

CURBING E- WASTE MENACE IN NIGERIA: ASSESSING THE REGULATORY FRAMEWORK

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Abstract

The paper sets out to interrogate the adequacy of the regulatory framework of e-waste management in Nigeria, as a bulwark against its hazardous effects. In doing this, the paper attempts to define what constitutes e-waste and discusses some of the hazardous components in e-waste and try to point out its consequences on the health and environment of Nigeria. The paper finds out that though there are some regulatory frameworks both internationally and nationally toward curbing the menace of e-waste, however, they do not fully address the challenges of e-waste thus rendering the frameworks substantially ineffective. Furthermore, the paper finds that while the existing regulatory frameworks tilt towards controlling the influx of the Used Electrical/Electronic Equipment (UEEE) or Waste Electrical/Electronic Equipment (WEEE) into the country, there seems to be no specific law to deal with the UEEE or WEEE that has found its way into the country. The paper therefore observed that for effective solution to the menace of e-waste in Nigeria the regulatory framework should also contain incentive measures and public awareness mechanism educating the people about the menace as well as encouraging them to dispose of the WEEE in authorized and safe designated dumps provided by the appropriate authority.

Keywords: E-Waste Management, Enforcement, Challenges, Nigeria.

1. Introduction

E-Waste refers to Electrical/ Electronic Equipment (EEE) that are no longer useful and therefore discarded by the owner. However, the regulatory frameworks on EEE in Nigeria have not adequately addressed the appropriate ways of disposing the discarded EEE that are already becoming a menace. The indiscriminate disposal attitude by individual and the lack luster posture of the government perhaps may be attributed to ignorant of the harmful components of the WEEE both to human health and the environment. Nigeria ironically, is not a producer of these products; majority of them are imported into the country from developed countries to satisfy the quest of the citizens for enhance life style and global demand for information and telecommunication technology (ICT).

Although, it is not in doubt that the emergence of the EEE in the socio-economic life of the citizens has actually made life easy and convenient due to their efficiency and time saving in application. However, it has also increase the influx of the WEEE into the country as quest for new models made the older models become obsolete and therefore, discarded as WEEE. Research has shown that some of the components of this WEEE do not decay easily and are also difficult and costly to dispose,¹ aside from being harmful to human lives and the environment.

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¹S O Obaje, "Electronic Waste Scenario in Nigeria: Issues, Problems and Solutions". *International Journal of Engineering Science Invention* 2 (11) (2013), 31-36

For example, mercury element is present in fluorescent lamps, Liquid Crystal Display LCD), monitors, switches, flat panel screens etc. Regrettably, this element is capable of causing neurological problems in fetuses' development, tremors', emotional changes, cognition, insomnia, headaches, changes in nervous responses, kidney effects, respiratory failure and even death in human beings. Furthermore, lead, which is a component element in Cathode Ray Tube (CRT) of Television, computer monitor, circuit boards etc., causes damage to brain, nervous systems, and slow growth in children. Other harmful effects of this element include, hearing problems, blindness, diarrhea, cognition, behavioral changes and general physical disorders.² Surprisingly, the producers of these EEE that has turned WEEE, which are mostly the developed countries, are aware of the harmful effects of the component elements, but are not ready to bear the cost of effective disposal. They rather, decide to ship them to developing countries of Africa including Nigeria as Used Electrical/ Electronic Equipment (UEEE) to satisfy their disposal quest.

The developing countries including Nigeria, ignorant of the fact that these products have reached it end- of- life (EOL) usage accepts them into their country with the attendance health and environmental challenge. Scholars on this field have argued that only about 25% of the imported UEEE into Nigeria are functional, while the remaining 75% are unserviceable.³ With an estimated 500 containers of "second-hand" electronics imported to Nigeria every month from Europe and each container containing between 500 to 800 computers and monitors (representing about 400,000 arrivals every month)⁴: Nigeria citizens and environment are exposed to terrible health and environmental issues.

Efforts by Nigeria to address the menace have resulted in both international initiatives by way of signing and or ratifying conventions including the Basel and Bamako Convention and enactment of local regulatory frameworks including the Harmful Waste (Special Criminal Provisions etc.) Act⁵, and the National Environmental Standards and Regulations Enforcement Agency (NESREA) Act 2007, with regulations made pursuant thereto.⁶

2. The Concept of E-Waste

It will be necessary in explaining the concept of e-waste to delve a little into the definition of the subject, examining few perspectives of learned authors on what they perceived e-waste to be. This, we believe will enhance our understanding of the concept.

2.1 Definition

There seems to be no internationally standardized or agreed definition of 'e-waste,' this perhaps, may be informed by countries 'customized definition' of e-waste.⁷ However, for the purposes of

²Ibid.

³ Ibid, 32.

⁴Ibid.

⁵ Cap H1 (LFN) 2004

⁶ NESREA Regulations made thereto include, National Environmental Protection (Waste Management) Regulations 1991; the National Environmental (Sanitation and Waste Control) Regulations 2009 and the National Environmental (Electrical / Electronic Sector) Regulations 2004.

⁷ Y. A. Adediran, & A. Abdulkarim, "Challenges of Electronic Waste Management in Nigeria," *International*

this paper, it will be necessary to examine some definitions proffered by learned authors on the subject. Alan Finlay, on his part, defines ‘e-waste’ to include ‘all end- of- life electronic products, components and peripherals, such as computers, cell phones, fax machines, photocopiers, radios and televisions.’⁸

By this definition, all disposed electronic products, whether new or end-of-life, as well as decommissioned electronic products held in storage is included.⁹ Alake and Ighalo, look at the concept differently, according to them, ‘e-waste’ is waste electrical and electronic equipment (WEEE) that are non-biodegradable, industrial and synthetic.¹⁰ On the part of Ogbomo et al., e-waste is unwanted electronic or electrical appliances such as old and outdated computers, laptops, televisions, cellular phones, mp3 players, telecommunication equipment, keyboards, mice, photocopiers, typewriters etc.¹¹

Still on the definition of e-waste, Ogoru & Akintunde, refer to e-waste as any appliance using an electric power supply or batteries that has reached its end- of- life or end of its usefulness.¹² While, on the part of the European Union (EU), e-waste refers to ‘Electrical and Electronics Equipment (EEE) which is dependent on electrical currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such current and fields designed for use with a voltage not exceeding 1000 volts for alternating current and 1500 volts for direct current.

On the definition of ‘waste’, the EU refers to it as ‘any substance or object which the holder disposes of, or is required to dispose of pursuant to the provision of national law in force. If one attempts to join the two together (waste and e-waste), one could come up with something like:

Electrical and Electronics Wastes (EEE) are equipment that depends on electrical currents or electromagnetic fields in order to work properly: made for the generation, transfer and measurement of such current and fields, designed for use with a voltage not exceeding 1000 volts

Journal of Advances in Engineering & Technology (JJAET), (2012), 641. However, some countries domestic laws definewhat constitute e-waste.

⁸ A Finlay, “E Waste Challenges in Developing Countries: South Africa Case Study” APC Issue Papers. He works regionally and globally in the ICT4D and media advocacy sectors as a researcher, writer and editor. He is based in Argentina, but travels regularly to South Africa. He runs the consultancy open Research and has been the editor of APC’s publication Global Information Society Watch (GISWatch) since 2007 and can be reached at open Research (www.openresearch.co.za), accessed May 16, 2018.

⁹ Ibid.

¹⁰ T J Alake, J. & G I Ighalo, “ End of Life Strategies for the effective electronic waste management in Nigeria”, *International Journal of Science Technology Research* 1 (7) (2012), 73-76.

¹¹ M O Ogbomo, A O Obuh, and E Ibolo, “ Managing ICT Waste: A Case Study of Delta State University, Abraka, Nigeria. *Library philosophy and Practice*. <http://unllip.unl.edu/lpp>. In Re S O Obaje, Electronic Waste Scenario in Nigeria: Issues, Problems and Solutions, *International Journal of Engineering Science Invention* 2 (11) (2013), 31-36 (Online).

¹² T Ogoru, S Akintunde, “ Poverty and e-waste Control in Nigeria”, *Current Jos Law Journal* 1 (2013), 233-243.

for alternating current and 1500 volts for direct current which the holder disposes of or is required to dispose of pursuant to the provision of national law in force.

Essentially, e-waste is EEE that are no longer valuable by the owner, have been discarded and required to be disposed of according to national law.

Ironically, Nigeria is not a producer of e-waste, but they are majorly shipped into the country from United Kingdom, European Union, Japan, Korea, Malaysia, China, United States of America and Singapore to mention but a few.¹³ According to Obaje, ‘an estimated 500 containers of ‘second-hand electronics are imported to Nigeria every month from Europe with each container holding 500 to 800 computers and monitors representing about 400,000 arrivals every month.’¹⁴

This estimation is only from formal ports and airports; it does not include volumes from informal routes by smugglers.¹⁵

Furthermore, by the end of 2004, about 9.1 million Nigerians had access to mobile phones and Nigerian Tele density stood at 85.97% with subscribers’ statistics of over 120.4 million as at June 2013.¹⁶ This is in addition to installed capacity of telecommunication providers rising up to 226.6 million as at January 2013. Also, Nigeria within the period experienced a stupendous increase in internet connectivity, thereby accelerating the ever rising demands for ICT devices in Nigeria.¹⁷

The cumulative effect of this is the rise in the volume of WEEE in the country with attendant human health and environmental consequences. This is due to the hazardous components in the EEE. E-Waste contains toxic substances such as lead, chromium, mercury, etc., that are hazardous to human health in particular, and the environment in general. For proper appreciation of the hazardous components in the EEE, it will be pertinent to discuss at this stage, the hazardous components and the consequences to human health and the environment.

2.2 E- Waste, types and the Hazardous Components

Electrical and Electronics Equipment that have reached its end of life and discarded may be difficult to classify, but for the purposes of this paper, we shall attempt a loose classification into nine types to identify the hazardous elements that are harmful to both human and the environment.

¹³ According to Obaje, European Union account for 45%, USA 45%, while the other 10% are from other locations such as Japan, Korea, Malaysia and Singapore. However, Osibanjo and Nnorom gave different statistical values such as United Kingdom (60%), Germany (16%), China (9%), USA (3%) and others (12%). See O Osibanjo and I C Nnorom, “Measuring e-waste-results from country studies,” (2011) (unpublished), 9th World Communication/ICT Indicator Meeting, 7-9 2011, cited by S O Obaje, *Electronic Scenario in Nigeria*, 32.

¹⁴ See S O Obaje, “Electronic Waste Scenario in Nigeria.”, 32

¹⁵ Ibid.

¹⁶ See S O Obaje, “Electronic Waste Scenario in Nigeria.”, 32.

¹⁷ Ibid.

Types:

1. Large household appliances that include refrigerators, freezers, washing machines, clothes dryers, micro waves, heating appliances, radiators, fanning/exhaust ventilation/conditioning equipment.
2. Small household appliances e.g. vacuum cleaners, other cleaners, sewing/ knitting/ weaving textile appliances, toasters, fryers, pressing iron, grinders, opening/sealing/drying/shaving devices, clocks, watches.
3. Information Technology and Telecommunication Equipment e.g. mainframes, micro computers, printers, PC (desktop, notebooks, laptops), photocopiers, typewriters, fax/telex equipment, telephones.
4. Consumers Equipment E.g. Radio and Television sets, video cameras/decoders, Hi-fi recorder, audio amplifiers, musical instruments.
5. Lighting Equipment e.g. luminaries for fluorescent lamps, low pressure sodium lamps.
6. Electrical and Electronic Tools (excluding large- scale industrial tools e.g. Drills, saws, sawingmachines,turning/milling/sanding/sawing/cutting/shearing/drilling/punching/folding/bending equipment, riveting/nailing/screwing tools, welding/soldering tools, spraying/spreading/dispersing tools.
7. Toys, leisure and sports Equipment E.g. Electric trains, car racing sets, video games, sport equipment, coin slot machines, biking/driving/rowing computers.
8. Medical Devices E.g. Devices for radio therapy/cardiology/dialysis/ventilators, analyzers, freezers, fertilization tests, detecting/preventing/monitoring/treating/alleviating illness, injury or disability.
9. Monitoring and Control Instruments e.g. Smoke detectors, heating regulators, thermostats, measuring/ weighing/adjusting appliances for household or laboratory use, other industrial monitoring and control instruments.¹⁸

Hazardous Components:

Hazardous components in some of the used electrical and electronic equipment (UEEE) and their effects on human and the environment shall be considered under this subhead.

Under consumers' equipment, items like Television and Computer Monitor contain hazardous elements of lead, antimony, mercury and phosphorous. A consideration of two of these elements for example lead and mercury will expose their dangerous effects on both human and environment.

Lead has effects on humans including damage to the brain and nervous systems, slow growth in children, hearing problems, blindness, and diarrheas, behavioral changes and physical disorder.

¹⁸ Y. A. Adediran, & A. Abdulkarim, "Challenges of Electronic Waste Management", 641.

Mercury causes impairment of neurological development in fetuses and children, emotional changes, cognition, insomnia, headaches, changes in nervous response, kidney effects, respiratory failure, death, etc. Plastic coated appliances/ casing including circuit boards in different electronic products contain lead, beryllium, antimony, Brominated Flame Retardant (BFR). Brominated Flame Retardant (BFR), for example poses cancer risk to digestive and lymph systems and also endocrine disorder in humans.

Battery appliances contain lead, lithium, cadmium and mercury. Cadmium element in these appliances causes damage to the lungs, kidneys and cognition as a result of inhalation.¹⁹

Humans aside, e-waste also affects the environment, for example leaches as a result of the presence of mercury, cadmium, lead and phosphorous in it. It also poses uncontrolled fire risk, leading to toxic fumes. Furthermore, uncontrolled burning, disassembly and disposal can cause a variety of environmental problems including ground water contamination, atmospheric pollution, and occupational and safety effects among those directly or indirectly involved in the processing of e-waste.²⁰

2.3 E-Waste in Nigeria

Nigeria, as earlier stated does not manufacture the UEEE that has flooded its market; rather they are imported into the country from developed countries to meet up with its citizens' quest for enhanced life style and global demand for information and telecommunication technology (ICT). It is not in doubt that the emergence of EEE in the country has generally made life easy and convenient due to their efficiency and time saving in application. However, technology and innovation have also brought along with it some problems. For example, with new models of the EEE turned out on almost daily basis and older models becoming obsolete in short period of time, the problem of safe disposal of the older models becomes a challenge to the developed countries. Rather than find a safe disposal base for these discarded items in their countries they are being shipped to developing countries as UEEE. According to Opara²¹, it costs about '£3.50 US \$ 30 or N848.00)' to properly dispose an old cathode ray tube (CRT) monitor in Germany but it costs about "£1.50 (US \$2.27 or N363.43)" to place it on container ship to Nigeria or Ghana.²²

More worrisome is the fact that at the point of shipment to the developing countries like Nigeria most of these items have reached their end-of-life or near-end-of-life. Report has it that an estimated 500 containers of 'second hand' electronics are imported to Nigeria every month from Europe with each container holding 500 to 800 computers and monitors representing about 400,000 arrivals every month.²³ It is also reported that only about 25% of these UEEE are

¹⁹ Ibid, 643.

²⁰ Ibid.

²¹ Opara, S., "Expert Moves to tackle e-Waste Problem," The Punch 9 April, 2013. www.punch.com/business/technology/experts-move-to-tackle-e-waste-problem. See also Vanguard Newspaper of April 4, 2019, "Experts want government to invest on waste management, article by Abimbola Solanke.

²² S O Obaje, "Electronic Waste Scenario in Nigeria," 33.

²³ Ibid, 32.

functional, while the remaining 75% are either junk or unserviceable, which are eventually burned or dumped carelessly.²⁴

As rightly observed by Ogboru & Akintunde, most Nigerians that patronized the UEEE are not aware that the products purchased by them are more or less near end of life EEE (EOL) which have short life spans and contribute to high rate of e-waste growth.²⁵ This ignorance, high level of illiteracy and the fact that Nigeria is rated among the world's poorest countries despite her vast oil resource have become the incentive for the illegal imports of e-waste into Nigeria.²⁶ It should also be added that poor public awareness of the hazardous components in e-waste has also encouraged the trade with the attendance safety risk for the environment and human health. Nigeria in managing the menace of e-waste in the country has taken both international and local measures by way of regulatory framework. However, the effectiveness or adequacy of these measures is what this paper seeks to examine.

4.0 Regulatory Measures toward the Management of E- Waste in Nigeria

The Nigeria government has initiated measures toward addressing the e-waste trade that has become a menace in the country. This paper assesses these measures in order to determine their adequacy or effectiveness in addressing the problem. The 1988 Koko incident case in Nigeria, where five ships transported 8000 barrels of hazardous waste from Italy to Nigerian town of Koko brought awareness both to the Nigeria government and the international community of the danger of hazardous waste and the need for measures to stem the tide. In the international arena we have major international instruments like the Basel Convention and the Bamako convention which it would be pertinent to examine in brief detail.

4.1 Basel Convention

This was sequel to public outcry following the discovery in the 1980s, in Africa and other parts of the developing world of deposits of toxic wastes imported from²⁷ abroad. The Convention was therefore designed to reduce the movement of hazardous waste (excluding radioactive waste) and specifically to prevent transfer of hazardous waste from developed countries to less developed countries.²⁸ The Convention penalizes illegal traffic on hazardous waste, although without

²⁴ M Amacree, "Update on e-waste management in Nigeria National Environmental Standards and Regulations Enforcement Agency NESREA) (Unpublished), being a paper delivered at the Annual Meeting of the Global E-Waste Management Network (GEM 3) at San Francisco, USA (2013), in Re: Obagie, S. O.," Electronic Waste Scenario in Nigeria,"³². Some scholars differ on the unserviceable percentage: for instance, Osibanjo and Nnorom argue that 60-70% of the UEEE are repairable and re-useable, while the remaining 30% are non-functional and constitute WEEE, A Manhart corroborated Osibanjo and Nnorom position, but M Amacree differs arguing that only 25% of the imported UEE are functional, while the remaining 75% are either electronic junk or unserviceable- see J Puckett, S Westervelt, R Gutierrez and Y Takamiya, "The Digital Dump Exporting re-use and abuse to Africa" -. *The Basel Action Network, Seattle, USA* (2005), 85. www.ban.org/banreports-10-24-05 documents the digital dump print pdf.

²⁵ T Ogboru, & S Akintunde, "Poverty and e-waste Control in Nigeria" , *Current Jos Journal*1(2013), 233.

²⁶ Ibid.

²⁷ Ogboru & Akintunde, 237.

²⁸ See the Preamble to the Basel Convention and also Article 4 (2) (e).

enforcement provisions.²⁹ The Convention places obligation on state parties to inform members of their import bans and to take appropriate measures to minimize the generation of hazardous waste³⁰. As at September 2010, 178 nations including industrialized countries such as United Kingdom, Japan and European Union were already parties to the Convention. However, the USA, the World highest producer of e-waste, has not ratified the Basel Convention. As argued by Obaje, such action or inaction has directly promoted the dumping of toxic e-waste on developing countries.³¹

The definition of UEEE under the Basel Convention need be revisited. Currently, UEEE that is functioning, even if it is near – end- of life that is intended to be re-use is not considered to be an e-waste, regardless of whether it is hazardous or not, this has given leverage to unscrupulous exporter, capitalizing on such provision to dump near end of life UEEE on developing countries including Nigeria.³² Obaje, has argued that to prevent this there should be provision in the Convention for proper testing to ascertain the functional state of the UEEE, certification and proper labeling. This paper fully adopts this view.³³

Nigeria ratified the Basel Convention in March, 1991 and the amendment to the Basel Convention in May, 2004.³⁴ Pursuant to ratifying the Convention, Nigeria promulgated the Harmful Waste (Special Criminal Provisions etc. Act.³⁵ This Act shall be discussed in detail later in this paper, but suffice it to say that this Act prohibits the carrying, disposing and dumping of harmful waste on any land, territorial waters and matters related thereto in Nigeria. Despite ratifying the Basel Convention, it cannot operate as a domestic legislation in Nigeria by virtue of section 12, of the Constitution of Nigeria, which requires a formal domestication by the National Assembly of Nigeria. As at today, the National Assembly has not taken any actions to domesticate the Basel convention pursuant to section 12 of the Constitution.

4.2 Bamako Convention

The Bamako Convention was adopted in January 29, 1991 and entered into force on April 22, 1998. The Convention placed ban on the import and regulates trans-boundary movement and management of hazardous e-waste within Africa. As rightly argued by Obaje, the Bamako Convention unlike the Basel convention articulated more specific and active guidelines for both sides of the e-waste trade.³⁶ As at March 2010, 33 African countries had signed the Convention,

²⁹ Y.A. Adediran, & A. Abdulkarim, "Challenges of Electronic Waste Management in Nigeria", *International Journal of Advances in Engineering & Technology*7 (2012)643. It is our submission that the reason for lack of enforcement provision is to allow national laws of the parties to complement it.

³⁰ See Article 4, of the Basel Convention.

³¹ S.O Obaje, "Electronic Waste Scenario in Nigeria.." 34.

³² Ibid.

³³ Ibid.

³⁴ Ogboru & Akintunde, 237.

³⁵ Cap H1 Laws of the Federation of Nigeria, 2004.

³⁶ S Obaje, 34.

while 24 of them ratified it.³⁷ Nigeria signed the Bamako Convention in February 2008, but has not yet ratified it. Ironically, Nigeria did not only sign the Basel Convention but has since ratified it as far back as May 24, 2004.³⁸ Obaje, argued quite strongly that Nigeria ratification of the Bamako Convention alongside an effective enforcement regime is one of the major components to the control of trans-boundary movement of e-waste from developed countries.³⁹ However, this may not be, as the National Assembly of Nigeria by virtue of section 12, of the Constitution need to domesticate it before it can be enforced in the country as a domestic legislation.⁴⁰

4.3 Harmful Waste (Special Criminal Provisions etc.) Act⁴¹

This law was made consequent upon Nigeria ratifying the Basel Convention. The Act prohibits the carrying, deposition and dumping of harmful waste on any land, territorial waters and matters relating thereto. The Act does not mention e-waste specifically in its provisions, but as pointed out by Ogboru & Akintunde, it could serve as an umbrella instrument under which National Environmental Standards and Regulations Enforcement Agency (NESREA) could act to combat the e-waste problem since e-waste are regarded as harmful wastes.⁴² It is equally hoped that the proposed 'Amended Bill to the Harmful Waste (Special Criminal Provision, etc.) Act' before the National Assembly, which contain provisions specifically for the control of electronic devices and prohibition on burning and dumping of electronic waste, when eventually passed will stem the menace of e-waste in the country.⁴³

For now, NESREA authority could explore this Act in regulating the dealings on hazardous waste including e-waste. The penalty for infringement on this Act ranges from life imprisonment and in addition forfeiture of the carrier of the hazardous waste including aircraft, vehicle or any other thing used in the transportation or importation of the waste to the Federal Government of Nigeria. Where the offence is being committed by a corporate body through the negligence or consent of the principal officers of the company, the officer and the body corporate shall be punished accordingly.⁴⁴ As commendable as this Act appears to be, it does not mention e-waste specifically and it will be difficult to adapt it to adequately deal with the e-waste menace.

³⁷ C Terada, "Recycling Electronic Waste in Nigeria: putting environmental and human rights at risk", *NW J Int'l Human Right* 10 (3) (2012), 154. [Http://scolarly common law northwestern.edu njhr vol. 10 issu3/2](http://scolarly.commonlaw.northwestern.edu/njihr/vol.10/issu3/2).

³⁸ C Terada, "Recycling Electronic Waste in Nigeria: putting environmental and human rights at risk", *NW J Int'l Human Right* 10 (3) (2012), 154. [Http://scolarly common law northwestern.edu njhr vol. 10 issu3/2](http://scolarly.commonlaw.northwestern.edu/njihr/vol.10/issu3/2).

³⁹ S. Obaje, 34.

⁴⁰ See the case of Sani Abacha v. Gani Fawehinmi (2000) NWLR 228.

⁴¹ Cap H1 Laws of the Federation of Nigeria 2004.

⁴² T. Ogboru, & S. Akintunde, 237.

⁴³ Ogboru & Akintunde, 237.

⁴⁴ 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 San Francisco, USA from 15th -19th July 2013.

4.4 Environmental Impact Assessment Act⁴⁵

It was promulgated as Decree No.86 of 1992, with the objective of restricting public and private projects carried out without proper assessment of the impact of such projects on the environment.⁴⁶ The principal goal of the enactment was stated under section 1, which is to ensure that possible negative impacts of development projects are predicted and addressed prior to any project take-off. The effect of this as rightly stated by Nwifo, is to promote sustainable development.⁴⁷

The Act deals majorly with environmental factors to be considered in the decision process before setting up the project without provision on how to ensure strict compliance and enforcement of adverse / hazardous environmental impacts after. This is a serious challenge as some companies after getting the initial approval may act otherwise. It is hoped that this factor will be considered when proposing amendment to the Act.

4.5 National Environmental Standards and Regulations Enforcement Agency (NESREA) Act 2007

The National Environmental Standards and Regulations Enforcement Agency (NESREA) is an Agency of the Federal Ministry of Environment which is responsible for the enforcement of all environmental laws in Nigeria.⁴⁸ The Agency is also empowered to make regulations for effective regulation of its activities.⁴⁹

NESREA replaced Federal Environmental Protection Agency (FEPA). FEPA was enacted in 1988 and vested with the statutory responsibility for overall protection of the environment. It existed until 2007 when it was formally repealed.⁵⁰ Consequent upon the repealed of FEPA, NESREA became the flagship law on environmental protection in Nigeria.⁵¹

NESREA Act does not contain specific provision on e-waste, but the definition of Hazardous substances in section 37, may be extended to cover e-waste.

Section 37, provides:

Hazardous substances mean any chemical, physical or biological radioactive materials that poses a threat to human and the environment or any such substance regulated under international conventions to which Nigeria is a party or signatory e.g. Montreal Protocol, Rotterdam Convention, Stockholm convention etc. and includes any substance designated as such by the President of the

⁴⁵ Cap E12Laws of the Federation of Nigeria 2004.

⁴⁶ C.C. Nwifo, , “Legal Framework for the Regulation of Waste in Nigeria”, *African Research Review* 4 (2) (2010) 491-501.

⁴⁷ Ibid, 497.

⁴⁸ S.O. Obaje, 31.

⁴⁹ See section 34 of NESREA Act. 2007.

⁵⁰ Section 36 of NESREA Act 2007 formally repealed FEPA.

⁵¹ S.G. Ogbodu, *Handbook on the National Environmental Standards and Regulations Enforcement Agency Act(NESREA) 2007*, (Lagos: Law Research and Development Forum ltd: 2010),3

Federal Republic of Nigeria by order published in the Federal Gazette.

NESREA also acting in pursuance of its power under section 34 of the Act has made some regulations that have direct bearing on e-waste activities. One of such regulations is the National Environmental (Sanitation and Waste Control) Regulations 2009

4.5.1 National Environmental (Sanitation and Waste Control) Regulations 2009.

The Regulation does not mention e-waste specifically, but part 7, section 106, of the Regulations defined end-of-life waste to mean ‘a post-consumer waste product, appliances equipment, machinery that may have physical integrity but have lost its utility value (e.g. tyre, vehicle, television, cooker, refrigerator, mobile phones, etc.). By this definition, it is not in doubt that e-waste is covered.

Also, the Regulations defined Hazardous waste as “waste or combination of wastes that exhibits ignitable, corrosive, reactive, or toxic characteristics and poses a substantial danger, now or in the future, to human, plant or animal life, and which therefore cannot be handled or disposed of without special precautions. UEEE exhibits most of these characteristics and can safely be accommodated by this definition. Some of the special provision highlights of the Regulations relevant to this study can be summarized as follows:

- No person is to engage in any activity likely to generate hazardous waste without permit of the Agency;
- A generator of waste shall ensure a secured means of storing such wastes;
- Every person who generates hazardous waste shall cause such waste to be treated using acceptable methods;
- No person shall export or transit hazardous waste without permit by the Agency;
- No person shall transit toxic waste destined for another country through the territory of Nigeria without prior informed consent of such movement by the agency;
- Any person who fails to comply with the above obligations shall be guilty of an offence punishable with a fine of N5, 000,000.00 or imprisonment for five years or both.⁵²

Although, we argued that e-waste could be included in the definition of the regulation, but a regulatory framework to adequately address a problem such as e-waste should not be interpreted by extension to cover the subject matter, it should by its direct provision cover the subject matter for unequivocal enforcement, unfortunately, this is not the case here. The other vital regulation enacted by the Agency towards managing e-waste in the country worth mentioning in this discourse, is the National Environmental (Electrical/ Electronic Sector) Regulations 2011.

⁵² Sections 44, 45, 46, 49, 51, 52 (2) & 103 of the Regulations.

4.5.2 National Environmental (Electrical/ Electronic Sector) Regulations 2011⁵³

The National Environmental (Electrical/Electronic Sector) Regulations 2011 seeks to prevent and or minimize pollution from all operations and ancillary activities of the Electrical and Electronic sector to the Nigerian environment.⁵⁴

In the Regulations, the 3 R's of waste management were expanded to 5R's namely: Reduce, Repair, Reuse, Recycle and Recover. Also, the law captured the issues of "Extended Producer Responsibility Programme" and buy back WEEE as well as fines and punishment for offenders (individuals and corporate) are well articulated in Schedule viii of the Regulation. All these innovations made the Regulations very laudable.⁵⁵

Furthermore, NESREA has now developed guidelines for importation of UEEE into Nigeria. The Guidelines contain guiding principles, requirements for import of UEEE and the description of items that are not allowed to be imported to Nigeria.⁵⁶ By section 2.0 (e) of Schedule 11 of the Regulations, importers of UEEE in Nigeria are required to register with NESREA.

However, under the Guidelines, new EEE and functional UEEE are allowed into the country. WEEE and near- end- of - life EEE are banned from importation into the country. The guidelines clearly states that any WEEE imported into the country shall be sent back to the port of origin. There is administrative punitive fee that is imposed on the carrier of WEEE or UEEE mixed with WEEE.

The Guidelines imposes a duty on every carrier of UEEE to be accompanied with the following:

- Cargo Movement Requirement (CMR) document;
- Proof of evaluation/testing and certificate containing testing information on each item;
- Declaration of the liability by the importer (letter of indemnity); and
- Copy of permit to import⁵⁷.

As reported by Lets recycle, NESREA acting pursuant to the Regulations were able to impound two containers from France identified to contain UEEE without exporter's test certification at Tin Can Island, Lagos, Nigeria.⁵⁸

However, the Regulations target majorly the e-waste about to be imported into the country, without also focusing on solving the volumes already in the country.

Other challenges of the Regulations are: one, the Nigerian populace are not adequately sensitized of the take-back programme being organized by producers, which would have help reduce the volume of the e-waste in the country⁵⁹. The reason perhaps is not unconnected with lack of

⁵³ The law is gazetted in Federal Government Gazette No. 5. Vol. 98.

⁵⁴ See Ogboru & Akintunde, 238.

⁵⁵ See S.O. Obaje, "Electronic Waste Scenario in Nigeria", 34.

⁵⁶ See Ogboru & Akintunde, 238.

⁵⁷ See M Amachree, (2013).

⁵⁸ Letsrecycle, "Agency Investigates 'e-waste' shipment to Nigeria"(2013). www.letsrecycle.com/news/latest-news/weee/agency-investigates-2018e-waste2019-shipment-to-nigeria.

⁵⁹ Nokia organized a programme, tagged, "The Nokia perspective" at the 1st Eko E-waste Summit held in

knowledge of the collection centers for e-waste in the country. Under Regulations 36 of the National Environmental (Electrical/Electronic Sector) Regulation 2011, this problem seems to be addressed, when it provides thus, ‘a person or body corporate or organization shall not discard and or drop any e-waste anywhere except in designated bin, collection center and or point.’ Regrettably, Nigeria does not have bins that are designated for disposal of e-waste. In Lagos, for instance, where you have bins that are designated, they are only designed to segregate paper, glass and other domestic wastes and non for e-waste.⁶⁰

Secondly, there is dearth of recycling centers that the e-waste should be taken to as collection centers. The few that existed in Lagos only provide a collection centers for scavengers to go and sort out metal, such as steel, aluminum and copper from the wastes that are merely dumped there.⁶¹

Thirdly, there are no incentives for the informal (Scavengers) that go about with their handcarts collecting metal containing waste to take them to e-waste collection centres or to recycling centers as is done in some countries that have been able to curb the menace of e-waste including India and Czech Republic.

In India, for instance, where nearly 1.7 million tons of e-waste is produced annually with about four and five percent increase annually, producers have been made responsible for collection of e-waste and for its exchange.⁶²

While in Czech Republic, the producers charge a recycling fee on materials that they sell and set a fee for recycler higher than the value of the valuable materials inside the WEEE. This is to discourage scavengers being tempted to pick the old electronics to extract the valuable from them. The amount paid to them to deliver the items to the recycler is higher than the valuable in the materials. In so doing those who picked the items have the incentives to deliver them to authorize recyclers. That solves the final economic problem with electronics recycling. For example, the sum deposited for an LCD Screen might be 200ks (200 Korunna, or \$8) at retail. The recycler might pay \$2 or \$3 for an LCD delivered to its works out of that sum. Czech Republic is not a notably rich country and \$2 is quite enough to encourage the local teenagers or older groups to pick up waste and deliver it for that sum.⁶³ Nigeria could draw lessons from this in enacting effective legislation towards curbing the menace of e-waste.

Lagos, Nigeria in February, 2011. See T Ogboru, & S Akintunde, “Poverty and e-Waste Control in Nigeria,” 238.

⁶⁰ See T Ogboru, & S Akintunde, 239.

⁶¹ Ibid.

⁶² T. Worstall, “India Almost Gets E-Waste Recycling Right But not Quite.” <https://www.forbes.com/sites/tim.wraccessed/13/03/2019>.

⁶³ F. Cavallaro, “Incentivizing e-waste Recycling.” <https://www.fronetics.com/incentivizi/978-499-9988info@fronetics.com> accessed 13/03/2019.

5.0 Conclusion/ Recommendations

The menace of e-waste in the country is quite challenging and it needs pragmatic legislative measures to curb or minimize the influx. The current legislative frameworks though laudable are inadequate; Nigeria needs to bring its legislations to modern realities if the populace and its environment must be kept sound, clean and safe. This paper therefore, makes the following recommendations toward achieving this end:

1. The appropriate Agency for environmental regulations including NESREA should organize coordinated and continuous sensitization programme on the harmful components of e-waste to human and the environment. The messages should be translated into local languages to achieve the desired effects.
2. NESREA should also engage other stakeholders in the e-waste trade including sales representatives of EEE imported into the country to carry out regular sensitization programme on the buy-back policy/programme of their companies.
3. States and Local Government Areas and Local Authorities should be mandated to operate registered e-waste dumpsites in their localities and either alone or with collaboration with other stakeholders operates recycling centers for e-waste.
4. The law, particularly the National Environmental (Electrical/Electronic Sector) Regulations should be amended to include incentives for those who picked and dropped e-waste in the registered dumpsites or recycling plants.
5. The enforcement unit of NESREA, Nigeria Custom, Immigration and the Police force should be strengthened to enforce the environmental regulations.
6. Finally, the Government must address the issue of poverty which seems to be the main driver for the e-waste trade and the National Assembly of Nigeria should consider making the provision of section 20 of the Constitution of the Federal Republic of Nigeria justiceable by making it part of the Fundamental Rights. If this is done the various agencies, individuals and corporate organizations that are connected with the e-waste trade will be awakened to their responsibilities, knowing full well that they could be sanction for breach of duty.
7. Section 12 of the country's Constitution should be amended to remove the bottle neck of domestication of international treaties before it becomes law by the Country's National Assembly, ratification should be sufficient. This will allow the country benefits from international instrument like the Bamako Convention and others.