

Participatory Waste Management System an Option for Effective Urban Solid Waste Management in Enugu

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Abstract -The public sector solid waste management system has proved not to be very efficient in dealing with the huge business of managing urban waste. The informal sector participation may offer a more reliable and sustainable solution to the increasing problems of waste management. This paper presents the combination of formal and informal management system as a better option to the existing formal solid waste management system in Enugu.

Keywords: Environment, Informal, Management, Participation, Solid waste, Sector, Sustainable, urbanization.



1 INTRODUCTION

The current rate of urbanization of cities in Nigeria and the rate of population growth in these urban centres equate to increasing volume of waste generated on daily bases in these urban areas,[1]. With the above scenario, there is need for a proper and efficient waste management system to be in place to tackle the mountain of waste been generated daily. The issue of solid waste management in the urban centres of Nigeria is becoming very worrisome. It is one of the problems of urban centres that beg for immediate and lasting solution. This is because it borders on the health of the citizenry and environmental quality. The issue of urban waste management is all about waste generation, collection and disposal. WHO defines waste as “something which the owner no longer wants at a given place or time and has no market value”. Lagos State environmental sanitation edict of 1985 sect.32 no.2 says that “waste is any substance that constitute scrap materials or effluent or other unwanted surplus substance arising from the application of any process”. From the above waste is an inevitable byproduct of any economic activity that needs to be properly managed. How well this is done is the bone of contention of this study so that the populace will not be jeopardized health wise and the environment not be degraded. It is said that urban waste is a demon that needs to be chased away with meticulous planning and thorough implementation.

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Solid waste management in Enugu Metropolis cannot be said to be one of the best, despite the efforts of the state government and the waste management agency. The fleet of trucks and the number of waste staff falls

short of the rate of production of these solid wastes. Therefore, there is need to explore other avenues of making the situation better for all of us. This study therefore aims at assessing the existing scenario with the intention of finding how the private sector participation can enhance solid waste management.

2 THE STUDY AREA

The study area is Enugu Metropolis. It is the capital of Enugu State, located between latitude 6°27" north of the equator, longitude 7°29" east of Greenwich meridian and lies at altitude 213.39m above sea level. Enugu Metropolis has a land area of 79.2sq. Kilometers and a population of 717,291 at 2006 census, Enugu Metropolis comprised of three local government areas being Enugu North, Enugu South and Enugu East. (fig. 1) Enugu is characterized by undulating terrain because of the presence of several hills and adjoining valleys. The soil type is predominantly that of laterite red soil with clay, silt, loam and alluvial sand in parches. The climate is that of the savannah region in the warm humid zone with moderate to high rainfall, high temperature and high humidity all the year round.

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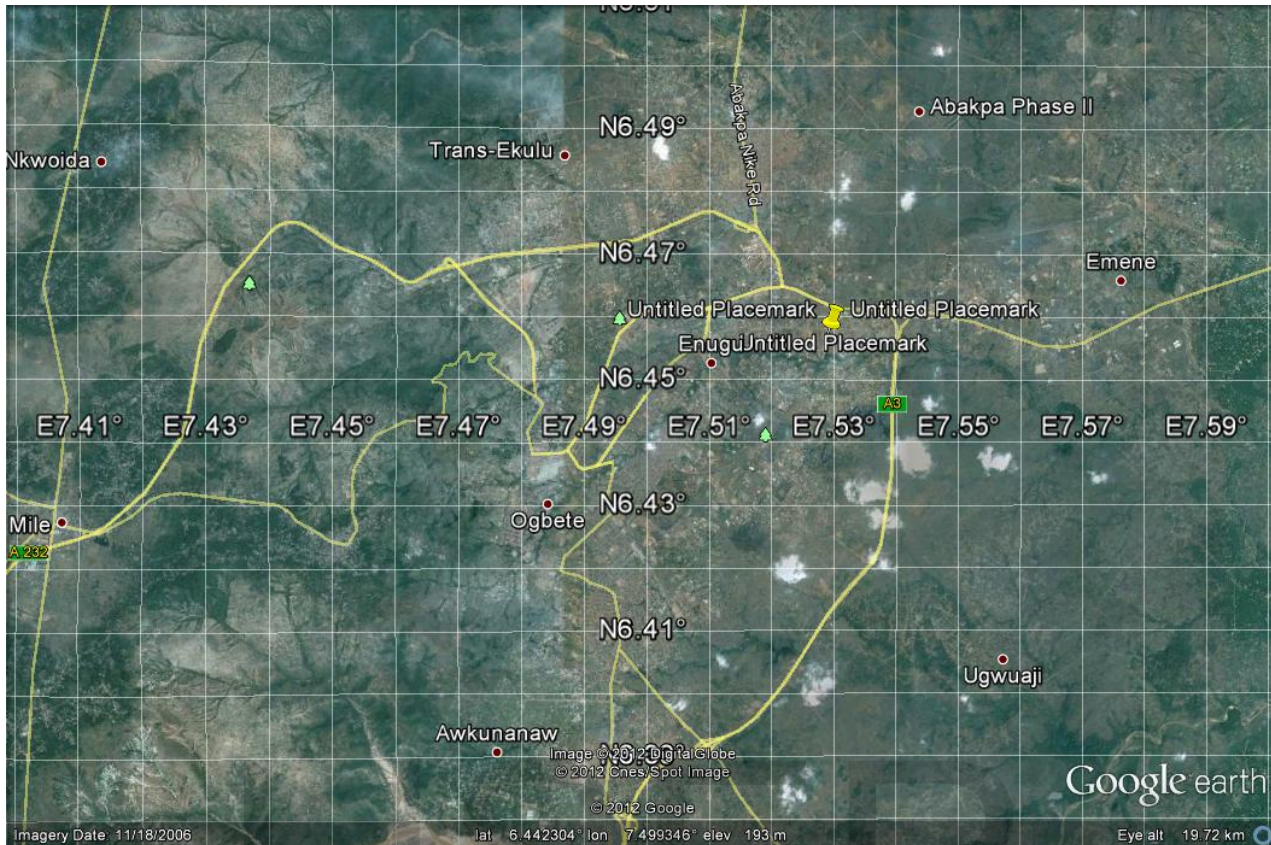


Fig. 1 Enugu Metropolis

Source: Google earth, 2012

3 METHODOLOGY

The study was done with observation and on the spot interviews within the study area being divided into four segments. These segments are drawn each from the three local governments operating in Enugu viz; Abakpa in Enugu East, New haven in Enugu North and Uwani in Enugu South. The fourth location depicts a market scene, the new market also known as the Relief market was used. The normal practice of depositing generated wastes at the various collection points, for temporary storage and subsequent disposal at landfill sites were keenly observed. Then these questions were put at random to residents for a direct Yes or No answer.

1. Degree of success of the present method of management.
2. The level of support the informal sector can render to help the situation.
3. If they (informal sector) are willing to participate to make waste disposal sustainable in Enugu.

The respondent's selection was done randomly, about ten in each sector which comprised male and female, adult and children. The result was simply presented on tables for further discussion.

4 Citizen Participation: a Conceptual Context

For the achievement of effective, efficient and sustainable urban management, democratization of urban governance is being advocated, [2]. This involves full participation of the citizenry in every aspect of government that impacts on their well being. [3] observed that the orderliness, harmony and efficiency of the pre-colonial urban centres could be attributed to the decentralization of administration to the authority of neighborhoods, the guilds and the markets. The decentralization gave the populace a sense of responsibility and as such highly involved in the maintenance of urban resources and environment. [4] ,[5] believe that people need to participate in planning their environment to be satisfied. The believe that participation gives users a feeling of control over their environment and is the only way user values can really be taken into account [6],[7] observed that planning, whose main objective is to create a supportive human settlement, has often succeeded in creating an incongruent environment which is a source of dissatisfaction as well as neglect of the fact that planning should derive its legitimacy from the people. He further stressed that good governance must involve participation of the citizen, that is active involvement of the urban communities in making and implementing decisions on matters of concern to their lives[8]. His opinion is that the micro-urban level involvement must be in the choice, execution and evaluation of programmes and projects.

The Last Level of [9] five-fold classification of citizens participation based on the degree of citizen's initiative termed, participation through creativity" is being advocated; for effective urban solid waste management in Enugu. This implies that citizens define their situation, determine their priorities, make plans based on those priorities, implement the plans and monitor and evaluate the outcomes. But the legislation and infrastructure would still be handled by the government.

5 CURRENT STATE OF SOLID WASTE MANAGEMENT IN ENUGU

Solid waste management in Enugu is the sole responsibility of Enugu State Waste Management Agency (ESWAMA). Enugu State Waste Management Agency (ESWAMA) was established in 2004 to replace Enugu State Environmental Protection Agency (ENSEPA). It was originally under the Ministry of Environment and Solid Minerals but now is under Enugu Capital Development Authority. It was established to develop and implement policies on the management of solid and liquid wastes that would promote the health and well being of the people. Through ensuring effective and efficient collection, removal, treatment and disposal of all kinds of wastes in the metropolis

Solid wastes are primarily generated from residential, commercial, industrial, construction, hospital, agricultural and animal farms. The wastes so generated are from different materials having different decomposing rate. Some decompose totally like food scraps, agricultural wastes, others decompose partially

and still some do not decompose at all. The wastes are generated at one point, collected and transferred to another where it will finally be disposed off. In Enugu, residents are required to bag their wastes and dump the bagged wastes at designated dumpsite to be evacuated later by the authorities. This is where the real problem is, to deal with the mountain of wastes on these dumpsites on daily basis and how often these are cleared is a matter of concern. Secondly how to finally deal with the dumped waste is a constant worry. In the market scene the collection of waste is done by small private individuals that go from stall to stall with a token, they manage to keep the market clean and remove the collected wastes to the designated dumpsites outside the market.

In Enugu the authority concerned Enugu State Waste Management Agency (ESWAMA) operate a landfill which in actual sense is not really a landfill but an open dumping and burning of refuse. One of the implications of this method is seepage of leachates with its attendant effect on ground water especially shallow hand dug wells. It also poses health and environmental hazard as it pollutes the air and endangers the health of the populace. This in turn creates a lot of pollution and discomfort to the immediate surroundings.[10]

6 FINDINGS OF THE STUDY

The study was carried out around the city of Enugu. The interviews were conducted randomly on the chosen study sites of Abakpa, New haven, Uwani and Relief market, the distribution of respondents are as shown on table 1 below

TABLE 1
DISTRIBUTION OF RESPONDENTS

	TOTAL	MALE	FEMALE	CHILDREN
ABAKPA	10	3	5	2
NEW HAVEN	12	3	6	3
UWANI	13	5	4	4
MARKET	8	3	5	0
TOTAL	43	14	20	9
PERCENTAGE	100%	32.56%	46.51%	20.93%

Source: Researcher's Field work, 2012

The table 1 showed the various strata of people because they are those found disposing waste. The respondents were asked to comment on how successful the present waste management style is and their answer is as represented on table 2.

TABLE 2
RESPONDENTS' OPINION ON THE DEGREE OF SUCCESS OF THE PRESENT METHOD OF WASTE DISPOSAL.

	TOTAL	YES	NO
ABAKPA	10	2	8
NEW HAVEN	12	4	8
UWANI	13	3	10
MARKET	8	4	4
TOTAL	43	13	30
PERCENTAGE	100%	30.23%	69.77%

Source: Researcher's Field work, 2012

From the table 2, 69.77% of the respondents feel that despite all efforts, the mountain of waste is still there and always on the increase. On the question on the level of support from the informal sector to help ameliorate the situation, the respondents feel that the informal sector should be involved more in waste management; this is shown on table 3.

TABLE 3
RESPONDENTS' OPINION ON LEVEL OF SUPPORT FROM THE INFORMAL SECTOR.

	TOTAL	HIGH	LOW
ABAKPA	10	7	3
NEW HAVEN	12	7	5
MARKET	13	9	4
UWANI	8	5	3
TOTAL	43	28	15
PERCENTAGE	100%	65.12%	34.88%

Source: Researcher's Field work, 2012

This was also answered with a simple high or low which translates into 65.12% for high while 34.88% feels otherwise. This led to the next question of willingness to participate. 83.72% of the respondents are willing and ready to partner with government in this waste management issue; as shown on table 4.

TABLE 4
RESPONDENTS' OPINION ON WILLINGNESS TO PARTICIPATE

	TOTAL	YES	NO
ABAKPA	10	9	1
NEW HAVEN	12	8	4
UWANI	13	11	2
MARKET	8	8	0
TOTAL	43	36	7
PERCENTAGE	100%	83.72%	16.28%

Source: Researcher's Field work, 2012

7. IMPLICATIONS OF THE FINDINGS

There are serious implications as seen from the findings. The private sector is willing to partner with the public agencies/ government in the issue of waste management to create a cleaner environment for all. The onus is on the government to work out a functional framework within which this partnership will operate. The first and major aspect of the implications lies with the realization and acceptance of the government and its agency about the failure of all the strategies of the formal solid waste management to achieve effectiveness and efficiency. When this is accepted, the government should understand that what is being advocated is the need to assign some aspects of solid waste management to the willing citizenry. Since urban waste management is statutorily one of the essential services rendered by the local and state government, the legislation, infrastructure provision, pretreatment and final disposal would be its responsibility while such functions as collection will be assigned to informal sector. While such functions as collection, evacuation waste reduction, monitoring and fee collection will be assigned to the informal sector. Thus the government would enact Legislation and pass bill transferring some functions and rights of solid waste management to the informal sector; then, follow the mobilization of the willing public and helping them to form cooperatives. Their rights and functions will be spelt out and areas of jurisdiction assigned. The recruitment will bear in mind the various aspects of waste management including administration. The recruitment would concentrate more on semi skilled, unskilled and not fully employed citizens who are willing to be trained by experts in various aspects of waste reduction and management, viz, collection, evacuation, sorting, composting, monitoring and fee collection.

After the necessary training, the various groups or cooperatives will be allowed to operate under close supervision and monitoring by experts for about six months. After which evaluation, filling of missing gaps, refinement and full implementation would follow. The attraction in this system is that the government provides the vehicle and equipments, pretreatment and final disposal hygienically while the informal groups collect, evacuate, monitor, collect the fees and control the fees both from levies, fines, sales from sorting and

8 CONCLUSION

There is a similar type of partnership already existing in parts of Lagos State and Abuja with a lot of visible successes. The government makes the laws, lease the existing infrastructure/ equipment to the private sector to operate and account to the government. These companies are under constant surveillance and monitoring by the government. But what is being advocated in this study is more citizens oriented and involving, since the people seeing it as taking their own fate in that hand would put all their best in it. The Monitoring and fee collection, which form the most difficult aspects for the agencies responsibility, are likely to be done with perfection since this is also their means of livelihood.

The success of this scheme will not only create a clean environment but also free the government to concentrate on other vital issues of development.

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