise in technological advancement. The complexity of these wastes generated necessitated the adoption of sustainable waste management to mitigate its negative impact on the environment. It is on this basis that this paper examined the challenges of solid waste generation and Management in Ado-Ekiti, Nigeria. 400 copies of questionnaire were administered on randomly selected respondents from five different zones in the study area. Secondary data were collected mainly from Ekiti State Waste Management Authority, National Bureau of Statistics as well as from GIS Spatial Nigeria Limited. Data were analysed using tables, frequencies and percentages. The study discovered that delay in collection of wastes, lack of public awareness on the importance of good sanitary condition and dumpsite being far from the populace as the major challenges of solid waste generation and management in the study area. The Study recommends that the government should increase the budgetary allocation of Waste management agencies to enable them perform their duties effectively and in an environmentally friendly manner.

Keywords: Challenges, Solid waste, Management, Ado-Ekiti and Nigeria.

Introduction

Waste is an inevitable by-product of socio-economic and institutional activities. As long as man is in existence, he uses, stores up, and disposes off materials (wastes) thus making him inseparable from waste (Hoorweg, 1999). Furthermore, the complexity of solid waste generated in modern civilization is directly related to the living standard, socio-economic and cultural attributes of that particular environment (Fakere, Fadairo, and Oriye, 2012). Consequent upon which the strategies for the management of the waste generated vary in terms of the region and the available resources.

In Nigeria and other developing countries, some of the prominent waste management problems witnessed include but not limited to: indiscriminate dumping, poor means of storage, inefficient transportation and insanitary disposal. All these problems are all a function of certain factors which include: population increase, Attitude of people towards waste management, location of Open dump sites without consideration to the surrounding land uses and in most cases these sites are very far from the people.

It may seem as though that urban waste management issues are difficult to deal with, however the root cause stems from the fact that the rate of collection and evacuation is inversely proportional to the rate of generation which makes solid waste accumulation a major source of environmental nuisance in Nigerian cities (Uwadiogwu and Chukwu, 2013). For instance, it is estimated that the rate of solid waste generated is about 0.43kg/head per day and 60 to 80 percent of it are organic in nature (Ogwueleka, 2009). Lagos alone generates over 10,000 metric tons of solid waste daily (WHO, 2006). The volume of solid waste generated sometimes over-whelm urban administrator's capacity to plan for their collection and disposal. Attempts to solve this problem effectively have given rise to myriad of strategies involving sizeable amount of capital and human resources. These strategies yielded little or no positive impact on the physical urban environment of Nigeria cities (Kayode and Omole, 2011).

In Ekiti State, the Ekiti State Waste Management Authority (EKSWMA) exists as the sole public agency responsible for waste management in the state. The waste management authority was established because, it was assumed that individual Local Government Authorities were incapable of performing the function of waste management because at the time of its establishment, solid waste management situation in Ado- Ekiti was "nothing to write home about" and embarrassing to the populace (Awosusi, 2010). However, currently in the state, unsightly scenes of heaped decomposing and semi-decomposed domestic wastes can be seen in the streets. Studies have shown that uncollected waste have contributed to flooding, breeding of insect and rodent vectors and the spread of diseases such as cholera, malaria, typhoid fever in Nigeria (Nabegu, 2010). This results in a delay in the collection of waste by the waste management board thus the populace resorting to dumping the wastes in the streets and drains, thereby littering the environment with rubbish (See also Ibimilua and Ibimilua, 2015). This is evident in the popular Oja Oba market in the capital city of Ado-Ekiti.

From the above, It is evident that not much success have been achieved by the Ekiti State Waste Management Authority with regards to the effective collection and management of waste in the state due to the various reasons which include; Poor Funding, inadequate

Manpower, Lack of awareness e.t.c. However, Issues such as poor funding can be ameliorated with the inclusion of the informal waste sector in the Solid waste management process. The success that accrue to most countries in terms of the inclusion of the informal waste sectors cannot be over emphasized.

It is in the light of this that this paper examined the challenges of solid waste collection and management in Ado-Ekiti.

The Study Area

The study area is Ado- Ekiti, Ekiti State, Ado-Ekiti, an ancient city in Nigeria is located between latitudes $7^{\circ} 33^1$ and $7^{\circ} 43^1$ North of the equator and longitudes $5^{\circ} 07^1$ and $5^{\circ} 22^1$ East of the Greenwich meridian. It covers approximately 5888.9 km^2 bounded by Kwara State to the North, Kogi State to the East, Osun State to the West and Ondo State to the South. The State is mainly an upland zone, rising over 250m above sea level and with rock outcrops.

Ado-Ekiti has a total population of 313,690 people going by the 2006 Population Census (NBC, 2007), with the upsurge in urbanization trend in the region. The projected population as at 2017 using a growth rate of 2.5% stands at 411,553. An increase in population will naturally lead to an increase in the amount, complexity and types of waste generated (Ogwueleka, 2009). In Ado-Ekiti, a corresponding increase has equally been evident as seen in the inability of the waste management agencies to handle and manage the waste generated by an ever increasing population (Ibimilua and Ibimilua, 2015).

Commercial activities in Ado-Ekiti are considered as one of the major factors contributing significantly to the generation of waste because traders do away with cans, papers, nylon, leavese.t.c during trading transactions. The composition of waste generated in Ado-Ekiti are predominantly food remnants, followed by plastic, rubber, nylon and polythenes ash and dust, papers and cartons as well as leather and skin. Others are tin and metal, broken bottles and glass, wooden materials, rags and textiles, as well as aluminum, (Ibimilua and Ibimilua, 2015).

In the study area, the predominant method of waste disposal in the study area are; disposal at public units to be collected by the Ekiti State Waste Management Authority (ESWMA), collection by vendors, burning, burying, composting, on-street dumping, e.t.c.

Methodology

Data for the study were collected from both primary and secondary sources. The methodology for primary data collection were preliminary study, observation, and administration of questionnaires.

The questionnaire was designed using Likert scale (Likert, 1932) and was based on the objectives of the study. The questionnaire ascertained; the Challenges of Solid Waste Generation and Management in the study.

The population of the study area is 313,690 (NBS, 2007), however with an annual population increase of 2.5% (NBS, 2007), the population of the study area is projected to be approximately 411,553 in 2017. From the projected population of the study area the sample size of 400 was determined using YaroYemani's (1964) equation.

For field data collection, simple random sampling method was used. The study area was grouped into five zones (A,B,C,D,E). (see Table 1 for areas covered by each zone). Eighty (80) questionnaires were administered on respondents in each zone. Across the five zones a total of 400 copies of questionnaire were administered, out of which 395 were retrieved on the spot to ensure a 98.8% returns, with all being good and used for analysis..

Table 1.1: Areas in the Study Area Covered by Each Zone

Zone A	Zone B	Zone C	Zone D	Zone E
Adebayo	Ajilosun	Odo-Ado	Basiri	Ijigbo
Similoluwa	Moferere	Igirigiri	Egbewa	Okeyinmi
State Hospital	Omolayo/Olujoda	Olokemeji	Falegan	Ojumose
School of Nursing	Bangboye	Bola clinic	Ile-Abiye	Okesa
Nova	Gbajumo	Immigration	Government Reserve Area (GRA)	Irona
Opopogbooro	Oke-Oniyo	Ureje	Textile	Oke-Ila
Federal/State Housing	Oke-Bola	Poly road	New Iyin Road	Dallimore or Stadium road
Adehun	Ekute		Bank Road	
Pathfinder				

(Field work, 2017).

Secondary data were collected mainly from Ekiti State Waste Management Authority, National Bureau of Statistics as well as from GIS Spatial Nigeria Limited. Data were analysed using tables, frequencies and percentages.

Results and Discussions

Table 1.2 presents the challenges inhibiting adequate solid waste management in the study area. According to the respondents, inadequate dumpsite in the area; 377(95.5%), dumpsite being far from the populace; 386(97.7%), the amount charged for waste collection and dumping is not affordable; 366(92.7%), delay in collection of waste; 376(95.2%), lack of public awareness on the importance of good sanitary condition; 336(85%) and no monetary value attached to recycled waste (incentives); 305(77.2%) were challenges inhibiting adequate solid waste management in the study area.

Table 1.2: Challenges inhibiting adequate solid waste management in the study area.

S/N	Perception statements	SA	A	U	D	SD
(a)	Inadequate dumpsite in the area is the cause of poor solid waste management.	112 (28.4)	265 (67.1)	0 (0.0)	8 (2.0)	10 (2.5)
(b)	Dumpsite being far from the populace is the cause of poor solid waste management.	172 (43.5)	214 (54.2)	0 (0.0)	0 (0.0)	9 (2.3)
(c)	The amount charged for waste collection and dumping is not affordable hence a poor sanitary situation.	143 (36.2)	223 (56.5)	16 (4.1)	2 (0.5)	11 (2.8)
(d)	Delay in collection of wastes leads to poor sanitary conditions.	293 (74.2)	83 (21.0)	2 (0.5)	7 (1.8)	10 (2.5)
(e)	Lack of public awareness on the importance of good sanitary condition is the cause of poor solid waste management.	200 (50.6)	136 (34.4)	38 (9.6)	10 (2.5)	11 (2.8)
(f)	No monetary value attached to recycled waste (incentives) is the cause of poor solid waste management.	38 (9.6)	267 (67.6)	46 (11.6)	26 (6.6)	18 (4.6)

Source: Field Work, 2017

In Summary, Over fifty percent (50%) of the respondents identified; inadequate dumpsite in the area, dumpsite being far from the populace, the amount charged for waste collection and dumping is not affordable, delay in collection of waste, lack of public awareness on the importance of good sanitary condition, as the challenges inhibiting adequate solid waste management in the study area.

Table 1.3 shows the recommended options for improved solid waste management in Ado-Ekiti. The results showed that provision of more waste containers; 391(99%), provision of incentives for recycled wastes; 340(86%), timely collection of wastes; 390(98.7%), environmental education and awareness; 380(96.2%), reduction in the cost waste collection; 387(98%), subsidizing the cost of waste bins; 391(99%) and provision of more approved dumpsites; 393(99.5%) are recommended options for improved solid waste management in Ado-Ekiti.

Table 1.3:Recommended options for improved solid waste management in Ado-Ekiti

S/N	Perception Statements	SA	A	U	D	SD
(a)	More waste containers should be provided	139 (35.2)	252 (63.8)	0 (0.0)	2 (0.5)	2 (0.5)
(b)	Provision of incentives for recycled wastes	59 (14.9)	281 (71.1)	38 (9.6)	14 (3.5)	3 (0.8)
(c)	Timely collection of wastes	266 (67.3)	124 (31.4)	1 (0.3)	0 (0.0)	4 (1.0)
(d)	Environmental education and awareness	214 (54.2)	166 (42.0)	5 (1.3)	6 (1.5)	4 (1.0)
(e)	Reducing cost of waste collection	203 (51.4)	184 (46.6)	5 (1.3)	1 (0.3)	2 (0.5)
(f)	Subsidizing the cost of waste bins	128 (32.4)	263 (66.6)	0 (0.0)	0 (0.0)	4 (1.0)
(g)	More approved dumpsites should be provided	145 (36.7)	248 (62.8)	0 (0.0)	0 (0.0)	2 (0.5)

Source: Field Work, 2017

The facts depicted by these data have proven that all suggested recommendations by the respondents must be implemented to achieve a sustainable waste management Practice in the Study Area.

Recommendations and Policy Implications

The paper recommends that more waste dump centres should be provided for the waste companies. This will enable the populace to go to these dump centres to dump their wastes. By this habit of dumping wastes along the streets and curbsides will be reduced. Secondly, the government should support the waste management agencies with more waste disposal vehicles, this will reduce the incidence of delay in waste collection. In addition, the roads leading to the landfill sites should be repaired to reduce the rate at which these waste disposal vehicles break down during the course of their movement from the collection points to the landfill sites. Thirdly, Government should make available funds in form of loans to persons' who wish to join the waste management sector. With this initiative the government will reduce the burden of waste management on the Local Government Councils who have limited resources at their disposal to manage the incessant increase in the amount of waste generated.

Government by increasing the budgetary allocation for waste management Agencies will go a long way in motivating the agencies to carry out their waste management duties effectively. Equipment such as compactors trucks and waste bins should be provided at strategic points in the study area, to ensure proper solid waste management. Problems like delay in collection, waste bins being always full, indiscriminate waste disposal will hence be ameliorated. Lastly, more recycling firms for plastics, iron and aluminum etc should be established. This programme if implemented will boost the activity of the informal waste collectors and more wastes will be recycled from the wastes stream thus leading to the longevity of our landfill sites. In addition, organic wastes should be processed in such a way

as to produce fertilizers for our crops and general agricultural purpose. If this stated recommendations are implemented the waste management agencies will be able and capable to carry out their duties effectively and implement the reduce, reuse and recycle policy of sustainable waste management.

References

- [1] Awosusi, A. O (2010): “Assessment of Environmental Problems and Methods of Waste Management in Ado-Ekiti, Nigeria”. *International Multi-Disciplinary Journal, Ethiopia*. 4 (3b) 331-343
- [2] Fakere, A. A. Fadairo, G. and Oriye, O. (2012): “Domestic Waste Management and Urban Residential Environment: Focus on Akure, Nigeria”. *International Journal of Engineering and Technology* 2 (5) 878-886
- [3] Hoornweg, D., Thomas L and Otten, L (1999). “Composting and its applicability in developing countries”. *Urban waste management working paper series 8*. Washington, DC; World Bank.
- [4] Ibimilua A. F and Ibimilua F. O (2015): Categorization, Characterisation, Management and Future Trends of Solid Wastes in Ado-Ekiti, Nigeria. *Mediterranean Journal of Social Sciences MC SER Publishing, Rome-Italy*. 6 (4) pp 628-637
- [5] Kayode, A. M. and Omole, F. K. (2011): “Some Socio-Economic Factors Affecting Solid Wastes Generation and Disposal in Ibadan Metropolis, Nigeria”. *Journal of Environmental Issues and Agriculture in Developing Countries*. 3 (1) 55-64
- [6] Likert, R (1932): “A technique for the measurement of Attitudes”. *Archives of Psychology*. No 140
- [7] Nabegu, A. B. (2010): “An Analysis of Municipal Solid Waste in Kano Metropolis, Nigeria”. *Journal Human Ecology*, 31(2), 111-119
- [8] National Bureau of Statistics NBS (2007): “*National Population Commission Census Data, 2006*. Accessed on 3/10/ 2016.from <http://www.nigerianstat.gov.ng/>
- [9] Ogwueleka T. Ch (2009):”Municipal solid Waste Characteristics and Management in Nigeria”.*Iran Journal of Environmental Health, Science and Engineering*, vol. 6, No 3, pp 173-180
- [10] Uwadiogwu, B. O. and Chukwu, K.E. (2013): “Strategies for Effective Urban Solid Waste Management in Nigeria”. *European Scientific Journal* 9 (8) 296- 308
- [11] WHO (2006): *Health of the People. The African Regional Health Report*.