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EVALUATION OF THE CHALLENGES OF EFFECTIVE SOLID WASTE MANAGEMENT IN AWKA, ANAMBRA STATE

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Abstract

Motivated by the dangers of indiscriminate waste dumping and evident poor waste management in Awka which has continually resulted in obvious negative effects on the environment like: outbreak of diseases, environmental pollution, degradation of aesthetic environment, blocking of drainage and urban flooding, proliferation of slums and devaluing of residential houses, among others; this study was conceived with the aim of evaluating the challenges of effective waste management in Awka with a view to recommending more efficient and effective measures. The study adopted survey research method by using a well-structured questionnaire to sample the opinion of 50 professionals purposively determined from departments, parastatals and agencies saddled with the responsibility of waste management using stratified random sampling. It was found that the major challenges to effective and efficient waste management are: insufficient funding, unavailability/inadequate waste management facilities, poor sorting of waste, unsupportive attitude of government/public towards scavengers, absence/poor implementation of policies, use of crude means of solid waste management, inadequate number of private waste contractors, government's monopolization in waste management, among others. The study therefore recommends adoption of modern waste management techniques, education and awareness/orientation of the masses, enactment and implementation of relevant laws and policies, engagement of private waste management firms and adoption of well-trained personnel for waste management as ways of making waste management more effective in the study area.

Keywords: Challenges, Environmental Pollution, Modern Waste Management, Solid Waste, Waste Management Techniques

Introduction

Background to the study

According to (Beneh, 2015) problems of solid waste disposal in Nigeria is attributed to lots of contributing factors. The springing up of illegal settlements, lack/non-existence of waste management facilities, Poor institutional regulation, Poor enforcement and monitoring and above all, corrupt and sharp practices by relevant stakeholders. According to (Cointreau 2017), Nigerians generates lots of solid waste which are commonly seen along the streets. The heaps of these refuse provide excellent breeding grounds for vectors of communicable diseases including rodents, insects, etc. which increase the potential for spread of infectious diseases.

According to (Folorrunso, 2016), solid waste disposal pose fire hazards apart from being eyesores and sources of unpleasant odours, very frequently waste is dumped in drainages or canals and along water courses with impunity. All these have unpleasant environmental consequences. Nweke (2011),

noted that of all the environmental problems facing the nation, the most obvious and most embarrassing is the solid waste disposal problems.

Awka which is the capital of Anambra state, is being ravaged by waste management problem. The Anambra State Waste Management Agency (ASWAMA) engages in the collection and disposal of solid waste, yet it has not made any significant impact on the urban residents in terms of environmental cleanliness. From the observation of some researchers, wastes are often indiscriminately dumped on open plots of land, gutters, and particularly along the streets in Awka. In fact, waste management in Awka has gained notoriety due to its visibility and general degradation of the environment. A good example is the situation along Eke Awka round about and Zik's Avenue road which leads to where wastes are scattered in gutters, streets corners and roadsides.

This is one of the major challenges Anambra State Government is facing. A healthy and sustainable environment that will help to salvage this condition can be ensured if there is an adoption of preventive and remedial strategies. This will only be feasible when there is willingness and commitment from the government, the supervisors of market and urban residents. This study therefore seeks to address the challenges of effective solid wastes disposal and attempt to proffer solutions that could checkmate and enhance solid waste management effectiveness and efficiency in Awka and its environs.

Statement of the problem

It is not uncommon to find streets in Nigerian urban centres being completely or partially blocked by solid wastes (Nwosu and Okoye, 2019). In the same vein, open spaces, market places are littered with solid wastes. Our Nigerian environments have been in distress as a result of poor solid waste disposal. This prevailing catastrophic level of environmental degradation resulting from improper disposal of solid wastes in Nigeria particularly Awka has created adverse impacts on health, environment and the economic life of the urban residents. It is not uncommon that the health of the urban dwellers may be in jeopardy due to poor sanitation. There is high incidence of epidemics of unavoidable diseases like cholera, typhoid, diarrhea, malaria, bronchitis, asthma which often results from failure or delay in disposing wastes. The leakages and runoffs from landfills and open dumps affect adversely the quality of ground and surface waters by polluting them with salts, nitrates, and biodegradable organics (Oduola, and Onibokun, 2016). It is observed in Nigeria including Awka that many urban centers have low water quality and this has heightened the cause of the diseases emanating from the environment.

In Awka, which is the study area, it is observed that there is improper disposal of solid waste (Onwuekwe and Okoye, 2014). Poverty is an enemy of environmental conservation; it makes man to be blind and hardens him against any attempt to conserve the environment (Nze, 2016). Indiscriminate disposal of solid wastes within Awka has caused a lot of harm to the physical environment, aesthetic environment, the health of the inhabitants and resulted in some ecological disasters like urban flooding due to blockage of drains. Of all the literature consulted, none specifically considered the challenges to achieving effective solid waste disposal, majority concentrated on causes and effects. The need to find solution to this environmental problem motivated this study.

Aim and objectives

The aim of this study is to evaluate the challenges of effective solid waste disposal in Awka metropolis. This was pursued through the following objectives:

1. To identify the problems hindering effective solid waste disposal methods in Awka metropolis and
2. To suggest effective ways to reduce indiscriminate solid waste disposal Awka metropolis.

Literature Review

The literature review was done under two sub-headings: Problems hindering effective solid waste disposal and Effective ways to reduce indiscriminate solid waste disposal.

Problems hindering effective solid waste disposal

Solid waste management related activities are carried out by a number of different organizations at various government levels (Federal, State, and Local). In Nigeria, the common constraints faced by environmental agencies include lack of institutional arrangement, insufficient financial resources, absence of bylaws and standards, inflexible work schedules, insufficient information on quantity and composition of waste, and inappropriate technology (UNIDO, 2012). Adisa (2000) found out that scavengers do not receive any assistance from the government, and the worst of it all is that government levy heavy taxes on the secondary scavengers who are mostly salvage dealers.

There is no clarification of relationship and responsibilities among NESREA, SEPAs Ministries and LGA councils with respect to policy development enforcement and implementation; hence there is confusion and overlap in their activities. This makes the current waste management process not to be effective because no policy exists for sorting at waste generation points, recycling, reuse, recovery, composting or sanitary landfilling. Non challant attitude of some residents towards are some of the major challenges encountered in solid waste management in urban areas. Sometimes, residents are seen disposing their generated waste at inappropriate places like water channels/gutters, streams, rivers, along the streets etc. Also, there are times that the residence is not being provided with waste collecting bins in their neighbourhood, even when these waste bins are present, the waste handling firms/institutions always waste time in evacuation of the bins. In this scenario, waste is seen littered across every nuke and crane (UNIDO,2012).

The main institutional hindrances to an effective solid waste management are: fragmentary institutional framework and there is no definitive strategy or national state policy plans on management of waste. There is also the issue of policy reversal with different administration where it exists and also non implementation of the national guidelines on solid waste management and possibly non awareness of the guidelines in some states; where there are plans, there is no clear delineation of roles and responsibility between local government and states and other stakeholders; and limited collaboration among MDAs. Inadequate statistical data exist on waste generation, collection, treatment and disposal and there is inadequate funding/logistics to achieve a quality database on waste management practices. Also there is lack of adequately trained personnel; and inadequate capacities building of technical staff; lack of demonstration activities concerning the feasibility of public private partnership achieving successful business models for integrated solid waste management projects (UNIDO, 2012**)**.

Waste management activities is still based on ad hoc business- as usual strategy that allows task force to arbitrarily perform mandates of institution without recourse to them, and the concessional private sector to abandon areas of service because of down turn in business. No proper costing for waste management exists hence recovery of cost is low by private sector; inadequate funding of the Waste Management Authorities; lack of recycling plant and market for recycled products; ability and willingness of the residents to pay for the services provided; and insufficient profitability which makes IWM unattractive to private companies are other constraints (UNIDO, 2012).

Effective ways to reduce indiscriminate solid waste disposal

Waste management practices differ for developed and developing nations, for urban and rural areas, and for residential and industrial producers. The adoption of some solid waste management techniques can really go a long way in reducing the indiscriminate solid waste disposal in the society. Some of these solid waste management techniques are:

Recycling method: Environmental Protection Agency (2015) defined recycling of refuse as a method of refuse management whereby recyclable wastes are collected. Sorted and recycled into new products. Waste materials such as glass, paper, tyre, plastic, metals etc., are recyclable and are usually easy to handle more than the recycling of complex products like computers and electronic equipment. This is due to the additional dismantling and separation required. (EPA, 2015)

Avoidance and reduction methods: This is another most important refuse management method aimed at minimizing waste generation. This method includes re-use of second-hand products, repairing broken items instead of buying new ones, encouraging consumers to avoid using disposable such as disposable cutlery, designing products that use less materials to achieve the same purpose. (EPA, 2015),

Other approaches that can be used to curtail indiscriminate waste disposal are (a) Education and Awareness (b) Relevant policies and laws.

Education and awareness: Education and creating of awareness in the area of waste management is very important. People should be educated on the unprecedented scale and speed of environmental pollution and degradation, and the depletion of natural resources, accumulation and distribution of toxic wastes and their subsequent effect on humans and thousands of other lives. This is a very important since knowledge is power (EPA, 2015).

Enactment and implementation of relevant policies and laws: Relevant environmental policies and laws should not only be enacted but also implemented.

Sustainable solid waste management is marred by many other contributing factors: These include but not limited to the following:

i. Inadequacy of infrastructure to support the growing urbanization solid waste problem.
ii. Weak political will by the government to establish a working governance system for waste management.
iii. Poor sanitation habit.
iv. Inadequate funding and nonexistence of solid waste management plan in some of the cities.
v. Most developing countries also have solid waste management problems different from those found in industrialized countries in areas of composition, density, political, and economic framework, waste amount, access to waste management system for collection, awareness and attitude etc. (Ogweleka, 2019; Okeke, 2018).

Study Area

The study area in this research is Awka. Awka is the capital City of Anambra State. Awka town is located between latitude 6.200 22’24’’N and 6.280 32’34’’N and Longitude 7.000 04’04’’E on the Southern part of Nigeria. Awka is bounded by Nibo in the south west, Mbaukwu and Okpuno in the north east and then Umuawulu, Isiagu, and Ezinato in the south east.

The city was declared capital on 21st August 1991, after creation of Anambra and Enugu state which moved the capital from Enugu to Awka. The city has an estimated population of 301, 657 as of the 2006 Nigerian census and over 1.5 million as of a 2018 estimate (Awka Youths in Diaspora, 2018). This continued population increase has also led to multiplied effect on waste generation, hence

the need for effective waste disposal management becomes expedient.

Methodology

This research work made use of survey research design. Survey research design consists of asking questions, including and analysing data from a supposedly representative members of the population at a single point in time with a view to determine the current status of that population in respect to one or more variables under investigation. The questionnaire survey was used in the research work.

The sample size for this study is 400 and in determining this sample size for the questionnaire survey, Taro Yamane's formula was used. The stratified random sampling technique was used to select 400 respondents in the study area. This was achieved by first dividing the study area into 5 neighbourhoods. Secondly, out of the neighbourhoods a number of streets were randomly selected. Thirdly, from these streets, the systematic technique was used to select at interval of 2 households to administer a questionnaire.

Four hundred copies of semi structured questionnaire were given to household respondents to fill. The questionnaire was designed to collect information on bio-data of the respondents, the types of wastes generated, the methods of waste disposal they engage, effects of indiscriminate dumping of waste and challenges affecting effective waste disposal methods in the study area. Simple descriptive statistics utilizing averages and percentage were used for analysis of data. In all, a total of 400 respondents were sampled.

Results and Discussion

From the responses of the respondents, the following results were collated:

Table 1: Raw response on challenges hindering effective solid waste disposal in Awka

Challenges to effective SWD	Strongly disagree	Disagree	Agree	Strongly agree	Total
Insufficient funding	45	42	146	167	400
Unavailability/inadequate waste management facilities	57	47	145	151	400
Unsupportive attitude of the public and government towards scavengers	60	65	125	150	400
Absence/ non-implementation of bye-laws and standards	61	39	130	170	400
Lack of trained waste management personnel	50	66	163	121	400
Use of crude means of solid waste	50	55	170	125	400
Inadequate number of private waste contractors	69	48	127	156	400
Government monopolization in waste management	78	64	126	132	400

Source: Researcher's field work 2021

Table 1 shows problems hindering effective waste disposal methods in Awka. It is further converted to percentages in Table 2 for better understanding and explanations

Table 2: Percentage response on challenges hindering effective waste disposal methods in Awka.

Challenges To Effective SWD	Strongly Disagree	Disagree	Agree	Strongly Agree	Total
Insufficient funding	11	10	37	42	100
Unavailability/inadequate waste management facilities	14	12	36	38	100
Unsupportive attitude of the public and government towards scavengers	15	16	31	38	100
Absence/ non-implementation of bye-laws and standards	15	10	33	42	100
Lack of trained waste management personnel	13	16	41	30	100
Use of crude means of solid waste	13	14	42	31	100
Inadequate number of private waste contractors	17	12	32	39	100
Government monopolization in waste management	20	16	31	33	100

Source: Researcher's field work 2021

From the above table 2, insufficient funding (37%, 42%), unavailability/inadequate waste management facilities (36%, 38%) and unsupportive attitude of government/public towards scavengers (31%, 38%) are seen as factors hindering effective solid waste disposal in Awka. Again, absence of bye laws (33%, 42%), use of crude means of solid waste management (42%, 31%), inadequate number of private waste contractors (32%, 39%) and government's monopolization in waste management (31%, 33%) are seen as hindering factors. These findings are in sync with Zerbock (2016) who spotted weak implementation of bye laws as barriers to effective solid waste management in developing countries. During the field observation by the researcher, wastes were seen littering along the streets. The reason for this is not far-fetched. There are virtually no good private waste contractors managing waste in the study area as the ones the government contracted were not well funded, hence render haphazard jobs. Again, government alone cannot manage it effectively.

Conclusion and Recommendation

Conclusion

The study concluded that some of the factors that hinders effective solid waste management in Awka metropolis as revealed from the study are insufficient funding, inadequate waste management facilities, absence/non-implementation of bye laws and standards, unsupportive attitude of government and publics towards scavengers and government monopolization of waste management in the state. Also there is serious negative alterations of the aesthetic environment, blocking of drainages and emergence of slum in the study area among other negative effects of ineffective solid waste management and everyone should rise up to the occasion in making solid waste disposal effective.

Recommendations

From the findings of the study, the following recommendations were made:

i. Adoption of major effective ways to reduce indiscriminate dumping of solid waste in Awka. For instance; adoption of modern waste management techniques like Recycling, Incineration etc., education and awareness, enactment and implementation of relevant policies and laws, engagement of private waste management firms and adoption of well-trained personnel in waste evacuation.
ii. Relevant waste management policies should not only be formulated but also enforced. This policy should promote new healthy treatment technologies like reduction in the quantity of recoverable materials in residential and commercial waste streams to minimize wastes, recycling and incineration while phasing out the old and unsanitary methods like open dumping and burning.
iii. Government and private partners should direct adequate efforts towards the provision of adequate home collection services such as provision of means of transporting the collected waste from the point of collection to the final dump site; this will help in reducing the common practices of open dumping by individuals and households.
iv. More private waste management firms should be engaged in solid waste management in Awka metropolis. These singular act will go a long way in addressing the issue of solid waste management problem in Awka metropolis.
v. Government should partner with scavengers. Aids in form of grants, loans, tools and personal protective equipment should be given to them.
vi. Government through federal and state ministries of Health and Environment should provide mediums for mass environmental and health education campaigns on the need for waste segregation and harmful effects of

improper disposal of waste through seminars, radio, televisions etc.

vii. There should be establishment of waste recycling and treatment plant in the study area. This can be achieved through public private partnership.

viii. There is need for community participation and enforcement of relevant laws through neighbourhood check to prevent dumping of solid waste at non-designated points.

ix. The State Government, its agencies and private partners should improve the welfare of solid waste management staff to make the job more lucrative and attractive.

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