

## AN APPRAISAL OF WASTE MANAGEMENT PRACTICES IN SATELLITE COMMUNITIES OF ABUJA

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### ABSTRACT

This paper appraises practices of the stakeholders in the waste management industry and satellite communities of the FCT. The study revealed a waste-collection system that is sound in principle but with deficiencies because of the declining quality of the waste managers' service delivery and residential practices. Understanding the knowledge, attitudes and beliefs of the stakeholders can hopefully address these gaps and perhaps determine more effective roles for stakeholders in awareness and advocacy. The results of this study showed that while several residents in the Kubwa locality understand the need to have a clean environment as well as the challenges that might occur if the opposite were the case, the storage, collection and final disposal of waste is fast overwhelming the authorities in the FCT. They also revealed that respondents agreed and were willing to participate in sustainable waste management practices but were of the opinion that the Government is not doing enough to encourage their involvement in the process.

**Keywords:** Knowledge Base, service providers, Waste Disposal, Waste Generation Waste Management

### INTRODUCTION

Today's environment contends with global warming which studies in part say is attributable to poor management of both biodegradable and non-biodegradable solid waste. This is compounded by the astronomical increase in solid waste generation due to increase in population and urbanisation. Even more critical in today's environment is waste disposal as the current trends of ineffective and irresponsible disposal of solid waste pollute the environment and pose as health risks to the

society. Modern approaches to waste disposal only present a partial solution to the problem. These approaches include landfilling and incineration, which comes with attendant problems of smell from the land fill which makes it an undesirable environmental scheme in the neighbourhood (Ola-Adisa and Mangden, 2013). Waste generation is one of the earliest activities attributable to human beings and a significant part anthropological and archaeological documentation of past civilisations. Waste generation and its disposal and management is a paramount issue in sustainability of the built environment and the future of the planet; particularly as the complex components create greater environmental pollutions and make waste disposal and management more difficult. (Jatau, 2013). An evaluation of the waste management practices of the various stake holders in the satellite communities is relevant in the assessment of Abuja's viability as a sustainable city.

Nigerian waste generation is on the increase at an estimated rate of about 0.5 – 0.7% per annum, with 2006 figures ranging from 0.4 to 0.8 Ton /capita /annum. Waste complexity is also increasing with biodegradable waste currently accounting for over 50%. This amounts to over 50million tons per annum average waste burden on the nation with less than 10% waste management capacity. Current per capita waste generation comprising high quantities of mostly organic waste from food waste and yard waste in FCT Abuja of between 0.66kg/day and 0.67kg/ day is quite high due to the economic status and population density of the Federal Capital (Anyaeibunam, 2013; Ayuba, AbdManaf, Sabrina and NurAzmin,2013).

**Table 1: Municipal Solid Waste Generation in Abuja**

Municipal Council	Area	Population	MSW/Metric Tonnes/Day	Per Capita Waste Generation/Kg/Day
AMAC (Abuja Municipal)		2,245,000	1527	0.68
Abaji		58,444	38	0.65
Bwari		227,216	150	0.66
Gwagwalada		157,770	104	0.66
Kwali		85,837	55	0.64
Kuje		97,367	44	0.67
Total		2,871,634	1918	0.668

Source: (Anyaeibunam, 2013)

## **Waste Management Systems**

Currently less than one percent (1%) of Nigerian GDP is spent annually on waste management and water supply. This is far less than the recommended standard of three to five percent (3-5%) of national GDP. Nigeria has over thirty five percent (35%) of her population living in the cities with a growing urbanization rate of about 7% per annum and less than ten percent (10%) of the city populations enjoying marginal waste management services. While some traditional disposal methods may release environmentally hazardous gases and pollutants, green waste management methods focus on sustainable and ecological solutions such as green disposal systems and recycling. The most common disposal methods used are landfills and incineration. Other methods that include recycling and green methods like composting and waste reduction.

The management and disposal of this waste is a major challenge for our cities and towns which should be managed so that it does not endanger human health, harm the environment, pose risks to air, water, soil, plants or animals, be a nuisance through odours or noise, or adversely affect places of special interest. Nigerian development policies have been poorly coordinated and, are highly dominated by economic objectives making environmental protection low in ranking (Ossai, 2006).

## **Waste Management Practices of Stakeholders**

Improper management of solid waste can also be attributed to the Knowledge Attitudes Beliefs and Practices (KABP) of Stakeholders. The stakeholders in waste management can be classified into public sector and private sector stakeholders. In Abuja FCT, the public sector stakeholders are further classified as federal and municipal (since FCT is a territory and not a state). Private Sector Stakeholders are formal and informal service providers, nongovernmental and civil society organisations and the private individuals that reside in the various communities including formal and informal service providers. There are currently 22 formal service providers that have been engaged by the Ministry of the Federal Capital Territory to handle waste disposal. This doesn't include the private service providers that are

engaged by the private individuals and corporate bodies. Informal service providers consist of local waste disposal contractors at the neighbourhood level, locally called *mai-bolas*. Others include Nongovernmental and Civil Society organisations such as Waste Management Society of Nigeria (WAMASON) and National Society for the Environment (NSE); Landlord and tenants associations and Individual home owners.

## **METHODOLOGY**

This study adopted a case study approach to appraise the knowledge, attitudes, beliefs and practices of Kubwa, FCT. Kubwa was selected because of it's the largest of the suburban districts. Data was drawn from primary and secondary sources. Primary data used was acquired through direct field measurement, questionnaire survey and interview methods. A total of one hundred and fifty (150) questionnaires were administered in the areas in Kubwa using the Quota sampling technique due to the need for a speedy result, the non-availability of a sampling frame for the large population. One hundred and fifty questionnaires were distributed. Of the questionnaires distributed, one hundred and eleven (111) were returned, representing a 75% return. The questionnaire was divided into four broad sections, with each section containing variables such as condition of environment, waste management facilities and services, waste management practices and questions concerning knowledge base, attitudes and beliefs. A separate questionnaire was administered to other stakeholders from the public and private sector. In order to aid primary data collection, a series of interviews were conducted with residents and staff of the Abuja Environmental Protection Board and relevant stake holders in the community

### **Profile of the Study Area**

Kubwa is one of the five (5) suburban districts in the Federal Capital Territory, Abuja; the others are Gwagwalada, Karu, Nyanya and Jukwoyi. This suburbia has seen rapid growth in recent times owing to the influx of people into the city and also the relocation of from the city centre into the satellite towns. Of the five (5), Kubwa is the largest and its residents are largely civil servants, traders and artisans. It is about 25 minute drive or 40 kilometres away from the city centre and some have attributed

this reason to its continued increase in population. Kubwa is divided into parts known as PW, Phase 2, 3, 4 and Kubwa village.

## **RESULTS**

Table 2 outlined the knowledge base and attitudes of respondents. Generally the respondents displayed positive knowledge and attitudes with regards to the issues. Figure 4 indicated the percentage distribution of the sampled population by waste storage practices. It showed that majority (56.75%) of respondent's stored waste in plastic bins. Figure 5 indicated that majority (66.7%) of respondent's took charge of their waste disposal by engaging local waste disposal contractors. Figure 6 indicated that majority (61.3%) of respondents agreed that waste sent off for disposal should be reduced. This demonstration of knowledge and attitude had not translated to actual waste reduction practices.

Kubwa, a satellite town falls under Bwari Area Council that is under the jurisdiction of the Satellite Towns Development Agency (STDA). The interview conducted at the office of the AEPB revealed that the STDA is supposed to be in charge of waste collection in Kubwa town but inquiries from the residents however showed that most of them were unaware of this fact. Given the pattern of its design, Kubwa contains specifically residential and business areas, but slum offshoots like those obtained in the Kubwa village area imposed considerable challenges on waste collection and disposal requirements. Survey observation revealed some green bins at a few residences, but the residents maintained that no government agency came around for the waste collection. This informed the use of local contractors popularly referred to as "mai bola" in almost all the parts of Kubwa (plates 1 and 2). Plate 3 reveals the water is completely polluted and the refuse heap so high from consistent dumping in by the local waste contractors.

**Table 2: Summary of Knowledge/Concerns on Waste Management**

Issues of Concern	SA (%)	A (%)	N (%)	D (%)	SD (%)
1 The burning of garbage causes health risks to residents.	69.4	26.1	0	2.7	1.8
2 Dumping of garbage into rivers and streams results in their pollution.	72.1	27.0	0	.9	0
3 Dumping of garbage into drains and gullies results in blockage and hence flooding.	81.1	17.1	1.8	0	0
4 Diseases like diarrhoea and malaria can result from the improper storage and disposal of garbage.	73.9	26.1	0	0	0
5 Public education about proper garbage management is one way to fix the garbage crisis.	63.1	33.3	1.8	1.8	0.7

*Key: SA= Strongly Agree; Agree=Agree; N=Neutral; D=Disagree; SD=Strongly Disagree*

**Table 3. Summary of Knowledge, Beliefs and Sustainable Waste Management Practices**

Questions	Yes (%)	No (%)	Don't Know (%)
1 Do you think that the residents have a role to play in assisting the Abuja Environmental Board (AEPB) to manage waste in Kubwa?	95.5	1.8	2.7
2 Do you support the principle of waste reduction?	87.4	6.6	6.3
3 Have you ever heard about composting?	76.6	17.1	6.3
4 Have you ever heard about recycling?	94.6	5.4	0
5 If a recycling program was set up, that collected materials like plastic, paper, metals, etc., would you be willing to separate these into separate bags for collection purposes?	93.7	3.6	2.7
6 Would you be willing to pay for pickup of these recycling materials from your home?	69.4	19.8	10.8
7 Would you be willing to participate in a program to compost food and yard waste?	72.1	12.6	15.3
8 If you were paid for every plastic bottle that you returned to a grocery store, would you participate in a program to return the plastic bottles?	87.4	9.0	3.6
9 Would you like more information about how and what types of garbage you can compost, reuse, and recycle in order to reduce the amount of garbage that you need to get rid of?	90.1	4.5	5.4

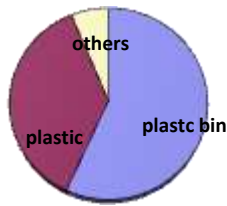


Figure 4. sampled population by waste storage practices



Figure 5. sampled population by waste disposal practices



Figure 6. sampled population by knowledge of waste reduction practices



Plate 1-2 "mai bola" with waste collection cart and door to door waste disposal in PW



Plate 3 final disposal point for waste for local waste collectors

## DISCUSSION

Deductions from the survey carried out also helped to buttress the fact that municipal waste management services were epileptic where they exist. On the other hand, informal contractors were readily available at any time in the course of the day. The local waste collectors usually moved from door to door collecting waste for disposal at varying amounts of money depending on the quantity being put out. This had in turn created a form of employment for the some of the youth in the locality that would

have otherwise turned to crime. The knowledge base on sustainable waste disposal methods however was found to be negative with these local waste collectors, as the method of final disposal employed by these local contractors is usually dumping of waste into flowing streams (plate 3).

## CONCLUSION

The respondents agreed and were willing to participate in waste management practices that are sustainable and would in turn better improve their environment with an improved knowledge base. Most respondents were of the opinion that the Government was not doing enough to encourage their involvement in the process. In the light of that, the respondent's succinct suggestions to improve the waste management practices of their respective communities included:

- a. The need for an increase in the knowledge base and disabused negative beliefs about waste, generations and disposal by sensitisation of the general populace.
- b. The provision of waste bins to residences in the locality and collection of the waste should be diligently done by the collectors in order to prevent unsightly heaps of garbage. Waste sorting bins should be introduced and residents rewarded for engaging in the separation.
- c. The taxing of residents through levy imposition in order for government to be able to provide the needed service.
- d. There re-introduction of health inspectors to ensure enforcement of the minimum sanitation standards and improve efficiency of service delivery.
- e. There view of the environmental sanitation enforcement laws and the fines and penalties accordingly. Defaulters who litter the environment out of carelessness should be face stiffer penalties.
- f. The agencies involved in waste management should study and take a cue from developed countries in order to improve service delivery to the citizenry. Waste to wealth initiatives should be introduced



## **RECOMMENDATIONS**

The following recommendations were proffered:

- a. Residents should be prepared to inculcate sustainable concepts as they relate to waste management as a way of contributing to an improvement or renewal of the environment where they live.
- b. Administrative bottlenecks and technical inadequacies should be resolved on the part of government. Public participation should be encouraged through planning which should be “for the people and not “with” the people. This will help to ensure that this planning by the government becomes sustainable as the residents are made to have a sense of belonging and responsibility to their environment.
- c. Improved efficiency in the service delivery to the people on the part of the government becomes imperative as it is not enough to make promises but being able to deliver on them hence boosting the morale of the residents in the process.
- d. The Satellite Towns Development Agency (STDA) the governmental agency responsible for waste management in Kubwa locality in terms of infrastructure development and maintenance should arise to its responsibility as their existence is not known to the residents of the town and make an impact in waste management facilities.
- e. The Ministry of the Federal Capital Territory had reported expenditure of N44 million Naira on the purchase of waste collection machinery. Three waste transfer stations are also under construction. It is hoped that these projects do not become white elephants or go the way of “abandoned projects” that seems to be a common scenario with a change in administration (the average tenure for the minister of the Environment in Nigeria is two years) or regime.
  - i. It also becomes pertinent that private public partnership in waste collection and disposal should be enhanced by the Abuja Environmental Protection Board (AEPB) venture of waste to wealth initiatives.
  - ii. A neat environment and indeed a renewed urban city are possible with the right attitude and necessary machineries in place and it is hoped that this study has helped to buttress that point.

## **CONCLUSION**

The survey results revealed that while several residents in the Kubwa locality understand the need to have a clean environment as well as the challenges that might occur if the opposite were the case, the storage, collection and final disposal of waste is fast overwhelming the authorities in the FCT. Steady increase in waste variety and quantity coupled with highly inefficient and ineffective solid waste management system in Kubwa evidenced by waste dumps in drains and public spaces has established the need for improvement.

Despite environmental agencies and the federal presence as the nations' capital, the deterioration of the urban environment remains a challenge to the communities especially the local government that are constitutionally responsible for managing the waste. The system is based on temporary storage within households and/or communal dumpsites; collection and transportation to final disposal sites for open burning and open dumping like Gosa Landfill, and a small but significant recycling of 8-22% by the informal sector (Imam et al., 2008; Wilson *et al.*, 2009 cited in Batagarawa, 2011).

A comprehensive assessment approach is essential to improve existing strategy, establish the performance of present strategy and improve the knowledge base through provision of information to stakeholders and creating a platform for discourse (Anschutz, 2004 as cited in Batagarawa, 2011). While the generic principles of sustainable development is especially relevant in Abuja, an emerging city whose viability can only be established through sustainability experiences in its knowledge, attitudes, beliefs and practices in the face of an emerging economy and legislature and ambiguity in the regulations (Ayotamuno and Gobo, 2004 cited in Batagarawa, 2011).

## **SIGNIFICANCE OF STUDY**

The case of waste management is neither peculiar to Kubwa or Abuja as a whole but efforts being made by all and sundry in tackling the physical, sociological and environmental issues that results can go a long way in minimizing the effects. There is an all-round need for increase in the knowledge base of all stakeholders so that policy and implementation would be sustainable. A

situation where local waste collectors dump waste indiscriminately in the water ways and streams is an indictment of all stakeholders from the government who fail to provide the waste disposal services to the private waste disposal providers who act in ignorance by dumping waste indiscriminately to the resident who does nothing to reduce his waste or report the dumping. This study reveals that while the provision of more facilities to improved waste management practices cannot be sustained without education to increase knowledge, re-orientation to change attitudes and workable private sector initiatives which will counter the Nigerian waste management beliefs that waste disposal is not a personal responsibility but solely that of the state.

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