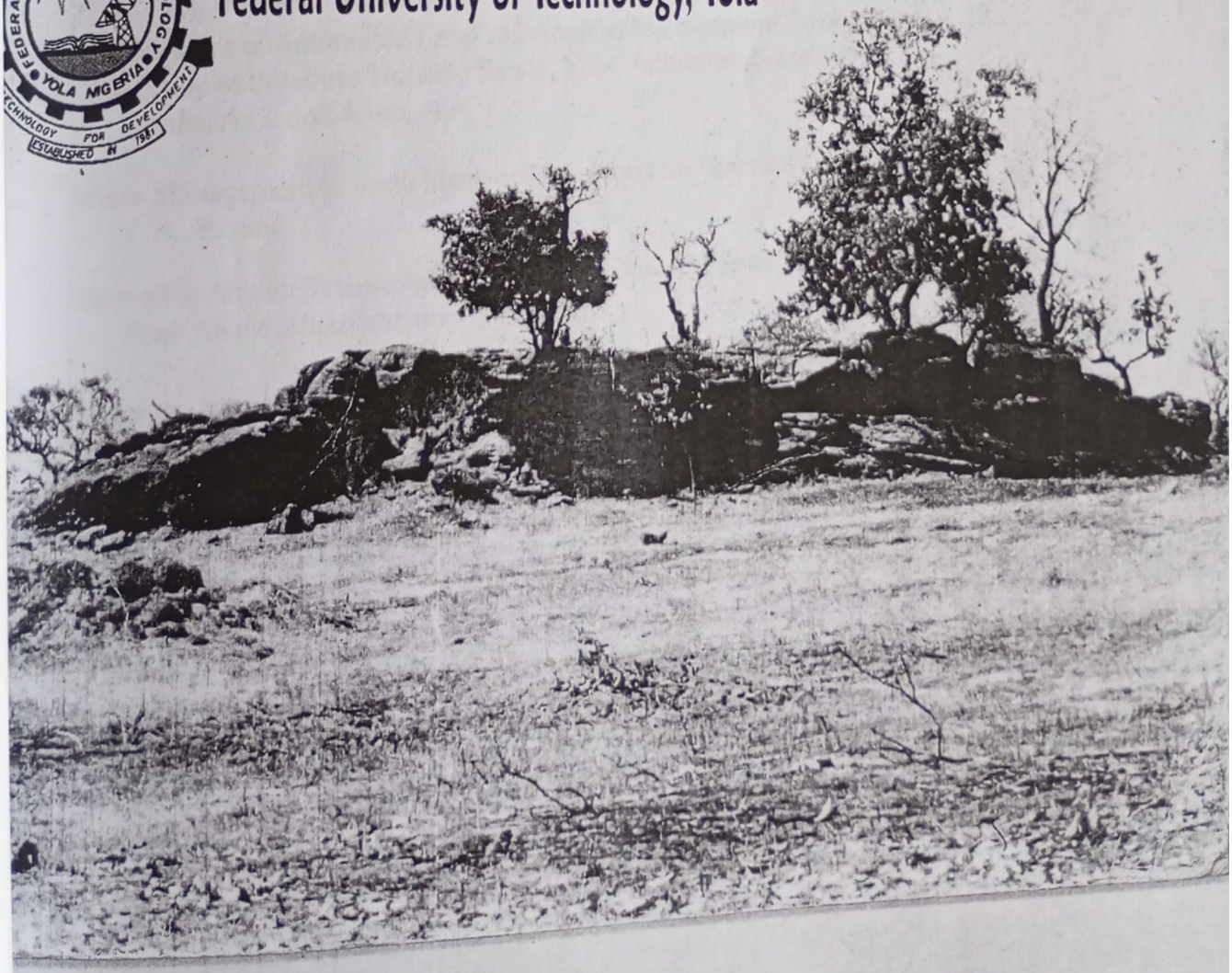
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# WASTE MANAGEMENT IN ILORI METROPOLIS: LESSONS FOR NIGERIAN CITIES

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**Abstract**

Ilorin metropolis consists of three Local Government Areas-Ilorin West, East, and South. The metropolis (Ilorin) is often polluted with heaps of refuse that are occasionally caused traffic hold-up in some strategic areas of the urban centre. A lot of health incidence resulting from water, air and pest borne diseases are not uncommon within and areas where prevalence of effluents prevailed. Management of waste in Ilorin and Kwara State in general has been the sole responsibility of the Kwara State Environmental Protection Agency (KWEPA) and other health management sectors in the recent past. The performance of these sectors had been rebuked as a result of their poor performance by the general public. This work presents a research effort aimed at identifying the factors that are responsible for the poor performance of KWEPA and other health sectors in the state and some other reasons that have led to the present Government contacting waste management to the hand of a company - "Ola Kleen" (alias clean and green) The outcome results show that both the Government financial supports to KWEPA and other Health Agencies in the past in terms of funding, manpower and equipment had been grossly inadequate, and misused. Improvement measures are suggested in the new tasks ahead of Kwara State Waste Management Company (KWMC) under the new dispensation of Ola Kleen.

**Key words: Agencies, Improvement measures, Management, Sanitation, Waste.**

## INTRODUCTION

Metropolitan cities are hubs of socio-economic growth and development. These growths have both positive and negative implications in the environment. The critical and most prominent problems facing most urban centres in Nigeria today include among others; environmental, problems resulting from air, land, and water pollution; poor and inadequate waste disposal, system unsatisfactory sanitary conditions and low level of hygienic standards (Oyegun, 1987; Ahmed, 2000).

Ilorin metropolis (comprising three Local Government Areas- Ilorin West, East and South) lacks proper land use zoning arrangement. The city has no precinct layouts of both new and old area demarcation and no proper provisions for open spaces and greenbelts. The results of these have led to pollution of all types which are collectively referred as "brown agenda". This set of problems disproportionately has impacts on human, urban health and productivity (Bartone et al, 1994).

The Earth Summit in Rio in 1992 clearly alerts the world on the need for all cities and urban centers in both developed and developing areas to urgently attain sustainable environmental development (FEPA, 1993).Though, cities are said to be engine of economic growth and development, but where environmental health condition of such

cities are ignored, then there arise the critical problems of sanitation resulting into pollution and improper waste management and control (Umeakuka, 1999).

In Ilorin today, one of the greatest challenges facing urban planners and town developers is how to ensure that the metropolis contributes to proper cleanliness and beautification of the metropolis to look like modern city of the world. There is no doubt that Nigeria in general is fast urbanizing with pains, having more people than it can perhaps adequately sustain health-wise. The amount of effluent being generated daily is vastly increasing with rapid exodus of people not only from rural areas, but also from other urban centres.

The amount of wastes (solid and liquid) generated in urban centers in the developing world are increasing with rapid population increases without adequate resources to go round to maintain the situation. However, for centuries, human beings have been supporting their growing numbers by inventing new technologies most especially in the developed world, which explore the productivity of their natural surroundings. Even though, nature appeared to have few limitations to some areas, but bestow other areas almost without limitation. However, the more people used material items, there was always more somewhere; no matter how much waste people generated, there is always room to discard them but if they are properly managed and controlled.

It is worthy to note that growth and development of any city depends on the type of people that constitute the population concentration. The urge for better improved conditions of life, economic growth, employment opportunities, better living condition and other necessity of livability are believed to be available in cities. As a result of this, many people rush to urban centers from rural areas, and consequently add to already overpopulated city inhabitants. As the pace of urbanization grows, the pressure increases at the rate by which wastes are generated, constituting greater problems. In all the three LGA's that makes Ilorin metropolis and the settlements within, there are limited infrastructural facilities to fulfill the expectations that led new comers to drifts to urban centers from rural areas. Living in the crowded environments most new comers (to towns) vis-à-vis earlier residents of these towns remain ruralite in behaviour they now acquired, and, amidst insufficient arrangements for sanitization of the new environment from filths which are dumped indiscriminately in streets and frontage of residential buildings.

Waste is regarded as the non-gaseous and non-liquid material resulting from domestic let-out of the inhabitants of a particular residential environment (Adedibu, 1982; Ahmed, 2000). The prodigious phenomenon of waste generation is peculiar to all human and animals' communities. In human habitation and in animals' habitat, waste generation often leads to urbanization problems as this is the case in cities in the third world countries nowadays. This phenomenon becomes a serious threat when good sanitary condition elude human and animals cleanliness in their habitation. Normally, when population explodes, for example, consumption rate tends to be elastic, and people create more refuse from all sort of materials used as packaging. Thus, man's activities on domestic, commercial and industrial processes produce some undesirable non-gaseous and non-liquid materials which are effluent.

Adedibu and Okekunle (1989) concluded that a rapid population growth as in the case of some cities in the contemporary Nigeria plays a significant key role in exhibiting poor environmental sanitation. Other factors are uncontrolled migration, inadequate knowledge of the composition of solid wastes, the rate to which people generate

wastes, inadequate and uncoordinated infrastructural facilities for waste disposal among others.

In Ilorin, the capital of Kwara state, the problem of wastes is turning into alarming rate because the more these wastes are evacuated the more they are generated on a daily basis. Huge of refuse are found dumped on unauthorized places, gutters and roads are filled up with sand and sediments which at times obstructed both free movement of pedestrians and vehicles alike. Thus, the issue of solid waste situation in Ilorin areas, to say the least, is quite distressing (Oyegun, 1987).

In view of the above, this study assessed the nature of wastes generat ed by inhabitants of Ilorin metropolis with the aim to identifying who real generated more wastes among the population, how are these wastes evacuated from the source to the disposal sites. What are the hygienic implications to the masses living in the city, and are on a daily surrounded by effluent of all categories. Also what are the likely suggestions for a total improvement on the sanitary implications on people living in Ilorin metropolis, among others.

Some appreciable research works have been conducted on waste generation and management efforts by various scholars in the recent past. Most of them identified various problems that are responsible for poor sanity conditions in some urban centers of Nigeria. Onyekwuluje (1990) observed while working on the performance of old Anambra State Environmental Sanitation Authority (ASESA) that poor logistics problems constituted to the main causes of ineffective management of wastes in Enugu. While Adedibu (1983) identified the inadequacy of staffing and paucity of modern equipment as major factors militating against the effective management of waste in Ilorin. Though, in the case of Ilorin, the situation has been given a challenge in the recent time, but the more the population migrated into the city the more wastes are generated. This was a reason why Okpala (1983) said, wastes found in cities of Nigeria were as a result of increased in number of population and urbanization processes. He cited Ibadan city as an example where wastes in different layout varied according to the social status of the residents. He observed further that about 180,000 tonnes of solid waste generated in Ibadan since 1975, only 140,000 tonnes were cleared due to logistic problems. In effect therefore, the problems of waste management are associated with improper sitting of housing layouts and haphazard construction of residential units that provides fundamental physiological, psychological and sanitary requirements (Akande, 1995).

## THE STUDY AREA

Ilorin metropolis is located on latitude $8^0$ 30'N and longitude $4^0$ 35'E.The city emerged as the capital of Kwara State in 1967 during the creation of twelve states in the federation. The city is situated between the dry north and south of Nigeria, and this gives it a description as the "gateway" between the Northwestern and Southwestern Nigeria (Adedibu, 1980; Ahmed, 1990).

The first official estimate of population of Ilorin after the establishment of the British annexation was made in 1911 which put Ilorin at 36,343. By 1921, the population attained about 36,688 and in 1931, it reached about 45,610. The 1953 national census indicated that Ilorin had about 40,994 inhabitants (Akorede, 1977). However, the national head counts 1991 put Ilorin population figures as 532,080 with 2.8 percent as annual growth rate (NPC, 1994).The people of Ilorin are predominantly

Yoruba with a large percentage of some indigenes who are Fulani, Hausa, Nupe and Bariba immigrants.

Ilorin belongs to tropical climate and enjoys two seasons of dry and wet season. The wet season begins in April and lasts October while the dry season is between November and March. The annual rainfall varies from 1000mm to 1500mm, with the peak between September and early October. Also, the mean monthly temperature is generally high throughout the year, which ranges from $23^0$c to $28^0$c.

The socio-economic activities of Ilorin indigenes include; farming, trading, weaving and pot making. Most farmers engage in food crop production using crude implements and manual labour. Where again, most indigenes are illiterates who mostly engaged in civil service work or self employed.

## MATERIAL AND METHODS

This study was carried out between year 2006 and 2007 period, and it was based on empirical assessment of sanitation problems in Ilorin metropolis. Data were generated from both primary and secondary sources within the metropolis-made up of twenty wards within three Local Government Areas (Ilorin East, West and South –see Fig. 1&2).

The primary data were obtained from two set of questionnaires designed for selected agencies that control and manage wastes in Ilorin. By this method, not less than 120 field workers from both Ministry of Health, Offices of Heath Management in the three LGA's, the Kwara State Environmental Protection Agency (KWEPA) and the new contact agent- Kwara Waste Management Corporation (KWCC) were randomly given questionnaires to solicit for needed information. The major information required from all these organizations include: their operation status (in the use of equipment and gadgets) man power situation, Government funding, voluntary supports (both by individual and organizations) in carrying out their tasks, among others.

The second questionnaire was designed for residents of the urban centre that were selected randomly within the twenty wards that make up the metropolis. For this purpose, 600 questionnaires were distributed to thirty (30) members of household in each ward. A stratified system of sampling was embarked on the selected population of the wards which is about 532,088 (NPC, 1991).The method was used with regard to the differences in the population of the households in the wards as a whole. Among information gathered from the household members included, personal data of respondents, wastes disposal methods, impacts of agent that manages and controls refuse in their areas, and their main problems with regards to waste disposition from the collection points to the disposal areas, among others.

Further more, the secondary data were obtained through records and reports from the offices of the KWEPA, KWCC, the Ministry of Health Headquarters and the three LGA's Headquarters for Ilorin East, West and South at Amilegbe, Oja-Oba and Fufu respectively. Most information required from these areas include; data on man power strength, income generated from sanitation levies, disposal vehicle supports, volumes of waste cleared on daily and weekly basis, as well as the needed equipment for effective and efficient services in and around the state as a whole (see Tables 2-4) To corroborate further, factor analysis statistical method was employed on the variables gathered in table 4.

## RESULTS AND DISCUSSION

The outcome of correlation matrix employed shows some appreciable relationship between the volumes of wastes cleared and selected variables within the year of study (see table 4). Though the correlation is low but it sheds light on the needs for proper implementation of all necessary requirements that all organs of health management sectors, and government required to handle wastes in the metropolis. Table 5 revealed that; as personnel increased, the volume of waste cleared will be increased (r = 0.10), and as the disposal of vehicle increased, the volume of wastes cleared will also increase. Further more, as the equipment decreased more personnel increased (are needed). On the other hand, as the disposal of vehicle supports increased, the volume of waste cleared increased (r = 0.13).Whereas, as equipment decreased, the volume of waste also remained not cleared increased. (r = -0.10), and as the disposal of vehicle supports increased then less equipment are needed or available (r = -0.83)Therefore there is a need for upholding this resolution if government must improve on keeping the environment in the metropolis cleaned from the position it was from some years back.

Generally, it is estimated that over one hundred and thirty thousand tones of refuse are generated annually in Ilorin metropolis (Adedibu, 1986; Ahmed, 2003).Whereas, sixty percent of this number is generated by women from homes(see Table 1).Since the industrial and commercial base of the metropolis is negligible, much of this waste originates from domestic refuse. From response generated from respondents (households) mostly women, they confessed openly that they occasionally deposited wastes on streets where there were no trash-cans and other means for collection. Also where they are available; some individuals hurriedly mishandled them by dumping refuse on un-authorised places. This no doubt has resulted into accumulation of heaps of refuse around nooks and crannies of the city causing mess and eye-sore to the environment. However, since the inception of present civilian regime in 1999, some appreciable efforts have been put in place in order to improve the situation. More equipment like 'row-row vehicles, trash cans, and other necessary items were put in place. But all these could not solve the problems of accumulation of refuse and effluent around the city. Therefore, on 23rd August year 2003, the state government contacted the overall control and management of wastes to the hand of a company called Ola Kleen under the auspices of Ministry of Environment and Tourism. Since then, more changes have been put in place as the city is now become neater. The irony of this however is that, the city's streets and roads are cleaned on three shifts basis daily by Ola Kleen men and women, who tagged his job *' Clean and Green'* but the interiors of the city continue to generate more refuse than ever.

**Table 1: Estimated and Projected Volumes of Wastes Generated in Nigerian Cities**

| Years | 1980 | 1985 | 1990 | 2000 |
|---|---|---|---|---|
| **Urban areas** | **Tonnes Per Year** | | | |
| Lagos | 625,399 | 681,394 | 786,079 | 998,081 |
| Ibadan | 350,823 | 382,224 | 440,956 | 559,882 |
| Kano | 319,935 | 348,580 | 402,133 | 535,186 |
| Kaduna | 257,639 | 280,925 | 324,084 | 434,314 |
| Onitsha | 242,240 | 263,929 | 304,477 | 386,593 |
| Port Harcourt | 210,934 | 229,821 | 256,129 | 352,853 |
| Osogbo | 131,903 | 143,712 | 173,720 | 253,841 |
| Aba | 131,903 | 143,712 | 169,719 | 236,703 |
| Ilorin | 102,676 | 133,099 | 145,256 | 401,447 |
| Jos | 99,871 | 111,905 | 135,272 | 197,660 |
| Warri | 67,477 | 75,607 | 91,396 | 133,531 |
| Gusau | 44,488 | 48,471 | 57,243 | 79,835 |
| Potiskum | 15,434 | 10,816 | 19,399 | 28,347 |
| Uyo | 12,508 | 13,628 | 15,721 | 20,923 |
| Suleija | 9,383 | 10,514 | 13,311 | 21,336 |
| New Bussa | 5,690 | 6,200 | 7,152 | 9,518 |

**Source:** NEST, 1991 modified by the author, 2007.

**Table 2: Manpower from Health and Environmental Sectors in Ilorin Metropolis 2005-2006**

| Environmental unit- Ministry of Health Headquarters. | Category of Officer | | | Number |
|---|---|---|---|---|
| | Chief Environmental Health Officers | | | 13 |
| | Principal Environmental Health Officers | | | 1 |
| Area Env.Health Officer in (3)LGA's | Environmental Officers | No. in the LGA's | | Ministry Total =14 |
| | Higher Environmental-Health Officers | East West | South | Total |
| | | 1 1 | 1 | 3 |
| | Senior Env.Health - Officers | 1 1 | 1 | 3 |
| | Principal E.H.O. | - - | - | 1 |
| | Asst.Chief E.H.O. | 4 1 | 2 | 7 |
| | Chief E.H.O. | 3 2<br>1 1 | 3<br>1 | 8<br>3 |
| | | **Grand Total** | | **LGA's Total = 25** |

**Source:** Author's Fieldwork, 2006.

**Table 3: Manpower from Units of Ministry of Health headquarters Ilorin.**

| | UNITS | OFFICERS | Number |
|---|---|---|---|
| Ministry of Health Headquarters. | (a)Food, Drugs and Pharmaceutical | Chief Environmental Health Officer | 1 |
| | | Asst.Chief Environmental Health Officer | 1 |
| | | Principal Env.Health Officers | 1 |
| | | Chief Env.Health Officers | 3 |
| | b) Inspectorate-Medical-Services/Training | | |
| | | Asst.Chief Env.Officers | 1 |
| UNICEF | c) Nutrition | Chief Env. Officers | 3 |
| | Health | Chief Env. Officers | 2 |
| | Town Planning- | Chief Env. Officers | 3 |
| | Devt.Authority (TDPA) & Kwara State Environmental Protection Agency(KWEPA) | **TOTAL** | **14** |

**Source:** Author's Fieldwork, 2006.

**Table 4: Funding and Equipment Supports from three LGA's to Development of Health Sectors in Ilorin Metropolis (1996-2001, Zero Allocation Period).**

| Year | Number of Personnel in Public Health sector | Disposal Vehicle supports | Equipment | Volume of waste Cleared ($M^3$) | Allocation from Govt. on Health ( Naira) |
|---|---|---|---|---|---|
| 1996 | 840 | 566 | - | 45.29 | NA |
| 1997 | 1095 | 635 | - | 60.34 | NA |
| 1998 | 1080 | 961 | - | 33.21 | NA |
| 1999 | 858 | 456 | - | 7.56 | 22,225,822.00 |
| 2000 | 753 | 228 | - | 4.15 | 8,503,250.00 |
| 2001 | 645 | 157 | - | 2.95 | NA |
| **Total** | **5271** | **3003** | | **153.5** | **30,729,072.00** |

**Source:** Author's Fieldwork, 2006

**Table 5. Intercorrelation between volumes of wastes cleared and selected variables.**

| | PSN | VWT | DVS | EQM |
|---|---|---|---|---|
| PSN | 0.00 | | | |
| VWT | 0.10 | 0.00 | | |
| DVS | 0.01 | 0.13 | 0.00 | |
| EQM | -0.40 | -0.10 | -0.83 | 0.00 |

**Source:** Author, Fieldwork, 2006.

**Note:**-PSN = Personnel
VWT = Volume of waste
DVS = Disposal Vehicle Support
EQM = Equipment

## CONCLUSION AND RECOMMENDATIONS

This research effort has clearly demonstrated that only part of the major problems have been solved by the new managers of waste control and management in Ilorin metropolis. The interior parts of the city still remained unkempt and uncared for, whereas the proper management of any organization is usually the key factor for the achievement of the objectives set of such organization. Therefore, Ola-Kleen must be giving all supports by the state government and other stakeholders in order not only to concentrate its operations on the main street arteries and roads, or on notable areas of prominent political supporters, but to all nooks and corners of Ilorin city and some other towns in the state to benefit equally from the services in general. Above all, wastes are been generated and cleared in Ilorin metropolis daily as said above, but where they are disposed in some noted points are not conducive enough. Most of the dumping sites like; Oloje Low Cost Housing Estate and Asa-Dam areas are too closed to living areas and where the city obtains it source of water supply. This is not only dangerous as pollutant sources, but to outbreak of endemic or epidemic diseases. Therefore, some new dumping sites that are not too closed to living areas or to sources of drinkable water supply must be re-located.

More again, most wastes could be turned into a new product that can benefits all asundry, therefore some private companies and individuals could be encouraged to source for new wealth from refuse as it is being practiced in advanced world through wastes recycling efforts.

Finally, this work has demonstrated a research effort on upgrading waste management and control in Ilorin metropolis. Though the bulk of this management was left to Ola-Clean Company to handle, the job being carried out by this company is commendable, but from all indications and information gathered for this investigation, only the main streets and low density area like Government Reservation Area (G.R.A.) were adequately catered for. Where by, the inner part of the urban areas were not covered by the company in Ilorin metropolis. Efficient and effective disposal of refuse and other effluent is dependent on the waste/refuse management technique adopted by the local or state government. Therefore all stakeholders-the governments, the present company that handle the sanitary development in the city, as well as private and public sectors should share the responsibility together. This no doubt this will pave ways for an improved quality of environment free from deplorable sanitary condition that is worth

emulation by other sister states of the federation. Health they say is wealth, and tidy and clean environment can lead to a good living standard.

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