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Residential Solid Waste Management in Sango-Ota, Ogun State: To Recycle or Not to Recycle?

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Abstract

Sango-Ota, like other fast urbanizing towns and cities in Nigeria is faced with a range of problems including poor state of roads, lack of potable water and epileptic electrical power supply, inappropriate solid waste management, etc. Ota, being a town with two universities, a prominent church and a host of industries, the problems posed by residential solid waste littering the major routes in the town appears to be the most prominent in recent times. Living with solid waste littered around has been embarrassing to visitors from far and near. This paper examined the visibility or otherwise of solid waste recycling program in Sango-Ota bearing in mind her dual roles of a gateway to Lagos, Abeokuta and Cotonou on one hand and her status of hosting two private universities as well as one of the leading Christian Church in the world – the Winners Chapel. Structured questionnaires, supported with interviews and observations were adopted to collect primary data from households, waste collectors, buyers/sellers and a waste recycling company. Secondary data were obtained through journal articles and books. Percentages and ranking were employed for the analysis of data collected while presentation was with the aid of tables. The results obtained indicated that government needs to encourage and support waste recycling companies in land acquisition documentation, equipment importation, site security and regular power supply. In addition, government should encourage traditional waste recycle workers/buyers/sellers to form cooperative societies as a means of strengthening their solidarity and increasing their income. To have a sustainable clean environment, solid waste materials' recycling has come to stay subject to the government political will at the local and State levels.

Key works: Residential Solid Waste, Solid Waste Management, Recycle, Sango-Ota, Nigeria.

1. Introduction

Man, as a living being, has to generate waste naturally since he must grow food crops so as to provide food he will eat to survive, build houses to live in, among other needs . In view of the ever increasing population of towns and cities across the country, there are bound to be massive generation of solid wastes in residential neighbourhoods. Unfortunately, Chukwu (2010) noted that many people still regard environmental degradation with urban solid waste generation as an inevitable price of development. Ota houses two private universities (Covenant University and The Bells University of Technology). The solid waste challenge being encountered in Ota presently sterns from the fact that the rate of solid waste generation is faster than the rate of collection and evacuation perpetually thus leading to solid waste accumulation across the nooks and corners of the town. Solid waste management therefore, concerns the interplay among generation, storage, collection and final disposal (Omuta, 1988).

Traditionally, Nigerians had for long been practicing waste recycling at the local level unknowingly through the use of old newspapers, leather, vegetable wastes for animal feeding, cartoons, planks of dismembered wooden cupboards, bed-frames, etc. There has been a booming market in the sale of dismantled roofing building materials such as corrugated iron sheets, planks of various sizes, recovered iron rods of various sizes, wash-hand basins, kitchen wash hand basins, etc. Pitchel (2005) also noted that by the 19th century in the USA, because all waste had to be dealt with, recycling and reuse had stepped in primarily out of necessity as it was cheaper to recycle materials than buy new ones hence the term 'recycling' became part of their vocabulary. Thus, what happened in the USA had also taken place in Nigeria out of necessity too. These acts were documented by Zavodska, Uhuo and Benesofa

Igbinomwanhia and Ohwovoriole (2012) identified five constraints (economic, financial technical, social and cultural) to effective solid waste management in Benin-City, Nigeria. They noted that developing countries have weak economic bases, hence, insufficient funds for development of sustainable solid waste management systems. More importantly, economic constraints also made the populace to patronize cart pushers who are not

able to get to the approved designated dump sites where the solid waste are expected to be managed properly. Also, solid waste management is given a very low priority in developing countries, except perhaps in capital and large cities (United Nations Commission on Sustainable Development, 1997). Solid waste management is given very low priority in the budget due to limited finances (Omran and Read, 2008). According to Ogawa (1996), there is lack of human resources at both the national and local levels with technical expertise necessary for solid waste management planning and operation. Furthermore, the social status of solid waste management workers is generally low (Agunwamba, 1998) as a result of the negative perception of the society regarding the work which involves the handling of solid waste. Such societal perception leads to low regards for the work, low self esteem for the workers especially the garbage men and in turn produces low working ethics and poor quality of their work (Ogawa, 1996). Culturally, materials such as dead animals, food items and cloth used for sacrifice were observed at the road junctions and by the road side and such items as dreaded as spiritually dangerous to solid waste truck pushers.

Despite various efforts at enforcing environmental sanitation in Nigeria at both national, State and local government council levels and the benefits of these efforts in terms of providing employment, alleviating poverty, improving public health and sanitation as well as a reduction in environmental pollution, there is still the issue of continuous increase in uncollected residential solid waste. Wilson et al., (2009) found out that the insufficiency of the various approaches towards eradication of solid waste accumulation has encouraged informal waste recovery and recycling activities by waste collectors sometimes described as "scavengers" who often sit apprehensively alongside formal 'modern' waste management systems. In the presence of such trepidation, the livelihoods of many families depend on the recovered and recycled products from landfills. The inability of the various efforts by scavengers to effectively gather substances such as paper, plastics, glass, wood, and compost from residential neighbourhood as well as at dumpsites or landfills has been attributed to inadequate collection infrastructure, quality sourcing problems, limited reprocessing capacity, need for standardization, specification or procurement barriers of end products as well as the need for alternative markets for end products.

2. Trends in Residential Solid Waste Management

Five groups of traditional waste recycle workers within the large informal waste management and recycling collection occupation in London in the late 1800's were, first, street buyers who bought any repairable items including old clothes, furniture, waste paper, bottles, glass, metals, etc. Second group consisted of street finders who were rag gatherers at the bottom of the heaps earning their income from dregs overlooked by others. Third group concerns night soil men who removed human sewage that is used as fertilizer. Fourth are street sweepers employed by dust contractors engaged in street cleaning. Fifth group consists of those who worked in recycling shops that bought and sold re-useable goods and recyclable materials.

Mbeng (2013) found that although informal waste recovery and recycling system in Douala, Cameroon was unregulated, yet large quantities of scrap metals (ferrous and non ferrous), glass bottles, plastic bottles, paper and cardboards, recovered and recycled makes the entire system an important contributor in reducing environmental pollution, combating unemployment and alleviating poverty in Douala. Plastic bottles are pelletized; scrap metals are transformed into aluminum pots by blacksmiths at Ndokotti and leather waste into leather shoes at Congo Market.

Russell (2008) analyzed cities and towns in the commonwealth of Massachusetts from years 1997 to 2008 and noted that as at 2008, 168 of the 350 towns across the United States had voluntarily implemented laws which required residents to recycle waste materials. He found also that major recycled materials include paper, glass, metal, and plastic materials. Programs such as curbside, drop-off, single-stream, or pay-as-you-throw (PAYT) activities increased recycling rates in the United States.

Rakib, et al., (2014) found that waste pickers and feriwalla act as key scavengers in removing solid waste from residential and industrial areas in Bangladesh. They noted also that informal recyclers and collectors as well as local recycling factories were involved with waste washing, drying and cutting but main recycling activities is performed in Dhaka city. They identified plastic, iron, polythene, sandle, tin, glass and paper as major materials involved. Nzeadibe (2009) found the attitude towards informal recycling desirable because it has led to poverty eradication and improved lives through job creation.

Uwadiegwu and Chukwu (2013) found that prices of recycled materials in USA have remained rather constant over the past decade and this has appeared to support the argument that economic forces are responsible for the

growth in curbside recycling. However, a direct tax on garbage disposal and a tax on virgin materials have been supported by some, the combination of an advanced disposal fee and a subsidy to recycling is supported by the majority of studies. Oumarou, Dauda and Abubakar (2011) noted that the success of efficient garbage collection and recycling rests on two critical issues. First, households must be willing to separate materials for recycling and second, private collectors must recycle the materials. The costs of landfills are high and for this reason, Japan, much of Europe, and the northeast regions of the United States have turned to incineration to manage residential solid waste since the 1970's though financially, incineration has been most successful where land is scarce. United States Environmental Protection Agency (2002) noted that organizing scavenging or waste-picking activities into recycling cooperatives had been on in Brazil. Cooperative societies enable members to sell to larger dealers at higher prices while the few cooperatives that already exist have demonstrated great success. In São Paulo, many other projects to promote recycling in Brazil included the development of a series of recycling handbooks, sponsored a database of solid waste documents, worked to standardize packaging symbols and conducted studies of local recycling programs.

3. **The Study Area**

Ota, an urban area with a 2006 census population of 526, 565 (NBS, 2006), is one of the largest towns in Ogun State. The city is located between latitude 60 30'N-60 50'N and longitude 30 02'E-30 25'E, with an elevation of 53m above mean sea level. Several rivers traverse the area that includes rivers Iju, Imojiba, Ogun, Abesan and Illo. The river Illo runs along the Lagos-Ogun boundary for about 24 kilometers. The field survey covered a distance of about 2km situated between Dalemo in Sango-Ota and the former Tollgate area. Ota is about a 10-minute drive from Lagos-Ogun State boundary and one of the fastest growing towns in Ogun State. Owing to the large growth in population as well as a significant influx of migrants from the countryside, Bangalore today faces serious problems of solid traffic congestion, inadequate infrastructure and an increased demand on resources. This, in turn, has affected the quantity and composition of municipal solid waste, which is further straining the city's resources.

Ota accommodates two private universities as well as many industries and residential housing estates. All these had influenced the extent to which the town has expanded in all directions. Ota has been selected because of the ever increasing heterogeneous population in recent years and urbanization, which made it a good ground for the study of this nature. The city performs the function of a State capital and headquarters for Winners Chapel which accommodates over more than one hundred and fifty thousand worshipers weekly. Ota has also been selected for this study due to the current appearance of solid waste products evident along the central Ota/Idiroko Road as a result of its increasing population and urbanization.

4. Methodology

For the purpose of this study, Ota was divided into four broad sub-areas on the basis of residential characteristics and socio-economic differences among them. The sub-divisions are: Sango fly-over neighbourhood and Oju-Ore being the two prominent indigenous built up parts of Sango-Ota; the new residential neighbourhood area of Iyana-Iyesi covering the two universities and the Winners Church neighbourhood; and the high status neighbourhood area of Toll-gate occupying the south-eastern section of the city. Two sources of data collection approaches were employed to meet the objectives of this study. Data collection was through field observation, administration of questionnaire and by conducting oral interviews with four top council officials involved in the collection, transportation, processing, recycling or disposal and monitoring of solid waste materials, ten re-usable solid waste material gatherers/scavengers and 200 residents of Sango-Ota across the four zones. Fifty questionnaires per zone were distributed using purposive sampling technique between June and September, 2014. On the whole, two hundred questionnaires were administered and distributed in the study area while structured interviews were held with 4 council officials, 10 and 15 scavengers/waste collectors. The study employed quantitative and qualitative statistical techniques. Simple percentage was used to summarise and organise data gathered from the questionnaires retrieved as well as interview responses.

5. Result

Two hundred and fourteen persons were involved in the overall survey. A greater percentage (75.2%) was male. The result was not unexpected because of the rough nature of waste recycling exercise. Observations coupled with in-depth interviews showed that women were more into neighbourhood waste collection and sale of waste products. 51.4% of people included were between 20 and 39 years age bracket while those below 20 years accounted for 38.3%. The involvement of people below 20 years of age waste collection activities was not by choice but by massive unemployment situation ravaging the country since the past three decades. Interactions

with respondents showed that those who were 40 years and above were those in civil/public service who had private vested interests in waste recycling business as well as senior staff of waste recycling company. Most of the people claimed to have had their first experiences while studying abroad.

Table 1: Table showing the Socio-economic characteristics of Households

Variables	Respondents	Percentage %
Gender		
Male	161	75.2
Female	53	24.8
Age		
<20	82	38.3
20-29	61	28.5
30-39	49	22.9
40-49	17	8.0
50and above	5	2.3
Education		
Primary School	92	43.0
Secondary School	78	36.4
Diploma	41	19.2
Degree	3	1.4
Employment Status		
Civil/Public Service	5	2.3
Company	7	3.3
Self employed	117	54.7
Student	24	11.2
Unemployed	61	28.5

The attitude of respondents towards claims of either being employed or unemployed was disturbing. Although 28.5% of respondents claimed to be unemployed, most of those who feigned self employment were only involved in partial solid waste recyclable material (leather, paper/old books/cardboards; plastic/polythene/rubber; glass/bottles; metals/can as well as textiles) collection.

As a way of establishing the feelings of various respondents (waste material collectors, buyers and recycling company users), concerning the way forward with respect to the full and inclusive participation of all those living in major towns and cities in solid waste recycling program, six conditions towards effective public participation were identified and put forward for ranking by all 214 respondents. In order of importance to each of the three groups concerned, solid waste collectors want government to encourage traditional waste recycle workers/buyers to form cooperative societies. Through this medium, group solidarity could bring in more rewards, funding and collective will to claiming their rightful place in the scheme of things. Waste Recycling Materials' buyers and Waste Recycling Companies' major concern was found to be the need for government, at all levels, and the communities at large to encourage and support waste recycling companies through land documentation, equipment importation, local security, electricity supply, etc. The stability of these companies across the country would influence their market operations and bring in additional profit for members.

Table 2: Conditions that must prevail for Effective Public Participation

S/N	Conditions	Rankings			
		Waste Collectors	Waste Recycling Materials' buyers	Waste Recycling Coy.	Average (Researcher's view)
1	Community residents must be adequately informed, opinion must be freely and openly ascertained	6	6	6	6
2	well-organized, continuous and effective communication dissemination to all a sundry by government	2	5	5	5
3	Community residents' demonstration of willingness to take on additional responsibility on waste sorting and disposal	5	3	3	4
4	Government full commitment to participation (funding and legal enforcement without partisan politics)	3	2	4	3
5	Encouragement of traditional waste recycle workers/buyers into cooperative societies	1	4	2	2
6	Need for Government and community encouragement and support for waste recycling companies (land, documentation, equipment importation, security, electricity supply, etc)	4	1	1	1

In the entire exercise, the view that community residents need to be adequately informed and their opinion must freely and openly be ascertained was least reckoned with in the ranking exercise. This result was not unexpected bearing in mind the unpredictable attitude of human beings in the areas of finance, commitment and government changing political environments in which Nigeria had been engulfed in since independence from colonial rule in 1960.

5. Conclusion and Recommendation

Effective urban solid waste management has become a major problem in Sango-Ota, in Ogun State and it is in the pursuit of the need to vigorously pursue a recycling program that this study was undertaken. It has been established that traditionally, Nigerians are not alien to solid waste recycling program; governments' political will to take such an idea to greater heights is required through encouragement and support to waste recycling companies as well as solid waste collectors, buyers/sellers. Also, as a result of prolonged years of unemployment, many people had resorted to recyclable solid waste collection and selling of same for survival, encouraging the establishment of cooperative societies among the various groups of waste collectors, buyers and users would create stable employment and engage a good number of the unemployed youth. Since solid waste management through recycling is not only about removing waste from the environment and returning it as new products or raw material, it is also a tool of social integration and economic well-being. There is therefore the need for higher awareness campaigns to motivate public towards supporting this laudable solution.

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