

## **Introduction**

### **TOWARDS SUSTAINABLE WASTE MANAGEMENT IN MY LOCAL COMMUNITY-LAGOS STATE. NIGERIA**

There are various or numerous problems facing my Local Government in Lagos, among this numerous problem ranges from water problem, waster management, Bad road and change problem, and electricity among others.

The most prominent among them that needs urgent attention that of waste management in my local community.

In Lagos State, it has been suggested that the quantity of waste generated in the state is in proportion to population size- as population increases so also waste generated also increases.

Most cities in Nigeria (especially Lagos) are faced with the twin problems of population increase and rapid expansion. These phenomena have no doubt, brought increasing strain on urban infrastructure facilities. One area in which this strain has become obvious is in waste management where the existing system appears to be incapable of coping with the mountain load of waste generated and heaped on the surface.

According to research in 1992, in situation where the growth of population might be expected to create environmental damage through such processes as cultivation of marginal lands, overgrazing and overuse of fertilizers. Waste generation as well as an increase in pollution resulting from the expansion of industry and growth of large urban areas (such as Lagos). It has been noted that over 9 million people live in Lagos State, which is the most densely populated state in Nigeria due to its commercial activities.

(1) Waste disposal habit of the people: Ignorance coupled with poverty may be adduced to the habit of must people in Nigeria especially in the densely populated states. It beats one hollow to see a man defecating in broad daylight on the side of the high way or a woman with her wrapper pulled up doing her thing on the sidewalk or gutter in full glare of the public. Or where a man parks his/her ear and throws waste on the street, then one begins to wonder the reason or reasons for those dirty habits of our people.

Nigerians are permanently accustomed to dirt. This is truth Evidence of this can be seen everyday by way of indiscriminate discharge if garbage into drains and at times on the highway. In urban areas, Nigerian cities have been described as some of the dirtiest the most unsanitary and the least aesthetically pleasing in the world (Mabogunje 1996).

Many industries in Nigeria do discharged their wastewater into surface waters [oceans, seas and streams] more often than not without any form of remediation or treatment. This has several deleterious consequences such as using partially diluted, polluted water for irrigation, reduction in the food quality and quantity of useful and beneficial aquatic flora and fauna, reduction in quality and quantity of harvested agricultural produce as a result of irrigation with unwholesome water consumption of agricultural produce.

The world health organization defines. Health as "The state of complete physical social and mental well-being and not the absence of disease or infirmity". This shows management of solid waste as on integral part of ensuring a sanitary safe and sound environment. Environmental sanitation, under which management falls, is the control of factors in the physical environment, which exercise or may exercise deleterious effects on man's health.

Safe waste disposal and management programmes are relevant to both developed and developing countries. In developed countries the focus is on improving facilities to meet higher environmental quality criteria, while in developing countries considerable investment is required to build new treatment facilities.

It should be noted that two principles of law of thermodynamics inform us that waste is an inevitable bye product of any economic activity, further more, a certain minimum amount of

economic activity can be pursued without causing damage to the natural environment. This is because the natural environment has the capacity, albeit a limited capacity, to degrade waste, although for persistent solid waste the assimilative capacity of the environment may be, if not zero quite insignificant.

Waste regulation activities depend on the culture and technologies advancement of any country throughout the world Nigeria only recognizes waste as a problem and the problems of managing waste in one country eventually overlap into waste management problems in another country.

Because of the inability to sort waste at source, household and industrial waste including toxic ones are often handled together leading to soil and ground water pollution (UNEP 2000).

World Health organization defined waste as "Something, which the owner no longer wants at a given time and place and which has no current or perceived market value".

One of the few statutes in Nigeria, which attempts to define waste, is the Lagos State Environmental Sanitation Edict 1985, there in section 32, waste is defined as follow." Waste" includes.(a) Waste of all description

(b) Any substance, which constitutes scrap materials or an effluent or other, unwanted surplus substance arising from the application of any process

#### EFFECTIVE AND SAFE WASTE MANAGEMENT.

Waste management is the organized and systematic channelling of waster through practically economically and technically appropriate recovery or disposal route in accordance with acceptable public safeguards.

Effective and safe waste management programmes, require a total annual investment in developing countries of \$15.7 or \$16 billion, of which \$2.7 or \$3 billion is required exclusively for safe disposal of solid waste- if the international community provides 1/5 of this amount that would be about \$3.5 billion annually of which about \$2 billion relates only to solid waste.

The post independence era in Nigeria has witnessed series of political and socio-economic development. Today the nation comprises 36 states and a federal capital territory compared with initial four regions at independence

in 1960 there is continuous increase in population, industrialization and enhanced research and commercial activities since petroleum was discovered in Nigeria, yet this growth has not been comparatively matched by an improvement in the quality of the urban environment.

Instead, we have huge mounds of refuse and astronomical increase in the volume and diversity of solid waste that are generated and disposed any how in Nigeria, these have been unprecedented reports of coastal water, land and air pollution world-wide, but with developing countries like Nigeria thereby creating a serious detrimental effects in many carefree, slow responding thereby creating a serious disposal problem and a major source of environmental pollution.

#### **STAGES IN WASTE MANAGEMENT**

The various stages involved in Waste management are:

[1] GENERATION: This is the stage when materials becomes waste and is discarded. The generation rate is often defined as the weight of material discarded as solid waste by one person in one day

[2] STORAGE: House storage, keeping solid waste in place or containers which is the responsibility of the individual members of the household while, Command storage, is the responsibility of the refuse collection agency.

[3] COLLECTION: This has to do with transportation of the solid waste from the point of storage to the point of disposal, two stages are involved in the collection stages;

**The direct collection**, which makes uses only one means of transportation i.e. the Solid waste is picked up from the point of storage in a truck that takes it to the disposal site,

**The second stage collection** Carries the solid waste from the storage facility to the Transfer station, at the transfer station, the waste is loaded into the secondary stage, to transport the refuse to the Disposal site.

[4] DISPOSAL: The final destination of solid waste, usually it is dumped on land at a tip, this may be done in an engineered and hygienic Way: - sanitary landfill or controlled tipping, or in a careless Way: - open tipping or crude dumping.

### **The effects of Waste Management on the quality of life in my community could be divided**

(a) Environmental effect (b) Health effect (c) Social effect (d) Economic effects

**(A) ENVIRONMENTAL EFFECTS:** There is a broad range of environmental concerns that encompass the solid waste management world wide, there is toxic (contamination to the atmosphere, soil and water, which puts the entire ecosystem of an area) in danger. The contamination of waste cases severs problems for humans and animals alike.

The major environmental effects includes Air pollution which includes odour, smoke, noise, dust, etc, waste pollution –pollution from disposal site via flooding because of blocked drains hand degradation.

**(B) HEALTH EFFECTS:** The effects are numerous on man, the Flora or Fauna of the environment in form of health problems from convulsion, dermatitis, irritation of nose/throat, a plastic anaemia, skin burns, chest pains, blood disorders, stomach aches, vomiting diarrhoea, lung cancer to death. Obviously something still needs to be accomplished in the filed of testing and linking waste exposure to human health

Other health effects includes: Flies which carry germs on their bodies and legs and also excrete them, mosquitoes, breed in stagnant water in blocked drains in favourable location and also in cars, tyres etc that collects rain water.

**RATS:** Rats spreads Typhus, Salmonella, leptospirosis and other diseases they cause lying by biting and spoil millions of tons of food. The refuse workers also faces some lizards which includes: parasite infection and infected cats resulting from skin contact with refuse, other glass, razor blade, syringes, tissue damage or infection. Through respiration, ingestion or skin contact

### **(C) SOCIAL EFFECTS**

A common thread that further unites people from across the globe, is their sentiment on wastes, they do not want them in their neighbourhoods, countless stories of social effects on people living near waste dumpsite have decorated the news in recent years and some incidents have be so great that whole town have been evacuated” (miller et al 1991). The issue of solid waste is a

relatively new issue, spawned by the city land fills and the desire for other sites for dumping in distance rural areas.

"A city with a hazardous waste facility is now perceived as an undesirable place to live (Miller et al 1991).

#### **(D) ECONOMIC EFFECTS**

The impact of solid waste on economic values has received limited attention. It is also presumed that its impact is a negative one, one economic effect of living near a hazardous waste site disposal maybe increased taxes.

#### **CAUSES OF IMPROPER WASTE MANAGEMENT IN MY COMMUNITY**

The Lagos State management authority (LAWMA) identified the following waste types as mostly generated and collected in Lagos State.

They include:

- a. Vegetable matter, putrescibles
- b. Paper
- c. Textiles
- d. Metal
- e. Plastics
- f. Glass
- g. Grits
- h. Miscellaneous, inert
- i. Tyres etc.

The foregoing composition of waste mostly generated and collected in Lagos state for example fall under, domestic, municipal, industrial, animal and vegetable matters.

#### **WASTE MANAGEMENT AND SUSTAINABLE DEVELOPMENT**

The end of the 1980S saw a radical reappraisal of our concerns over resource availability and use, the environmental consequences of resources exploitation and the relationship between the environment, poverty and economic change.

This re-appraisal has given rise to a new approach to environment and development issues an approach, which seeks to reconcile human needs and the capacity of the environment to cope with the consequences of economic systems. This approach is called sustainable development. Sustainable development is an implied development without destruction. Sustainable development can also be defined as judicious use of non-renewable resources for the present and future generations. That is, non-renewable resources must be used at a judicious rate, neither too fast nor too slow and to ensure that the natural wealth that they represent is converted into long-term wealth as they are used.

Some scholars succinctly put it that sustainable development is development without jeopardizing future development. Meaning that in our efforts to explore and exploit the natural resources to serve us, there is an obvious paradox evident in the need to ensure economic development, while protecting the environment.

#### **THE ISSUE OF WASTE COLLECTION AND DISPOSAL**

Domestic waste management, collection and disposal have always been a universal problem, also in the U.S until the 1970's Federal Agencies had little authority to regulate hazardous and solid

waste. Disposal often took place in an unsafe manner at landfills or in surface waters, as reported in (Environmental Quality, 1991).

Refuse and domestic waste will not constitute a strange sight to Nigerians whose streets are littered with tons of garbage from animal to human carcass.

Lately however, a lot of concern has been expressed by the well-meaning residents that the battle against refuse, especially on the streets, roads, and avenues is not being prosecuted in a way to guarantee a healthy environment.

At present, in Lagos state private sector waste disposal operators diligently visits homes and carry away filled refuse bags, load them into waiting trucks and cart them away for final disposal " that is good, " the resident say. They however worry that a lot of littering goes on in the environment and the streets and avenues may have been ignored and left not cleared.

"Household account for about half of the solid wastes generated i.e. by weight in the third world cities "which include Lagos, it has also be noted that domestic waste disposal management has received considerable attention not only in Lagos State but- Nigeria generally. Despite this laudable attention, collection, disposal, processing, treatment recycling and utilization have defied solution.

It could also be stated that the major problem caused by (domestic) wastes to the environment is pollution, characterized by various types of solid wastes, which include, "paper, textile, plastic, metals, glass, bone, wood, vegetal matter and food remnants of multiple consistency.

Scholars has also pointed out that the generation of waste materials is a problem that is not peculiar to Lagos alone. This problem is not peculiar to the third world alone but cuts across the industrialized countries of the world where the pollutant effects and industrial wastes have caused considerable concern to environmental scientists. It was suggested that our problems emanate from solid waste essentially. These are wastes from discarded materials generated from domestic and community activities or from industrial, commercial and agricultural operations.

It is against this backdrop that this paper intends to review the impediments to effective and efficient waste management for sustainable development.

***Lets us now look at the major causes of improper waste management in my community.***

### **1. POPULATION EFFECTS ON WASTE MANAGEMENT**

Nigeria urbanization trend has also been spectacular, to say the least. For instance in 1921 there was no city in Nigeria with a population of over 1,000,000, while only 10 towns had population of 20,000 and above each.

In 1931, 24 towns had urban population status (in Nigeria, town with a population of 20,000 and above are regarded as urban), with 2 having up to 100,000 and above population. By 1984 estimates showed that there were 356 towns with population of 20,000 and above, while 62 with population of 100,000; 14 with 500,000 and above population respectively. In fact, by 1984, Lagos had attained a millionaire city status. Conclusively, between 1984 and year 2004 (a spate of 20 years) the population of Lagos state has increased by 19 million people. This explosion in population growth has negatively impacted on the management of solid domestic waste in the state.

Population growth goes hand in hand with increased pollution and environmental decay

### **(2) ATTITUDE TO WORK**

Alamieyeseigha (2004) in his book titled" Managing employee productivity in Nigeria- A strategic Approach" noted that employee productivity of the Nigeria worker is too low, when compared with available human and natural resources. He attributed this incidence of low productivity to certain factors including sociological factors, which is fact in the manifested lack of sense of belonging in an organization and the tendency by employees to perceive a "job" as another business. Confirming the slogan" It is everybody's job and nobody's job"

This negative attribute to work has negatively impacted on the waste management effort of my community.

### **(3) INADEQUATE VEHICLES , PLANTS AND EQUIPMENT AND NECESSARY TOOLS**

It should be noted that waste disposal or deposited at designated points of collection has to be transported either to the transfer loading station where sorting is done or to the landfill or the final disposal point. Therefore for effective and efficient collection system, there must be enough and well maintained equipment such as trucks, tippers, pay loaders, bulldozers, road sweepers, compactors and others.

In Lagos State for example municipal solid waste transportation collection and disposal has been epileptic, since the state realized its responsibility to the environment.

A lot of problem such as inadequate number of vehicles, lack of spare, dearth of fund, Poor technical know – how, poor maintenance culture, insufficient funding and lack of motivation has bedevilled the various agencies responsible for effective and safe waste management in my community.

### **(4) CORRUPTION**

Corruption is a canker worm that has eaten deep into every fabric of the Nigerian society. This we may not denied except to our collective demises and peril.

The collapse in most of the various agencies in waste management infrastructure in my community may be traced to this menace.

## **(C) RECOMMENDATION TO SOLVE THE PROBLEM OF EFFECTIVE WASTE MANAGEMENT IN MY COMMUNITY**

There are international convention such as the section 6.21 of the framework document to the Basel Convention which list several strategic guidelines towards environmentally sound effective waste management, these include:

- (1) Where practicable, economically feasible and environmentally sound, aim at avoiding the generation of any waste in the first places
- (2) Where (1) is not practicable, economically feasible and environmentally sound, to reduce to a minimum, the wastes nevertheless generated by any waste generating activity
- (3) Recover, reuse and recycle the greatest possible quantity of those wastes which are generated nevertheless and are amenable to reprocessing
- (4) Destroy or convert to a stable form any waste not amenable to (3).

In the past, there have been several laws enacted in Nigeria, Despite all these Laws, More need to be done the by:

- (1) The Federal and state Government should properly fund the various agencies responsible for effective and safe waste management and make it the pivot of the agency in the various states to be responsible for collection and disposal of all types of waste.
- (2) The law on waste and its management generally should be given a human face instead of the punitive nature of the law as being applied presently. The law on waste management should include grassroots participation and input.
- (3) There should be a daily and timed collection of waste on all nooks and crannies of the Federation.
- (4) The public or the people in my community need to be sensitized to the need of Generating less waste and sorting the waste. Generated at source before disposal. There should be

different waste collection bags for different types of waste such as bottles, cans, papers, nylon etc.

- (5) There is urgent need to use other disposal method other than the dumpsite method being use in my community method such as (I) recycling (ii) Incineration (iii) bio-treatment (iv) composting among others.
- (6) There is a need for a vigorous campaign launched by government non-governmental organization / agencies and others stakeholders to sensitize the general public to the need to have a clean environment.

#### **(A) OBSTACLES TO SOLVING THIS ISSUE SUGGESTED STRATEGIES**

- (1) The Government attitude at Federal and State level could also be an obstacle most especially in the area of funding.
- (2) Another prominent obstacle is the law on waste disposal and management in my community, the law is not that effective.
- (3) Lack of proper and well trained staff, well stocked maintenance store and availability of spare parts.
- (4) Accessibility this has to do with nearest to the disposal site
- (5) The Government and the private sector are not willing to collaborate with other cities of the world where waste management has achieved sustainable development.

Others include waste disposal habit of the people, attitude to work, inadequacy of

Vehicles, plant and equipment, corruption and population effects

#### **(B) HOW TO DEAL EFFECTIVELY WITH THESE OBSTACLES AND KEEP MOVING FORWARDS.**

As stated earlier on the Government at Federal and state level including all stakeholders has a lot to do: The most realistic and practical solution are

- (1) There must be a disposal site in each sheet, closes and avenue nearest to the sources of waste which must be accessible by everyone.
- (2) There is an urgent need for well trained staff, vehicles, trucks tippers, pay loaders, bulldozers and road sweepers. Which must be backed up with well stocked maintenance store provided for spare parts for all equipment's?
- (3) The street should be property well layout for easy accessibility.
- (4) Disposal methods, it should be mandatory for all commercial vehicles to have a waste disposal basket in their vehicle.
- (5) There should be public toilet in strategic places with proper ventilation and accessibility.
- (6) The support of private sector and Ngo is also required most especially in the area of organizing maintenance workshops and enlightened programme which should include grassroots participation and input.
- (6) Lastly all the above suggestion should be backed up by a strictly and implement able laws and penalty.

My major campaign within my community have be based on the three- (3) **R"s**

#### **Reduce**

The best way to reduce waste is not to produce it in the first place. Everyone should try to reduce his or her consumption of goods as much as possible. For example, choose products, which have the minimum of packaging around them, and instead of accepting plastic bags when shopping, use cloth bags

#### **Reuse**

Items should not just be thrown away after use if they can be used again. Doing this results in a reduction in waste and better conservation of resources. Items , which can be reused, include glass jars and bottles, and plastics bags.

### **Recycle**

Recycling means creating new things from used items, Almost 20-30% of most solid waste contains material, which could be recycled for instance

1. Paper can be re-pulped and reprocessed into recycled paper, cardboard and other paper products
2. Broken glass can be crushed, re-melted and made into containers.
3. Some forms of plastic can be re-melted and fabricated into carpet fibre or cloth
4. Food wastes and yard wastes can be composed to produce a fertilizer and soil conditioner.

### **(C) CONTINUTY OF THE WASTE TO WEALTH PROJECT IN MY COMMUNITY**

As long as there is strict hold fast laws and penalty with all the above suggestion the project will continue to be accepted to everyone because nobody likes to live in a dirty and filthy environmental. As long as we have all the stakeholders such as the Federal State and NGO to monitor the implementation of this suggestion everybody in my community will and must raise the war against indiscriminate waste dumping.

The Youth (Both male and female usually between the age of 15-30) in my community has to be resourceful by fixing what others has cast off i.e. they should be able to use what you and I consider non-resources and threw away.

There is an urgent need for a thriving recycling industry comprising more than 1000 small, medium and large businesses such as hawkers, brokers, processors, recyclers, suppliers of waste reduction equipment's, customized collection system designers, wholesales pick up services, confidential document shredders, waste audit consultants, energy conversion units, drum re-conditioners, converters, compactors etc. All these i will set up in my community if it is adequately funded and monitored by the funding partner and Government for proper implementation and Evaluation.

With proper and adequate funding, I can liase with some youth within my community and turn some of them if not all to manufactures – cum-recyclers engaged in " Closed loops" recycling in manufacturing activities like plastic compounding, paper, insulation, Tapes, mounded paper, cryogenic recycling of rubber and plastics, wiping cloth, fire logs, cults from glass wastes. Composting, scrap metal smelting, solvent recycling e.t.c.

This will open up vast frontiers in recycling business making. It highly beneficial to man and nature in my community, besides the great potential of generating employment and income.

Another area in which I will also like the appropriate authority to assist me is that appropriate measure like increasing the number of waste material that will be prohibited from the various land fills we have in my community such as cardboard, wood, metals, paper etc, This list could be so exhaustive as to cover the entire spectrum of industrial, commercial and institutional wastes and will call for recycling of all waste in the year to come.

Finally, I believe if I have access to adequate funding I can bring in a wide range of machine and equipment for pollution and waster reduction, reuse and recycling from developed country such as South and North American markets into Nigeria to support the waste to wealth programme

