

SOLID WASTE MANAGEMENT IN BENIN CITY: AN APPRAISAL

Dr. Monday Ohi Asikhia and Danieles Olaye

Abstract

This paper appraises the critical challenges of solid waste management in Benin City with a view to identifying options and opportunities for solid waste management in Benin City. Drawing from secondary data, the paper shows that rapid urbanization, urban growth and the rapid population growth are some of the critical challenges facing solid waste management in Benin City. Other identified challenges include dwindling financial resources, weakness of local councils, poor governance and inadequacy of solid waste services. On the strength of the above findings, the paper advocates for strict control of urbanization and urban growth, increased financial resources for the disposal of solid waste, strengthening of local councils capacity and public enlightenment programme for the masses.

Introduction

Nigerians cities and towns are currently facing serious environmental problem arising from poor solid waste management. The rate of solid waste generation in Nigeria has increased with rapid urbanization. Solid waste is generated at a rate beyond the capacity of the city authorities to handle in order to maintain a sustainable urban environment. This has resulted in poor solid-waste management system that portends serious environmental crisis in most Nigeria towns and cities (Umunna, 2009).

The Federal Government of Nigeria in response to this has promulgated various laws and regulations to safeguard the environment. These include Federal Environmental Protection Agency Act of 1988. The Federal Ministry of Environment administers and enforces environmental laws in Nigeria. It took over this function in 1999 from the Federal Environmental Protection Agency (FEPA), which was created under the FEPA Act. Pursuant to the FEPA Act, each state and local government in the country set up its own environmental protection body for the protection and improvement of the environment within its jurisdiction. Solid waste management is a major responsibility of state and local government environmental agencies. The agencies are charged with the responsibility of handling, employing and disposing of solid wastes generated. The state agencies generate fund from subvention from state governments and internally generated revenue through sanitary levy and stringent regulations with heavy penalties for offenders of illegal dumping and littering of refuse along streets (Ogwueleka, 2003).

Despite these efforts, most cities in Nigeria are still facing the problem of non evacuation of mountains of refuse on a daily basis from their city centres, markets and along streets. This scenario can be attributed to the attitude of the residents of these cities who dump refuse indiscriminately. Ogboi and Okosun (2003) reported that the residents of Onitsha and those of other Nigeria cities such as Benin City, Lagos, Ibadan, Kano, and Enugu, dump refuse indiscriminately along the streets, roads, in open spaces, market places, frontages of residential buildings and drainage system. This result in an unsightly mountain of refuse that have become a common feature of Nigeria's urban landscape.

In Benin City which is the focus of this appraisal, the state government has over the years formulated several policies with a view to improving the sanitary conditions of its environment. Edo State solid waste management policy is designated to support policy guideline of National Environmental policy. The policy dilemma appears to be how to contain the adverse environmental impacts through proper implementation (Nwaka, 2005). One of the most important objectives of the policy is to solve sanitation problem in Benin metropolis as well as other cities in the state. However, data from the 2006 population and housing census (Table 1.1) shows that 35.5% of the households who disposed their solid waste using various means are located in Benin City. The table also shows that Oredo local government has the highest households followed by Ikpoba-Okha and Egor with a total of 88, 680, 82, 646 and 77, 295 respectively. More interesting in Table 1.1 is the fact about 49.4% of the households in Benin City dispose their solid wastes in unapproved dump sites, a situation that may have contributed to the present poor sanitary condition of the city.

Table 1.1: Methods of Solid Waste Disposal in Benin City

Local Government	Total Waste	Collected Waste	Buried by household	Public approved dump site	Unapproved dump site	Burnt by household	Other
Egor	77295	27570	7077	8390	9046	24511	701
Ikpoba-okha	82646	15799	10451	11168	17015	26743	1470
Oredo	88680	18901	5171	1185	8614	13895	245
Orhionmwon	37867	2808	4920	2304	16327	10286	1222

Source: 2006 Population and Housing Census of the Federal Republic of Nigeria. Vol. Ii

The present administration in the state has demonstrated uncommon courage towards the beautification of the state capital. The government has embarked on the development of solid waste management plan and the appointment of waste managers in Benin City metropolis and the implementation of zoning plans. The state government has also strengthened the mechanisms of solid waste management by the procurement of waste management equipment

such as two road sweepers, two tippers, two compacting trucks, three roll-off-roll on-trucks among others (Agba, 2010).

In spite of these efforts, a visit to some markets in the city, streets and open spaces still shows the presence of mountainous heaps of refuse. The implications of this is that the existing framework and policies for solid waste management in Benin city have failed in its onerous task of improving the sanitary conditions of the environment and therefore, requires a total overhauling. It is on this premise that this paper x-rays the critical challenges of solid waste management in Benin City with a view to identifying options and opportunities for solid waste management in Benin City. The next section of the paper briefly explores the concept of solid waste management. This will be followed by a review of the challenges of solid waste management in the area. The last will focus on the conclusions and opportunities for effective solid waste management in Benin City.

Conceptual Issues

Solid waste management could be referred to as the collection, transfer, recycling and disposal of solid wastes (Cointreau-Levine, 1994). Solid waste management refers essentially to a process of collection, transfer and disposal of wastes generated in cities and includes the institutional structures and arrangements for the efficient disposal of solid wastes (Ogu, 2000). According to Tchobanoglous (1993), solid waste management may be defined as the discipline associated with the control of generation, storage, collection, transfer and transport, processing and disposal of wastes in a manner that is in accord with the best principles of public health, economics, engineering, conservation, aesthetics, and other environmental considerations that are also responsive to public attitudes. The term “solid waste” refers to household refuse, market waste, street sweepings and waste materials from institutions such as schools, colleges and commercial establishments (Ogu, 2000). The importance of waste collection, transfer and disposal cannot be overemphasized. Apart from the issue of aesthetics, uncollected wastes constitute health risk which can be a serious consideration in local communities. Leachate from uncollected and decomposed garbage waste can contaminate ground water (UNCHS, 1988) and this could have enormous health implications in low-income communities where the use of well-water for drinking is common.

Issues and Challenges of Solid Waste Management in Benin City

The unprecedented rapid urbanization and urban growth occurring in Benin City has been identified as one of the critical challenges facing solid waste management in Benin City and other cities in Africa (Ogu, 2000; Onibukum and Kumuyi, 2010). The city has experienced rapid spatial and population growth in the last five decades and is now one of the major cities in Nigeria. The earliest recorded indication of the geographic size of Benin was by Olfer in 1786 who

described the city to be ‘about four or six mile (Dutch mile) in circumference and has thirty very straight broad streets, about 120ft wide (Hodgkin, 1975). By 1938, Benin had a total built up area of about 468 hectares. In 1952 the built up area has expanded to 949.5 hectares. Presently, Benin City lies mainly within the Oredo Local Government Area with a total area of 1,225sq km. The other local government areas, which make up the city in small proportions include Ovia (now Ovia North-East and Ovia south-West local government area) which has an area of 5119 sq km and Orhionmwon (also comprises of Uhunmwonde and Orhionmwon local government area) with an area of 4,385 s1 km. However, the current size of Benin city planning area is 804 sq. Km (Edo state government, 1996). The spatial growth has been equally dramatic and is attributable to suburbanization, a process whereby surrounding rural and peri-urban settlements are incorporated into the city. The rapid spatial growth of Benin City has made solid wastes generated in residential localities, commercial and institutional premises a huge and difficult task for the municipal authorities to handle.

In addition, the rapid population growth of the city has contributed to the problem of solid waste disposal. The first population growth estimate for Benin put the size at 15,000 between 1786 and 1800 (Roth, 1972). By 1952, the population of Benin was 53,753 with 28,287 male and 25,466 female (Nigeria census, 1963). According to 1963 census, it rose to 100,094 in 1991. The population of Benin metropolis rose to 780,976 and to 1,085,676 in 2006. However, a population projection growth rate of 2.78% is therefore used to project the population in Benin metropolis from 2006 to 2015 as shown below. The implication of this geometric increase in population of Benin City metropolis means increase in the generation of Solid Waste.

Table 1.2: Population of Benin City

Year	Population
1952/53	53,753
1963	100,694
1991	780,976
2006	1,085,676
2009	1,146,473
2011	1,87,084
2013	1,227,694
2015	1,268,305

Source: NPC (National Population Commission 1952-2006).

Another daunting challenge facing solid waste management in Benin City has been dwindling financial resources allocated for environmental issues. Finance has always been a problem for urban waste services in the city. Poor financing is characteristic of public waste services provision in Nigeria. The annual average financial resources allocated to sewerage, drainage and refuse

services by all the states in Nigeria fell from US\$ 163 million to only US\$ 17.4 million for the period 1990-92 (Ogu, 2000). The corresponding amount allocated by all local councils in the country was only US\$ 5 million. Arguably, public funds for waste services are not usually adequate, considering the many expanding cities in the country. In Benin City, in 1992, the city council proposed spending US\$ 0.1 million dollars on refuse services of which only US\$ 0.02 million (23 per cent) was actually released and spent. Meanwhile, there was no efficient framework for recovering some of the costs of the refuse services from households (Ogu, 2000).

Another main factor that contributed to the crisis of solid waste management in Benin City is the weakness of the city council as an institution that had unclear strategies for removing solid waste. The city councils are not able to collect solid waste in their respective jurisdiction. The inability of local councils to manage waste in an environmentally friendly manner calls to question the capacity of governance at this level. What do we mean by *governance*? Governance embraces the role of the state in society; the management or mismanagement of socioeconomic activities in the public, private, and community sectors and the involvement or lack of involvement of civil society in the management of society as a whole (Oniboku and Kumuyi, 2010). Good governance can be defined as the presence of a government with good and legitimate leadership, a lawful claim to power and authority (based on a mandate derived from the people's will), vision, and a progressive socio-political agenda acceptable to, and accepted by the people and implemented with honesty, transparency, and accountability. Good governance requires a government to draw its legitimacy from, and be accountable to the governed. Good governance will lead to the institutionalization of appropriate policies, programs, and strategies for urban management that help to eliminate or ameliorate the problems posed by solid waste.

Still related to the issue of poor governance is the inability of government to implement its own formulated policies be it in the environment or other sectors. According to Adamolekun (1983), policy implementation refers to the activities that are carried out in the light of established policies. It refers to the process of converting financial, material, technical and human inputs into outputs – goods and services (Egonmwan, 1984). Edwards (1980) defined policy implementation as a stage of policy making between the establishment of a policy (such as the passage of a legislative act, the issuing of an executive order, or the promulgation of a regulatory rule) and the consequences of the policy for the people whom it affects. It also involves a wide variety of actions such as issuing and enforcing directives, disbursing funds, making loans, assigning and hiring personnel, etc. Implementation problem occurs when the desired result on the target beneficiaries is not achieved. Some of the identified problems responsible for policy implementation gaps in Nigeria include ego problem, plan indiscipline, poor participation of the target beneficiaries, bribery and corruption

and the failure of the policy makers to take into consideration the social, political, economic and administrative variables when analysing for policy formulation. As a matter of fact, it has been argued that the problem facing Nigeria and other developing countries is not that of lack of policies but its implementation.

Ogu (1996) identified inadequacy of solid waste services as another major challenge facing the management of waste in Benin City. In his study of solid waste management conditions in Benin City, he observed that 62 per cent of houses do not have any formal arrangement for waste collection and disposal, which implies that no public or private waste services are available to these residential houses and their neighbourhoods. On zonal basis, a survey by Ogu (1996) showed that the planned settlement areas have the highest proportion of in-compound waste bins. On the other hand, the suburban areas have the highest number of cases of indiscriminate waste disposal followed by the intermediate zone. In Benin, access to waste bins by households does not necessarily imply that wastes deposited therein are collected and disposed of efficiently. Only 79 (13 per cent) of all surveyed households in the city out of the 181 that have access to either street or compound waste bins 31 per cent of all surveyed households have access to any form of pre-arranged waste collection and disposal. Over 50 per cent of households with refuse bins burn the wastes in containers or dispose of them in illegal refuse dumps at road junctions or near undeveloped land. The households involved usually throw refuse into stormwater drains, burn waste materials within or outside the compound, use any available vacant or underdeveloped plots of land as “refuse dumps” or throw their refuse into the concretized old city moat. Similarly, there is still the problem of inadequate vehicles, plants, equipments and other necessary tools. It should be noted that wastes deposited at designated points of collection has to be transported either to the transfer loading station or to the landfill or the final disposal point. Therefore for effective and efficient collection system, there must be enough and well maintained equipment such as trucks, tippers, pay-loaders, bulldozers, road sweepers, compactors and others (Bidemi, 2004).

Finally, the poor waste disposal habit of the people is another major challenge facing solid waste management in Benin City. There is generally poor attitude to waste disposal by residents in the City. This poor habit has made people to dump refuse indiscriminately on drainages, roads, moats, open spaces, markets, among other places. In the light of these challenges, this paper advanced the following recommendations.

Conclusion and Recommendations

The importance of clean environment to good health of the people and aesthetic cannot not be overemphasized. Proper solid waste management undoubtedly will promote a clean environment. To achieve this, some of the identified challenges must be succinctly addressed.

In this regards, the following recommendations are therefore made.

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Firstly, the contemporary pattern of urban growth and rapid population explosion in the area should be brought under control. The source of this population is mostly through rural-urban migration. It therefore demands that government as a matter of urgency should create a decent condition of living and the provision of opportunities to rural people to stem their influx into the city. In addition, government must evolved appropriate urban planning measures to check the uncontrolled and un-coordinated growth of the city.

Secondly, the financial resources being allocated for the management of solid waste should be increased. Also, individuals operating outfits that generate noticeable solid waste such as polythene bags and sachet water should be made to pay special levy with a view to increasing government internally generated revenue (IGR) to combat the menace of solid waste in the city.

On the capacity of local council to collect solid waste generated in their respective jurisdiction, it is important that government strengthen its capacity through training of their staff, acquisition of relevant equipments and tools and the development of appropriate policy in consultation with the people.

The government should strive to implement its policies of solid waste management to the letter. These policies should be developed in consultation with the people to ensure smooth implementation.

Finally, government should continuously carry out enlightenment programme on the proper ways of solid waste disposal and the dangers associated with improper solid waste management to the environment and to health. This should be done through the various groups in the various wards in the city such as women group, men and the youth. Television and radio programmes and hand bills educating the people on ways of managing waste should be carried out on a daily basis. Some cities in Nigeria such as Calabar have been noted for its high quality with respect to management of solid waste. These cities strategies can be studied and adopted or modified if possible to suit the contemporary socio-economic and environmental conditions of Benin City.

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