



AHMADU BELLO UNIVERSITY LAW JOURNAL

FACULTY OF LAW

AHMADU BELLO UNIVERSITY, ZARIA - NIGERIA.

website: <https://abulj.org.ng> | e-mail: abulj@abu.edu.ng

WASTE MANAGEMENT LAWS IN THE FCT: ADDRESSING IMPLEMENTATION CHALLENGES

Chelsea Euphemia Okafor, Esq*

&

Hadiza Hamma PhD**

**Department of Jurisprudence and International Law, University of Abuja-
Nigeria**

Abstract

Waste management has appeared as one of the greatest challenges facing environmental protection agencies in the Federal Capital Territory. There are laws in the FCT regulating waste management, and despite this plethora of laws, waste management continues to be problematic majorly because of implementational challenges. The aim of this paper is to address the implementation challenges of waste management laws in the FCT. The doctrinal research methodology was employed to address the objectives of this research. This paper observed that the challenges bedevilling the implementation of waste management laws in the FCT include duplicity of laws, poor funding, lack of modern technologies, inadequate number of trained personnel, etc. The paper recommended solutions for better waste management in the FCT and Nigeria such as harmonisation of existing laws, improvement

on funding, education/sensitisation, adequate training of sanitary and health workers, development of integrated policies on waste minimisation, reuse, recycling, and disposal management, effective monitoring and evaluation etc. to ensure that wastes generated are properly managed, generate wealth and guarantee a healthy environment.

INTRODUCTION

Waste management laws in Nigeria are enormous and considerably adequate to cater for waste management in Nigeria. While these laws seem to be tools for containing waste management in Nigeria, waste generators are still not close to an ecologically and socially sustainable relationship with the environment notwithstanding these waste management laws enacted to ensure a better environment because of implementational challenges.

In the pre-colonial and colonial era, the traditional rulers such as the Emirs, Obas and Igwe through their various native authorities ensured that the people were law-abiding even with Indirect Rule. The post-colonial era saw many ordinances enacted but the landmark of waste management law in Nigeria was the Koko incident of 1988 which led to the promulgation of the Harmful Wastes (Special Criminal Provisions, etc) Act²¹⁶ together with subsequent laws and the establishment of many Agencies to mitigate waste management problems and ensure environmental protection. As these waste management challenges persist, the effectiveness and efficiency of these laws and agencies created become questionable as the improper disposal of wastes pose significant danger to the human health, the ecosystem etc.

Laws such as the National Environmental Sanitation and Regulatory Enforcement (Establishment) (NESREA) Act²¹⁷, Water Resources Act²¹⁸ and a host of other regulations were enacted to regulate activities leading to waste production as well as its final disposal to ensure a sustainable environment. This is despite the lack of a

* Email: noblechel@yahoo.co.uk , Phone: +2347037386533, +2348189015180

** Associate Professor, Dept. of Jurisprudence and International Law, University of Abuja, Email: hadiza.hamma@uniabuja.edu.ng , Phone: +2348036128319, +2347081960136

²¹⁶ Harmful Wastes Act Cap H1 LFN 2004.

²¹⁷ Cap N164 LFN 2010.

²¹⁸ Cap W2 LFN 2010.

justifiable right to a healthy or sustainable environment under the constitution of the Federal Republic of Nigeria, 1999, (as amended).²¹⁹

The Federal Ministry of Environment in consonance with other agencies such as the NESREA etc. were established to enforce environmental laws wherein waste management falls and to ensure environmental protection.

This paper aims at analyzing waste management laws in the FCT in order to address these implementational challenges affecting waste management in the FCT

1.1. CONCEPTUAL CLARIFICATION OF KEY TERMS

1.1.1. Waste:

Waste is the useless by product of human activities which physically contains the same substance that are available in the useful product.²²⁰ Waste means different things to different people because a disposed material can still be recycled by someone who finds such material useful to be reused or recycled to produce something else. Hence, there is no generally acceptable meaning of waste by any scholar. The Basel Convention defines wastes as “substances or objects, which are disposed of or are intended to be disposed of, or are required to be disposed of, by the provisions of national law”.²²¹ Waste can be defined as “something which the owner no longer wants at a given time and place and which has no current or perceived market value.”²²²

Waste can be categorized into the following;

- i. Solid²²³, semi-solid²²⁴ and liquid²²⁵. Liquid is that which is in form of water and flows freely and is neither solid nor gaseous. While solid waste is the direct opposite of the liquid waste.²²⁶
- ii. Waste can also be said to be toxic²²⁷, hazardous²²⁸, non- hazardous²²⁹, chemical or radioactive.²³⁰

²¹⁹ CFRN 1999, s20 (as amended). This section provides that ‘the state shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria’.

²²⁰ P.R. White, M. Franke and P. Hindle, *Integrated Solid Waste Management: A Lifecycle Inventory*. (Berlin: Springer, 1995).

²²¹ Basel Convention, 2011

²²² WHO’s definition

²²³ BYJU’S Classes, ‘Waste – Sources of wastes’ <https://byjus.com/biology/types-of-waste/> accessed 21 February 2024

²²⁴ Ibid

²²⁵ Ibid

²²⁶ Ibid

- iii. Waste can also be biodegradable and non-biodegradable.²³¹
- iv. Waste can also be categorized based on the sources such as; domestic waste²³², municipal solid waste²³³, industrial waste²³⁴, agricultural waste²³⁵, electronic and electronically generated waste²³⁶, medical waste etc.²³⁷

1.2.2. Waste Management

According to World Health Organization, “Waste management starts from generation to collection, transportation, treatment and disposal of waste.”²³⁸ Sustainable waste management systems include advanced management strategies to minimize environmental challenges and protect resources.²³⁹ It also encompasses the legal and regulatory framework that relates to waste management encompassing guidance on recycling etc.”²⁴⁰

The definition of the process of wastes management finds substantial support in Reg. 11 (1) of Pollution Abatement in Industries and Facilities Generating Wastes Regulations which provides that the collection, treatment, transportation and final disposal of wastes shall be the responsibility of the industry generating wastes.

²²⁷ US EPA, ‘Wastes’ <https://www.epa.gov/report-environment/wastes> accessed 21 February 2024

²²⁸ Ibid

²²⁹ Ibid

²³⁰ Ibid

²³¹ Toppr, ‘Waste: Types, categories and methods with videos and examples’ <https://www.toppr.com/guides/biology/our-environment/waste/> accessed 21 February 2024

²³² Ibid

²³³ Ibid

²³⁴ ESCAP, ‘Introduction to types of wastes’ <https://www.unescap.org/sites/default/files/CH08.PDF> accessed 21 February 2024.

²³⁵ Ibid

²³⁶ BYJU’S Classes, ‘Waste – Sources of wastes’ <https://byjus.com/biology/types-of-waste/> accessed 21 February 2024.

²³⁷ Ibid

²³⁸ Compendium of World Health Organization and other UN guidance on Health and Environment https://cdn.who.int/media/docs/default-source/who-compendium-on-health-and-environment/who_compendium_chapter4_v2_01092021.pdf?sfvrsn=b4e99edc_5#:~:text=solid%20waste%20management%20starts%20from,to%20protect%20soil%20or%20groundwater. accessed 19 February 2024.

²³⁹ Ibid

²⁴⁰ Conserve Energy Future, ‘What is Waste Management and Various Methods of Waste Disposal?’ <https://www.conserve-energy-future.com/waste-management-and-waste-disposal-methods.php#:~:text=you%20will%20find%20there%20are,%2c%20incineration%2c%20and%20land%20application>. accessed 21 February 2024

There is a dual legal regime for waste management in Nigeria viz: the Federal and state legal regime. The spheres of application of this dual legal regime for wastes management in Nigeria is nowhere defined.²⁴¹ In the absence of such definition, a state wastes management law is likely to apply on industrial wastes generated within the state without discriminating between Federal and state owned industries, and vice versa.²⁴²

1.2.2.1. Methods of Waste Management

Waste management methods include the following:

i. Landfills

Landfills are the most commonly and popularly practiced method of waste disposal. This process of waste disposal involves the burying of wastes generated underground.²⁴³ Landfills are commonly found in developing countries, and they are cost-effective and can accommodate large amounts of waste.²⁴⁴ Landfill sites²⁴⁵ are potential sources of radioactive gas, radon which may lead to natural leakages and if not strictly regulated may be hazardous and inimical to the environment.

Landfills give rise to air and water pollution which severely affects the environment and can prove fatal to the lives of humans and animals.²⁴⁶ A landfill operator may be liable in negligence if there is escape of gas or hazardous material from the site as illustrated in the Canadian case of *Gertsen v Municipality of Metropolitan Toronto*.²⁴⁷

²⁴¹ Adamu Kyuka Usman, *Environmental Protection Law and Practice* (Ababa Press Ltd, 2012), p.105

²⁴² Ibid

²⁴³ Affordable Waste Management, 4 types of waste management

<https://affordablewastemanagement.co.uk/4-types-of-waste-management/#:~:text=There%20are%20four%20main%20type,incineration%2c%20recycling%2c%20and%20composting>, accessed 19 February 2024.

²⁴⁴ Ibid

²⁴⁵ Landfills are usually holes left after quarrying for stone or extraction of gravel. Ideally, they should have a base of clay of low water permeability. A normal requirement is for the site to be sufficiently far from rivers and groundwater to prevent contamination from drainage and overflow liquids, both of which should have their composition monitored. An impermeable cover may be needed to stop the infiltration of rainwater.

²⁴⁶ Conserve Energy Future, 'What is Waste Management and Various Methods of Waste Disposal?' <https://www.conserve-energy-future.com/waste-management-and-waste-disposal-methods.php#:~:text=you%20will%20find%20there%20are,%2c%20incineration%2c%20and%20land%20application>, accessed 21 February 2024

²⁴⁷ (1973) 41 D.L.R. (3rd) 646.

ii. Incineration/Combustion

Incineration or combustion is a disposal method by which wastes are burned at high temperatures.²⁴⁸ Incineration is carried out both on a small scale by individuals and on a large scale by industry. It is used to dispose of solid, liquid and gaseous waste. It is recognized as a practical method of disposing of certain hazardous waste materials (such as biological medical waste). Incineration is a controversial method of waste disposal, due to issues such as emission of gaseous pollutants. The process eventually converts them into residues and gaseous products.²⁴⁹ Incinerators are primarily used in thermal treatment where solid waste materials are converted to heat, gas, steam, and ash.

iii. Recovery and Recycling

Resource recovery is the process of taking useful discarded items for a specific next use. These discarded items are then processed to extract or recover materials and resources or convert them to energy in the form of useable heat, electricity or fuel. Recycling is the process of converting waste products into new products to prevent energy usage and consumption of fresh raw materials. The popular meaning of ‘recycling’ in most developed countries refers to the process of converting waste into re-usable materials.²⁵⁰ Material for recycling may be collected separately from general waste using dedicated bins and collection vehicles, or sorted directly from mixed waste streams.

The idea behind recycling is to reduce energy usage, reduce the volume of landfills, reduce air and water pollution, reduce greenhouse gas emissions, and preserve natural resources for future use or sold for generating profits.²⁵¹

²⁴⁸ Affordable Waste Management, 4 types of waste management <https://affordablewastemanagement.co.uk/4-types-of-waste-management/#:~:text=There%20are%20four%20main%20type,incineration%2c%20recycling%2c%20and%20composting>. accessed 19 February 2024.

²⁴⁹ Conserve Energy Future, ‘What is Waste Management and Various Methods of Waste Disposal?’ <https://www.conserve-energy-future.com/waste-management-and-waste-disposal-methods.php#:~:text=you%20will%20find%20there%20are,%2c%20incineration%2c%20and%20land%20application>. accessed 21 February 2024

²⁵⁰ Affordable Waste Management, 4 types of waste management <https://affordablewastemanagement.co.uk/4-types-of-waste-management/#:~:text=There%20are%20four%20main%20type,incineration%2c%20recycling%2c%20and%20composting> accessed 19 February 2024.

²⁵¹ Ibid

iv. Composting

Composting is an easy and natural bio-degradation process that takes organic wastes i.e. remains of plants and garden and kitchen waste and turns into nutrient-rich food for your plants.²⁵² Composting is the controlled conversion of degradable organic products and wastes into stable products with the aid of microorganisms. Composting is often seen as one of the best methods of waste disposal as it can turn unsafe organic products into safe compost. It is an excellent method most suitable for businesses that often generate lots of organic waste.²⁵³

v. Waste to Energy (Recover Energy)

Waste-to-Energy is the generation of energy in the form of heat or electricity from waste. Waste to energy process involves the conversion of non-recyclable waste items into useable heat, electricity, or fuel through a variety of processes. This type of energy is a renewable energy source as non-recyclable waste can be used over and over again to create it.²⁵⁴ Waste to energy can also help reduce carbon emissions by offsetting the need for energy from fossil sources.²⁵⁵

vi. Special Waste Disposal

There are certain waste types that are considered hazardous and cannot be disposed of without special handling which will prevent contamination from occurring. Biomedical waste is one example of such a waste disposal method. It is primarily practiced in health care facilities and similar institutions. The special waste disposal system effectively disposes of hazardous biomedical waste.²⁵⁶

²⁵² M. S. Ayilara, O. S. Olanrewaju, O. O. Babalola and O. Odeyemi, 'Waste Management through composting: challenges and potentials' *Sustainability* (2020) (12) (11) 4456; <https://www.mdpi.com/2071-1050/12/11/4456>, accessed 02 March 2023

²⁵³ Affordable Waste Management, 4 types of waste management <https://affordablewastemanagement.co.uk/4-types-of-waste-management/#:~:text=There%20are%20four%20main%20type,incineration%2c%20recycling%2c%20and%20composting>, accessed 19 February 2024.

²⁵⁴ Z. Bacinschi; C. Z. Rizescu; E.V. Stoian and C. Necula, Waste Management Practices Used in the Attempt to Protect the Environment, conference: *Proceedings of the 3rd WSEAS international conference on Engineering mechanics, structures, engineering geology*, July 2010 https://www.researchgate.net/publication/262323926_waste_management_practices_used_in_the_attempt_to_protect_the_environment, accessed 19 February 2024.

²⁵⁵ Ibid

²⁵⁶ Special Waste Disposal - Texas Commission on Environmental Quality https://www.tceq.texas.gov/permitting/waste_permits/msw_specialwaste.html, accessed 02 March 2023

vii. Waste Minimization/ Avoidance:

Waste minimization is a set of processes and practices intended to reduce the amount of waste produced at source.²⁵⁷ Methods of avoidance include reuse of second-hand products, repairing broken items instead of buying new, designing products to be refillable or reusable.

Waste reduction can be achieved through recycling old materials like jars and bags, repairing a broken item instead of buying a new one, avoiding the use of disposable products like plastic bags, reusing second-hand items, and buying items that use less design.²⁵⁸

1.2. AN OVERVIEW OF WASTE MANAGEMENT LAWS IN THE FCT

The current state of waste management in the FCT is of major concern due to the high rate of waste generation and poor management practices.²⁵⁹ The environment does not reflect the potency of these laws and institutions.

With regards to the status of the Federal Capital Territory, Section 299 of the Constitution²⁶⁰ provides that:

“The provisions of the Constitution shall apply to the Federal Capital Territory, Abuja as if it were one of the states of the Federation; and accordingly- (a) all the legislative powers, the executive powers and the judicial powers vested in the House of Assembly, the Governor of a state and in the courts of a state shall, respectively, vest in the National Assembly, the President of the Federation and in the courts established for the Federal Capital Territory, Abuja;

(a) all the powers referred to in paragraph (a) of this section shall be exercised in accordance with the provisions of this constitution; and

²⁵⁷ Waste avoidance and minimization, Sustainability exchange delivered by the EAUC https://www.sustainabilityexchange.ac.uk/waste_avoidance_and_minimisation accessed 02 March 2023

²⁵⁸ Ibid

²⁵⁹ E. Braimah, ‘The Current State of Waste Management in Nigeria and the Challenges of Transitioning to a Circular Economy’, News Letter (The Green Leaf Project), March 2023 <https://www.linkedin.com/pulse/current-state-waste-management-nigeria-challenges> accessed 23 June 2023

²⁶⁰ 1999 (as amended)

- (b) The provisions of this Constitution pertaining to the matters aforesaid shall be read with such modifications and adaptations as may be reasonably necessary to bring them into conformity with the provisions of this section”.

The FCT from the provisions above is not considered as one of the states in Nigeria except in the peculiar circumstances as enumerated in the constitution which is strictly on the administration of the FCT²⁶¹ such that the National Assembly and president would exercise such powers in the administration of the territory as the House of Assembly or the Governor may exercise in respect of a state. Also, the constitution in Section 2 (2), provides that Nigeria shall be a Federation consisting of states and a Federal Capital Territory.

The following are some of the relevant laws regulating the management of waste in the Federal Capital Territory:

1.3.1. National Policy on Environment:

The basis of environmental policy in Nigeria is contained in the Constitution of the Federal Republic of Nigeria, 1999 (as amended). Pursuant to S.20 of the Constitution, the State is empowered to protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria. In addition to this, S.2 of the Environmental Impact Assessment Act²⁶² provides that the public or private sector of the economy shall not undertake or embark on or authorise projects or activities without prior consideration of the effect on the environment. Hence before a place is designated as legal dumpsite for instance, the impacts of waste on the environment will be greatly considered. The goal of the National Policy on the Environment is to ensure environmental protection and the conservation of natural resources for sustainable development. Its strategic objective is to coordinate environmental protection and natural resources conservation for sustainable development.²⁶³ This document prescribes the guidelines²⁶⁴ and strategies²⁶⁵ for achieving the Policy Goal of Sustainable Development.²⁶⁶

²⁶¹ CFRN 1999, s304.

²⁶² EIA Act 1992.

²⁶³ National Policy on the Environment (revised 2016).

²⁶⁴ No. 3.3

²⁶⁵ No. 3.2

²⁶⁶ Ibid

1.3.2. National Policy on Solid Waste Management:

The essence of the National Policy on Waste Management is to ensure “an environment that is healthy and safe through implementation of environmentally sound and ethical solid waste management system that will be a wealth generation resource and job creation vehicle.”²⁶⁷ The goals of this policy include managing waste in a manner that will enhance conservation of natural resources and protect the environment and public health from its harmful impacts; establish Solid Waste management practices and services, in line with “Best Environmental Practices (BET)” and, “Best Available Technology (BAT)” principles; and reduce potentially hazardous content of wastes by adopting consistent, safe and accountable waste reduction, segregation, reuse, recovery, recycling, collection, storage, transport, and treatment and disposal methods.

Strategic development of the National Policy on Solid Waste Management is guided by a set of principles that shall be upheld at all levels of development and execution. For instance, the Polluter Pays Principle (PPP) is an environmental policy principle, which requires that the costs (legally and financially) of pollution inflicted on the natural environment be borne by those who cause it (waste generator).²⁶⁸ This policy keys in with the objectives of sustainable development.²⁶⁹ The policy equally states that the judiciary shall be responsible for the interpretation of principles, protocols, rules and legislations, and the trial of Solid Waste Management legislations defaulters.²⁷⁰

1.3.3. The Constitution of the Federal Republic of Nigeria, 1999 (As Amended):

The Constitution is the basic law of the land and it proclaims its supremacy over and above all other laws in the country and any law that is inconsistent with any of its provisions shall be null and void to the extent of its inconsistency.²⁷¹ The relevance of the Constitution to environment lies in the fact that it should lay the foundation for the legal framework for the enforcement and protection of the environment by empowering the citizens to have legal standing and access to justice to be able to protect and enforce the protection of a clean and healthy environment and promote

²⁶⁷ National Policy on Solid Waste Management, 2020

²⁶⁸ Principle 16, Rio Declaration, 1992.

²⁶⁹ Principle 8 Rio Declaration, 1992.

²⁷⁰ Ibid

²⁷¹ S. 1 (3)

sustainable development.²⁷² The constitution of the Federal Republic of Nigeria, 1999, as amended in Section 20 provides as follows: ‘the state shall protect and improve the environment and safeguard the water, air, land, forest and wildlife of Nigeria’. The provision of Section 20 of the Constitution was first given a judicial interpretation in the case of *Attorney General of Lagos State v. Attorney General of the Federation and Ors*²⁷³ where the court failed to clarify the state or non-state functions and duties in the regulation of the environment. Pursuant to Paragraph (h) of the fourth schedule to the Constitution, the local governments are responsible for waste collection and disposal. However, based on the provisions in the constitution, several environmental policies have been formulated at the state and local government levels.

1.3.4. National Environmental Standards and Regulations Enforcement Agency (NESREA) (Establishment) Act, 2007:

The NESREA Act²⁷⁴ was created pursuant to S.4 of the Constitution of the Federal Republic of Nigeria, 1999(as amended), which provides for the power of the Legislature to make Laws. The NESREA Act²⁷⁵ is the major statutory regulation or instrument guiding environmental matters in Nigeria.

By virtue of S. 7, the Agency has as one of their functions the enforcement of compliance with the provisions of international agreements, protocols, conventions and treaties on the environment, including climate change, biodiversity, conservation, desertification, forestry, oil and gas, chemicals, hazardous wastes, ozone depletion, marine and wild life, pollution, sanitation and such other environmental agreements as may from time to time come into force.²⁷⁶ The Act equally provides that Agency can seek the approval of the minister on the evolution and review of existing guidelines, regulations and standards relating to waste management and environmental sanitation.²⁷⁷

In a nutshell, it specially makes provision for waste management and its administration and prescribes sanction for offences or acts which run contrary to proper and adequate waste disposal procedures and practices.²⁷⁸ The NESREA Act allows for establishment of zonal offices of the Agency in the six geopolitical zones of

²⁷² National policy on environment

²⁷³ (2003) 12 NWLR (PT. 833) 1.

²⁷⁴ Cap N164 LFN 2010

²⁷⁵ 2007

²⁷⁶ NESREA Act 2007, s7(c)

²⁷⁷ NESREA Act 2007, s8(k)(vii)

²⁷⁸ NESREA Act 2007, s20-27

the country,²⁷⁹ other departments, units or offices in any part of the country for the protection and improvement of the environment within the State.²⁸⁰ The Federal Capital Territory has issued the Abuja Environmental Protection Board Act which also makes provisions for waste management in the FCT. The NESREA Act pursuant to S. 34 of the Act, made other Regulations specifically to take adequate care of waste management.

1.3.5. National Environmental (HealthCare Waste Control) Regulations, S.1 No. 44 of 2021:

These Regulations are applicable to healthcare waste generators, handlers and treatment facilities; and categories of healthcare waste.²⁸¹ The appropriate collection, storage, transportation, treatment and final disposal of waste shall be the responsibility of the healthcare facility generating the waste within the specified standards and guidelines.²⁸² The Regulations also provides that in the event of an incident resulting in an adverse impact on the environment, the facility shall be responsible for the cost of damage assessment and control,²⁸³ remediation,²⁸⁴ reclamation,²⁸⁵ and restoration.²⁸⁶ National Environmental (HealthCare Waste control) Regulations also made provisions for effluent limitation,²⁸⁷ prohibition of untreated discharges,²⁸⁸ effluent treatment,²⁸⁹ Pre-treatment of wastewater before discharging,²⁹⁰ litter prohibition,²⁹¹ registration of healthcare waste treatment facility,²⁹² management of healthcare waste by waste generators using Best Available Technology (BAT) and Best Environmental Practices (BEP) acceptable to the Agency,²⁹³ segregation of waste,²⁹⁴ containment and storage as prescribed in the third schedule to these

²⁷⁹ NESREA Act 2007, s10(5)

²⁸⁰ NESREA Act 2007, s10(6)

²⁸¹ Reg. 1(2)

²⁸² Reg. 3(1)

²⁸³ Reg. 3(2)(a)

²⁸⁴ Reg. 3(2)(b)

²⁸⁵ Reg. 3(2)(c)

²⁸⁶ Reg. 3(2)(d)

²⁸⁷ Reg. 5

²⁸⁸ Reg. 6

²⁸⁹ Reg. 7

²⁹⁰ Reg. 8

²⁹¹ Reg. 9

²⁹² Reg. 10

²⁹³ Reg. 11

²⁹⁴ Reg. 12

Regulations,²⁹⁵ handling and treatment of healthcare waste by generators,²⁹⁶ packaging and labeling of the wastes generated,²⁹⁷ as well as prohibition of open burning of wastes.²⁹⁸

The Regulations provide for the use of personal protective equipment by the staff or waste handlers in any public or private healthcare facility. The Regulations also made provisions for the responsibilities of the Local Government Areas.²⁹⁹ The Regulations provide for the powers of the Agency³⁰⁰ to enforce the provisions of the Regulations with regards to any contravention and the processes to follow³⁰¹ in penalizing for contravention of the provisions of the Regulations.³⁰²

1.3.6. National Environmental (Surface and Groundwater Quality Control) Regulations 2011:

The Regulations is concerned with the protection of water resources for purposes of various uses including clean water supply, agriculture, aquaculture, industrial use, aquatic ecosystems, controlled and regulated waste assimilation to the extent that such use is compatible with other uses, hydro-energy and such other uses as may be provided by the Regulations.³⁰³ The Regulations provide for water quality standards,³⁰⁴ activities in violation of water quality standards³⁰⁵ and prohibits the discharge of pollutants (hazardous waste) regardless of the effect on water quality standards or the treatment which the pollutants received.³⁰⁶ The Regulations also provides for monitoring to ensure compliance with the provisions of the Regulations³⁰⁷ empowers the Agency³⁰⁸ to enforce the provisions of the Regulations³⁰⁹ and spells out the penalties for contravention of the Regulations.³¹⁰

²⁹⁵ Reg. 13

²⁹⁶ Reg. 14, 19, 20 and 21

²⁹⁷ Reg. 15

²⁹⁸ Reg. 16

²⁹⁹ Reg. 34

³⁰⁰ NESREA Act 2007

³⁰¹ Reg. 35, 36, 37 and 38

³⁰² Reg. 47

³⁰³ Reg. 3

³⁰⁴ Reg. 5

³⁰⁵ Reg. 6, 7 and 8

³⁰⁶ Reg. 13

³⁰⁷ Reg. 31

³⁰⁸ NESREA

³⁰⁹ Reg. 32 and 33

³¹⁰ Reg. 34

1.3.7. National Environmental (Polychlorinated Biphenyls (PCBs) Control and Disposal) Regulations, 2020:

The Regulations made provisions for the handling, treatment, storage and disposal of PCBs and PCB waste,³¹¹ as well as transportation of PCB waste in an environmentally sound manner.³¹² Reg. 3 provides timeframe for the phasing-out of PCB material³¹³, or PCB contaminated material³¹⁴ or PCB wastes in Nigeria. A PCB waste³¹⁵ shall be stored for disposal within 90 days only from the date it was determined to be PCB waste.³¹⁶ PCB containers shall be incinerated or drained and disposed in an environmentally sound manner at facility approved by the Agency.³¹⁷

PCB bulk product wastes are to be disposed of based on analytical determination of the PCB concentration in the material at the time of its designation for disposal and its potential to leach underground.³¹⁸ Reg. 29 provides for compliance with abatement measures in the handling, storage and transportation of PCBs. No person is allowed to violate the registration requirement of failure in the submission of report or making false report on matters concerning the control of PCBs or PCB-containing equipment and their wastes.³¹⁹ The Regulations provide steep penalties for non-compliance with the provisions of these Regulations.³²⁰

1.3.8. National Environmental (Electrical and Electronic Sector) Regulations, 2022:

The objective of these Regulations is to provide measures for preventing and minimizing pollution from operations and ancillary activities of the electrical and electronic sector to the environment.³²¹ These Regulations apply to new and used electrical and electronic equipment (EEE) in Nigeria.³²² The principle of these Regulations is anchored on the 5Rs, reduce, repair, reuse, recover and recycle, as the

³¹¹ Reg. 13

³¹² Reg. 14

³¹³ PCB material means oil or articles with PCB concentration greater than 500mg/kg.

³¹⁴ PCB contaminated material means oil or articles with PCB concentration greater than 50mg/kg (part per million) but less than 500mg/kg.

³¹⁵ PCB waste means a PCB liquid, a PCB solid and PCB equipment that has been taken out of service for the purpose of disposal.

³¹⁶ Reg. 7(4)

³¹⁷ Reg. 7(9)

³¹⁸ Reg. 7(10)

³¹⁹ Reg. 32(d)

³²⁰ Reg. 33

³²¹ Reg. 1

³²² Reg. 2(1)

primary drivers of the sector and includes all categories of EEE.³²³ The Regulations also provide for minimum standards for emissions.³²⁴ Where a person generates or handles waste, such person shall be responsible for collection, treatment, transportation, and final disposal of the waste in line with specific standards and guidelines.³²⁵

Reg. 26 provides for e-waste handling and separation of e-waste at source from other waste streams. A person who handles e-waste shall ensure that a technician, repairer, informal collector or individual within the facility wears appropriate Personal Protective Equipment (PPE).³²⁶ The Regulations provide for what constitutes an offence under the Regulations³²⁷ and the penalties thereof.³²⁸

1.3.9. National Environmental (Sanitation and Wastes Control) Regulations 2009:

This is one of the Regulations made under **S.34 of the NESREA Act, 2007**. Pursuant to Reg. 1, these Regulations are applicable to issues in environmental sanitation and all categories of wastes as provided for in the Regulations. The Regulations has as its purpose, the adoption of sustainable and environment friendly practices in environmental sanitation and waste management to minimize pollution.³²⁹

By virtue of Reg. 14, all generators of wastes, owners or occupiers of premises where wastes are generated shall be legally and financially responsible for the safe and environmentally sound disposal of their wastes. All generators and managers of wastes shall apply sustainable practices to minimize pollution.³³⁰ The Regulations provide that for agricultural purposes, no person shall be permitted to use wastewater for irrigation purposes unless such waste water complies with the quality guidelines set out in Schedule 10 to these Regulations.³³¹ The Regulations provide that all industrial facilities using various hazardous chemicals and products shall ensure safe appropriate disposal of the hazardous chemical and containers.³³²

³²³ Reg. 2(3)

³²⁴ Reg. 6

³²⁵ Reg. 8(2)

³²⁶ Reg. 29

³²⁷ Reg. 53

³²⁸ Reg. 54

³²⁹ Reg. 2

³³⁰ Reg. 15

³³¹ Reg. 42, 43

³³² Reg. 53

Pursuant to Reg. 65, all Local government Areas shall ensure the provision and maintenance of sanitary slaughter houses, toilets and urinals in public places, and waste receptacles in the streets, premises of all kind and public places.³³³ The Local Governments are also responsible for the clearing of litter and waste on the highways,³³⁴ registration of Municipal and Health Care Waste Collectors,³³⁵ and ensure compliance with the provisions of these Regulations.³³⁶

The Regulations provide that in order to ensure effective implementation of these Regulations and promote stakeholder involvement in environmental sanitation, programmes such as Waste Minimization Programme, Waste Management Enlightenment Programs (Information, Education and communication) etc.³³⁷ shall be implemented by governments in collaboration with the public and private sector under the Strategic Alliance Programme:

The Regulations made provisions as to what constitutes an offence under the Regulations³³⁸ as well as the steep penalties for individuals or corporate bodies that breach any provisions of the Regulations.³³⁹

1.3.10. Abuja Environmental Protection Board (AEPB) Act, 1997:

The Abuja Environmental Protection Board Act³⁴⁰ provides for the establishment of the Abuja Environmental Protection Board³⁴¹ which consists of persons including the Chairmen of the Six Area Councils in the Federal Capital Territory.³⁴² The Abuja Environmental Protection Board Act provides for its functions³⁴³ as follows:

1. To clean street, remove, collect and dispose of domestic, commercial and industrial waste;³⁴⁴
2. Remove and dispose of carcass of dead animals from public places;³⁴⁵

³³³ Reg. 65(1)

³³⁴ Reg. 65(2)(a)

³³⁵ Reg. 65(2)(d)

³³⁶ Reg. 65(2)(f)

³³⁷ Reg. 66

³³⁸ Reg. 71-93

³³⁹ Reg. 94-104

³⁴⁰ 1997.

³⁴¹ AEPBA 1997, s 1.

³⁴² AEPBA 1997, s 2(1) (b).

³⁴³ AEPBA 1997, s 6.

³⁴⁴ AEPBA 1997, s 6 (c) (ii).

³⁴⁵ AEPBA 1997, s 6 (c) (i).

3. Make provision for waste management services to state agencies, local governments, industries, business entities, private persons within the state by receiving waste at the Authority's facilities pursuant to contract agreement between the Authority and such other party.³⁴⁶etc.

Every owner, caretaker or occupier of any tenement within the FCT is to ensure that he provides and maintains a suitable dustbin and adequate sanitary convenience.³⁴⁷

The Act also provides for the treatment and purification of wastes generated from manufacturing activities in accordance with such standard as may be approved by the Agency.³⁴⁸ No person is allowed to discharge or cause to be discharged raw or untreated human waste into any drain, water course, gorge, storm water, drainages or into any land or water,³⁴⁹ and prescribes penalty for the contravention of the provisions of the Act.³⁵⁰ S. 30 of the Act prohibits the removal, destruction or tempering with waste management bins,³⁵¹ provides for payment to the Board for the waste bins,³⁵² replacement of waste bins when destroyed³⁵³ and payment of waste disposal fees as and when due to the Board.³⁵⁴ The Act also provides steep penalties for the contravention of the various provisions of the Act in Part IV of the Act.

1.3.11. Water Resources Act:

This Act³⁵⁵ aims at promoting the optimum planning, development, use and protection of water resources.³⁵⁶ It equally ensures the application of appropriate standards and techniques for the investigation, use, control, protection, management and administration of water resources.³⁵⁷ **S.5 (b) of the Act** provides for the supply of water for the drainage, the safe disposal of sewage, effluent and water-borne wastes and the control and prevention of pollution;³⁵⁸ the control and prevention of flooding,

³⁴⁶ AEPBA 1997, s 6 (d).

³⁴⁷ AEPBA 1997, s 17 (1) (g).

³⁴⁸ AEPBA 1997, s 27(1).

³⁴⁹ AEPBA 1997, s 27(2).

³⁵⁰ AEPBA 1997, s 27(6).

³⁵¹ AEPBA 1997, s 30(1).

³⁵² AEPBA 1997, s 30(2) (b).

³⁵³ AEPBA 1997, s 30(2) (c).

³⁵⁴ AEPBA, 1997, S. 30 (4).

³⁵⁵ Cap W2 LFN 2010.

³⁵⁶ WRA S. 1(a).

³⁵⁷ WRA S. 1(c).

³⁵⁸ 'Pollution' means any direct or indirect alteration of the physical, thermal, chemical, biological or radioactive properties of any water or groundwater so as to render such water or groundwater less fit for

soil erosion and damage to watershed areas;³⁵⁹ the protection of inland and estuarine fisheries, flora and fauna;³⁶⁰ the Minister is to ensure that the possible consequences of particular development proposals on the environment are properly investigated and considered before each proposal is approved;³⁶¹ to make proper provisions for the procedures to facilitate and ensure the co-ordination of all detailed planning for the investigation, use, control, protection, management and administration of water resources.³⁶² Pursuant to the provisions of S.8 (d) of the Act, the Minister also has the power prohibit or regulate the carrying out of any activities on land or water which are likely to interfere with the quantity or quality of any watercourse³⁶³ or groundwater.³⁶⁴ S.18 of the Act criminalizes contravention or failure to comply with the provisions of the Act and further prescribed penalty in that regard. Pursuant to the provisions of S. 19 of the Water Resources Act, the Federal Ministry of Water Resources has power to make regulations for the administration of the provisions of the Act.

1.3.12. The Nigerian Urban and Regional Planning Act:

The Nigerian Urban and Regional Planning Act³⁶⁵ aims at overseeing a realistic, purposeful planning of the country to avoid overcrowding and poor environmental conditions. The Act provides that an application for land development would be rejected if such development would harm the environment or constitute a nuisance to the community.³⁶⁶ The Act made provisions for steep penalties for violation of any

any beneficial purpose for which it is, or may reasonably be used, or cause a condition which is hazardous or potentially hazardous to public health, safety, welfare to animals, birds, wildlife, fish or aquatic life, or to plants.

³⁵⁹ WRA, S. 5 (c).

³⁶⁰ WRA, S. 5 (e).

³⁶¹ WRA, S. 5 (f).

³⁶² WRA, S. 5 (g).

³⁶³ 'watercourse' includes any river, creek, stream, spring, lake, lagoon, swamp, marsh or any other course for water in which water flows or is contained either usually or occasionally and includes any natural channel artificially improved, or any artificial channel artificially improved, or any artificial channel of work which has changed the course of boundaries of any river, creek, stream, watercourse, spring, lake, lagoon, swamp, marsh or any other course for water.

³⁶⁴ 'Groundwater' means any water occurring in or obtained from any geological structure or formation or artificial landfill, permeated or capable of being permeated occasionally with water and includes any matter dissolved or suspended in such water.

³⁶⁵ Cap N138, LFN 2004.

³⁶⁶ NURPA S 39 (7)

section of the Act.³⁶⁷ It equally made provisions for the preservation and planting of trees for environmental conservation.³⁶⁸

1.4. CHALLENGES OF IMPLEMENTING WASTE MANAGEMENT LAWS IN THE FCT

After assessing thoroughly the waste management laws in the FCT, the following were identified as the challenges facing the implementation of waste management laws in the FCT:

1.4.1. The Non-justiciability of the Provision of Section 20 of the Constitution:

Analyzing the legal regime for waste management in the FCT, there is obviously a need for the constitutional provision on environmental protection to be made justiciable. The Constitution of the Federal Republic of Nigerian being the supreme law of the land, made the following provision: "the state shall protect and improve the environment and safeguard the water, air, land, forest and wild life of Nigeria".³⁶⁹ The constitution lacked a specific provision on the environment, the broad nature of the wording of this provision make its enforcement difficult and this is a serious defect as the provision only attempts a middle-ground between two extremes formulated by a system that is not desirous of initiating any serious environmental change, the thrust of which may disturb its economic direction and strategies.³⁷⁰

1.4.2. Obsolete Laws:

The Abuja Environmental Protection Board Act which is the main legislation regulating Waste management in the FCT was enacted in 1997 and its provisions notwithstanding that it covered a wide range of issues bothering on environmental protection through proper waste management in the FCT, fail to accommodate modern waste management strategies and technologies in its provisions. Waste management is literally the process of extracting value from waste. In most developed countries,

³⁶⁷ NURPA S. 59

³⁶⁸ NURPA S. 72.

³⁶⁹ S. 20 CFRN, 1999 (as amended)

³⁷⁰ O. Fagbohun, Reappraising the Nigerian Constitution for Environmental Management. *A.U. Law Journal* (2002) (1) (1), 44

wastes are recycled and used.³⁷¹ Wastes are not properly managed in the FCT due to lack of modern technologies. Wastes have not been properly managed in Nigeria as Waste management institutions are still managing wastes through the use of landfills by digging of a hole on the ground and filling it with wastes.³⁷² They also make use of incinerators in burning of solids, liquid gaseous combustible material.³⁷³ There is absence of recycling and resource recovery technology and other modern technologies, but where modern technologies are utilized in waste management, wastes can be used to generate wealth and other amenities like electricity, the toxic materials³⁷⁴ in wastes will be minimized and pollution will be controlled to its barest minimum.

1.4.3. Institutional Challenges:

While most Areas councils in the Federal Capital Territory lack the facilities for effective collection and management of waste, it is grossly inadequate among the few that have them. The efforts by the Abuja Environmental Protection Board to completely rid streets and neighborhoods of indiscriminate wastes have not yet achieved the much desired success because the penalties stipulated in the laws are not meted out to the defaulters, hence the incessant indiscriminate dumping of wastes³⁷⁵ in the FCT.

It has been observed that the constitutional strength of waste management policies is weak and ineffective and the implementation of these policies by the institutions is not monitored adequately.³⁷⁶ The NESREA, an institution created pursuant to the provisions of the constitution which serves as a regulatory agency, however they have not been able to handle the issues associated with waste management adequately due

³⁷¹ Theresa U. Akpoghome, *Managing Domestic Waste in Nigeria: Legal Framework, Problems and Solutions*

https://www.academia.edu/10384739/managing_domestic_waste_in_nigeria_legal_framework_problem_s_and_solutions accessed 01 February 2023

³⁷² *ibid*

³⁷³ Incineration produces dioxin and incinerator's ash is toxic and its leachate can poison groundwater.

³⁷⁴ Such as chlorinated plastics

³⁷⁵ Places such as Kwali, Gwagwalada, Bwari, Kuje and Abaji Area councils have limited facilities to cater for the wastes generated by inhabitants while Abuja Municipal Area council have a very working waste management system as waste collectors were seen to always come around to evacuate the wastes piled in the waste bins at the designated areas for onward disposal by the Agency.

³⁷⁶ Jordan Journal, Sylvester Odiana and Olorunfemi Ikudayisi, 'An Overview of Solid Waste in Nigeria: Challenges and Management', December 2021

https://www.researchgate.net/publication/356951468_An_Overview_of_Solid_Waste_in_Nigeria_challenges_and_Management. Accessed 29 May 2023

to the existence of poor working relationships between the NESREA and other agencies in charge of waste management.³⁷⁷

1.4.4. Limited Waste Collection Points and Lack of Coordination:

Most inhabitants across the length and breadth of the FCT dump their wastes at any location that suits them because there are no defined waste collection points in most of the Area councils in the FCT. This creates a collection problem, especially in densely populated and poorly-planned area councils such as Kwali, Bwari, Gwagwalada, Kuje and Abaji. Also, industrialists are interested in only their products and not in the waste discharged. Ignorance, materialistic tendencies, and apathy have often prevented them from adopting good environmental practices.³⁷⁸ The lack of coordination among the relevant agencies often results in duplication of efforts, wastage of resources, and unsustainability of overall waste management strategies.

1.4.5. Poor Funding:

Poor funding of public waste services is one of the major problems hampering waste management in Nigeria with reference to the Federal Capital Territory. Poor funding is one of the major challenges bedeviling proper waste management in the FCT. Notwithstanding that the FCTA invests a lot in waste management; it is insufficient as the funds invested cannot cater for the rate at which waste is being generated. The funding problem is basically a problem of poor recovery of investments made on waste management and the limited funds of government provided for the Agency to carry out their responsibilities which includes proper waste management. The inability to recover the funds spent on waste management can be attributed to lack of willingness to pay for the service by households.³⁷⁹

³⁷⁷ M. Ibrahim and K. Imam, Overview of Environmental Laws, Regulations, and Multilateral Environmental Agreements in Nigeria. Presentation at the UNEP Global Training Programme on Environmental Law & Policy, Nairobi, Kenya 5th–13th October, 2015; M.T. Ladan, Legal Issues in Environmental Sanitation and Waste Management in Nigeria: Role of Environmental Courts. Being a Paper Presented at A 3-Day National Seminar for Magistrates on Environmental and Sanitation Laws in Nigeria Organized by the NJI, Abuja, 2015.

³⁷⁸ J.C. Agunwamba, Solid Waste Management in Nigeria: Problems and Issues, *Journal of Environmental Management* (1998) (22) (6), 849-856
https://www.academia.edu/1808215/Solid_waste_management_in_Nigeria_problems_and_issues
Accessed 01 February 2023

³⁷⁹ O.A. Olafadehan and L. Salami, 'Proactive Solid Waste Management and Control: A Way of Environmental Sustainability in Nigeria' *Nigerian Journal of Engineering Management* (2011).

Unlike in developed countries, most state agencies in Nigeria operate with little subsidy from state governments and sanitation tax.³⁸⁰ It is also realized that there are some administrative bottlenecks in the way the laws are drafted or amended. This creates confusion and delays in the system of waste management which is controlled by State to a large extent, including the Mobile Sanitation Courts that have become non-functional due to logistic and funding problems.³⁸¹

1.4.6. Population Growth and Urbanization:

Nigerian cities are largely characterized by the public provision of urban infrastructure services. These services, such as water supply, drainage, sewerage, access roads and solid waste collection and disposal are usually of poor quality.³⁸² The unprecedented rapid urbanization and urban growth occurring in the FCT has been identified as one of the critical challenges facing waste management in the FCT.³⁸³ The ever increasing challenges of rapid growth and poor planning, has not only affected waste volume but they also made waste management strategies incapable of keeping pace with the rate of generation. The problem of urbanization has also complicated the problem of waste management as land becomes scarce, human settlements encroach upon landfill spaces, and government in some cases encourage new development directly on top of operating on recently closed landfills.³⁸⁴

1.4.7. Inadequate Collection Bins and Poor Management Strategies:

https://www.academia.edu/40789967/proactive_solid_waste_management_and_control_a_way_of_environmental_sustainability_in_Nigeria accessed 05 February 2023

³⁸⁰ J. C. Agunwamba, 'Solid Waste Management in Nigeria: Problems and Issues,' *Journal of Environmental Management* (1998) (22) (6), 849-856

https://www.academia.edu/1808215/Solid_waste_management_in_Nigeria_problems_and_issues

Accessed 01 February 2023

³⁸¹ Ibid

³⁸² Adepoju Onibokun "Urban growth and urban management in Nigeria" in Stren, R and S White (editors), *African Cities in Crisis: Managing Rapid Urban Growth*, (West Press Inc., Boulder CO, 1989),

³⁸³ M.O. Asikhia, and D. Olaye, Solid waste management in Benin City: An appraisal, *The Nigerian Journal of Research and Production*, 18(2), 1-9; C. Ezeah. (2010): *Analysis of Barriers and Success factors affecting the adoption of sustainable management of municipal solid waste in Abuja, Nigeria*. A PhD thesis submitted to University of Wolverhampton, (2011).

³⁸⁴ D.O. Ikemike, 'Effective Solid Waste Management: A Panacea to Disease Prevention and Healthy Environment in Bayelsa State, Nigeria'. *International Journal of Academic Research in Education and Review* (2015) (3) (3), 65-75

Waste management in the FCT is hindered by exhausted waste collection services and by inadequately managed and uncontrolled dumpsites and the problems are worsening day by day. The effectiveness of waste collection initiated by both the public and private sectors is largely controlled by location, the ability and willingness of the owner of waste to pay the amount charged.³⁸⁵ Most of the times, people are not willing to pay and as such most wastes are not collected by Municipal collection systems because of poor management, fiscal irresponsibility, equipment failure, or inadequate waste management budgets.³⁸⁶ There are also inadequate collection bins in the FCT as observed during the course of this study. Most of the waste bins seen at different locations visited within the Area Councils during the Course of this study were provided by those residing in there. The institutions responsible for waste management are not living up to their responsibilities in that regards.

1.4.8. Poor Attitude of People to Proper Disposal of Wastes:

Another major challenge facing waste management in the Nigerian society is the poor waste disposal habit of the people. Wastes are viewed as an invaluable and unwanted materials rather than wealth. Wastes are not seen as valuable materials that can be recycled for actual use, material recovery and energy recovery. The value of waste to people enhances the actualization of the process involved in the management of wastes.³⁸⁷

1.4.9. Inadequate Number of Trained Personnel:

Most of the problems that the waste management system is faced with are exacerbated by the lack of trained personnel at the waste management policy implementation level. These include workers in all ranks, from the administrator to the refuse-men. There is

³⁸⁵ D.O. Olukanmi and M.U. Mnenga, 'Municipal Solid Waste Generation and Characterization: A Case Study of Ota, Nigeria. *International Journal of Environmental Science and Toxicology Research* (2015)(3) (1), 1-8

³⁸⁶ C.R. Bartone, 'Institutional and Management Approaches to Solid Waste Disposal in Large Metropolitan Areas', *Management and Research* 9 (6): 525-536, 1991; J.A. Opara and F. Uwakwe, 'Environmental Waste Management and Sustainable Development in Developing countries'. *International Journal of Applied Science and Engineering* (2016) (4) (2), 51-60, cited in Jordan Journal, Sylvester Odiana, Olorunfemi Ikudayisi, 'An Overview of Solid Waste in Nigeria: Challenges and Management', December 2021
https://www.researchgate.net/publication/356951468_An_Overview_of_Solid_Waste_in_Nigeria_challenges_and_Management. Accessed 29 May 2023

³⁸⁷ Beatrice Abila and Jussi Kantola, Municipal Solid Waste Management Problems in Nigeria: Evolving Knowledge Management Solution, *International Journal of Environmental, Chemical, Ecological, Geological and Geographical Engineering* (2013) (7) (6), 303-308
<https://www.scinapse.io/papers/1561213359> accessed 31 May 2023

no formal training program and communication is poor. The capacity and awareness of officers (enforcers), facilities, and operators on legal requirements are poor as well.³⁸⁸ Without adequately trained personnel for waste management policies making and implementation, sustainable waste management planning and implementation will not be realisable. Only a few institutions in Nigeria offer specialised courses on waste management.³⁸⁹ Thus, the number of professionals with the requisite knowledge and capability regarding waste management in Nigeria is few. The provision of qualified operation and monitoring personnel will help increase management efficiency.³⁹⁰

1.5 CONCLUSION

This paper analysed waste management In the FCT with specific focus on implementational challenges. The paper analyzed the state of FCT laws and found that The non-justiciability of Section 20 of the Constitution poses a serious challenge to waste management in the FCT. Also, the main Law regulating waste management in the FCT, the Abuja Environmental Protection Board Act is obsolete and needs to be reviewed to accommodate modern technologies and good management strategies in waste management. There is an inadequate number of trained personnel and inadequate collection points and bins to ensure that waste is properly managed in the FCT. The institutions are poorly funded which accounted for ineffective waste management. In addition, the paper also found that population and urbanisation is also a major challenge to waste management in the FCT. Etc.

To address these challenges, the paper recommended specific measures to be adopted in addressing the implementational challenges of waste management in the FCT. It is advisable to embrace zero waste management by evaluating and monitoring the activities of waste generators such as households, industries, business centers, cities etc. to ensure that wastes are reduced at source to the barest minimum and pollutant

³⁸⁸M. Ibrahim and K. Imam, Overview of Environmental Laws, Regulations, and Multilateral Environmental Agreements in Nigeria. Presentation at the UNEP Global Training Programme on Environmental Law & Policy, Nairobi, Kenya 5th–13th October, 2015; M.T. Ladan, Legal Issues in Environmental Sanitation and Waste Management in Nigeria: Role of Environmental Courts. Being a Paper Presented at A 3-Day National Seminar for Magistrates on Environmental and Sanitation Laws in Nigeria Organized by the NJI, Abuja, 2015.

³⁸⁹ J.C. Agunwamba, Solid Waste Management in Nigeria: Problems and Issues, *Journal of Environmental Management* (1998) (22) (6), 849-856
https://www.academia.edu/1808215/Solid_waste_management_in_Nigeria_problems_and_issues
Accessed 01 February 2023

³⁹⁰ Ibid

contents properly managed to avoid any adverse effects. Finally, the institutions should be made to ensure that every contravention of the laws is speedily penalised.

1.5.1. Sensitization and Enlightenment Programme:

The NESREA Act provides that the Agency should create public awareness and provide environmental education on sustainable environmental management, promote private sector compliance with environmental regulations other than in the oil and gas sector and publish general scientific or other data resulting from the performance of its functions.³⁹¹ Enforcement of this provision needs to be given utmost attention because if every citizen is conscious of the implications his/her waste has on the environment and public health, there would be a huge reduction in the volume of waste generated. Education and enlightenment programs are essential in waste management as it will facilitate the development of technical know-how on the conversion of waste to resources, thereby enlightening more people to embrace new technological strategy skills on areas in the management of waste.³⁹²

1.5.2. Harmonization of Existing Waste Management Laws:

Lack of harmonization of legal provisions on waste management at the various tiers of government provides a loop-hole for willful non-compliance by waste generators and collectors.³⁹³ Hence our existing laws should be adequately harmonized to make them efficient and enforceable. There should be an effective working relationship between the National Environmental Standards and Regulations Enforcement Agency (NESREA) and other agencies charged with waste management responsibilities, ensure effective implementation and enforcement of all existing relevant laws, standards, and regulations that make for sustainable waste management. The Constitution of the Federal Republic of Nigeria should be amended to reflect environmental rights as a significant component of the nation's well-being. The Abuja

³⁹¹ NESREA Act, 2007, S. 7 (1)

³⁹² A.O. Nwosu and H.E. Chukwueloka, 'A Review of Solid Waste Management Strategies in Nigeria', *Journal of Environment and Earth Science* (2020) (10) (6), 132-143

³⁹³ A.G. Onibukan, N.O. Adedipe and M.K.C. Sridhar, *Affordable Technology and Strategies for Waste Management in Africa: Lessons from Experience*, Centre for African Settlement Studies and Environment (CASSAD), CASSAD Monograph Series. 2000; 13:1-134

Environmental Protection Board (AEPB) Act should also be amended to reflect modern waste management practices.

1.5.3. Adequate Funding:

There should be an improvement in the method of funding these agencies charged with waste management responsibilities in order to enable successful implementation of sustainable waste management programs. This may be achieved by allowing greater participation of the private sector in waste management in the FCT. Also, the workers can be motivated through the provision of adequate financial remuneration and proper incentives.

1.5.4. Adequate Training:

There should be provision of adequate and well trained sanitary and health workers to meet the challenges of waste management in Nigeria and also supply adequate equipment and facilities for the sanitary and health personnel to work with, in order to achieve maximum output. Also, there should be adequate training for the staff of these agencies handling waste and capacity building through training of judicial officers on environmental pollution, sanitation and waste management etc. to increase their level of awareness and knowledge.

1.5.5. Integrated Policies on Waste Minimization, Reuse and Recycling Programs:

Integrated policies on waste minimization reuse, recycling and disposal of waste should be developed in Nigeria to ensure effective waste management. The problem of waste management in Nigeria has become more complex in recent times due to rapid population growth, urbanization, and industrialization and the rising standard of living.

Recycling is less capital-intensive than landfills, incinerators, or waste-to-energy facilities.³⁹⁴ A well-structured recycling program has several advantages over other more conventional disposal technologies because waste is recovered rather than thrown away.³⁹⁵

³⁹⁴ Caman and Curcio 1991—Carmon in reference section; Multifamily Recycling Guide 1991 cited in J. C. Agunwamba, ‘ Analysis of Scavengers’ Activities and Recycling in Some cities of Nigeria’ https://www.academia.edu/32688230/Analysis_of_Scavengers_Activities_and_Recycling_in_Some_cities_of_Nigeria accessed 31 May 2023

³⁹⁵ Ibid

The activities of scavengers should be integrated into the programs of the respective sanitation authorities so as to effectively collect recyclable while maximizing human resources and minimizing health risks. Generally, the state of recycling in the FCT and Nigeria generally could be improved by undertaking policy measures in education by adopting more comprehensive and culturally-oriented educational media program to increase public awareness and stimulate public participation. Also, government through incentives can help expand the range of materials that can be recycled by sponsoring research and encouraging new businesses and industries related to recycling. Environmental Principles such as the precautionary principle, the polluter pays principle and the principle of cooperation should be enforced in the FCT as they set standards for environmental policy decisions as well as emphasize waste minimization, reuse and recycle at all levels to achieve waste management goals.

1.5.6. Adequate monitoring and evaluation machinery:

Effective machinery for monitoring and controlling government agencies for waste management should be in place. Constant and adequate monitoring and enforcement of regulations will ensure that rules are adhered to and offenders are penalised adequately to deter intending violators. Also, the legislature and the Courts need to be more active in making and enforcing environmental laws/policies.

1.5.7. Adequate Provisions of Vehicles and Collection Points:

The government should make adequate provisions for vehicles for easy transportation of waste to the final disposal places and collection Points designated for proper disposal of these wastes by waste generators to avoid indiscriminate dumping of waste at illegal dumpsites. Well-meaning private individuals should be encouraged to provide these vehicles to assist in the management of waste in the FCT.

1.5.8. Use of Modern Technologies in management of wastes:

Government should employ the use of modern technologies in waste management in the FCT. The crude means employed over the years yield not much results as against the huge impact modern technologies would make in management of wastes in the FCT especially in recycling. Persons with good initiatives and specialists in the use of modern technologies should be employed to help in making waste management in the FCT a realistic goal.

Nigeria government should make extensive use of self-regulation and encourage close cooperation between government officials and representatives of industry the

developed countries in the world are doing so as to monitor closely the activities of the established institutions and ensure that appreciable results are recorded in the management of waste in Nigeria. Nigeria should adopt this approach as it is environmentally friendly and will greatly improve the management of waste if enforced by these institutions.