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URBAN SOLID WASTE DEVELOPMENT: A REVIEW OF NIGERIA'S WASTE MANAGEMENT POLICY

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ABSTRACT

Solid waste management concerns with the administration of the generation, storage, collection, transfer, transport, processing, and disposal of solid waste in correspondent with the best principle of public health, economic engineering conservation, aesthetics and other environmental considerations which are responsive to public attitudes. The continually rising worldwide concern on ecological wellbeing requires that wastes be appropriately administered and discarded harmoniously and satisfactorily. This would minimize, and where possible dispense its potential damage to people, plants, animals and natural resources. Urban solid waste management development in Nigeria can be traced the back to late 1980s. With the rise in population, urbanization, and industrialization alongside globalization, the challenge of urban solid waste management (USWM) has escalated with its attendant human and environmental problems that need to be attended to. Thus, the purpose of this paper is to review government policy related to waste management, development, and practices in developing countries particularly, Nigeria cities from 1988 to date. Finally, this paper is a conceptual paper achieved through the review method.

Disciplinary: Environmental Management (Solid Waste Management).

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1. INTRODUCTION

Nigeria has 36 States and a Federal Capital Territory which is situated in the Western part of Africa. Census Bureau of the United States (2017) averred that premised on insertion of World Population Prospects information estimated Population of Nigeria is 186,988,000 with a GDP of US\$ 235.9billion. With the increase in population due to urbanization and industrialization alongside globalization, the challenges of urban solid waste management (USWM) have expanded. Studies have shown that the birthplace of the problem incorporates inadequate and outdated waste management policies with the deficient regulatory system. Okot-Okumu (2012) traced the primary

source of poor urban solid waste management practices to insufficient and lax policy. This is clearly evident in government failure; absence of private sector's passion to invest in USWM service conveyance (framework); uncoordinated institutional capacities; low political will, low capacity to discharge duties, poor data for planning, negative attitude of waste generators among others. Adequate and updated waste management policy with a strong regulatory system is a sole success factor in any reform management. A good policy in any reform institution may give a 50% chance of success. Amasuomo & Ojukonsin (2015) stated that suitable policy is an institutional instrument for the execution of waste management procedure whosoever in charge, hence, it is pivotal to effective USWM. The aim of this paper is to review Nigerian government waste management policy vis-a-vis USWM practices to determine both success and failure factors.

2. WASTE MANAGEMENT DEVELOPMENTS IN NIGERIA

The solid waste issue drew the attention of human civilization even before water and air pollution issues. Due to the advancement in the development of items, technologies, and services, the quality and quantity of waste kept on changing throughout the years. Hence, the waste qualities depend on individuals' income, culture and location as well as economy general public experiences and circumstances like a hazard to which the general public might be subjected to (Chen et al., 2011). The historical development of developing nations is not starkly similar to that of developed nations. The method of waste disposal or sanitation and its associated human and environmental problems in Nigeria like any other African nation today are remindful of the 19th century of Europe and perceived as the 20th century of Asian and, it appears everyone needs to win 'as much conceivable' (Chandrappa & Brown, 2012). Thus, presently Nigeria like any other Africa are living in the past of the 19th century of Europe and the 20th century of Asian in terms of urban solid waste management and its attendant human and environmental problems.

Walling et al. (2004) averred that the total size of the solid waste issue in Nigeria is difficult to grasp. Perhaps, due to the absence appropriate system for regulation and poor planning, the volume of waste that piles up in a few hours is beyond what waste collectors could responsibly transport in a day. Based on these narratives, Nigerian waste "dumps" are situated along the major road at the edge of urban areas and there are no public waste containers. As a result, waste regularly spreads into the street, blocking traffic, gutters and so on. Hence, a reasonable amount of waste remains uncollected; when waste piles up, households and businesses gather it in the middle of main roads and burn it (Warren, personal experience). Consequently, these lead to inadequate waste management with far-reaching ramifications to both public and environmental health (Zainu & Songip, 2017).

From the background information described above, Nigeria is a country that epitomizes protracted solid waste management issues going by the trend of its population growth. That it is the most populated black nation in the world, with enormous wealth from crude petroleum. However, the country has been facing numerous environmental and socio-economic problems such as urban waste management and poverty, with the population more than 190 million, known as the giant of Africa (Ezeh, 2017). In the same vein, the National Population Commission (NPC) and the National Bureau of Statistics (NBS), in 2017 have put the figure of Nigeria's population at 193,392,517. Likewise, for more than half a century now, Nigeria has had the third biggest urban growth rate on the planet at 5.51% every year (UNWUP 1999). It is evaluated that almost 10% of the population

lives under the national poverty line (World Bank 1996). Since the acquisition of independence from Great Britain in 1960, Nigeria's administration has been controlled by a progression of military dictators. The race in 1999 of Olusegun Obasanjo was the start of the 1st true democracy in Nigeria (Economist 2002). But, the nation is still known to be exceedingly corrupt which thwart the influence of the federal government over environmental control.

The National Environment Protection Agency (FEPA) was set up in 1988 to manage the increasing concern of waste management in Nigeria (Onibokun and Kumuyi 2003). Vision 2010 was FEPA try to address environmental problems in the country that would lead to sustainable development. Concerning solid waste management, the report says the objective is to "accomplish at least 80% successful managing of the volume of urban solid waste produced at all levels and guarantee environmentally stable management" (Vision 2010, 2003). Approaches to accomplish this objective incorporates education/awareness programs, community involvement in dealing with the integrative management of USW, reinforcing existing laws and guaranteeing adherence, and promoting a residence and private sector cooperation. Even though this sounds positive, but to some degree no commitment towards that, because the realism of poverty and government infidelity has barred viable operation of these plans. There is little to consider the government or the general population in charge of the regulations made by FEPA and Vision 2010 (Bankole 2004). This paper argued that there is a lot much more to consider the government is the custodian of the regulation and there is nothing to consider since the general public can only respond to the regulations not responsible for the formulation and Vision 2010 now we are in 2019 yet nothing to show on waste management appropriation in Nigeria. The general public can only respond to regulations (i.e., policies) that are responsible (i.e., policies that are strong, appropriate, fully implemented and enforced) not the opposite.

Consequently, no organization would be ready to assume liability for the regulation of waste management. For instance, in Ibadan, in the western region of Nigeria, jurisdiction over waste management has changed hands many times since the late 1980s (Onibokun & Kumuyi 2003). Even though local authorities are planned to fund solid waste disposal, not as much as one-fourth of the cash was realized in 1994 (Onibokun & Kumuyi 2003). Since state resources are to some extent scarce, privately-owned companies would often be engaged in waste disposal. But, these companies cannot be more efficient than the state, in Ibadan in 1991, there were twenty-three enlisted private waste collectors. However, just ten were functional (Onibokun 1999). This as a result of the fact that privately-owned companies have limitations regarding law enforcement.

Lagos, south of Ibadan, exhibits another impediment to efficient waste management. The city has about twelve and eighteen million individuals, the 6th biggest city on the planet. A 20-25% of Lagos' financial plan is allotted to waste management. Not only that but even with appropriate waste gathering trucks, effective management and collection of solid waste were thwarted. This was due to the absence of good streets and planned roads which made it difficult for the trucks to move through to gather the huge accumulated waste generated daily. In the five other mega-cities of the world, more than forty trips are made every day from the city to the disposal site. In Lagos, just two trips are conceivable every day (UNESCO 2003). This is so because development control which is the urban planning tool used to regulate the development of any physical development in town or cities being the custodian of space were not recognized in the policy guidelines.

To illustrate this, Agunwamba (1998) stated that, at the center of the problems of solid waste management are the lack of appropriate and strong policy. In other words, Government policies on the environment are piecemeal where they exist and are not fully implemented which were identified as key challenges militating against effective waste management in Nigeria. It is against this background that this study is set out to review Nigeria's government policy related to waste management to provide a clear part for all agencies, different levels of government, and the general public including NGOs and group affiliations.

2.1 URBAN SOLID WASTE MANAGEMENT PRACTICES IN NIGERIA

Nigeria covers 924,000 km² and is located in the western part of the African continent with a population of more than 190 million, with a growth rate of 2.6% (Ezeh, 2017). Nigeria is comprised of 36 states and the Federal Capital Territory (FCT) which are all in all constituted 774 Local Government Areas. Urban waste management ideally, should be the collective process of sorting, storage, collection, transportation, processing, resource recovering, recycling and disposal of waste to rid human and the environment from it hazards (Cointreau, 2007; Schübeler et al., 1996). However, USWM in Nigeria is portrayed by ineffective gathering techniques, lack of ability to meet the scope of the gathering framework and indiscriminate dumping of solid waste.



Figure 1: A pile of solid waste along Lafia road (the capital city of Nasarawa state)

Contrarily, the amount of solid waste produced in urban centers in industrialized nations is higher than in low-income countries; still, municipal solid waste management service deliverance was met due to enabling policies. While, in most low-income nations, Nigeria is not the exception, the reverse is the case (Agunwamba, 1998). Hence, the typical solid waste disposal practice in Nigeria is an open dump. While some use streams as routes to transport their solid waste out of their sight, some specifically dump their solid waste by the street sides. In some segments of Nigeria, by and large, a dump is covered; some imprudently blaze it (Igoni, 2007). According to Babayemi & Dauda (2009), and Nkwachukwu et al. (2010) that in Nigeria, waste is often dumped by roadsides, accessible open pits, rivers, and gutters. The habit of indiscriminate dumping of urban waste is increasingly increasing in most cities of Nigeria (Figure 1). Uniquely, only a few Nigerians have thought of it as a shoddy method. Throughout the years, solid waste collection and disposal in

Nigeria has been a greater issue of concern. In the same manner in Nigeria, the processes involved in the management of waste are storage, collection, transportation, and disposal at dumpsites (any available open space).

Urban solid waste is being disposed of using several methods. However, methods used, are landfill, incineration, composting and anaerobic digestion and recycling (Abila & Kantola, 2017). In Nigeria, the existing practice of urban or municipal waste management is open dumping in any available open space, while the incineration technique is rarely put to practice. Incineration is the cheapest urban waste disposal option which is from time to time used in Nigeria clinics where medicinal waste is burnt at a nominal scale (Ogwueleka, 2009). The cheapest and easiest technique for waste disposal is landfill. The subsequent environmental effect of landfills is colossal yet could be alleviated given sanitary precautionary measures are embraced, and waste lessening is upheld. Landfills were in charge of 49% of England's methane outflows in 2007 (Burnley et al., 2011).

Additionally, recycling which is an environmentally free inched disposal method has no place in policy guidelines in Nigeria. Consequently, the issue of the formal recycling sector in Nigeria will not arise. Waste is recycled casually by scavengers who purchase un-utilize valuables from individuals and furthermore go to lawful and unlawful dumpsites looking for materials that can be re-utilized and recycled. The circumstance reported above, if left unchecked may lead to environmental degradation and all forms of human health implication. Thus, this necessitates a review of existing Nigeria waste management policy to curtail the abnormality in waste management practices which is the main purpose of this paper.

3. NIGERIAN GOVERNMENT WASTE MANAGEMENT POLICY

Effective waste management is a condition for environmental sustainability depending on policy guidelines. It expresses Nigeria's sense of duty regarding sustainable development with regards to the efficient management of the environment (Ikpeze, 2014). Therefore, waste is the birthplace of environmental issues, and as would be seen underneath, the regulatory system for environmental protection here has gotten attention in Nigeria based on the number agencies involved (Ikpeze, 2014). However, what remains oblique is, can the regulatory system in Nigeria attend to the challenges postured by the increasing rate of waste generation? There are numerous laws and agencies regulating waste management in Nigeria. These comprise The National Environmental Standards Regulatory and Enforcement Agency (NESREA); Federal Ministry of Environment; States' Ministries of Environment; Ministry of Water Resources; Lagos State Waste Management Authority (LSWMA) and different states waste management experts; States' Environmental Protection Agencies, for example, the Lagos State Environmental Protection Agency (LASEPA); and States' Waste Disposal Boards, for example, the Lagos State Waste disposal board (LSWDB).

Bako (2014a) stated that Laws/Regulations on Environmental management in Nigeria is glued on the 1989 National Policy on the Environment as edited in 1998, and likewise a set of laws, regulations, and guidelines to guarantee the preservation of natural resources and the quality assurance of the environmental and human wellbeing. The objective of the Nigeria Government Policy on waste management is to accomplish sustainable development in Nigeria as follows: to secure for all Nigerians a quality of environment sufficient for their wellbeing and prosperity; re-

establish, keep up and upgrade the ecosystems and ecological procedures key for the role of the biosphere to save biological diversity and the standard of ideal sustainable yield in the utilization of these natural resources and ecosystems; sharpen public awareness and raise comprehension of crucial linkages amongst environment and development in environmental improvement efforts. Likewise, to collaborate in compliance with other countries, international organizations/agencies to accomplish the ideal utilization of trans-boundary natural resources and successful counteractive action of trans-boundary environmental pollution (Bako, 2014a). The Federal Environmental Protection Agency (FEPA) Act is the major legal framework on waste management in Nigeria.

With the change to democratic governance in 1999, FEPA transformed into the Federal Ministry of Environment in June 1999. As a ministry is to a greater extent, policy-making organ, the Federal Government built up in November 2006 the National Environmental Standards and Regulations Enforcement Agency (NESREA) with powers the same with the old FEPA for effective enforcement of environmental regulations in Nigeria (Babayemi, 2017). All FEPA's laws have been abrogated with the NESREA act signed into laws by the President of Nigeria in July 2007. The federal laws are the minimum standards in the states. Constitution 33 permits the state to set up stricter standards than the Federal, furthermore enforce stiffer sanctions on violators (Bako, 2014a). Nigeria has different Ministries, Agencies and Departments (MDAs) engaged directly or indirectly with waste issues. These incorporate the Federal Ministry of Environment, State Environmental Protection Agency, State Ministry of Environment, different Local Government and Area Councils and NESREA.

The local government authorities are given the obligation of municipal solid waste management by law, however, because of inefficiency, the mediation in waste management exercises by different State environmental protection board/agency became a child of necessity (Table 1). The National Environmental Protection (NEP) (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations S.I.9 of 1991 enforces limitations on the emission of toxic substances and stipulates requirements for monitoring of pollution; it likewise makes it obligatory for existing industries and facilities to perform the environmental audit. The NEP (Waste Management) Regulations S.I.15 of 1991 regulates the collection, treatment, and disposal of solid and hazardous wastes from the municipal and industrial sources. The National Guidelines and Standards for Environmental Pollution Control in Nigeria 1991 offer an essential instrument for monitoring and controlling industrial and urban pollution in Nigeria (Bako, 2014b).

In Table 1, different environmental institutions in Nigeria such as Federal Ministry of Environment (FME), National Environmental Standards and Regulations Enforcement Agency (NESREA), State Environment Protection Agencies (SEPAs), State Ministry of Environments (SMEs), State Ministry of Health (SMH), State Waste Management Authorities/Boards (SWMA/B), Local Government Environmental Health Officers (LGEHO), Community Based Organizations (CBO) and Non-Governmental Organizations (NGOs). The FME is designated to manage and implement environmental laws in Nigeria. The importance of such laws/regulations is for it to abide by and for the ministries, agencies, and departments to develop, organize, execute policies and programs on effective waste management information.

Table 1: Nigeria Laws/Regulations Related to Solid Waste Management (Source: UNIDO (2012)).

Law/regulations/international conventions	Content	Entry into force
The Constitution of the Federal Republic of Nigeria 1999, S. 20.	Ensuring general environmental sustainability	
National Environmental (sanitation and wastes control) regulations, S.1. 28.	The Regulations apply to issues in environmental animation and all categories of solid wastes covering every stage of the existing solid waste management chain. It is the most comprehensive regulation on solid waste so far in the country	2009
The National Environmental Standards and Regulatory Enforcement Agency (Establishment) (NESREA Act) No 25.	Protection and development of the environment, biodiversity conservation and sustainable development of Nigeria's natural resources in general and environmental technology including coordination and liaison with, relevant stakeholders within and outside Nigeria's on matters of enforcement of environmental standards and regulations.	2007
The Environmental Impact Assessment Act	It provides for the need for an environmental impact assessment of all projects that may affect the environment.	1992
NEP: Management of Solid and Hazardous Waste Regulations S.1 15.	The regulations specifically provide for the management of Solid and Hazardous Waste and adopt a multi-pronged approach that involves the Agency, private operators, industrial and other public agencies.	1991
Hazardous waste (Criminal Provisions) Decree No 42.	Prohibits the carrying, depositing and dumping of harmful waste on any land, territorial waters and related matters. It prohibits activities relating to harmful waste and lists such activities.	1988
International Conventions and treaties.	i. Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal. ii. Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa.	1991 1991

3.1 TOP SITUATION ANALYSIS OF NIGERIA WASTE MANAGEMENT POLICIES

In terms of Nigeria waste management policies narrations in Table 1 indicate that there are no clarification of relationship and responsibilities among NESREA, SEPA's Ministries and LGA councils concerning policy development enforcement and implementation; hence there is confusion and overlap in their activities. According to Bako (2014b) apart from these obvious hindrances, one of the most important factors this paper identified as a factor affecting waste management is the ambiguity in the Nigerian environment law on the authority (i.e. state government or local council) vested with the responsibility of collecting and disposing of wastes in the states. Unlike, Malaysia, solid wastes are by and large classified into three main classifications, and every class is under the obligation of particular government divisions:

- a. Municipal solid waste – under the Ministry of Housing and Local Government (MHLG)
- b. schedule/ hazardous waste – under the Department of Environment (DOE)
- c. Clinical waste – under the Ministry of Health (MOH)

Municipal solid waste management in Malaysia is under the obligation of the local authority. The local authority is relied upon to give direct or indirect (through contract) fair and satisfactory public sanitary services to all urban and semi-urban communities inside of its jurisdiction. Nevertheless, local authorities are confronted with a lot of issues concerning the collection and transportation of wastes. By and large, half of the local authority's working budget plan is spent on

MSWM and of this more than half is spent on the collection of waste. Hence, the government has set up another solid waste management structure. Under the Ministry of Housing and Local Government, Malaysia has set up the National Solid Waste Management Department as the regulatory body and the Solid Waste and Public Cleansing Management Corporation to carry out the operations. The corporation would assume control over the part of overseeing solid waste from local authorities and watch over the concessionaires. In any case, local authorities would keep on monitoring cleanliness in regions under their watch.

From the circumstances reported above, to have effective waste management and sustainable development in terms of waste collection and disposal effort in Nigeria, the enforcement mechanism should preferably be left with only one organization where many agencies must be involved, their role must be clear-cut and well spelled out. The enforcement of environmental laws in Nigeria generally has been problematic. The management and regulation of the environmental Laws have been overwhelmed by a host of problems and has met with very limited success. These problems that hinder the enforcement of sanctions on violators of the environment are political, social and economic. It is, therefore, clear that any effort towards a sustainable legal framework for successful enforcement, avoidance of overlap of environmental laws must come to terms with these issues, as a positive step towards the protection of the environment through effective waste management (Uchendu, 2016). Mbah and Nzeadibe (2017) lamented that at the core of the problems of solid waste management is the absence of adequate policy and enabling legislation. Government policies related to waste management are piecemeal where they exist and are poorly implemented. The policy of waste management must be thorough and incorporate plans for waste minimization amid every phase of a product life cycle from the utilization of raw materials, production procedure, to final disposal of the wastes. However, the financial cost of products decides client decisions as opposed to their environmental friendliness. There is no rising public sensation to the relationship linking products and environment and said sometime recently, the manufacturing sector is not stimulated viably to lessen waste. Concerns mostly are for the profit at the detriment of environmental protection. Thus products are not intended for minimized environmental effects.

Conversely, significance set on the various policies set out which supposes to serve as a base for the government's vision and strategic plan for the prevention and management of wastes, and the policies intended to be applied for achieving them has been a neglected domain. Hence, it aims to provide a framework within which individuals and organizations can make a contribution through more efficient use of resources, better-informed choices, and decisions about how to manage and dispose of waste once the products have reached the end of their useful life are undermined. Possibly, because of limited studies on policy related to USWM in Nigeria which is apparently evident in the present deficit and weakness of Nigerian government policy on several important areas of waste management. To demonstrate this, no policy exists for sorting at waste generation points, recycling, reuse, recovery, composting or sanitary landfilling, scavenging and no specific agency responsible for enforcement of laws/regulations, which makes the current waste management process not to be effective (Gurdian & McDonald, 2011).

Table 1 also indicated that there is no decisive strategy or national policy plans on the management of waste. There is also the issue of policy reversal with different administration where it exists and also non-implementation of the national guidelines on solid waste management and

possibly, no awareness of the guidelines in some states; where there are plans, there is no clear delineation of roles and responsibility between local government and states and other stakeholders. Consequently, this led to a fragmentary institutional framework with attendant institutional hindrances to effective solid waste management. It is also quite evident from narrations in Table 3.1 that waste management is an uncoordinated sector in most of Nigeria cities. Perhaps, due to poor policy formulation and implementation. The constraint to policy formulation and implementation in the cities includes the constitutional lapses in ensuring duties and the clear path between the state and local government agencies. This review found that inadequacy and poor implementation of policy-related waste management may be attributed to lack of understanding of the underlying political economy of waste work; nonchalant attitude towards the informal economy on the part of elected officials who see no mileage to benefit from supporting the waste management sector; and before now, a limitation of study highlighting the significance of political economy of waste work in the Nigeria.

3.2 NEED FOR SOLID WASTE MANAGEMENT POLICY IN NIGERIA

Waste generation and its likely effects on both human, environmental health, and the urban landscape have become recurring dismal in Nigeria today (Olukanni, 2014). All stakeholders concern with the safety and the beautification of our environment need to realize the negative consequences of nucleated solid wastes found in residential neighborhoods and many places in cities. These solid wastes have become recurring features in our urban environment. It is no longer news that Nigerian cities are inundated with the challenges of uncleaned solid wastes (Osinibi, 2014). Consequently, urban residents are often confronted with the hazardous impact of nucleated solid wastes found in their environment.

Hence, there is a need for solid waste management policy to clearly spelt out the following in the policy guidelines: the overriding rules and regulations; strategic goals/objectives; blue print specifying what actions and measures shall be taken to accomplish the waste management policy; and by who; a set of management methods to be considered to enable cost-effective management of a particular waste as specified by waste management policies (special emphasis on the role of the private sector and community; for their full participation); facts on how various measures and actions perceived in waste management plan shall be executed and by whom; amount of waste generated; a comprehensive solid waste management framework; integrated; cost effective; sustainable; and satisfactory to the community, with an accentuation on environmental preservation and technological option which are bearable and guarantee general wellbeing; execute solid waste management in light of the waste management progression that necessitate waste reduction through 3R, in-between treatment and final disposal; negative effects of the waste generated on human and environmental health; the composition of harmful substances in products and materials; persons whose activities generate waste; a clear call for adequate funding of the various strategies has been made to all stakeholders; sanctions and enforcement mechanisms strengthening and decentralising for effectiveness, while rewards for best practices to be institutionalised as identified by various studies such as (Akpabio, 2012; Ladan, 2012; Ngwuluka et al., 2009; Offiong, 2011; Olusakin, 2006), etc. just to mention a few. Given these points, the waste management policies and regulations were propagated to guide and mitigate the continuous dumping of waste to rivers, pathways, water channels and illegal dumpsites (Abila & Kantola, 2013). Collaborating the study of

Zainu and Songip (2017) in a study “Policies, Challenges, and Strategies for Municipal Waste Management in Malaysia” stating that, generally, substantive progress has been made in Malaysia regarding developing MWM infrastructures. However, the desired goal of a clean and green nation has yet to be attained due to docile and weak policy which provides a favored condition for the following number of issues:

Attainment of a waste recycling program as a long haul strategy for urban waste management is deterred (Economic Planning Unit, 2010). This becomes a matter of concern in view of the fact that the appropriate disposal sites are winding up threatened and the vast majority of the current ones are almost coming towards the terminal point of its utility. To demonstrate this, as indicated by (Nadzri, 2013) that the wastes produced are dumped at 165 dump sites in Malaysia, which provide for up to 95% of Malaysian waste, of these, only 8 are sterile landfills while the rest are open dumps. Moreover, around 80% of these dumps have practically attained full limits and will be closed down in a few years. Shutting a landfill is environmentally tasking which entails obtaining different parcels of land, which would, in the end, turn out to be rare later on.

The current recycling rate of 5% is misleading since recycling exercises are as yet unregulated along these lines no legitimate information has been gathered (Nadzri, 2013). Meaning, municipal waste recycling in Malaysia is still at the crossroad. Attempt to less waste through waste recycling should be well strategized in a policy guideline. This does not mean going for more capital-intensive and classy frameworks since they are not only the most powerful and productive. The recycling system ought to be legitimately strategized including all the partners (waste generators) such as the government, districts, families, non- governmental organizations, manufacturers, scavengers and so on.

No Decision Support System (DSS) has been developed for the waste management system. This may hinder access to important information from being used for future planning (Nadzri, 2013). In other words, coveted waste management service deliverance in any given nation relies upon dependable information about quantities and qualities (Badgie et al., 2012). And the authors added that this would shed light on the amount of material that can be obtained and aid the decision-makers to come up with better decisions later on. A lot of researches has been embraced in the past on waste composition, yet they were challenges utilizing appropriate sampling procedures and lacks coordination due to the absence of DSS. This is a factor that could be a threat to a decent method for city waste management in any nation. Consequently, municipal waste analysis and information for major cities in Malaysia have not been critically analyzed and documented (Badgie et al., 2012).

Public awareness on waste management issues stays deficient; in spite of the amount of money the local authority spent half of their operational budget (40% - 80%) on municipal waste management related issues. Hence, the need for basic skills and expertise in waste management must not be undermined if the coveted objective must be accomplished. The important partners must obtain and expertise to deal with the different municipalities of waste management well and skilfully as stated in the eleventh Malaysia Plan to speed up human capital improvement for a developed country (Economic Planning Unit, 2015).

The government has upheld recycling programs through various campaigns however little has been achieved. Perhaps, due to the lack of community participation aside lukewarm attitudes of the public in Malaysia would have reduced the cost and volume of waste to be disposed of. To demonstrate this a research was carried out by (Rathi, 2006) of which the two alternative

approaches to solid waste management were weighed on the balance and explored using a developed mathematical model to determine the net costs of each approach as follows:

One, the net cost with community participation is Rs. 1518(US\$35). Two, the net cost with private-public partnership (PPP); Rs. 1797 (US\$41). Three, the net cost with only local authorities Rs. 1908(US\$44). Thus, community participation in waste management is the cheapest among all. These could be briefly explained as follows: on account of community participation, the expense is borne by waste generators while on account of PPP which Malaysia government dwells on there is no component to recoup the cost from waste generators. The expense of collection and transportation of waste management is much lower with community participation than with PPP due to the fact that on account of community participation waste is separated at the source and just non-biodegradable and non-recyclable materials are transported to dumpsites. It lessens the necessity for community containers and the number of trips to transport waste. This directly or indirectly has lessened the cost and amount of waste to be disposed of.

Moreover, LAs are, in most cases, incapable of absorbing the high-cost expenditure since the necessary resources to implement adequate municipal waste management systems are generally underestimated. The absence of these consequently, leads to inadequate waste management with far-reaching ramifications to both the public and the environment health (Badgie et al., 2012). That is to say that, the amount of waste generated would continue to increase without a conscious decision by consumers to reduce, reuse and recycle. Noted that Malaysia's solid waste management policies lack two imperative measures: i. motivators for waste separation and the "pay as you throw" approach. That the incorporation of these measures is fundamental if any coordinated waste management system is to be effective. ii. Low levels of legislative enforcement and administrative inefficiencies are important issues that must be avoided. This may be possible because the Malaysian Solid Waste Management Corporation is a private business that expects to operate profitably. Thus, to change the narratives there is a need for adequate and sound policy fully implemented, enforced, and ensure compliance, been a law, roadmap, or framework, blueprint, or plan, or measures or standard working practices which the main objective of this paper.

4. CONCLUSION

This paper dissects the existing policy structure on urban waste management in Nigeria and elucidates the provision of strong and appropriate policies, judicial decision and government intercessions that help a rights-based comprehension of waste management and disposal in Nigeria. Likewise, recommendations have been made on positive activities and changes that could offer a catalyst to a heartier and effective waste management framework in Nigeria. Government at all levels in Nigeria ought to in this manner be aware of the need for a healthy and clean environment as a condition for sustainable development. This is because, from the much that has been expressed about enhancing the framework for waste management, it is clear from this work that the Nigerian Government policy is porous and of course, has a long way to go in the documentation of adequacy and efficiency. This is the main issue abetting poor waste disposal practices. As a matter of urgency, this necessitates a review of Nigeria's waste management policy as well as streamlines them to provide a clear part for all agencies, different levels of government, and the general public including NGOs and group affiliations involved.

Subsequently, the bridging equipment and infrastructure gap is a relevant variable in the equation of effective and sustainable urban waste management need to be met. In other words, there is a need for an articulated national policy strategy that joins sufficiently streamlined regulation, monetary arrangements, community participation, presentation and sustenance of new technological and scientific techniques and awareness in the region.

The answer to solid waste issues in Nigeria would remain illusory until the point where every single related issue has been dissected exhaustively and brought to the fore.

The recommendation for effective urban waste management is given

- a). Providing enabling regulation for the effective execution of a waste program, to incorporate a complete sanction on open dumping. This sanction, conversely, is possible only and only if sufficient waste cans, collection facilities, and appropriate dumpsites are first worked out.
- b). Formulation of integrated policies on waste minimization, recycle, reusing, and disposal. One of the basic parts is the system for sufficient planning of waste collection, transportation, and disposal facilities.

5. DATA AND MATERIAL AVAILABILITY

Information regarding this study is available by contacting the corresponding author.

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