



CHALLENGES OF SOLID WASTE MANAGEMENT AND ENVIRONMENTAL SANITATION IN IBADAN NORTH LOCAL GOVERNMENT, OYO STATE, NIGERIA

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ABSTRACT

It is widely accepted that Nigerian cities generally suffer in the area of effectively managing the high rate of solid waste generation in the country which poses great problems for good environmental sanitation and sustainable living of the citizens. The issues surrounding solid waste and its management in Nigerian municipalities have been variously discussed by scholars in various fields of study, but the multi-faced nature of the challenges associated with it make research into it imperative. Therefore, this paper concentrates on the challenges affecting management of solid waste in Ibadan North Local Government Area of Oyo State, Nigeria. The study adopted qualitative research techniques and was conducted among stakeholders including officials of the Oyo State Ministry of Environment, Ibadan North Local government, Oyo State Waste Management Authority, private contractors and residents of the twelve wards that make up the local government. Data were collected using In-Depth Interviews and Key Informant Interviews. Data collected were content analysed. The study revealed that financial incapability, inadequate manpower and welfare, poor provision of health services, negative attitudes, poor equipment maintenance, crude waste disposal and unplanned city structures among others were factors affecting solid waste management and environmental sanitation in the study area. Therefore, there should be increased patronage and effective management of the private contractors, prompt collection of solid wastes in the city, financial back up, and implementation of the waste-to-wealth scheme.

Keywords: *Solid Waste, Solid Waste Management, Environmental sanitation.*

INTRODUCTION

Solid wastes refer to the wastes arising from human and animal activities that are normally solid and are discarded as useless and unwanted. They include household wastes, industrial wastes and agricultural wastes. The process of collecting, separating, transporting and disposal of solid wastes in such a way that they are harmless to humans, plants, animals, the ecology and takes into account public health and aesthetic quality of the environment is referred to as solid waste management. According to the United Nations (1997) solid waste management is the handling process of solid waste materials from generation at the source to its disposal. Okosun (2011) noted that solid waste management is a planned system of effectively controlling all the stages in a sanitary, economic, and aesthetically acceptable manner. The National Urban Development Policy (2006) also defined it as the generation, separation, collection, transportation and disposal of waste in a way that takes into account public health and aesthetic quality of the environment. Also, the World Bank (2006) defined it as effective control of production, storage, collection, transportation, processing and disposal of wastes in a sanitary and aesthetically acceptable manner. If wastes are not properly managed, they constitute serious health challenge to the society, hence the need for efforts to be carefully directed at keeping the environment clean and hygienic, a process referred to as environmental sanitation. Environmental sanitation is the process, conditions or procedures of making the environment hygienic and fit to live for both humans and animals (UNESCO, 1997).

According to UNESCO (1997), between one-third and one-half of the solid waste generated within most cities in developing countries are not collected. Ogu (2000) observed that despite the importance of adequate solid waste management to the urban environment, it remains a daunting challenge to developing countries of which



Nigeria is one. Ye-Obong and Uduak (2013) affirm that the different categories of wastes in many Nigerian cities are most times disposed in an unsustainable manner in open dumps, streets, ravines and also drainages which then flow into streams that serve as a source of water to the people residing in such environment.

Successive governments in Nigeria over the years have made concerted efforts at proper solid waste management which will translate to effective environmental sanitation. In Nigeria, the state is responsible for the protection of the environment and in accordance with Section 20 of 1979 constitution, 'the state shall protect and improve the environment and safeguard the water, air and land, forest and wild life of Nigeria' and the same constitution specifically assigns the responsibility of environmental sanitation to the local governments, the third tier of government.

In order to enhance effective environmental sanitation in the country, the federal government introduced the monthly sanitation exercise in 1984 and stipulated that every last Saturday of the month, there should be restriction of both human and vehicular movement and charged every individual to clean their surrounding between the hours of 7.00 and 10.00am. Later in 1988, the Federal Military Government promulgated Decree No 58 of 1988 which charged the Federal Environmental Protection Agency with the responsibility of maintaining decent environment in Nigerian cities and towns. Section 4 of the decree charged the agency with the responsibility for the protection and development of the environment in general and environmental research and technology. In 1992, the federal government formulated the national guidelines and standards for environmental pollution.

In an attempt to supplement the federal government's efforts to combat environmental hazards, state government agencies were established. In Oyo state, the issue of solid waste dumping dated back to early 1960s when Ibadan Council was responsible for the maintenance of Ibadan city (Ishaq, 2004). Before the enactment of edict No 8 of 1997 establishing the Ibadan Waste Management Authority, the management of the environment of Ibadan city was the responsibility of the defunct Ibadan City Council, Mapo Hill and later when Ibadan Municipal Government was created, the responsibility automatically transferred to Ibadan Municipal Council. Later, Oyo State government enacted an edict establishing the Ibadan waste Management Authority (Gazette No 8, Volume 22 of 16th May, 1997), although the functions of the Local government councils areas are to collect, transfer and dispose off solid wastes. This, according to Ishaq, meant that the functions that were previously performed by the local government councils under 1979 constitution have been transferred to the authority through this edict. This enactment shifted the management of Ibadan city environmental wastes and refuse on a singular authority which admittedly, could not cope with the volume of solid wastes generated in Ibadan. Ishaq opined that such hijack of functions and responsibilities of local councils could be attributed to the low technical capacity of local councils to provide waste management services especially in large urban centres such as Ibadan.

The Oyo State government established the Ministry of Environment and Water Resources which commenced functioning on 1st January 2001. The Ministry has among others the responsibility of formulating and enforcement of policies, statutory rules and regulations on waste collection and disposal, general environmental protection, control and regulation of ecological system and all activities related thereto.

In furtherance of the institutional arrangements to enhance environmental sanitation, the state government has gone further to introduce other micro level arrangements which include Kerbside sweeping as a way of safeguarding public health and beautify the environment. This innovation came into existence in May 1999 as an attempt to make Ibadan city wear a good look in preparation for the World Youth Soccer tournament (Nigeria '99). In addition to the street sweepers, registered refuse collectors are employed by the Ibadan Solid Waste Management Authority to collect refuse in drums in front of each house under their jurisdiction and dispose them off in



approved waste depots. Communal depots and block systems are also used for people in that locality to dump their wastes for eventual collection by the contractors. The idea is to bring the process close to the doorstep of the masses and enhance community participation in the process. In addition to the national environmental sanitation day, the Oyo State government has also introduced the weekly environmental day which is every Thursday between the hours of 7am and 9am., and state media houses also run television and radio jingles to sensitise people on the need for proper waste disposal and to make use of facilities provided by the government.

However, despite all these laudable structures and arrangements, the streets of Ibadan are still littered with piles of refuse which disfigure the environment and constitute serious health challenges. The habit of indiscriminate dumping of refuse on the streets, open places, drainages and rivers is yet to become a thing of the past. Refuses dumped in communal depots are still left un-cleared several days. The question therefore is, what are the factors impeding effective waste disposals and environmental sanitation in Ibadan Metropolis? This study was therefore carried out to investigate the challenges of solid waste management and environmental sanitation in Ibadan North Local government area of Oyo State.

THEORETICAL FRAMEWORK

This study was anchored on the structural functionalist theory. It is one of the long standing theories in sociological studies and it derived from the classical works of August Comte, Talcott Parsons and Emile Durkheim. There are structures in the society with defined functions and each structure is expected to play its part well to keep the society together. Failure to perform this role well affects the whole society. The functions, interdependency, necessity and complementary roles and nature of the different actors and agencies that are in charge of the Solid Waste Management programme in Ibadan North Local Government Area may be viewed in light of sociological theory of Structural-functionalism as elucidated by Abuyuan (1999). According to the Structural-functionalist theory, institutions must survive by adapting to changing circumstances by means of interdependence on its various branches or partners. The actors and agencies in Solid Waste Management adapt to this theory well if we view the various actors as functional parts of a social phenomenon like environmental sanitation. Here the agents or actors (Ministry of Environment, Local Government, Solid Waste Authority, Private Contractors, residents) may be seen as interdependent organs of a larger organisation or society (Ibadan North Local Government Area) each having its specialised function working as a whole towards the common goal of delivering effective service and carrying out responsibilities in ensuring a clean environment in the Local Government Area.

RESEARCH METHODOLOGY

The study was descriptive and adopted qualitative approach. It was conducted in Ibadan North Local government area of the state. The study population comprised of officials of the Ministry of Environment, Ibadan North Local Government, Solid Waste Management Authority, Private Contractors and Residents of Ibadan North Local Government Area. Primary data were collected with the aid of Key Informant Interviews (KII) and In-Depth Interviews (IDI). The sample size was 20 respondents analysed as follows:

Instruments	Population	Sample size
KII	Oyo State Ministry of Environment	2
	Oyo State Waste Management Board	2
	Ibadan North LGA	2
	Private Contractors	2
IDI	1 resident from each of the wards	12
Total		20



The respondents were purposively selected by virtue of their responsibilities and involvement in solid waste management and environmental sanitation in Oyo state, and it was therefore expected that they would have the desired information needed for the study.

The qualitative data were collected by tape recording and were later translated and transcribed. The data were analyzed using manual content analysis. The procedure commenced with the translation and transcription of the interview, followed by examination and separation of various responses that threw light into the study objective. The responses were imported into analysis on the merit of their applicability to the subject matter. In terms of ethical consideration, every attempt was made to protect the respondents as well as the information obtained from them. There was informed consent and the rights and freedom of respondents were well respected.

RESULTS AND DISCUSSION

From the study, it was gathered that many stakeholders are involved in the process of solid waste management and environmental sanitation in Ibadan North local government area. The stakeholders identified were the Ministry of Environment, Oyo State Waste Management Authority (OYOWMA), the Environmental Health Department of Ibadan North LG, Private contractors and the citizens. They all have their roles to play and the roles are complementary and at times overlapping. The State Ministry of Environment and OYOWMA have overriding responsibilities since they are directly under the state government, while Ibadan North LG, though independent, has its activities limited to the local government and provides financial contribution called counterpart fund to the state agencies who then use it to service available vehicles and equipment. OYOWMA has the primary responsibility but receives back up from the Ministry of Environment whose officials go out on environmental sanitation days to support and monitor the activities of other stakeholders.

There is also an arrangement for public/private partnership of solid waste management which is an attempt to accommodate and encourage the involvement of private individuals or contractors in the management of solid wastes together with the government. This is termed PSP—Private Sector Participation. The private contractors are actually the ones charged with the responsibility of collecting all wastes in the Local Government Area while charging some amount for their services. However, as complementary efforts, the Oyo State Waste Management Authority and Ibadan North Local Government also collect wastes from road media and roadside refuse bins. The private contractors are in four categories—the household waste collectors, commercial waste collectors, industrial waste collectors and highway sweeping contractors. It was gathered that the private contractors charge N1, 000 per month for their services although the amount is subject to negotiations between the parties involved.

After the collection of solid wastes from the different points in Ibadan North by the governmental agencies and the private contractors alike, the wastes are then transported to the various dumpsites maintained by the government. The Oyo State government has four dumpsites which are located in four Local Governments namely Ido, Oluyole, Ona-Ara and Akinyele Local Governments. The dumpsites are valleys that are being filled up with wastes being dumped there. The private contractors are given tickets before they can make use of the dumpsites. However, concerning the recycling and other processing of these solid wastes, it was gathered that scavengers are given the opportunity to sort out some materials that can be reused or amended but a formal waste to wealth scheme is not yet in place in Ibadan North LGA.

The study revealed challenges affecting effecting environmental sanitation and solid waste management in the local government and they are presented under three major categories namely personal factors, administrative factors and infrastructural factors.



A. PERSONAL FACTORS

The personal factors refer to the attitude of the citizens which is shaped by their level of education, poverty, orientation and socialization. According to respondents, an average citizen in the study area especially in the less urban areas have still not cultivated the habit of ensuring proper disposal of refuse as some of them still dump refuse indiscriminately and believing that it is the sole responsibility of the government. Furthermore, the level of cooperation with and patronization of private contractors who will collect the wastes and thus stop the dumping of wastes in the roadside bins, on the road media, in gutters and rivers was still low. This was captured in the words of respondents as follows;

On regular basis, we still find refuse every where around the streets as people do not make use of the facilities provided. Many of them send their young children to dump refuse and they, for whatever reason will dump them anywhere on the streets (IDI/Male Resident/Ward 7/2014)

Another respondent spoke as follows:

As a long residing resident (44 years) around here, we are still not satisfied with a lot of people. We will wake up only to find bags of refuse around the streets and corners. They hide under the cover of the night to dump refuse anywhere (IDI/Female Resident/Ward 11/2014)

It was also revealed that people are not willing to spend their money for disposing their refuse. To them it is the responsibility of the government. This is captured further as follows:

Although there are many contractors operating now but people are not patronizing them. They will say we have not eaten and you want us to be paying for waste. They said it is the responsibility of the state and the local government to carry their wastes for them so people are not patronizing the contractors well.

(KII/Male/Ibadan North LG/November 2014)

This was further buttressed by another respondent who explained as follows:

The attitudes of the people towards waste collection are not encouraging because they saw it as the social responsibility of the government and government alone cannot do it. That is why we allow private sector to participate.

(KII/Male/Ministry of Environment/November 2014)

This is because they felt that the collection and disposal of solid wastes by the governmental agencies is a right of the citizens and duty of the government which thus should be free of charge. This could be traced to the level of poverty as well as the socialization process of the people. During an IDI session, a landlord explained that environmental sanitation is one of the issues often discussed during Landlords' Association meeting, and that during meetings the contributions of some members are indication of their negative attitude towards environmental sanitation. He spoke further

The attitude of some people is worrisome as they tend to believe that the weekly and monthly exercises are just waste of precious time of the people. Why should the government prevent us from doing our job just



because we want to do cleaning?
(IDI/Male Resident/Ward 2/2014)

Another landlord respondent also explained:

Not everybody is cooperating with us during our meetings. They see environmental sanitation as government business and should not be discussed at Landlords meeting. A particular landlord even physically assaulted another landlord when the latter went to the former's house to remind him that environmental has started that morning. (IDI/Male Resident/Ward 4/2014)

Respondents commented on this issue and the agency's efforts to improve the people's effort thus:

We make use of enlightenment. That is mass media—radio, television jingles, on paper at times to enlighten people and let them know the nitty-gritty of waste management. And let them know that it has become an offence to dump refuse illegally and they should engage the service of the contractors. We also go to markets with the NYSC members that are with us. We go to villages and motor parks to sensitize them. But you know it is very difficult to change people's attitudes overnight but it needs perseverance and consistence. You still have to continue educating, enlightening and sensitizing them on radio and television. There are changes in the attitudes of people but to me it is at a very slow pace and I can say it is due to political will. Because if the government want something to work, they will back it up with money so that the radio jingles will continue on and on so that it will become part and parcel of the people.

(KII/Male/OYOWMA/November 2014)

The attitude of the people is another constraint and this is as a result of their culture because they make use of biodegradable materials. Had it been people are listening or are abiding with what we have been telling them that each premises should have a drum and engage the service of the contractors, it would have minimized the volume of wastes that you are seeing outside now because what this authority wants to stand for is to regulate the activities of private sector in managing wastes but we are involved in collection and transportation. We want to minimize that.

KII/Male/OYOWMA/November 2014)

Another respondent buttressed this further:

Well, since the inception of this authority, series of enlightenment programmes have been carried out on the radio, television and even we do normally go out with our outside broadcast van whereby we announce to people. Series of the meetings of landlord associations have been attended by our officers to go there and educate members of the public. And not only that, the government has



organised a sort of fora whereby stakeholders were brought together to enlighten them about the proper means of managing waste. (KII/Male/OYOWMA/November 2014)

From the above, it could be seen that many residents still have negative attitude to the sanitation of their environment, an attitude which seemed to have been shaped by their orientation and poverty. This is in spite of the efforts of the state and local governments to ensure good environmental sanitation. This finding supports support views of previous scholars such as Ishaq (2004) and Imoh and Emmanuel (2011).

B. ADMINISTRATIVE FACTORS

1. *Financial Incapacity*

Among the important factors responsible for the current inadequate effectiveness of solid waste management in the study area is insufficient financial resource available to the authorities directly responsible. The previous governments of Oyo State have problems in financing solid waste collection and disposal system because the possibility of cost recovery is very low. It is indeed, difficult for government to get people to pay for this kind of service, despite its essential nature. In fact, the study shows that people are very reluctant to patronize the private contractors because of the fees attached to the latter's services. Although the local and state governments give the Oyo State Waste Management Authority some financial support for its functions, the fund is just not enough. Unfortunately, the state government is not fully ready to finance the authority. This study also shows that the Ministry of Environment only issues policy directives that are not backed by financial assistance and the user communities are unwilling to pay for services rendered hence the Authority finds it extremely difficult and unmanageable to perform its statutory functions thereby turning the residential city into public dustbin and environmental hazard. Concerning the financial problems faced in the management of solid wastes and the coping strategy, respondents had this to say:

The challenges are very serious. One of them is the issue of funding. It is really hampering the waste authority. It is not enough because to manage solid waste is capital intensive. All these vehicles you are seeing are consuming a lot of diesel and we have to ensure that before they go out, they are filled with nothing less than 50 litres of diesel. So it is capital intensive.

(KII/Male/OYOWMA/November 2014)

This finding was further supported by a respondent as follows:

From time immemorial, in any government organisation, there is no way you cannot encounter financial challenges but we have been able to manage it one way or the other. If we run short of fund, we go to the head of the agency who will meet up with the governor's office to source for money. For example, presently, we are suffering from cash crunch. Money is no longer coming in. Our General Manager is trying anyway but the counterpart fund and the one coming from the government has been a great problem for us. Before, we are making use of very many trucks in Ibadan Metropolis but now hardly can we get 10 trucks that function. And it is not that we don't have the competency or the expertise to handle the maintenance of the trucks and waste management but there is no money. Money is not



forthcoming. That is why you can see refuse around.
(KII/Male/OYOWMA/November 2014)

When officials of the state ministry of health were contacted, they corroborated the above discussions and introduced another dimension that even when funds are approved, it may take months for the release because of the bureaucratic arrangements on ground. This emphasises one of the deficits associated with bureaucracy and can be very frustrating and could hamper effective operations of the officials involved in environmental sanitation in the state.

2. Inadequate Staffing

Another challenge gathered from respondents during the study was the inadequate number of workers that work with the agencies. A respondent noted thus:

The professionals that are supposed to be in charge of solid wastes are so few in number. For the whole of Oyo State, we have only 20 environmental health officers and they are the one to go out and educate members of the public. In this area, there is inadequate number of staff to really cover the whole of the state.

(KII/Male/OYOWMA/November 2014)

This suggests poor human resource planning which is a strategy for the acquisition, utilization, improvement and preservation of the workers needed by an organisation. According to Armstrong (2009), inadequate staffing constitutes a big barrier to attainment of organisational goals because the success or failure of organisations depends to a great extent on the quality and quantity of workers who need to be planned.

C. INFRASTRUCTURAL FACTORS

1. Inadequate and Poor Maintenance of Equipment and Vehicles

Another problem affecting effective solid waste management and environmental sanitation in the state in general and study area in particular is inadequate transportation for inspection by health officials and for the collection and transportation of solid wastes not only in Ibadan North but the state in general and this further buttresses previous works by Ishaq, (2004) and Blessing, (2013). The health officials (traditionally called *Wolewole*) have no vehicles to move round the streets for inspection and monitoring. Most times, they have to rely on their personal vehicles and fuelled from their personal pockets. This may not encourage them to effectively discharge their duties. Also, on the parts of the waste collectors and disposers, the same challenge occurs: there are no enough trucks as several vehicles have broken down completely inside the Authority's compound as shown in Figures 1 and 2 below and even those that are functioning are very costly to maintain. The Authority at times hijacks vehicles from the local government authorities and the latter are left to hire vehicles and personnel anytime they want to perform their duties. Interview respondents corroborated this further:

I told you earlier that this agency is working in synergy with the local governments. It was around March this year that we held meeting with the heads of the local governments that they have to bring their vehicles to us to complement the ones that we are making use of presently. The ones we inherited from the past government have gone down. Some are out of use. Local governments have 3 fords and 1 goliath vehicles each and we have 11 local governments in Oyo State. So we said that all of them should bring those

vehicles. We are fuelling it and repairing it.
(KII/Male/OYOWMA/November 2014)

Below are pictures showing vehicles that have broken down thereby impeding effective solid waste management in the state:

Figure 1: Showing waste vehicles that have broken down in the compound of the Oyo State Waste Management Authority



Source: field survey 2015 (12/11/2014)

Figure 2: Showing Ibadan North Local Government waste vehicle that has broken down in the compound of the Oyo State Waste Management Authority



Source: field survey 2015 (12/11/2014)

The resultant effect of the inadequate vehicles for collection of refuse is that, most times refuse bins are left un-attended to thereby constituting environmental pollution and other health hazards. This becomes most pronounced during the raining season.

2. Inadequate Health and Welfare Services

The issue of health and welfare was also identified as a challenge militating against effective environmental sanitation in the local government. Finding from the study indicated that there are no adequate health facilities for the drivers and motor boys who collect refuse from various points for dumping at the approved sites. Although there are first aid measures but they are not adequate to cater for the health hazards these people are exposed to. A respondent noted thus:

The health challenges are so many. One of these is that of the citizens. Though there are preventive measures, but the motor boys who handle the vehicles, the drivers, scavengers (though we are not paying them), refuse managers that follow the refuse up to the sites face health challenges. Because of that, we have first aid box to take care of them and there is facility for them at the medical clinic for those that have serious issues. Also another health challenge is accidents. We used to encounter accidents. Recently, one vehicle ran into our vehicle collecting refuse at the middle of the express road and it broke our driver's leg. At times our vehicles may lose break and run into electric poles and it will affect other electric poles. It is our responsibility to pay for the repairs. (KII/Male/OYOWMA/November 2014)



The implication of inadequate health facilities is that many people may not want to take up the jobs of taking part in the collection and dumping of refuse, and those who eventually agree to do so may not be all that committed as a result of possible health hazards.

3. *Unplanned City Structures*

Also, the structure of most Nigerian cities constitute impediment towards effective solid waste management. A typical Nigerian city like Ibadan North Local Government Area of Ibadan city is made up of a traditional inner core and a modern section. In most cases, no form of refuse disposal service is provided for the traditional core areas because of lack of easy access to these areas. Again, the issue of poor planning of houses and structures constitutes barrier to effective sanitation in many parts of the study area. Most of the roads and pathways are too narrow to be motorable and are generally impassable during the rainy season. Even where garbage trucks are available, they may not be able to pass through for the evacuation of refuse. This further affirms studies that observe that ineffective solid waste management is caused by the physical planning in most Nigerian cities (Nze, 1978; Karanja, 2005) and Blessing (2013). Mabogunje (1988) observed that ineffective solid waste management is caused by the poor attention being paid to physical planning in most Nigerian cities. As a consequence, the relics of pre-industrial urbanization in these cities such as narrow, irregular and unploughed lanes and alleys hamper the efficient collection and disposal of solid wastes in the cities. A respondent corroborated this thus:

Another thing is physical planning of Oyo State. We have some areas where there is no accessible road—where vehicles cannot enter because there is limitation to where our vehicles can move. Those people cannot be reached and it is very difficult for private sector to work in those places where there is no road like inner core areas such as Beere and old areas. They cannot be compared to areas like Bodija. (KII/Male/OYOWMA/November 2014)

4. *Inefficient Waste Disposal Method*

Inefficient waste disposal method was also identified as an infrastructural challenge affecting effective solid waste management and environmental sanitation in the study area. The means of final waste disposal employed by the governmental agency is still crude as it just makes use of landfill method; this supports the findings of Ishaq (2004) who had also identified crude technology as the means of waste disposal in the state.. This suggests that over eleven years ago, nothing has been done in the state to improve on the waste disposal methods. The recycling and waste-to-wealth scheme is yet to commence on a full scale. However, this hinders effective waste management in a significant way. A respondent commented on the waste-to-wealth scheme thus:

If government should allow that thing to commence, I believe that the problem we encounter in the issue of refuse management now will be a thing of the past because it will come to a stage that people will be buying refuse from various quarters.

(KII/Male/OYOWMA/November 2014)

Karanja (2005) asserted that land use patterns in most cities of developing countries have remained a major bottleneck to effective solid waste management. In other words, space development was unplanned and had with time, grown into slums, with inaccessible roads and streets. With the example of Ibadan, Abumere and Filani (1986) reckoned that solid waste management is not handled in a comprehensive manner



because vital issues such as health and aesthetic character, culture of hygiene and cleanliness and environmental awareness are relegated to the background.

This study has been able to identify the stakeholders involved in waste management and environmental sanitation in Ibadan LGA, and that the challenges identified are multifaceted suggesting that multi-faceted approaches should be adopted to solve the problems. It also suggests that all stakeholders need to be fully involved in evolving effective solution to the menace. The findings therefore validates the theoretical framework adopted for the study. If all parts/stakeholders perform their statutory and moral responsibilities, then the whole society will remain healthy in terms of good environmental sanitation.

CONCLUSION AND RECOMMENDATIONS

From the foregoing, the study had been able to provide informed assessment and adequate understanding of the challenges of environmental sanitation and solid waste management in Ibadan North Local Government. Proper waste management and sanitation of the environment is necessary to ensure healthiness of residents and cleanliness of the city for effective socio-economic interactions of the people and smooth administration of the city that brings about desired development. Ibadan North Local Government is a large city with a very high level of solid waste production. However, poor waste management attitude, lack of cooperation and inefficiency in the performance of the agencies' duties made the solid waste process to be largely ineffective. Thus the residents resort to indiscriminate dumping of solid wastes, burning and overloading of communal depots so as to get rid of the wastes

It is evident that the effective management of solid waste in Ibadan is still faced with several challenges and problems. However, a very useful literature concerning the problems facing administration of environmental pollution in Ibadan is that of Ishaq (2004) who acknowledged that the problems facing effective solid waste management in Ibadan are multi-faceted. Therefore, approaches to its solution must be multi-faceted.

In order to effectively manage solid wastes in the country and drastically reduce the health hazard risk of residents thus bringing about socio-economic development in Ibadan North and the country at large, it is recommended that citizens make effort to inquire about, contact and patronize the various private contractors zoned to their areas. This will help with the use of waste drums provided by the contractors for waste storage, disposal and collection thus reduce largely the high level of roadside and other indiscriminate dumping of solid waste in the city. Furthermore, the residents should make their environments serve as a perfect example of the kind of neat city they want while also serving as watchdogs to those who dump wastes indiscriminately.

For the waste management agencies the following are recommended. First, effective management and supervision of the activities of the private contractors and the implementation and unbiased enforcement of environmental laws and sanctions to offenders must be the watchword of the state waste management authority. Second, waste bins should be removed from roadsides and put in right strategic places that are distanced from residential or commercial areas to prevent pollution and environmental hazards and people should be banned from bringing wastes on road media but instead have drums and patronize private contractors. Third, waste collection by the concerned agencies should be prompt and often and for communities that have inaccessible roads, an effective means of waste collection such as the bring-and-dump method should be employed by the governmental agencies and private contractors.

Finally, the most important actor in solid waste management is the government as only it can afford the necessary tools, machinery, manpower and financial capability to bring about positive change in solid waste management. Therefore it is first recommended that the government should not just be concerned about the



promulgation and development of decrees and policies about environmental sanitation and solid waste management but also support these efforts with adequate and sufficient financial backup. Also, adequate waste vehicles and other necessary equipment should be provided for the governmental agencies for waste collection, transportation and disposal. Apart from that, adequate waste workers and competent professional environmental officers should be employed, paid dully and taken care of health-wise by the government.

Furthermore, there should be continuity in the efforts of the government and its agencies concerning financial support and enlightenment activities for the members of the public about the proper means of waste management and the patronization of private contractors. Importantly, the private contractors' charges should be regulated by the government and affordable to the residents while being adequate to cover the marginal costs of the contractors and give them appropriate benefits. The advanced means of waste transformation such as recycling and waste-to-wealth scheme should be urgently and effectively implemented by the government. Finally, a stronger partnership between landlord associations, community development associations, market associations, youth organisations, private contractors, local government authorities, state governments, national government and international agencies is an effective way to bringing about efficient and successful solid waste management.

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