ANALYTICAL ASSESSMENT OF THE LEGAL FRAMEWORK ON ELECTRONIC WASTE MANAGEMENT IN NIGERIA FOR EFFICIENT INTERNATIONAL BEST PRACTICES

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Abstract

The management of electronic waste (e-waste), a uniquely complex waste stream, has emerged as a significant environmental and public health challenge in urban centres worldwide, including Nigeria. Rapid urbanization has led to a surge in the use of Electrical and Electronic Equipment (EEE). Additionally, technological advancements, population growth, and efforts to bridge the digital divide have further contributed to the rising generation of e-waste. However, many developing countries, Nigeria included, struggle to effectively manage the growing volume of e-waste they produce. Given the increasing environmental and health hazards posed by improper e-waste disposal in Nigeria, it has become essential to establish a robust legal framework for e-waste management. This study adopted a doctrinal legal research methodology. It revealed that international environmental legal instruments on e-waste management must be ratified and domesticated to ensure efficient e-waste handling in Nigeria. Furthermore, the research found that the current national legal frameworks are inadequate and ineffective in addressing the specific challenges of e-waste management. The study concluded that while Nigeria has existing legal provisions for general waste management, these are insufficient and weak when applied specifically to e-waste. Moreover, current laws focus broadly on solid waste management and lack dedicated regulations for e-waste. To ensure effective management and alignment with international best practices, it is recommended that existing laws be reviewed and amended to include specific e-waste provisions, or that a new, standalone law be enacted exclusively for e-waste management.

Keywords: E-waste, E-waste Management, Environment, Electrical and Electronic Equipment

1. Introduction

Technological advancements and the reduction in the product life cycle have been a major catalyst to the significant increase in the e-waste generated globally and once they become obsolete or outdated they are discarded in large amounts.

[1]Therefore, as a result of increase in consumption of Electrical Electronic Equipment (EEE) the Transboundary E-waste Flows Monitor estimated that 5.1 Metric tonnes, which is about 10 per cent of the total amount of global e-waste, (53.6 Metric tonnes) were moved from one country to the other in 2019. Out of the 5.1 Metric tonnes, 1.8 Metric tonnes of e-waste were illegally moved across boundaries and poses a threat to managing e-waste.[2] Nigeria is the major recipient of e-waste in Africa and in Nigeria, approximately 60,000–71,000 Metric tonnes of e-waste were imported annually through Lagos ports in 2015 and 2016.[3]

Beyond being a major recipient of e-waste Nigeria's bustling Information, Communication and Technology (ICT) markets**,** particularly those in Lagos e.g. Computer Village in Ikejacontribute significantly to e-waste generation through the sale, repair, and disposal of both new and used devices. Additionally, major dumpsites such as Olusosun (Ojota) and Solous (Igando) landfills receive thousands of tonnes of mixed waste, including substantial amounts of e-waste[4]. These sites serve as operational grounds for informal recyclers, who manually dismantle and process discarded

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[1] SK Ghosh, and others, 'Waste electrical and electronic equipment management and Basel Convention compliance in Brazil, Russia, India, China and South Africa (BRICS) Nations' *Waste Management & Research* (2016)34(8) p.693-707. <https://journals.sagepub.com/doi/abs/10.1177/0734242X16652956?journalCode=wmra>. Accessed on 25th October 2025

[2] CP Baldé, and others, 'Global Transboundary E-Waste Flows Monitor' (2022)'. United Nations Institute for Training and Research (UNITAR). <https://ewastemonitor.info/wp-content/uploads/2022/06/Global-TBM_webversion_june_2_pages.pdf > Accessed on 25th October 2025

[3] T Maes, and F Preston-Whyte, 'E-waste it wisely: Lessons from Africa' SN Applied Sciences (2022) 4 (72). <https://doi.org/10.1007/s42452-022-04962-9>. Accessed on 3rd June 2023;IOkukpon, 'Towards The Sustainable Management Of Electronic Waste In Nigeria: South Africa As A Model.' (2015).<https://open.uct.ac.za/handle/11427/16730> accessed on 3 February 2023

[4] Ibrahim Mansur and JemilatNasiru, 'Living on Borrowed Time: How Nigeria's Unchecked E-Waste Is Poisoning Residents, Environment.' International Women's Media Foundation (2024). https://www.iwmf.org/reporting/living-on-borrowed-time-i-how-nigerias-unchecked-e-waste-is-poisoning-residents-environment/. Accessed on 10th August, 2025

electronics on a daily basis, often under hazardous conditions with high health and environmental risks[5].

Key health and environmental risks associated with e-waste handling include respiratory diseases, heavy metal poisoning, DNA damage, and elevated cancer risks**.** Medical studies have documented impaired lung function and hypertension among workers with prolonged exposure[6]. The environmental impacts are equally severe, with soil and water contamination being a major concern. For instance, leachate samples from the Igando landfill contained hazardous levels of cadmium, lead, iron, and ammonia (far exceeding permissible limits)[7].

Growing health and environmental concerns have led to the implementation of international and national regulations aimed at mitigating the harmful effects of e-waste. At the global level**,** Nigeria is a signatory to some key treaties such as the Basel Convention (1991)[8] and the Stockholm Convention on Persistent Organic Pollutants (POPs)[9], while in Nigeria areregulations by the National Environmental Standards and Regulations Enforcement Agency (NESREA)[10], the Nigerian Communications

[5]AO Odeyingbo, IC Nnorom, and OK. Deubzer, 'Used and Waste Electronics Flows into Nigeria: Assessment of the Quantities, Types, Sources, and Functionality Status' Science of the Total Environment 666: 103–113. (2019)https://doi.org/10.1016/j.scitotenv.2019.02.102; Francis Tunde, 'How to Properly Dispose of Electronics in Lagos.' Fij.ng,(2024). https://fij.ng/article/how-to-properly-dispose-of-electronics-in-lagos/. Accessed on 10th August, 2025

[6] ibid

[7]Alabi, Olumide. 'Nigeria's Electronic Waste Is a Public Health Problem and Needs Urgent Attention.' The Conversation,(2021). <https://theconversation.com/nigerias-electronic-waste-is-a-public-health-problem-and-needs-urgent-attention-163537.> accessed on 9th August 2025;Lovo, Silvia, and Stephanie Rawlings. 'Electronic Waste Is a Silent Killer in West Africa.'VoxDev, J(2025)https://voxdev.org/topic/health/electronic-waste-silent-killer-west-africa. Accessed on 9th August 2025

[8] United Nations Environment Programme (UNEP). Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal & Basel Protocol on Liability and Compensation. Geneva: UNEP (2023)https://www.basel.int/Portals/4/download.aspx?e=UNEP-CHW-IMPL-CONVTEXT-2023.English.pdf. Accessed on 8th August 2025

[9] United Nations Environment Programme (UNEP). Stockholm Convention on Persistent Organic Pollutants (POPs). Geneva: UNEP. (2023)https://chm.pops.int/Portals/0/download.aspx?e=UNEP-POPS-COP-CONVTEXT-2023.English.pdf. Accessed on 8th August 2025

[10]National Environmental Standards and Regulations Enforcement Agency (NESREA). 2011. National Environmental (Electrical/Electronic Sector) Regulations. Amended 2022. Abuja: NESREA. https://nesrea.gov.ng/wp-content/uploads/2025/05/Electrical_Electronics.pdf. Accessed on 9th August 2025

Commission (NCC) E-Waste Regulations of 2018[11], and the Harmful Waste (Special Criminal Provisions) Act, 2004[12].

Whether these laws/regulations are adequate enough to combat the challenges of managing e-waste prompted this research. This study therefore examines some of international Conventions in which Nigeria is a party to and national laws on e-waste management in Nigeria and their efforts in curbing the complexities and menace of e-waste management practices and environmental protection.

2. Conceptual Clarifications on the Legal Framework on E-waste Management

2.1. Concept of Waste

According to the Webster's Encyclopedic Dictionary, waste is defined as an item that has no practical value, worn out, discarded or used, and something cast out as worthless.[13]Waste can be described as any items that its value has lost, to be disposed or thrown away. It includes things that are required to be disposed, intended to be disposed and meant to be disposed by the provisions of the laws of Nigeria. Wastes are also worthless materials which must be disposed.[14]

2.2. Concept of E-waste

E-waste is quite different from municipal solid waste and this is mainly due to its extremely dangerous, toxic and hazardous substances and hence needs a different

[11]Nigerian Communications Commission (NCC). 2018. Nigerian Communications Commission (NCC) Industry E-Waste Regulations, 2018. Abuja: NCC. https://www.ncc.gov.ng/media/115/view. Accessed on 9th August 2025

[12]National Environmental Standards and Regulations Enforcement Agency (NESREA). National Environmental Standards and Regulations Enforcement Agency (Establishment) (Amendment) Act, 2018. Abuja: NESREA. https://nesrea.gov.ng/wp-content/uploads/2025/05/NESREA_Amended_Act_2018-1.pdf. Accessed on 9th August 2025

[13]The New International Webster Encyclopaedic Dictionary of English Language (Columbia: Trident Press International, 2003). <https://www.merriam-webster.com/dictionary/waste#:~:text=of%203%20adjective-,1,body%20gives%20off%20waste%20materials.> Accessed on 25th October, 2025

[14]EL Amah, OT Eze and CE Emeka, 'An Examination of the Regulation of Electronic Waste Management in Nigeria. African Journal of Law, Ethics and Education (2024) Vol 7, Issue IV. <https://ajleejournal.com.> accessed on 27th October 2025; UCKalu and WE Okoye,'Developing Effective Legal and Institutional Mechanism for Managing Electronic Waste in Nigeria' African Journal of Law and Human Rights (AJLHR) (2024) 8 (1) P 58-29

approach in its management.[15] The National Environmental Standards and Regulatory Enforcement Agency (NESREA), which is the apex body responsible for the regulation of e-waste and the protection of the environment defines e-waste to mean any Waste Electrical and Electronic Equipment (WEEE) that is in its end stage or any Electrical and Electronic Equipment (EEE) that is discarded. E-waste is also defined by the EU Waste Electrical and Electronic (WEE) directive as the Waste Electrical and Electronic Equipment and it includes it sub-assemblies, all its components and consumables that are all parts of an electronic products during the time of discarding it. This European Union (EU) WEE Directive is the most recognized e-waste definition.[16] For the purpose of this research e-waste is defined as waste that emanated from electrical and electronic devices that are obsolete, not in use or discarded. They also include electrical and electronic equipment that their product life cycle had expired or had reached the end of their useful life and have been discarded for either, reuse, recycle or final disposal at dumpsites.

2.3. Components of E-Waste

It is important to note that e-waste comprises of both valuable and toxic substances/materials. The hazardous components are cadmium, mercury, lead, brominated flame retardants, polyvinyl chloride plastics (PVCs), selenium, polychrorinated biphenyls (PCB) and so on while the valuable components comprises of Aluminium, Tin, Silicon, Iron, Gold, Silver, Nickel and so on. All these valuable components can be recovered for the production of new electronic products. However, when these valuable components are processed with unsound methods of recycling e-waste, they can become hazardous.[17]

[15]KJ Miner, 'A Critical Evaluation of Current E-waste Management and Recycling Practices in the Jos Metropolis in Nigeria.' (2021). P. 9

[16]Chenyu, and others, 'An Overview of E-Waste Management in China.' *Journal of Material Cycles and Waste Management* (2015)17 p. 1-12. <https://link.springer.com/article/10.1007/s10163-014-0256-8> Accessed on 20th October, 2023

[17]Rubiyath Chowdhury Afifa, 'E- waste Management in Bangladesh: An Analysis on Compliance with The International Legal Regime'(LLM Dissertation, Department of Law, Faculty of Security and Strategic Studies (FSSS), Bangladesh University of Professionals 2022) p. 24

2.4. Classification of E-Waste

There is the necessity to classify e-waste into various categories and this is because e-waste has different sources and types and most importantly, the classification is necessary in other to enhance e-waste management.[18] The EU Directive classified e-waste into six categories and they are: Temperature exchange equipment and these include freezing and refrigerating equipment such as freezers, air conditioners and refrigerators; Screens, monitors and these include laptops, notebooks, computers and televisions; Large equipment and they include photocopiers, washing machines, dish washers and so on; Lamps and they also include light emitting diodes (LEDs) and fluorescent lamps; Small equipment and examples include radios, video cameras microwave ovens and electric shavers; and lastly, small ICT and examples of them include devices such as electronic toys, cell phones and telephones.[19]

In summary, e-waste refers to any discarded Electrical and Electronic Equipment (EEE) or Waste Electrical and Electronic Equipment (WEEE) that has reached the end of its useful life. It presents a significant environmental challenge because it contains both hazardous substances (such as lead and mercury) and valuable materials like gold and copper. Unlike ordinary waste, e-waste requires specialized treatment to prevent environmental contamination and health hazards associated with improper disposal. However, when handled responsibly through formal recycling systems, it enables the recovery of valuable resources, lessens the need for virgin raw material extraction, and contributes to a circular economy. In Nigeria, where e-waste generation is growing

[18]KJ Miner, 'A Critical Evaluation of Current E-waste Management and Recycling Practices in the Jos Metropolis in Nigeria.' (2021). P. 11

[19] European Union Directive 2018, Forti, Vanessa, and others, 'The Global E-waste Monitor 2020.' *United Nations University (UNU), International Telecommunication Union (ITU) & International Solid Waste Association (ISWA), Bonn/Geneva/Rotterdam* 120 (2020).<https://www.researchgate.net/profile/Vanessa-Forti/publication/342783104_The_Global_E-waste_Monitor_2020_Quantities_flows_and_the_circular_economy_potential/links/5f05e6c0458515505094a3ac/The-Global-E-waste-Monitor-2020-Quantities-flows-and-the-circular-economy-potential.pdf>Accessed on 20th October, 2023, A Okposin, 'Curbing E-waste Menace in Nigeria: Assessing the Regulatory Framework.' *ChukwuemekaOdumegwuOjukwu University Journal of Commercial and Property Law* 2.1 (2020).<https://nigerianjournalsonline.com/index.php/COOUJCPL/article/view/632> accessed on 27th October 2025

rapidly but regulatory frameworks remain underdeveloped, implementing effective management practices (guided by models such as the EU's WEEE Directive and Nigeria's NESREA regulations) is essential for achieving environmental sustainability. Therefore, e-waste should not merely be seen as waste, but as a valuable, recoverable resource.

3. Methodology

This study relied predominantly on secondary data sourced from publications and databases of international organizations, government bodies, and academic institutions. It also incorporated peer-reviewed journal articles, scholarly books, and legal reports pertaining to e-waste management. This study also relied on primary sources like the Constitution of the Federal Republic of Nigeria (as amended), statutes and regulations.

The collected data were analyzed using content analysis and descriptive analysis methods. Content analysis was used to systematically examine and interpret the selected publications, facilitating the identification of key themes and insights. Through descriptive analysis, recurring patterns in the e-waste management data were identified, allowing for a clear interpretation and discussion of emerging trends and relevant relationships within the context of the study.

4. Waste Management in Nigeria

The management of waste in Nigeria has been a problem for a long time and a lot of factors have contributed to the problems of waste management in Nigeria. These factors include population increase, industrialization, rise in production of materials, technological advancements and also the rise in the consumption of resources like fossil fuels, minerals, water, land and food which are all as a result of population increase.[20]

The Nigeria government initiated and implemented several methods to solve the menace of waste mismanagement, however, the problem is still prevalent. It is worthy to note that

[20]AM Eberinwa, 'Waste Management in Nigeria: The Legal and Institutional Framework'. (LLM Dissertation, University of Eastern Finland Law School 2023)

state governments are primarily in charge and responsible for the proper management (collection and disposal) of waste in their various states/jurisdictions, however, the management of waste are not done efficiently, effectively and properly and the major contributory factor to this is inadequate resources and lack of political will for the management of waste.[21]

In furtherance of the above, the challenges facing waste management in Nigeria are numerous and it include lack of coordination by the government and its agencies in the management of waste, lack of expertise by the environmental agencies and also the lackadaisical attitude on the part of the government towards the management of waste.[22]

5. An Overview of the Legal Framework on E-waste Management in Nigeria

5.1. Legal Framework on E-Waste Management in Nigeria

The legal framework for e-waste management in Nigeria is based on a combination of international agreements and national regulations. These include various global conventions as well as locally enacted laws and policies as stated below.

5.1.1. The Stockholm Conference on the Human Environment 1972

The 1972 United Nations Stockholm Conference on the Human Environment was the first global summit to elevate environmental issues to the international agenda. It produced the Stockholm Declaration, an Action Plan for the Human Environment, and led to the creation of the United Nations Environment Programme (UNEP).[23]

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[21]KJ Miner, 'A Critical Evaluation of Current E-waste Management and Recycling Practices in the Jos Metropolis in Nigeria.' p.30

[22]E. Amasuomo and J Baird, 'Solid Waste Management Trends in Nigeria'.*Journal of Management and Sustainability*,(2016) vol. 6, no 4 p. 34-44.<https://doi.org/10.5539/jms.v6n4p35.> Accessed on 22nd May 2024

[23]United Nations Conference on Sustainable development. Sustainable Development 20 Years on from the Earth Summit: Progress, Gaps and Strategic Guidelines for Latin America and the Caribbean (2012);E Christopher andJrBarthel, 'The United Nations Conference on the Human Environment Its Implications for Air Pollution Prevention Associations'*Journal of the Air Pollution Control Association*, (1972) 22:12, p. 950-954.<http://dx.doi.org/10.1080100022470.1972.10469733.>Accessed on 22nd October 2024; <http://UN.org/en/Conference/Stockholm1972.> Accessed on 8th November 2024

The Conference established key principles highlighting the interconnection between economic, social, and ecological challenges, and initiated a dialogue between developed and developing nations on how pollution of air, water, and oceans affects global well-being and economic development.[24]

Although e-waste management was not directly addressed, the Conference laid the foundational environmental frameworks, institutions, and principles (such as sustainable development) that later informed global e-waste governance. The establishment of UNEP, the development of national environmental laws, and the global push for sustainable practices all trace their origins to this landmark event, underscoring its long-term influence on e-waste management.[25]

5.1.2. The United Nations Conference on Environment and Development 1992

The United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit, was held in Rio de Janeiro, Brazil, in June 1992, marking the 20th anniversary of the 1972 United Nations Conference on the Human Environment in Stockholm[26].

The Conference adopted the Rio Declaration on Environment and Development and Agenda 21, a comprehensive action plan aimed at promoting sustainable development by ensuring human activities do not harm the environment. The Rio Declaration built upon the 1972 principles, emphasizing international cooperation and the creation of agreements to protect both environmental and developmental systems. Key outcomes included the establishment of the Commission on Sustainable Development and the adoption of the United Nations Framework Convention on Climate Change and the

[24] United Nations Organisation, Stockholm 1972. Report of the United Nations Conference on the Human Environment.<http://www.unep.org/Documents/Default.asp?documentID=97.> Accessed on 23rd October 2024; Ph. Boudes, 'United Nations Conference on the Human Environment' in J. Newman (ed.) Green Ethics and Philosophy - The Green Series : Toward a Sustainable Environment, Vol. VIII, *Sage Publications Inc*., (2011) pp. 410-413

[25]<http://UN.org/en/Conference/Stockholm1972.> Accessed on 8th November 2024

[26]<https://www.un.org/en/conferences/environment/rio1992#:~:text=The%20primary%20objective%20of%20the,in%20the%20twenty%2Dfirst%20century.> Accessed on 23rd October 2024

Convention on Biological Diversity. UNCED also catalyzed the 1994 Convention to Combat Desertification.[27]The Rio Conference significantly influenced e-waste management through its promotion of sustainable development, which advocates for economic growth that does not compromise environmental health. This principle supports sustainable production, consumption, and disposal of electronics to protect both current and future generations. The conference also introduced key environmental principles, including the precautionary principle (urging careful handling of hazardous e-waste components) and the polluter-pays principle, which holds producers accountable for the environmental impact of their products. This latter principle laid the foundation for Extended Producer Responsibility (EPR), requiring manufacturers to manage the recycling and disposal of their electronic products at end-of-life.[28]

5.1.3. The Basel Convention

The Basel Convention, adopted in 1989, is the primary international treaty governing the transboundary movement of hazardous waste (excluding radioactive waste).[29]It was established in response to public outcry over the dumping of hazardous waste from developed countries to developing countries. The Convention entered into force on May 5, 1992, and aims to minimize hazardous waste generation, ensure its environmentally sound management, and enforce prior informed consent for cross-border waste movements.[30]

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[27]World Health Organization, United Nations Conference on Environment and Development. EB91/INF.DOC.15, 1992. Report by the Director-General.

[28]United Nations Conference on Sustainable development. Sustainable Development 20 Years on from the Earth Summit: Progress, Gaps and Strategic guidelines for Latin America and the Caribbean (2012).

[29]D Olowu, 'Menace of E-wastes in Developing Countries: An Agenda for Legal and Policy Responses.' *Law Env't& Dev. J.* (2012) 8 p. 59-70. <https://heinonline.org/HOL/LandingPage?handle=hein.journals/leadjo8&div=7&id=&page=> Accessed on 25th October 2025; McIntire, Erin 'The International Tribunal for E-waste: Ending the Race towards Lethal Fallout' Seattle Journal of Environmental Law: (2015) Vol. 5: Iss. 1, Article 4. Available at: https://digitalcommons.law.seattleu.edu/sjel/vol5/iss1/4. Accessed on 25th October 2025

[30]A Okposin, 'Curbing E-Waste Menace in Nigeria: Assessing the Regulatory Framework' *ChukwuemekaOdumegwuOjukwu University Journal of Commercial and Property Law*(2020) 2 (1) p.7.<https://nigerianjournalsonline.com/index.php/COOUJCPL/article/view/632.>accessed on 24th April, 2024.

Despite being the first and most comprehensive global agreement on hazardous waste, the Basel Convention has struggled to curb illegal e-waste trade.[31]Loopholes allow waste exports labeled as "for reuse," and some parties fail to comply with its provisions, leading to continued dumping in African nations.[32]

Nigeria ratified the Convention in March 1991, but under Section 12 of the Constitution of Nigeria 1999 (as amended),[33] international treaties require domestication by the National Assembly to become enforceable law. As of now, the Convention has not been domesticated in Nigeria.[34]To support e-waste management, the Convention launched initiatives such as the Mobile Phone Partnership Initiative (MPPI), the Global Partnership on E-waste (GPE), and the Global Partnership on Computing Equipment (GPCE). While these efforts are valuable, the lack of enforcement and legal integration limits their effectiveness in Nigeria and other developing countries.[35]

5.1.4. The Bamako Convention

The Bamako Convention, adopted on January 29, 1991, in Bamako, Mali, and effective from April 22, 1998, was established by the then Organization of African Unity (now the African Union) to address the widespread dumping of hazardous and nuclear waste into Africa by developed countries. Unlike the more lenient Basel Convention, the Bamako Convention imposes a complete ban on the import of hazardous waste into Africa and sets stricter rules on transboundary movements within the continent. It offers more specific and enforceable guidelines for exporters and importers.[36]

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[31]BI Olutoyin, 'A Legal Appraisal of the Challenges of Management of Electronic Waste in Nigeria' p. 11.
[32]A Okposin, 'Curbing E-Waste Menace in Nigeria: Assessing the Regulatory Framework' p. 7
[33] Section 12 of the Constitution of Federal Republic of Nigeria 1999 (as amended)
[34] A Okposin, 'Curbing E-Waste Menace in Nigeria: Assessing the Regulatory Framework' p. 7
[35] BI Olutoyin, 'A Legal Appraisal of the Challenges of Management of Electronic Waste in Nigeria' p. 12; International Initiatives on E-waste Management. United Nations Environmental Programme, UNEP Report 2015.
[36]BI Olutoyin, 'A Legal Appraisal of the Challenges of Management of Electronic Waste in Nigeria' *International Journal of Law* (2017) 3 (2)p. 12; ZT Bogale 'E-Responsibility: E- waste, International Law and Africa's Growing Digital Wasteland' p. 10;D Olowu, 'Menace of E-wastes in Developing Countries: An Agenda for Legal and Policy Responses.'*LawEnv't& Dev. J.* (2012) 8 p. 71 <https://heinonline.org/HOL/LandingPage?handle=hein.journals/leadjo8&div=7&id=&page=>.

The Convention distinguishes between waste generated within Africa and waste imported from outside, and requires all parties to enact national laws that impose criminal penalties for illegal importation of hazardous waste.[37] It explicitly prohibits and criminalizes the import of such waste from non-parties, treating it as an unlawful act.[38]However, the Convention lacks strong enforcement and monitoring mechanisms.[39]

While it calls for domestic laws imposing strict, unlimited, and joint liability on waste generators, it does not empower the Convention's Secretariat to oversee implementation.[40]

The impact of the Bamako Convention has been limited due to financial constraints, inadequate technical capacity, and a lack of reliable data on the volume and locations of e-waste entering African countries (hindering effective policy development).[41]Notably, Nigeria has not ratified the Convention, despite signing it in February 2008. As a result, e-waste trade continues unchecked in Nigeria, undermining the Convention's goal of banning hazardous waste imports across sub-Saharan Africa42.[42]

5.1.5. The Constitution of the Federal Republic of Nigeria

The 1999 Constitution of the Federal Republic of Nigeria recognizes the importance of environmental protection and improvement. It provides that ratified international treaties must be domesticated by the National Assembly to become law in Nigeria.[43]The Constitution also mandates the State to protect and enhance the environment,

[37]Article 4 of the Bamako Convention; ZT Bogale ' E-Responsibility: E- waste, International Law and Africa's Growing Digital Wasteland' p. 10
[38]Article 9 of Bamako Convention; ZT Bogale ' E-Responsibility: E- waste, International Law and Africa's Growing Digital Wasteland' p. 10
[39]Article 4 of the Bamako Convention.
[40]D Olowu, 'Menace of E-wastes in Developing Countries: An Agenda for Legal and Policy Responses.' p.71
[41]ZT Bogale, ' E-Responsibility: E- waste, International Law and Africa's Growing Digital Wasteland' p. 10
[42]BI Olutoyin, 'A Legal Appraisal of the Challenges of Management of Electronic Waste in Nigeria' p. 12,
[43] HO Ijaiya 'The Legal Framework for Solid Waste Disposal and Management in Kwara State, Nigeria' Journal of Environmental Protection, (2013)4, 1240-1244, p. 1242.<http://www.scirp.org/journal/jep>. Accessed on 23rd November, 2024; & Section 12 of the Constitution of Federal Republic of Nigeria 1999 (as amended)

safeguarding Nigeria's air, water, land, wildlife, and forests.[44]However, the provisions in Chapter II on Fundamental Objectives and Directive Principles of State Policy are non-justiciable, meaning they cannot be directly enforced in court. Despite this, the National Assembly can enact laws to make these provisions enforceable.[45]Additionally, through a combined interpretation of Section 20 of the Constitution and Article 24 of the African Charter on Human and Peoples' Rights, the right to a healthy environment has been recognized as justiciable, as demonstrated in cases like SERAC v Nigeria[46] and SERAP v Nigeria.[47]Moreover, the constitutional guarantees of the right to life and the dignity of the human person implicitly support the right to a safe and healthy environment.[48]

5.1.6. The Harmful Waste (Special Criminal Provisions) Act

The Harmful Waste (Special Criminal Provisions) Act[49]was enacted in 1988, prior to Nigeria's ratification of the Basel Convention, to combat the illegal dumping of hazardous waste in the country.[50]The Act prohibits the transport, importation, sale, purchase, and dumping of harmful waste on Nigerian land, waters, or other territories.[51] Offenders are deemed criminally liable and may face penalties including environmental restoration, fines, forfeiture of assets to the Federal Government, or life imprisonment.[52]

Individuals or entities causing environmental damage through the disposal of hazardous waste in areas such as territorial waters, exclusive economic zones, inland waterways, or land are strictly liable for harm caused.[53] If a corporate body commits an offence with the

[44]BL Ijaiya, 'Analytical Legal Framework on Biodiversity Conservation in Nigeria, India and United Kingdom*International Journal of Law, Justice and Jurisprudence*, (2021) 1 (1): 01-13. <https://www.lawjournal.info/.> Accessed on 23rd November, 2024.
[45] Cap A9, Laws of the Federation of Nigeria, 2004
[46] (2001) ACHPR
[47] (2009) ECCJ
[48]HO Ijaiya 'The Legal Framework for Solid Waste Disposal and Management in Kwara State, Nigeria' Journal of Environmental Protection, p. 1242.
[49] Cap H1, Laws of the Federation of Nigeria (LFN) 2004
[50]A Okposin, 'Curbing E-Waste Menace in Nigeria: Assessing the Regulatory Framework' p. 7
[51] ibid
[52]Section 1 of Harmful Waste (Special Criminal Provisions etc.) Act
[53] Section 6 ibid

consent or negligence of its officers, both the company and its principals are punishable under the Act.[54]

Despite its provisions, the Act has been largely ineffective in managing hazardous waste due to lack of government interest in amending or updating it with clear definitions and enforcement mechanisms.[55]

A proposed Harmful Waste (Special Criminal Provisions, etc.) Amendment Bill 2009 aims to strengthen the law by, among other measures, banning the importation of e-waste used for over five years abroad. However, the bill remains unpassed, leaving the 1988 Act as the current regulatory framework.[56]

Although the Act does not explicitly mention e-waste, it is applied by the National Environmental Standards and Regulations Enforcement Agency (NESREA) to regulate e-waste, as electronic waste is classified as harmful.[57] The amended bill, once enacted, is expected to significantly reduce e-waste influx by including specific prohibitions on e-waste dumping and burning. Until then, NESREA relies on the existing Act to enforce e-waste controls.[58]

5.1.7. National Environmental Standards and Regulations Enforcement Agency (NESREA) Act

NESREA Act was assented to by 2007 by the president and it established the NESREA as an agency of the Federal Ministry of Environment.[59]

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[54]Section 12 (2) ibid; M Amachree, 'E-waste Management in Nigeria'(A Presentation at the International Workshop on Management of Waste Electrical and Electronic Equipment, Taipei, Taiwan, 15-20 October 2012), 7 <http://www.epa.gov.tw/fileLink/FileHandler.ashx?file=16787> accessed on October 9 2023.

[55]M Amachree, 'National Environmental Standards and Regulations Enforcement Agency (NESREA), Nigeria', (A presentation at the 3rd Annual Meeting of the Global E-Waste Management Network GEM3, unpublished, held at the San Francisco, USA from 15th-19th July 2013);P Amechi Emeka and AO Babatunde, 'Import of Electronic Waste into Nigeria: The Imperative of a Regulatory Policy Shift', Chinese Journal of Environmental Law 3 (2019) p.141-166

[56]I Okukpon, 'Towards the Sustainable Management of Electronic Waste in Nigeria: South Africa as a Model',p.8

[57]Section 2(2) OF the Harmful Waste (Special Criminal Provisions, etc.) Amendment Bill, 2009.

[58] T Ogboru and S Akintunde, 'Poverty and E-waste Control in Nigeria', *Current Jos Law Journal* 1 (2013), 233-243, p. 237.

[59]Section 36 of the NESREA Act.

Following the repeal of the FEPA Act,[60]the NESREA Act became Nigeria's primary legislation for environmental protection. The agency is empowered to enforce all environmental laws, regulations, and standards, including those governing the importation, exportation, production, storage, use, sale, handling, and disposal of hazardous waste and chemicals.[61]

NESREA's responsibilities include developing, reviewing, and enforcing national environmental regulations (both new and existing) as well as ensuring compliance with Multilateral Environmental Agreements (MEAs) such as the Basel Convention.[62] Its core mandate is the promotion of sustainable development, positioning it as Nigeria's key environmental regulator, advisor, and enforcement body.[63]The Act prohibits the discharge of hazardous substances into Nigeria's air, land, or water. Violators face a fine of 1 million Naira or five years' imprisonment; for corporate bodies, the penalty is 1 million Naira plus an additional 50,000 Naira for each day the offence continues.[64]Authorized enforcement officers include NESREA staff, customs officers, and police officers not below the rank of Inspector.[65]

Notably, the Harmful Waste (Special Criminal Provisions) Act takes precedence over the NESREA Act regarding hazardous waste, meaning it governs the control and prohibition of hazardous waste, including e-waste, within and into Nigeria. While the NESREA Act serves as the overarching environmental law, the Harmful Waste Act specifically targets illegal dumping and trafficking.[66]

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[60] SG Ogbodu, *Handbook on the National Environmental Standards and Regulations Enforcement Agency Act (NESREA) 2007,* (Lagos: Law Research and Development Forum ltd: 2010),p.3

[61]Section 1 (2) (a) and Section 7 (g) of the NESREA Act 2007

[62] M Amachree, 'Update on E-Waste Management in Nigeria' (A Presentation made at the 3rd Annual Meeting of the Global E-Waste Management Network (GEM3), San Francisco, U.S., 15-19 July 2013), 4, <http://www.epa.gov/sites/production/files/2014-05/documents/nigeria.pdf>, accessed on 5th October 2024

[63] NESREA Website ' What We Do', <http://www.nesrea.gov.ng/activities/index.php>, accessed on 4th October 2024

[64]Section 27 (1)- (4) of NESREA Act

[65]Section 37 ibid

[66]Section 27(5) ibid

In 2009, NESREA introduced 12 regulations to ensure sustainable environmental management. Key among them for e-waste are the National Environmental (Sanitation and Wastes Control) Regulations, 2009, and the National Environmental (Electrical/Electronics Sector) Regulations, 2022, as examined below.[67]

5.1.8. National Environmental (Sanitation and Wastes Control) Regulations 2009

The National Environmental (Sanitation and Wastes Control) Regulations 2009, hereinafter referred to as the Regulations, was made in other to promote sustainable environment and waste management and also to reduce the rate of pollution. The Regulations therefore was adopted mainly to promote environmental friendly practices on waste management in Nigeria.[68]

The Regulations made provision for the Extended Producer Responsibility (EPR) principle/approach and this is because the Regulations states that producers and manufacturers must employ environmental concerns in the process of designing and disposal of a product.[69] The Regulations also went further to talk about the fact that the "polluters pay principle" is an essential part of the EPR principle and that all waste generators must be financially and legally responsible for the environmentally sound and safe disposal of their wastes.[70] The Regulations also went further to provide that all waste generators and waste managers must employ best and sustainable practices to reduce pollution.[71]

It's imperative to note that the Regulations made provision to the effect that license permit should be obtained from the NESREA before any engagement in any activity that is likely to generate hazardous waste. Thus, the Regulation prohibits any activity that is likely to generate hazardous waste when the license permit is not obtained from the NESREA. Furthermore, the regulation prohibit the movement of hazardous waste to

[67]Section 34 ibid
[68]Section 2 of the National Environmental (Sanitation and Waste Control) Regulation, 2009
[69]Section 16 ibid
[70]Section 106 ibid
[71]Section 12 ibid

another country from Nigeria without valid Prior Informed Consent (PIC) for the transit issued by the NESREA as this PIC is in line with the requirement of PIC under the Basel Convention. Any person who violates the provision of this regulation shall be guilty of an offence punishable with a fine of N5 million or imprisonment for 5 years or both.[72]

The Regulations also mandated the producers/manufacturers and importers of e-waste to register with NESREA to undertake collective or individual Product Stewardship Programme (PSP) contained in Scheduled IX to organise buy-backs for recycling. This illustrates the EPR principle/approach of e-waste management.[73] Schedule IX provides guidelines for EPR programmes and gives direction to the importers and manufacturers of e-waste to either collectively or individually submit a PSP for approval to NESREA. The PSP according to section 3 (a) (i) and (ii) of Schedule IX, shall set up an avenue for the collection, transportation and treatment of Electrical and Electronic Equipment (EEE) at the end of life regardless of who the brand owner of the consumer or products is. The failure of the producers/manufacturers to participate in the PSP will attract penalties.[74] This provision is applaudable, however, the inclusion of manufactures/producers in the provision of the Schedule IX in Nigeria is not practicable because the major stakeholders of new and used EEE or e-waste are the importers.[75]

Additionally, the provisions of the Regulations imposed fines and/or terms of imprisonments for violators of the Regulations but there is no clear provision for who to enforce such penalties in a situation where a person is found guilty of transporting and transiting hazardous waste via Nigeria without PIC permit which is valid and issued by the NESREA. [76]

The Regulations did not however, deter the importers of e-waste from importing same into Nigeria territories as the trade of e-waste continues to thrive in Nigeria. The

[72] Section 49 and 51 ibid
[73] Section 32 ibid
[74] Section 3(a) and (d) of Schedule IX ibid
[75]I Okukpon, 'Towards the Sustainable Management of Electronic Waste in Nigeria: South Africa as a Model.' p. 247
[76] ibid p. 248

provision also included the application of EPR approach to the management of e-waste into its provisions but however, there is problem of implementation of the principle through the PSP by importers and manufacturers.[77]

5.1.9. The National Environmental (Electrical/Electronics Sector) Regulations 2022

The National Environmental (Electrical/Electronics Sector) Regulations, 2022, hereinafter referred to as the Regulations, revoked and replaced the 2011 version to prevent and minimize pollution from electrical and electronic equipment (EEE) operations and related activities, thereby safeguarding Nigeria's environment.[78]The Regulations adopts a life-cycle approach,[79]covering EEE from cradle to grave, and is guided by the 5Rs: reduce, repair, reuse, recycle, and recover.[80] It mandates that new EEE imported into Nigeria must have a clearly visible date of manufacture, warranty information, and legible PIN and serial numbers. Importers of new EEE must register with NESREA and a Producer Responsibility Organisation (PRO).[81]Used EEE imports must comply with the requirements in the Second Schedule.[82]

The Regulations enforces the "polluter pays" principle, requiring polluters to cover costs for environmental damage assessment, cleanup, remediation, and restoration. E-waste collection, treatment, transportation, and disposal must follow specified environmental standards.[83]

Extended Producer Responsibility (EPR) is established under Regulation 12, requiring all manufacturers, importers, exporters, assemblers, retailers, and distributors of EEE to join the EPR scheme and participate in the Buy-Back Programme (Schedule VIII).[84]

[77] ibid p. 249
[78] Regulation 56 and 57 of the National Environmental (Electrical/Electronic Sector) Regulation 2022
[79] Regulation 2(1) ibid.
[80] Regulation 2 (3) ibid
[81] Regulation 3 ibid
[82] Ibid
[83] Regulation 8 ibid
[84] Regulation 12(1)-(3) Ibid

Producers must register with a PRO, partner with NESREA, ensure environmentally sound management (ESM) of e-waste, and pay recycling fees to support ESM. [85]

To mitigate e-waste impacts, generators must separate e-waste at source, and operators of e-waste recycling facilities or collection centres must register with NESREA and PRO.[86]

Regulation 28(1)(2)(a)-(e) prohibits improper disposal, including dumping or burning e-waste with municipal waste, leaching metals from circuit boards using acids, unsafe breaking of CRTs, or releasing CFCs into the environment. E-waste must only be disposed of at government-approved collection points or bins.[87]

The non-compliance is an offence: corporate bodies face a minimum fine of ₦2 million plus ₦50,000 per day of continued violation; individuals face at least ₦200,000 fine, six months' imprisonment, or both, plus ₦20,000 per day of continuation.[88]

Despite these comprehensive measures, implementation faces major challenges. Public awareness of take-back programmes is low, and most Nigerians are unaware such initiatives exist. Collection centres are scarce (Lagos is the only state with limited facilities) and there are virtually no functional e-waste recycling plants. Existing centres in Lagos are mainly used by scavengers for informal metal sorting. Poor enforcement and lack of political will further undermine the Regulation. While provisions are well-drafted, weak implementation renders them largely theoretical, allowing e-waste pollution to persist unchecked.[89]

6.0. Assessment of Some of the Activities of Agencies and Regulations on E-waste Disposal Management in Nigeria

The existence of international conventions and national regulations notwithstanding, illegal disposal and improper handling of e-waste continue to persist in Nigeria. This is

[85] Regulation 26(6) ibid
[86] Regulation 27 (1) ibid
[87] Regulation 28 (1) (2) (a)-(e) ibid
[88] Regulation 54 Ibid
[89] A Okposin, 'Curbing E-Waste Menace in Nigeria: Assessing the Regulatory Framework' (2020) 2 (1)

evident from the frequent arrests and seizures carried out by enforcement agencies in recent years. In 2020, authorities intercepted 46 containers of illegal e-waste at Lagos ports, containing over 500,000 units of obsolete electronics such as Cathode Ray Tube (CRT) monitors, old televisions, and damaged computers. In 2021, customs officials and NESREA seized 20 containers of "near-end-of-life" electronics (primarily laptops and phones with less than one year of remaining functionality). That same year, a criminal network involved in smuggling approximately 2.5 tonnes of discarded and hazardous electronic waste from Spain's Canary Islands to several African countries, including Nigeria, was apprehended[90].

In 2023, LASEPA seized e-waste stockpiles and shut down illegal dismantling operations in the back alleys of Computer Village, Ikeja, where acids used for gold recovery were being dumped into drainage systems. About 30 environmental offenders were arrested and arraigned before a Magistrate's Court for improper waste disposal and violation of environmental laws. In early 2025, LAWMA arrested over 25 residents for illegal dumping, including six vehicle owners implicated in using their cars to dispose of large quantities of waste[91].

Despite these efforts, the agencies continue to face numerous challenges, including weak enforcement of environmental laws and widespread corruption, which weaken regulatory effectiveness and erode public trust. There is limited coordination between the formal and informal sectors, with the informal sector dominating e-waste recycling activities. Extended Producer Responsibility (EPR) is poorly implemented, resulting in minimal incentives for manufacturers to manage end-of-life electronics. Socioeconomic pressures

[90]Egba, John. 'A Gang That Dumps Electronic Waste in Nigeria Has Been Arrested by Spanish Authorities.' Pulse.ng, June 29, 2020. https://www.pulse.ng/articles/news/local/a-gang-that-dumps-electronic-waste-in-nigeria-has-been-arrested-by-spanish-2024081711185935208 Accessed on 11th August 2025: Agency Report 'Lagos Government Arrests 30 Environmental Offenders.' Premium Times, October 15, 2023. https://www.premiumtimesng.com/news/more-news/633802-lagos-govt-arrests-30-environmental-offenders.html?tztc=1. Accessed on 10th August 2025

[91]Ayeni, Victor. 'Lagos Agency Arrests 25 for Illegal Waste Dumping.' Punch Newspapers, February 9, 2025. https://punchng.com/lagos-agency-arrests-25-for-illegal-waste-dumping/. Accessed on 11th August 2025

such as rising living costs and widespread poverty further exacerbate the problem. Additionally, illegal smuggling of e-waste persists, and the regulatory framework remains fragmented, with multiple agencies (such as NESREA, NCC, LASEPA, and LAWMA) having overlapping responsibilities. This leads to jurisdictional conflicts, duplication of efforts, and operational inefficiencies.

7.0. Conclusion and Recommendations

The analysis above reveals that Nigeria's current legal framework for e-waste management is inadequate and ineffective. While several laws exist to regulate general waste and hazardous waste, they fail to sufficiently address e-waste, which differs significantly from municipal solid waste and requires a specialized management approach.

First, existing laws should be reviewed and amended to explicitly include e-waste, or a dedicated law should be enacted specifically for e-waste management. Such legislation must cover all aspects of e-waste handling, including collection, transportation, recycling, and disposal.

Second, the law should include guidelines for regulating informal e-waste recycling activities and provisions for public awareness campaigns. These measures would protect the health of recyclers and the public while promoting environmental safety and legal compliance.

Third, the legislation should mandate Extended Producer Responsibility (EPR) for e-waste, holding producers and importers accountable for the entire lifecycle of their electrical and electronic equipment (EEE), thereby, promoting sustainable waste management.

Fourth, stricter penalties tailored to e-waste violations should be introduced, as current fines are too lenient to deter illegal and harmful practices. Stronger sanctions will discourage illegal dumping and unsafe recycling methods.

Finally, for effective e-waste management, Nigeria must fully ratify and domesticate all international environmental conventions it has signed. Most importantly, the Bamako Convention should be domesticated, as this would significantly curb the illegal transboundary movement of hazardous waste and prevent the importation of e-waste into the country. Domestication will align national laws with international best practices, harmonize regulations, and strengthen enforcement, ultimately improving e-waste governance in Nigeria.