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Violet Aigbokhaevbo

Nkoli Aniekwu

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ENVIRONMENTAL ABUSES IN NIGERIA: IMPLICATIONS FOR REPRODUCTIVE HEALTH

VIOLET AIGBOKHAEVBO AND NKOLI ANIEKWU

I. INTRODUCTION

The prevalence of abusive environmental practices in Nigeria and the impunity with which they are perpetuated has generated increased concern globally and among the populace. Reproductive health and environmental health are intertwined. There has been increased concern about the adverse impact of environmental contaminants on fertility and reproduction.¹ For example, epidemiological studies indicate that environmental exposure to endocrine disrupting chemicals is associated with human diseases and disabilities.² Such exposure to environmental contaminants can be through air, water, land, and the workplace. In Nigeria, infant and maternal health prospects are still shrouded in controversy due to the unreliability of data and rot endemic to the reproductive health care system which is attributable to corruption, ignorance, poverty, illiteracy, and poor infrastructural development.³ Nigeria's public health care system encompasses federal, state, and communal hospital and health care centers. There also exists a plethora of environmental laws and regulations to protect public health and ensure sustainable utilization of environmental resources.

1. See, e.g., Ass'n of Reproductive Health Professionals, Reproductive and Environmental Health Scientific Leadership Meeting, Wash. D.C. (Sep. 15, 2008), available at <https://www.arhp.org/professional-education/programs/environmental-impacts/091508-Outcomes>.

2. Laura N. Vandenberg et al., *Hormones and Endocrine-Disrupting Chemicals: Low-Dose Effects and Nonmonotonic Dose Response*, ENDOCRINE REV. 1050 (2012).

3. See Hope C. Okereke et al., *Maternal and Child Health Prospects in Nigeria*, 5 THE INTERNET J. OF PEDIATRICS & NEONATOLOGY, no. 2 (2005).

Despite these efforts, conditions harmful to reproductive health like cough, respiratory problems, gastrointestinal problems, tetanus, tuberculosis, influenza, hepatitis, yellow fever, and small pox thrive. This prevalence of harmful diseases and conditions is due, in part, to air and water pollution and dumping of carcinogenic waste on the land. Maintaining adequate levels of infant and maternal health also continues to pose a major challenge in Nigeria.

This paper examines abusive environmental practices in Nigeria and their implications on reproductive health. Furthermore, the paper analyzes the enhancement of environmental regulatory mechanisms and proffers suggestions with a view to overcoming challenges posed by environmental abuses to the Nigerian health sector.

A. REPRODUCTIVE HEALTH

Reproductive health has been defined as the ability of people to have a responsible, satisfying, and safe sex life, the capacity to reproduce, and the freedom to decide if, when, and how often to do so.⁴ It embraces access to appropriate health care services that will enable women to undergo pregnancy and childbirth in a safe and healthy environment and to have healthy children.⁵

The term reproductive health also refers to the diseases, disorders, and conditions that affect the functioning of the male and female reproductive system during one's life.

B. ENVIRONMENTAL PRACTICES AND REPRODUCTIVE HEALTH IN NIGERIA

Environmental factors are largely responsible for the proliferation of most diseases that affect reproductive health. In 2008, it was estimated that forty-six percent of Nigerians lived in the urban environment with sixty-six percent of them living in slums, deprived of access to basic amenities due to inadequate city planning, uncoordinated urban governance, and unsustainable development.⁶ Increased childhood mortality is associated with living in socio-economically disadvantaged

4. Rose Wicher & Willard Cates "Choices of Women with HIV", *Bull. of the WORLD HEALTH ORG.*, no. 11 (2009): 833.

5. Eva A. Refuess et al. "Environment Risky for Health" *Bull. of the WORLD HEALTH ORG.*, no. 11 (2009): 880.

6. Johnson Falade, Program Manager for Nigeria, UN-HABITAT, Presentation of Planned City as Foundation for Sustainable City Development at the Conference on Sustainable Cities, New Economic Partnership on African Development (May 17, 2010).

areas,⁷ and Nigeria has one of the worst mortality statistics in the world with a mortality rate of 545 per 100,000 live births.⁸ Maternal morbidity and mortality are also enhanced by malaria,⁹ tuberculosis,¹⁰ anemia, various worm infestations,¹¹ syphilis, Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS), scarlet fever, rheumatic fever, and pneumonia that also pose reproductive health challenges.¹²

Environmental contaminants adversely impact reproductive health. For example, exposure to endocrine disrupting chemicals can negatively impact fertility, pregnancy, and the reproductive structures of human beings and other mammals. Fetal exposures to some chemicals have been discovered to have life-long developmental and behavioral consequences.¹³ There have been concerns about the utilization of plastics in domestic baby care and personal care bottles. Bisphenol A (BPA), which is used in plastic production, is non-biodegradable and its seepage into soil and groundwater contributes to reproductive complications.¹⁴

7. Diddy Antal & Tahereh Moradi, *Urban Area Disadvantage and Under-5 Mortality in Nigeria: The Effect of Rapid Urbanization*, 118 ENVTL. HEALTH PERSPECTIVE, no. 6 (2010).

8. U.N. Population Fund, *8th International Conference & 44th Annual General Meeting of Society of Gynecology and Obstetrics of Nigeria (SOGON): 31st November to 3rd December 2010 at Nicon Luxury Hotel Abuja Nigeria*, UNFPA NIGERIA, <http://nigeria.unfpa.org/pdf/confgynecology.pdf> (last visited Mar. 18, 2013).

9. See Douglas Gollin & Christian Zimmerman, *Malaria: Disease Impacts and Long-Run Income Differences*, INST. FOR THE STUDY OF LABOR (IZA) 1, (2007) (“Malaria... causes over 300 million episodes of ‘acute illness’ and more than one million deaths annually... [It] causes numerous health and cognitive problems. It is associated with maternal anemia during pregnancy, with low birth weight for babies, and it is a major cause of childhood anemia... caus[ing] severe long-term physical and neurological disability... According to United Nations Children’s Fund (UNICEF) Report 2005, Malaria afflicts primarily the poor who tend to live in malaria-prone areas in dwellings that offer few if any barriers against mosquitoes.”).

10. See World Health Org., *WHO Report 2009 – Global Tuberculosis Control Key Points*, WHO TUBERCULOSIS, http://www.who.int/tb/publications/global_report/2009/key_points/en/index.html (Providing the key points of a World Health Organization (WHO) 2009 Report on Global Tuberculosis that adjudged Nigeria as the 4th largest Tuberculosis (TB) endemic zone with more than 460,000 estimated new cases as at 2007) (last visited Mar. 18, 2013).

11. Northern and Eastern Nigeria are endemic regions for parasitic infections like onchocerciasis, filariasis, tapeworm, and hookworm infections, contributing to health challenges of infants and mothers.

12. United Nations International Children Educational Fund (UNICEF) Immunization Prospects in Nigeria, Guidelines for Treatment of Sexually Transmitted Diseases MMBOR 2003 64: 1 in Hope C. Okereke et al., *Maternal and Child Health Prospects in Nigeria*, 5 THE INTERNET J. OF PEDIATRICS & NEONATOLOGY, no. 2 (2005).

13. JON LUOMA, CHALLENGED CONCEPTIONS: ENVIRONMENTAL CHEMICALS AND FERTILITY (Ass’n of Reproductive Health Professionals ed., 2005), available at http://www.rhpf.org/fertility/vallombrosa/documents/challenged_conceptions.pdf.

14. Stephen Rauch et al., *Associations of Prenatal Exposure to Organophosphate Pesticide Metabolites with Gestational Age and Birth Weight*, 120 ENVTL. HEALTH PERSPECTIVE, no. 7 (2012)

Additionally, environmental pollution arising from generator fumes adversely impacts the health of the citizenry.¹⁵ Also, prolonged exposure to intense noise from generators could induce stress, irritability, hearing loss, and sleep deprivation with attendant health implications.¹⁶ Due to an inadequate power supply and the desperation of citizens to counteract the consequential hardship foisted on them, generators are part of the daily existence of Nigerians.

Also, due to the increased cost of petroleum products and hiccups in the distribution chain, Nigerians are increasingly becoming dependent on wood as a cheaper alternative source of fuel. This dependence on wood for fuel has encouraged indiscriminate felling of trees with the consequential deforestation, desertification, erosion, and loss of biodiversity.¹⁷ Uninhibited utilization of wood in open fires and for domestic cooking predisposes women and children to increased incidents of respiratory diseases that can in turn, adversely impact their reproductive health.

The extraction, processing, and transportation of oil are among the most damaging causes of environmental pollution and human health impacts. Since the inception of oil exploration in Nigeria in 1958, it is estimated that between nine million and thirteen million barrels of oil have been spilled due to poorly maintained pipelines and drilling equipment,¹⁸ corrosion of pipelines, pipeline vandalization, and spills in the course of production¹⁹ and transportation. These oil spills have led to the contamination of surface and ground water and aquatic animals with

(Presenting the view that prenatal-exposure to organophosphate (OP), a widely used class of pesticides, may be associated with decreased gestational age and lower birth weight).

15. Sola Ogundipe, *Nigeria: Power Outages: Carbon Monoxide, Silent Killer on the Prowl*, VANGUARD, Mar. 13, 2007, available at <http://allafrica.com/stories/200703130040.html> (Stating that due to the spate of power outages in Nigeria, the country is assailed with the proliferation of portable power generating plants which pollute the environment with their noise and often adversely impact the health citizens, yet most Nigerians consider generators a lifesaver in urban areas).

16. Sunny O. Banjoko et al., *Ambient Carbon Monoxide and Carboxyhaemoglobin in Ibadan City Nigeria: A Source of Health Inequality Between Developed and Developing Nations?*, 7 J. OF ENVTL. HEALTH RESEARCH, no. 1 (2008). (Discussing how exposure of pregnant women to carbon monoxide has been associated with low birth weight and increased incidence of Sudden Infant Death Syndrome).

17. Yakubu Yahaya Babanyara & U. F. Saleh, *Urbanisation and the Choice of Fuel Wood as a Source of Energy in Nigeria*, 31 J. OF HUM. ECOLOGY, no. 1, (2010), at 19.

18. Jide Ojo, *Despoliation of Nigerian Environment*, PUNCH (Feb. 23, 2010), <http://www.punchng.com/opinion/despoliation-of-nigerian-environment/> (Describing how Chevron explosions at the Funiwa field affected an estimated 500,000 inhabitants).

19. Julia Baird, *Oil's Shame in Africa*, NEWSWEEK, July 26, 2010, at 27.

hydrocarbons and carcinogens with grave health implications for consumers.²⁰

Similarly, flaring of gaseous by-products from crude oil exploration has led to the emission of poisonous gases like nitrogen dioxide, sulphur dioxide, and other carcinogens with adverse health implications. According to Owugah, “the oil which brought so much wealth to the nation and to those in power brought much power, disease, death, loss of livelihood to the people of the oil bearing areas.”²¹

Dangerous and sometimes criminal mining practices have had tragic environmentally related results in Nigeria. More than 400 children died in Northern Nigeria from lead poisoning in Zamfara resulting from illegal mining activity. Symptoms exhibited due to lead ingestion ranged from abdominal pain, lethargy, constipation, and headaches, to seizures, comas, and death.²²

Waste management is yet another daunting environmental challenge facing Nigeria. In addition to fouling the air, indiscriminate dumping of refuse and sewage in open drains and pot holes on the streets has provided breeding places for rats, rodents, cockroaches and other vectors; this has increased the incidence of germs and diseases that they transmit. Hazardous waste dumping and consequential health implications pose a formidable challenge in Nigeria. Nigeria has mountains of electronic waste mostly comprising computers, which are hazardous to the environment.²³ Nigeria is the daily recipient of more than five hundred metric tons of electronic wastes shipped from

20. Sandra Steingraber, Testimony before New York State Assembly Standing Committee on Environmental Conservation and Health: Potential Health Impact of Hydraulic Fracturing (May 26, 2011), available at <http://newyork.sierraclub.org/documents/SteingraberAssemblyMay262011.pdf> (Stating that some of the chemicals used in hydraulic fracturing are carcinogens, some are neurologically poisonous with suspected links to learning deficits in children, and some are asthma triggers. Radioactive chemicals used in hydraulic fracturing have been known to bioaccumulate in milk while others are reproductive toxicants that can contribute to pregnancy loss).

21. Leroy Owugah, *Political Economy of Resistance in the Niger Delta*, in THE EMPEROR HAS NO CLOTHES (Envtl. Right Action/Friends of the Earth 2000).

22. United Nations Environmental Protection (UNEP) Agency Issued a warning that five villages in Zamfara contained ten times the recommended limit of lead, the soil one hundred and fifty times the limit of lead and the air sampled more than five hundred times the acceptable limit concerns were also expressed by the contamination of the food chain through the ingestion of contaminated water and vegetation by livestock which would be consumed by locals. See “Zamfara, Nigeria Lead Poisoning Epidemic Emergency Environment Response” Final Report UNICEF Programme Cooperation Agreement PCA Ref: YW – 303(01) May 2010 – March 2012.

23. Elizabeth Grossman, *Digital Dumps’ Heap Hazards at Foreign Sites*, WASH. POST, Dec. 12, 2005, <http://www.washingtonpost.com/wp-dyn/content/article/2005/12/11/AR2005121100664.html> (Reporting that the container loads of hazardous waste arriving in Nigeria complicate “hazardous waste problems of a country that lacks facilities to properly handle it”).

developed countries like Britain²⁴ and the United States of America. This importation into Nigeria is usually done with bogus documentation to circumvent detection. The customs documents often describe these toxic and hazardous wastes as “[s]hipped for reuse.”²⁵ Nigeria has acquired notoriety as a dumping ground for mobile telephones, refrigerators, televisions, and microwave ovens. The products that cannot be sold in their imported condition are broken into spare parts by youths and children, who are employed for a pittance. Most of these child workers are ignorant of the hazardous health impacts of such work, while others propelled by destitution are too desperate to care about health concerns. They are consequently exposed to toxic chemicals like mercury, lead, chromium, and cadmium which, depending on the level of exposure, could result in damage to their brains from neurological poisons,²⁶ their kidneys, and their reproductive cells.²⁷

Due to the lack of recycling facilities, scrap materials from waste electronics are incinerated,²⁸ exposing the populace to toxic air fumes. Underground water is also contaminated and the soil is tainted by excess heavy metals, which contaminate food crops.

Medical waste dumping also constitutes an environmental hazard, threatening reproductive health. Licenses to operate private clinics are indiscriminately granted to medical practitioners without proper oversight management by the government. Consequently, dumping of medical waste like syringes, blood soaked cotton wool and gauze, intravenous (iv) tubes, infusion bags, and bottles are dumped in open

24. Press Release, Greenpeace, Undercover Operation Exposes Illegal Dumping of E-waste in Nigeria (Feb. 18, 2009), available at <http://www.greenpeace.org/international/en/press/releases/greenpeace-undercover-operation/> (Describing in its undercover operation that exposed illegal dumping of e-waste in Nigeria: “Electronic waste intended for recycling is being illegally exported from the United Kingdom to Nigeria and other developing countries disguised as second hand goods... poisoning the people and the people and the environment”).

25. Modoupe Taiwo Odubela et al., TRANSBOUNDARY ILLEGAL SHIPMENTS OF HAZARDOUS WASTE TOXIC CHEMICALS (PESTICIDES) CONTRABAND CHLOROFLUOROHYDROCARBONS: THE NIGERIAN EXPERIENCE, (Fourth Int'l Conference on Env'tl. Compliance & Enforcement), available at <http://www.inece.org/4thvol2/odubela.pdf> (last visited Mar. 19, 2013) (Explaining the surge in hazardous dumping in Nigeria is the quest by industrialist and populace to utilize cheaper secondary raw materials clothing and electronics to counteract the hardship foisted on them by the downturn in the Nigerian economy).

26. Aimin Chen et al., *Developmental Neurotoxicants in E-Waste: An Emerging Health Concern*, 119 *Env'tl. Health Perspective* 431 (2011).

27. Olujimi Julius Ajilowo Bayode et al., *Environmental Implications of Oil Exploration and Exploitation and Exploitation in the Coastal Region of Ondo State, Nigeria: A Regional Planning Appraisal*, 4 *J. OF GEOGRAPHY AND REG'L PLANNING* 110, 116 (2011) (Explaining that poor waste disposal and chemical discharges has increased incidence of high blood pressure, stroke and kidney problems).

28. When incinerated plastic components contain brominated flame retardants these chemicals accumulate in human blood and fat tissues and could cause hormonal imbalance and cancer.

bins, drains, refuse dumps, and on street corners near hospitals. Unfortunately, state-owned hospitals are not exempted from such poor medical waste management. These practices have rendered citizens vulnerable to contracting infections and diseases that could be life threatening.

To make matters worse, exposure to surface and groundwater water contaminants, present as a result of the various activities described above, is an ever-present danger in Nigeria. Over the years, suitable public water supply has become a disappearing phenomenon.²⁹ Boreholes,³⁰ streams, rivers, springs, lakes, and brooks are increasingly being utilized as water sources leading to exposure to water borne diseases like cholera, dysentery, diarrhea, typhoid fever, and various skin infections.

The environmental abuses discussed above have predisposed the Nigerian health sector and its reproductive health component to be in shambles. According to Twaddell,

it is no secret that Nigeria's health sector is in shambles as a result, Nigeria has one of the highest infant and maternal mortality rates in the world and a growing HIV/AIDS infection rate. The unabated continuation of these trends combined with a high population growth rate poses a direct threat to Nigeria's economic development and social stability.³¹

The disastrous reproductive health effects of widespread and ongoing environmental abuses continue to be understood and exposed, but it remains to be seen whether the Nigerian government and people will be able to recover and maintain acceptable levels of environmental and reproductive health.

II. REGULATORY MECHANISMS

In recognition of the pivotal impact that exposure to contaminated water, air, and land can have on human health and fetal development, the Nigerian government has enacted a plethora of environmental laws and

29. Helen Eni, *Why City Taps Are Dry*, TELL MAG. (Oct. 17, 2011), http://www.tellng.com/index.php?option=com_k2&view=item&id=666:why-city-taps-are-dry (In Edo State, "an \$18 million grant from the World Bank for the provision of potable water... was found to have been allegedly embezzled by top officials of the state urban water board").

30. Poor regulation of boreholes has led to sinking of shallow boreholes providing water infested with bacteria and carcinogenic substances which is utilized by citizens for drinking.

31. William H. Twaddell, U.S. Ambassador to Nigeria, Remarks at the Nigerian Institute of Policy and Strategic Studies 2 (Apr. 2000).

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regulations. Of these laws and regulations, the most specific and far-reaching is the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007.

A. NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS ENFORCEMENT AGENCY (ESTABLISHMENT) ACT 2007

This act established the National Environmental Standards and Regulations Enforcement Agency (NESREA), which is entrusted with the responsibility of environmental protection, biodiversity conservation, environmental technology promotion, and sustainable development of Nigeria's natural resources in general.³²

The Agency is empowered to enforce through compliance monitoring environmental regulations and standards on noise, air, land, seas, oceans, and other water bodies, with the exception of standards in the oil and gas sector.³³ The Agency is also instructed to conduct public investigations on pollution and the degradation of natural resources, again with an oil and gas exception for investigations concerning oil spillage. To promote and to enhance public health and welfare, including the natural development and productive capacity of the nation's human, animal, marine or plant life, the Agency's goals include "(a) minimum essential air quality standards for human, animal, marine or plant health; (and)(b) the control of concentration of substances in the air which separately or in combination are likely to result in damage or deterioration of property or of human, animal, marine or plant health[.]"³⁴

Violators of this provision of the Act are to pay a fine not exceeding N200,000³⁵ or a term of imprisonment not exceeding one year, or both fine and imprisonment, and an additional sum of N20,000 for everyday the offense subsists.³⁶ Where the offense is committed by a corporate entity, on conviction, the corporation is liable to pay a fine not exceeding

32. See National Environmental Standards and Regulations Enforcement Agency (Establishment) Act (2007) Cap. (25), §§ 2, 7 (Nigeria), available at <http://faolex.fao.org/docs/pdf/nig120569.pdf> [hereinafter NESREA].

33. The NESREA's jurisdictional regulation does not extend to the oil sector in Nigeria. The National Oil Spill Detection and Response Agency (NODSRA) was established in 2006 with the primary function of coordinating the implementation of the National Oil Spill Contingency Plan (NOSCP) in Nigeria. It is mandated to ensure speedy response to oil spills and remediate affected sites to the best practicable extent.

34. NESREA, *supra* note 34, § 20 (1).

35. Equivalent to roughly \$1,269, as of April 11, 2013.

36. NESREA, *supra* note 34, § 20 (3).

N2,000,000 and an additional fine of N50,000 for every day the offense subsists.³⁷

The discharge of designated “harmful quantities of any hazardous substance³⁸ into the air or upon the land and the waters of Nigeria or at the adjoining shorelines” is another environmental harm prohibited by the Act, “except where such discharge is authorized by any law in force in Nigeria.”³⁹ Contravention of this discharge regulation is penalized with a fine not exceeding N1,000,000 or imprisonment for a term not exceeding five years where the contravener is an individual, and for a corporate entity, a fine not exceeding N1,000,000 and an additional fine of N50,000 for everyday the offense persists.⁴⁰

The Agency is also empowered to, in collaboration with appropriate authorities, make regulations on noise and emissions control as may be necessary to protect and maintain public health and welfare.⁴¹ The Agency is also mandated to make regulations to enhance water quality for the purpose of protecting public health and welfare. The Minister for Environment is empowered to make regulations for the purpose of implementing the Act and to prescribe any specific removal method or financial responsibility for owners or operators of resets or facilities onshore or offshore.⁴² Unfortunately, in addition to other difficulties, the challenge of role conflicts between NESREA and other agencies like the Standards Organisation of Nigeria (SON) and the Nigerian Communication Commission (NCC) hampers efficiency, as most of their officials are preoccupied with jostling for power and supremacy and sometimes issue conflicting directives to environmental violators.

In the exercise of his powers, the minister has promulgated numerous regulations. The following sections discuss regulations established under this act with a view to understanding their impact on the reproductive health sector and their utility as checks on environmentally abusive practices.

37. *Id.* § 20 (4).

38. *Id.* § 37 (Defining hazardous substance as “any chemical, physical or biological and radioactive materials that poses a threat to human health 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 Federal Republic of Nigeria”).

39. *Id.* § 27 (1).

40. *Id.* §§ 27 (2), 27 (3). (The Harmful Waste (Special Criminal Provisions etc) Act is also applicable to pollution attributable to hazardous substances constituting harmful waste as defined in § 37 of the Act).

41. *Id.* § 22.

42. *Id.* § 28.

1. National Environmental (Chemicals Pharmaceuticals, Soap and Detergent Manufacturing Industries) Regulations, 2009⁴³

This regulation mandates the implementation of cleaner production processes and pollution preventive measures to yield economic, social, and environmental benefits.⁴⁴ Pollution preventive programs are expected to focus on the reduction of the use of water and on more efficient use of process chemicals.⁴⁵ Under the regulation, recyclable damaged and disused packaging materials such as glass, plastics, metals, paper, wood, nylon, and other materials, are to be recycled.⁴⁶ Further, every chemical, pharmaceutical, soap, or detergent manufacturing facility is to ensure that no employee is exposed to any hazardous condition in his or her place of work.⁴⁷

Facilities are further mandated to carry out effective water treatment at all times the plant or unit is operating,⁴⁸ as well as to ensure the environmentally sound management of sludge containing heavy metals or other toxics by disposing of it in a land-fill or designated disposal site approved by the Agency. Treatment of toxic organics contained in both effluent and sludge is expected to be guaranteed as approved by the Agency. Wastes that contain toxic organics are also to be subjected to thermal treatment to effectively destroy or remove over 99.9% of toxic organics, and the resulting residue is mandated to be disposed of in an environmentally sound manner as prescribed by the Agency.⁴⁹

2. National Environmental (Food, Beverages and Tobacco Sector) Regulation 2009⁵⁰

This regulation mandates all companies operating in Nigeria to reduce the amount of packaging materials used and to enforce the use of the three “Rs,” namely Reuse, Recover, and Recycle.⁵¹ Every company is also expected to install anti-pollution equipment for the detoxification of its effluent and emissions so as to meet the prescribed effluent and

43. National Environmental (Chemicals Pharmaceuticals, Soap and Detergent Manufacturing Industries) Regulations, 2009, Statutory Instrument (S.I.) 36 (2009).

44. *Id.* Regulation 6 § 1.

45. *Id.* § 2.

46. *Id.*

47. *Id.* § 5.

48. *Id.* Regulation 18.

49. *Id.* Regulations 8 § 2 and 18 § 3.

50. National Environmental (Food, Beverages and Tobacco Sector) Regulation 2009, Statutory Instrument S. (I) 33 (2009) (The purpose of the regulation is to prevent, and minimize pollution from all operations and ancillary activities of food, beverages and tobacco companies in the Nigerian environment.).

51. *Id.* Regulation 2 § 4.

emissions standard. Such installation is mandated to be based on the Best Available Technology (BAT) or the Best Practicable Technology (BPT).⁵² Most packaging materials utilized are cellophane, plastic, or glass. In contrast to contemporary global trends, these materials are not segregated for recycling by consumers, but end up in waste dumps where they are scavenged and constitute most of the litter. Due to inadequate technological advancement, emission monitoring in Nigeria constitutes a daunting task.

3. National Environmental (Ozone Layer Protection) Regulations 2009⁵³

This regulation provides that no person may manufacture for the purpose of local consumption or export any product that contains ozone-depleting substances. The regulation also prohibits any person from reclaiming, recovering, recycling, or reusing an ozone depleting substance unless that person has successfully completed an approved technical training on ozone depleting substances or is working under the direct supervision of a person who has successfully completed an approved training in ozone depleting substances.⁵⁴ This regulation attempts to induce safe handling and safe disposal of ozone depleting substances swiftly.

Violation of the provision of this regulation is punishable with a fine of N200,000 and an additional fine of N10,000 for every day the offense persists, or imprisonment for a term not exceeding one year, or both fine and imprisonment for individual offenders. Corporate violators are penalized with a fine not exceeding N1,000,000 and additional fine of N50,000 for everyday the offense persists.⁵⁵

January 2010 is stipulated to be the terminal date for the proliferation of halon-based equipment.⁵⁶ More than 3 years after this deadline, significant success is yet to be recorded. Abusive utilization of ozone-

52. *See id.* Regulation 4 (BAT and BPT are not defined by the Regulation).

53. National Environmental (Ozone Layer Protection) Regulation 2009, Statutory Instrument No 32 (2009) (It prohibits the importation, manufacture in part or in whole, install, offer for sale, sell or buy new or refurbished facilities intended to be used for the production of any ozone depleting substances unless for recovery and recycling of substances already in use.).

54. *Id.* Regulation 3 (Nigeria has been a dumping ground for ozone depleting substances and due to ignorance and desperation to eke out a living and the absence of proper regulation, it is carried out with impunity.).

55. *Id.* Regulation 22.

56. *Id.* Regulation 18.

depleting substances continues to thrive in the full glare of regulatory agencies.⁵⁷

4. National Environmental (Mining and Processing of Coal, Ores and Industries Minerals) Regulations 2009⁵⁸

These regulations mandate new development in the mining and processing techniques to apply up-to-date, efficient, and cleaner production technologies to minimize pollution to the highest degree practicable.⁵⁹ Environmental Evaluation Studies (EES) are to be carried out on facilities without Environmental Impact Assessment (EIA)⁶⁰ at the commencement of operations, and Environmental Audit Reports are to be submitted to the Agency. An Environmental Audit Report must be conducted every three years and submitted to the Agency for review.⁶¹ Mine water containing heavy metals or other toxic materials or substances must be treated and disposed off in government-approved, designated sites or landfills. Any water containing heavy metals or other toxic materials or substances are to be treated to acceptable levels before disposal.⁶² The regulations also require contamination arising from leakage of oil or fuel storage facilities to be properly managed to avoid

57. *Nigeria to Stop Goods Dumping*, NAT'L DAILY NEWSPAPER, Feb. 29, 2012, available at <http://nationaldailyng.com/maritime/nigeria-to-stop-goods-dumping> (Ngieri Benabo the Director General of the NESREA has decreed that electronic gadgets like television sets, computers, bulbs, microwave ovens, blenders and telephones are brought in as second hand goods in homes because if there is a current surge, they are damaged and e-waste is generated daily and due to these defunct gadgets piling up. Unfortunately, the National Agency for Food and Drug Administration and Control has not been able to manage this issue in a sustainable manner).

58. National Environmental (Mining and Processing of Coal, Ores and Industries Minerals) Regulations 2009, Statutory Instrument No 31 (2009) (The purpose of the regulation is to minimize pollution from the mining and processing of coal, ores and industrial minerals.).

59. *Id.* Regulation 2.2

60. The term "Environmental Impact Assessment" refers to studies required to be carried out by potential developers to ascertain any long-term or short-term adverse impacts on the environment with a view to ensuring that steps are taken to address anticipated impacts.

61. See National Environmental (Mining and Processing of Coal, Ores and Industries Minerals) Regulations 2009, *supra* note 63, Regulation 2.3, 2.4 and 2.5; See Olufemi Adeosun, *NESREA Cautions Miners on Negative Impact to Environment*, NAT'L MIRROR Feb. 14, 2012 (Reporting on the concerns of Dr. Ngeri Benebo who stressed the dangers posed to the environment and human health by unsustainable mining in Osun and Ekiti States and lamented the rising frequency of public complaints of hazards they are exposed to resulting from artisanal mining); See also Femi Makinde, *NESREA Moves to Stop Disasters Caused by Miners*, PUNCH NEWSPAPER, Feb. 1, 2010, available at <http://www.punchng.com/business/industry/nesrea-moves-to-stop-disasters-caused-by-miners/> (Such hazards includes deforestation, abandoned mine pits and burrow-pits, loss of valuable farm lands, and health complications. The proliferation of artisanal mining epitomizes the inefficiency of the regulatory mechanism. In spite of the global outrage generated by the tragedies resulting from the infamous Zamfara illegal mining incident in which more than four hundred people died from lead poisoning, stringent regulation of the mining, sector is yet to be accomplished and violations continue with impunity with the active connivance of law enforcement agencies.).

62. National Environmental (Mining and Processing of Coal, Ores and Industries Minerals) Regulations 2009, *supra* note 63, Regulation 10.

pollution to the environment including surface water, groundwater, and soil.⁶³

In the event of pollution resulting in environmental impacts with socio-economic and health implications, the facility operator must bear the cost of clean up, remediation, reclamation, damages, and compensation.⁶⁴ The regulation does not recognize the fact that most facilities are substandard and mostly operated by artisanal miners, with devastating environmental consequences. The acquiescence of the government to these artisanal miners' existence, reflected by the paucity of prosecution for their environmental crimes, has encouraged the impunity with which the environment is polluted.

5. National Environmental (Sanitation and Waste Control) Regulation 2009⁶⁵

This regulation provides that no person is to discard, throw, or drop any litter or any similar refuse anywhere except in designated litterbins. Generators of wastes are to ensure that waste is handled by a person licensed to transport and dispose of the wastes in designated waste management facilities.⁶⁶ Owners, operators, occupants, or persons in care, management, or control of premises are not to allow the release of litter or any similar refuse into the environment.⁶⁷ Food vendors and traders are to ensure that litter and other wastes do not pollute the environment. They must properly dispose of all wastes generated in the course of their business and must maintain hygiene and cleanliness of the

63. *Id.* Regulation 11.

64. *Id.* Regulation 13 (13).

65. National Environmental (Sanitation and Waste Control) Regulation 2009, Statutory Instrument No 28 (2009) (The purpose of the regulation is the adoption of sustainable and environmentally friendly practices in environmental sanitation and waste management to minimize pollution.).

66. Waste Management in Nigeria is an evolving phenomenon which is yet to attain the level of waste segregation. Wastes are dumped and incinerated at the same point without segregation. The average Nigerian is yet to be exposed to the necessity of distinguishing between biodegradable and non-biodegradable refuse and treating them accordingly. An extreme example is that of medical waste management in hospitals, which mostly consists of burning and burial of medical waste. In Lagos and most other cities, black plastic refuse bags are used for the storage of both infectious and regular waste without appropriate labeling. Such careless mismanagement of waste has led to this hazardous waste being dumped in the same dumpsites where the poor scavenge, leading to exposure to contaminated syringes, blood, and other infectious waste which has increased the risk of contamination of Human Immunodeficiency Virus (HIV) and Hepatitis. Additionally, incineration of medical waste increases air pollution and airborne diseases. E.O. Longe & A. Williams, *A Preliminary Study of Medicine Waste Management in Lagos Metropolis, Nigeria*, 3 *Iran J. of Env'tl. Health Sci.*, no. 2, at 133 (2006).

67. National Environmental (Sanitation and Waste Control) Regulation 2009, *supra* note 70, Regulation 3.

location of business at all times.⁶⁸ All traders in market places are mandated to ensure that litter and recyclable materials are deposited in appropriate receptacles or waste bins, which must be emptied regularly.⁶⁹ Passengers of vehicles or occupants are not to throw or drop any litter onto the streets, roads, highways, public places, or other undesigned places.⁷⁰

Owners of premises are mandated to provide potable water supply for the premises to ensure sound environmental sanitation and personal hygiene. Owners are also to ensure that untreated sewage is not piped or discharged into public drains or roads. Further, owners must control disease vectors in the premises and cut grass, lawns, shrubs, and flowers in and around the premises.⁷¹ Manufacturers, producers, and importers of food and beverages are mandated to incorporate environmental concerns in their design, manufacturing process, and product disposal.⁷² All commercial facilities are to ensure proper cleanliness of their toilet and hand washing facilities. Any person who owns a waste-generating

68. *Id.* Regulation 6 (food vendors and street trading, and the wastes associated with it, have been condoned by successive government as a poverty alleviating measure for its impoverished population. Designating the last Saturday of each month as a sanitation day has not yielded appreciable results. Evacuated wastes are left on street corners where they are dispersed by wind, rodents, and people. Their offensive sight, smell, and general nuisance have been accepted as the price of living in cities and towns and patronizing market places.).

69. Market places in Nigeria are associated with filth. Flies, cockroaches, and rodents coexist with food in stalls. Flies perch on food in stalls indiscriminately, and refuse heaps are part of the market topography. In spite of the fact that traders are taxed for the purpose of funding market sanitation, most markets remain unsanitary; most sanitation officers deployed to marketplaces are more preoccupied with extorting money from petty traders selling in the vicinity of market places. To make matters worse, due to inexistence or poorly maintained toilets, defecating and urinating around the markets is a common sight.

70. National Environmental (Mining and Processing of Coal, Ores and Industries Minerals) Regulations 2009, *supra* note 63, § 5 (This provision is breached with impunity as refuse bins are either non-existent, cited irregularly, or not emptied regularly when due. Most designated refuse dumpsites are improperly managed leading to indiscriminate dumping of refuse. *See* Kalu C. et al., *Evaluation of Solid Waste Management Policy in Benin Metropolis Edo State, Nigeria*, 10 African Scientist No 1 (2009) (Considerable urban waste is deposited either on the roadsides drainage systems). (Solid waste collection and disposal are among the most serious threats to waste management.).

71. Enforcement of this regulation is almost impossible because in spite of the existence of regulatory agencies, complaints of poor funding and a dearth of manpower has impaired its efficacy. Government official residences and other parastatal premises, which should lead by example, are mostly overgrown with grass, littered with refuse, and unkempt. Due to the failure of government to provide basic social amenities like good roads, water, electricity, and hospitals for the citizenry, it has been rendered impotent in its supervisory role of ensuring compliance with these regulations.

72. National Environmental (Mining and Processing of Coal, Ores and Industries Minerals) Regulations 2009, *supra* note 63, Regulation 16 (Due to desperation of government to encourage industrial growth and development, most industries are poorly regulated. Cans, tins, cellophane, paper bags, cartons, and packs litter drains and sidewalks. The issue of manufacturers' responsibility for ultimate disposal of their products is yet to be addressed.).

facility or premises is also mandated to reduce, reuse, and recycle waste to minimize pollution.⁷³

Sidewalks and drainage areas all around buildings should be kept clean at all times. Litter is not to be thrown into drains, public-places, private places, vacant plots, streets, lanes, walkways, beaches, or docks within five meters of the premises.⁷⁴ Similarly it should be ensured that there are no blockages of the streets, walkways, or drains by building or construction materials such as sand, gravel, chippings, earth, stones, bricks, cement blocks, iron rods, and others.⁷⁵

The regulation also prohibits the discharge or application of any poison, toxic, noxious, or obstructing material, radioactive waste or other pollutants, prohibiting any person from dumping or discharging such material into any natural environment.⁷⁶ Every local government (county councils) or persons operating a facility, trade, or industrial undertaking are mandated to comply with monitoring guidelines.⁷⁷

The regulation also specifically provides for health care waste (HCW)⁷⁸ control by mandating operators of any facility that treats HCW or generators of such waste to segregate the waste and use designated vehicles for its disposal.⁷⁹ All HCW should also be securely packaged in

73. *Id.* Regulations 24 (The concept of waste segregation for the purpose proper disposal and recycling of waste has not been given sufficient attention and consumers are poorly sensitized as to its necessity. Consequently, poor waste disposal systems continue to thrive in premises and facilities.).

74. Matthew Egbobor Eja et al., *Environmental and Public Health-Related Assessment of Solid Waste Management in Uyo, Akwa Ibom State, Nigeria* 2 WORLD J. OF APPLIED SCI & TECH., no. 1 at 110 (2010), available at http://wojast.com/fullpaper_vol2_1/110-123.pdf (Waste Management in Nigeria is largely dumped in open pit or erosion gullies and is viable breeding ground for insects and rodents. *Id.* at 111.).

75. Government, corporations, and individuals are brazenly in breach of this provision. Individuals are also indicted. Due to the poor implementation of planning regulation, streets, walkways, and drains are often utilized as convenient places for miscellaneous purposes irrespective of restrictions imposed. Government officials, politicians, their cronies, and wealthy individuals often consider themselves privileged violators who cannot be regulated.

76. National Environmental (Mining and Processing of Coal, Ores and Industries Minerals) Regulations 2009, *supra* note 63, Regulation 39 (Most regulatory agencies are too poorly equipped to detect and deal with hazardous waste, and enforcement of this regulation could pose substantial challenge.).

77. *Id.* Regulations 39 § 3 (Lack of proper monitoring or oversight implementation has been the bane of environmental regulation.).

78. *Id.* Regulation 106 (which defined Health Care Waste (HCW) as waste generated during the diagnosis, treatment, or immunization of human beings or animals, or in research or activities pertaining thereto or in the testing or production of biological experiments and waste generated in medical and health institutions or wastes generated during diagnosing and medical treatment and prevention of diseases in humans and animals.).

79. *Id.* Regulations 56 – 57 (Waste disposal is mostly contracted to private individuals and firms who are more concerned with improving their profit margin than environmental safety. Health care waste (HCW) is disposed of alongside other wastes, and is transported in the same vehicle as

color-coded bags or containers designated in schedule 18 of the regulations.⁸⁰

Noncompliance with the provisions of this regulation constitutes an offense which is penalized. The regulation provides for a minimum punishment of N20,000 fine or imprisonment for six months to a maximum of N500,000 fine, five years imprisonment, or both, depending on the regulation violated.⁸¹ The stiffest penalty is reserved for generators of hazardous waste⁸² who fail to comply with safety standards.

6. National Environmental (Standards For Telecommunications And Broadcast Facilities) Regulations, 2011⁸³

The main objectives of these regulations are to protect the environment and human health,⁸⁴ ensure safety and general welfare, and eliminate or minimize public and private losses due to activities of the telecommunications⁸⁵ and broadcast industries.⁸⁶ Radiation levels from telecommunication and broadcasting base stations are to be monitored to ensure that the base stations do not transmit electromagnetic waves with potential adverse effects on human health and the environment.⁸⁷ Radiation levels for occupational staff on site and for the general public⁸⁸

laborers who are often co-opted from the street to handle this dangerous waste. These laborers are not given safety equipment nor are they educated on handling of HCW. It is not unusual for HCW to fly off vehicles onto the roadway during transportation. Due to the proliferation of chemists, patent medicine stores, and maternity homes, HCW often ends up in gutters, erosion sites, and house-hold bins in crowded apartments where some health care providers practice from their homes.)

80. *Id.* Regulation 59 (The National color-code for health care waste specified in schedule xviii indicates that: (1) infectious waste should be disposed in yellow containers which must be strong, leak-proof plastic bags with biohazard symbols; (2) pathological waste is to be disposed in yellow containers with strong, leak-proof plastic bags with biohazard symbols; (3) sharps should be disposed in yellow containers; (4) chemical and pharmaceutical waste is to be disposed in brown containers or plastic bags; and (5) non-infectious or non-hazardous or non-clinical waste is to be disposed in black containers or plastic bags.)

81. *Id.* Regulation 94 -114.

82. *Id.* Hazardous Waste is defined as "any waste or combination of waste 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;" *Id.* Regulation 103 stipulates a penalty of N5 million or 5 years imprisonment or both for failure to comply with hazardous waste safety standards.

83. National Environmental (Standards For Telecommunications And Broadcast Facilities) Regulations, 2011, Statutory instrument No 11 (2011).

84. *See id.* (The principal thrust of these regulations is, among others, to ensure consistent application of environmental laws, regulations, and standards in all sectors of the telecommunication and broadcast industry in Nigeria.)

85. *Id.* Regulation 3.

86. *Id.* Regulation 5 (3).

87. *Id.* Regulation 8 (1).

88. *See e.g.* S.O. Inyang et al., *Radiation Exposure Levels Within Timber Industries in Calabar, Nigeria*, 34 J. OF MED. PHYSICS 97 (2009) (Exposure to radiation can have disastrous health consequences. Evidence of radiation damages including radiation-induced malignances have been observed from epidemiological studies of populations exposed to radiation.)

are mandated to conform with all extant standards, regulations, and the permissible limits⁸⁹ approved for telecommunications and broadcasting facilities by the World Health Organization (WHO) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP), and with any subsequent amendments to these designated limits.⁹⁰

The regulation further provides that emission levels from general exhausts should conform to the Agency's guidelines on permissible limits for noise and air quality standards in Nigeria.⁹¹ Waste oil, sludge, and oil filters from power-generating sets should be handled and disposed of in accordance with extant laws and regulations.⁹² Effluents and any other liquid wastes or discharges from the operations and service maintenance of power-generating sets such as oily waste water should be handled and disposed of in conformity with extant guidelines and regulations issued by the Agency.⁹³

7. National Environmental (Base Metals, Iron and Steel Manufacturing/Recycling Industries Sector) Regulations 2011⁹⁴

This regulation is to prevent or minimize pollution from all operations and ancillary activities of the manufacturing and recycling sectors in the Nigerian environment.⁹⁵ New facilities, corporations, and organizations are expected to apply up-to-date, efficient "cleaner production" technologies to minimize pollution to the greatest degree practicable.⁹⁶ These industrial players are also to plan for and set up machinery for combating pollution hazards and must adequately maintain equipment to

89. The Nigerian Nuclear Regulatory Authority (NNRA) is the agency empowered to ensure that radiation protection and safety regulations are adhered to. NESREA's exercise of its enforcement powers is therefore complimentary to the enforcement powers of NNRA.

90. *See Nigeria: Mining Activities Threaten MDGs in Plateau*, VANGUARD Aug. 25, 2010, available at <http://allafrica.com/stories/201008260008.html> (Due to technological limitations and non-availability of sufficient equipment and manpower to tackle highly technical issues of radioactive monitoring, regulation poses a huge challenge in Nigeria. Even when radiation contamination is suspected, it is treated with the same levity with which authorities handle other environmental issues in Nigeria. According to Godongs, the Plateau State Coordinator of the Millennium Development Goals (MDG), humans, animals, and crops in Plateau State are unsafe due to the effect of radiation contamination. In spite of the nature of the risk of exposure, the government has yet to take steps to assess the situation with a view to containing the damage.)

91. National Environmental (Standards For Telecommunications And Broadcast Facilities) Regulations, 2011, *supra* note 93, Regulation 9 § 3.

92. *Id.*

93. *Id.* (Any contravention of this regulation is penalized with a penalty of a fine not exceeding five million naira or term of imprisonment or both or an additional fine of fifty thousand naira for every day the offence subsists, *see* Regulation 11 § 2).

94. National Environmental (Base Metals, Iron and Steel Manufacturing/ Recycling Industries Sector) Regulations 2011, Statutory instrument No 14 (2011).

95. *Id.* Regulation 1.

96. *Id.* Regulation 3 § 2.

be prepared in the event of an emergency.⁹⁷ Pursuant to the regulation, anti-pollution equipment for detoxification of effluent, emissions and chemical discharges emanating from facilities must meet the prescribed effluent and emission limits.⁹⁸ Every such installation must be based on the Best Practicable Environmental Option,⁹⁹ cleaner production and green technologies to reduce pollution to meet the minimum national standards as may be certified by the Agency.¹⁰⁰ The “polluter pays” principle is also mandated to apply to every facility that pollutes the environment in the course of their operations.¹⁰¹ Should their operation result in adverse impacts on the environment, whether socio-economic or health-related, facilities are responsible for the cost of damage assessment, damage control, clean up, remediation, reclamation, and restoration.¹⁰² Also, every facility, corporation, and organization is mandated to ensure the adoption of the “5Rs,” in the management of scraps generated in the course of production. The 5Rs are: Reduce, Repair, Reuse, Recycle and Recover. Pollution prevention programs are to be directed towards efficient use of process chemicals and the reduction and recycling of water and energy.¹⁰³ Where a facility or corporation envisages challenges in the best practice programs specified

97. Over the years, Nigeria has acquired notoriety for poor maintenance of equipment and infrastructure. It would require stringent monitoring to enforce compliance with the provision.

98. Compliance monitoring is one of the most abused regulatory mechanisms in Nigeria: Effluent and discharges from facilities are often channeled to drains, water sources, and gullies. Due to the handicap of infrastructural and manpower deficiencies, assailing most regulatory agencies in Nigeria, including NESREA, assessment of effluent limitation compliance is a rare occurrence.

99. This refers to the most effective non-conventional standard, based on cost, environmental, and engineering factors, aimed at achieving a high general level of protection of the environment.

100. Enforcement of environmental standards is sometimes hampered by extraneous considerations ranging from the status of the polluter to political implications of the check sought to be imposed and power plays between agencies whose roles, instead of being complimentary, are envisaged by their enabling acts, degenerate to unhealthy rivalry. See *NESREA, NCC Clash: Group Warns of Further Conflicts*, DAILY TRUST MAY 10, 2012, available at <http://allafrica.com/stories/201205100677.html> (This unhealthy rivalry was evident in the verbal war between NESREA officials and National Communication Commission (NCC) over the sealing off of the MTN base station located in Mborora District in the Federal Capital Territory Abuja for violating the requirement that such facilities be situated at least 10 meters distance from houses stipulated by the World Health Organization (WHO). In spite of the environmental implications on human health and safety, which to have been the overriding consideration, the National Communication Commission (NCC) unsealed the mast on the basis that it constituted an infringement on its jurisdictional competence.).

101. On the occurrence of harmful environmental damage, the principle is hardly enforced due to the fact that regulatory agencies are mostly poorly funded and equipped, and are incapable of compelling the polluter to pay for pollution. Similarly, Nigeria's desperation for development makes it acquiesce to pollution on the basis that there is a price to pay for growth, as developers could be antagonized by being held accountable for their pollution.

102. See e.g. *Umudje v. Shell BP*, [1975] 9-11 SC 155 (Nigeria), available at <http://www.lawpavilionpersonal.com/newfulllawreport.jsp?suite=olabisi@9thfloor&pk=SC.254/1973&apk=11495> (The malicious acts of third parties have always provided a viable defense for operators to evade their obligations to clean up and restore the environment.).

103. National Environmental (Base Metals, Iron and Steel Manufacturing/ Recycling Industries Sector) Regulations 2011, *supra* note 104, Regulation 11.

in the regulation, it is to assign the responsibility for pollution control to a person or corporate entity.¹⁰⁴

B. ENVIRONMENTAL IMPACT ASSESSMENT ACT¹⁰⁵

This act requires any person, authority, corporate body, or unincorporated body, including the government at the federal, state, or local level, that intends to undertake or authorize any activity that may likely or to a significant extent affect the environment, to first assess the undertaking's environmental implications.¹⁰⁶ The components of such assessment are to include direct, indirect, cumulative, and short-term effects.¹⁰⁷ Infringement of the provisions of this act is punishable by a fine of N50 for individual offenders and N100,000 for corporate offenders provided that the fine should not exceed N1,000,000.¹⁰⁸

C. NIGERIAN MINERALS AND MINING ACT 2007¹⁰⁹

This act establishes that the property rights in and control of all mineral resources in, under, or upon any land in Nigeria, its contiguous continental shelf, and all rivers, streams, and watercourses throughout Nigeria, including any area covered by its territorial waters and the Exclusive Economic Zone, shall be vested in the Government of the Federation. These mineral resources are expected to be administered for, and on the behalf of, the people of Nigeria.¹¹⁰ Pollution of water bodies in the course of mining or exploration is prohibited by the Act.¹¹¹ It also regulates the quantity of tailing to be deposited in any natural water

104. The nonchalant attitude displayed by regulatory agencies has led to shoddy compliance, including incidents of operators utilizing the destitute residents in the host community to scoop oil into buckets with spades under the guise of clean up operations in the full glare of regulatory agencies' officials. Tragically, this is a common occurrence. See O.A. Odiase-Alegimenlen, *Environmental and Other Issues Relating to Oil Pollution in Nigeria*, 2 OIL GAS & ENERGY 2 (2004), available at <http://www.ogel.org/article.asp?key=1256>.

105. Environmental Impact Assessment Act (1992) (Nigeria), available at <http://www.placng.org/lawsfnigeria/files/E12.pdf>.

106. *Id.* §§ 1, 2.

107. *Id.* § 4(d).

108. *Id.* § 60 (In spite of the rhetoric of the necessity of environmental and developmental activities, the reality is that short-term benefits often outweigh long-term environmental impact considerations. Environmental impact assessment compliance certificates are issued as a matter of course to fulfill the necessary paperwork required by the Federal Ministry of Environment (FME), not because any evaluation has been carried out. Effectively, the regulation is honored on paper and not in practice. Breaches are treated with levity and this has consequently led to gross disregard for regulations.).

109. Nigerian Minerals and Mining Act (2007) (Nigeria), available at <http://www.eisourcebook.org/cms/Nigeria%20Minerals%20&%20Mining%20Act%202007.pdf> (This act repealed the Minerals and Mining Act No 34 of 1999. This act is for the sole purpose of regulating all aspects of exploration and exploitation of solid minerals in Nigeria.).

110. *Id.* § 1.

111. *Id.* § 123.

source by the holder of a mining lease.¹¹² The Act further prohibits illegal mining, false and misleading statements as well as false or misleading non-declaration, and smuggling of mined material.¹¹³

The increasing incidents of illegal mining in Nigeria and the environmental mismanagement associated with it is a reflection of the inadequacy of the Act in the regulation and control of mining in Nigeria.¹¹⁴ The adverse health implications of the negligent handling of hazardous waste generated during mining has resulted in death and increased incidents of lead pollution-related ailments. Unregulated artisanal mining thrives in Jos and Zamfara States, leading to environmental degradation and health impacts. In spite of the over 400 deaths related to lead poisoning of surface and underground water and the fleeing of residents from several villages, there is no record of prosecution of violators of the above regulations.

D. ASSOCIATED GAS RE-INJECTION ACT¹¹⁵

This act prohibits the emission of gas produced in association with oil during oil exploration without lawful authorization. After the enactment of this act in September of 1979, every oil and gas corporation operating in Nigeria was mandated to submit not later than 1 October 1980 a program for the re-injection or viable utilization of the gas associated with oil exploration.¹¹⁶ Additionally, after 1 January 1984, no company engaged in the production of oil or gas was permitted to flare associated gases without the permission in writing from the Minister charged with responsibilities for matters relating to petroleum.¹¹⁷ Failure to enforce this Act and the continuing flaring of gas in the Niger Delta Region of Nigeria has resulted in air pollution and acid rains. The desperation to

112. *Id.* § 126.

113. *Id.* §§ 123 – 126.

114. Illegal mining activities in Nigeria have wreaked havoc on the economy with severe environmental and health implications, as evident in Zamfara where the improper utilization of mercury in an extractive mining process led to the poisoning and death of several people. See John Y. Dung- Gwom, *Post Mining Operations and the Environment* (Nov. 2, 2007) (paper presented at the 38th Annual Conference of the Nigerian Institute of Town Planning, Asaba Delta State, October 31st – Nov. 4, 2007) (on file with the University of Jos Nigeria Institutional Repository), available at <http://dspace.unijos.edu.ng/handle/10485/1275>.

115. Associated Gas Re-injection Act (1979) (Nigeria), available at <http://www.placng.org/lawsofnigeria/node/26>.

116. *Id.* § 2 (In spite of this regulation, World Bank in Strategic Gas Plan for Nigeria, Joint UNDP/World Bank Energy Sector Management Assistance Programme (ESMAP) February 2004 paragraph 2.5, estimates that 75% of the associated gas produced in Nigeria during oil exploration is flared by the multinational companies. In 2005, the Environmental Rights Action (ERA) attributed premature deaths, 4,960 incidents of respiratory ailments in children, 120,000 asthma attacks, and annual cases of cancer to gas flaring that continues to occur in Bayelsa State. Various degrees of additional physical and mental disabilities have also been recorded.)

117. *Id.* § 3.

end the pollution of their environment has led to the evolution of ethnic militia groups masquerading as environmentalists. The kidnapping, robbery, and blowing up of oil wells, tankers, and pipelines has contributed to the socio-economic challenges confronting Nigeria and further environmental hazards.¹¹⁸ Enforcement of this act would alleviate these environmental and socio-economic issues.

Nigeria produces approximately 3.5 billion cubic feet of associated gas annually, and it is estimated that 2.5 billion cubic feet, which constitutes roughly seventy percent, is wasted by being flared.¹¹⁹ This evidently portrays the laxity with which regulatory laws are implemented.

E. NATIONAL OIL SPILL DETECTION AND RESPONSE AGENCY (ESTABLISHMENT) ACT, 2006 (NOSDRA ACT)¹²⁰

This act was enacted to establish an agency to prepare for, detect, and respond to all oil spills in Nigeria.¹²¹ The Act's primary objective is to ensure a viable national organization that ensures a safe, timely, effective, and appropriate response to major and disastrous oil pollution. The Act's goals are to monitor oil production and to mobilize resources to save lives, protect the threatened environment, and clean up impacted sites.¹²² Failure by a polluter to report a spill later than 24 hours after the spill is punishable by a daily fine of N500,000 for each day of failure to report the occurrence.¹²³

Most spills occurring in oil exploration and transportation processes are attributed to acts of sabotage by militants in oil producing communities. With government exploiting avenues of placating these militants with monetary incentives, appointment into public offices, and provision of jobs and training opportunities, this regulation has been inoperable.

118. See Violet Aigbokhaevbo, *Environmental Terrorism in the Niger Delta: Implications for Nigeria's Developing Economy*, 2 INT'L ENERGY L. REV. 60, 40 (2009).

119. DAMILOLA. S. OLAWUYI, BEAUTIFYING AFRICA FOR THE CLEAN DEVELOPMENT MECHANISM: LEGAL AND INSTITUTIONAL ISSUES CONSIDERED, in CLIMATE LAW AND DEVELOPING COUNTRIES: LEGAL AND POLICY CHALLENGES FOR THE WORLD ECONOMY ch. 11, 67 n. 39 (Benjamin Richard et al. eds., Edward Edgar Publishing, 2009).

120. National Oil Spill Detection and Response Agency (Establishment) Act (2006) (Nigeria), available at <http://www.placng.org/lawsofnigeria/node/343>.

121. *Id.* § 1.

122. *Id.* § 5.

123. *Id.* § 6 (2). (This provision is one of the most abused of all the environmental regulations in Nigeria. When spills occur, in most cases it is the hue and cry of the impacted community that draws attention to it. Even when this is done, it is riots and the threat to use violence by communal members that propels haphazard response from the agency and polluters.).

III. THE DOMESTICATION OF GLOBAL CONVENTIONS AND ENVIRONMENTAL PRINCIPLES

Most of the above regulations reflect the domestication of global conventions, declarations, and environmental regulations, particularly the United Nations Conference on the Human Environment (UNCHE).¹²⁴ The UNCHE significantly departed from the prioritization of economic gains over environmental health and encouraged more sensitivity to the global danger that could arise from unsustainable utilization of environmental resources. To ensure environmental health and safety, principles including the principle of sustainable development, the precautionary principle, the polluter pays principle, environmental procedural rights, common but differential responsibility, intergenerational and intra generational equity, common heritage, and requirements to conduct environmental impact assessments have emerged through consensus of ideas and behavioral trends of member states. The precautionary principle, the polluter pays principle, and the principle of sustainable development are of particular relevance to environmental regulation in Nigeria.

A. PRECAUTIONARY PRINCIPLE¹²⁵

This principle is also referred to as “anticipatory caution.” It is premised on the moral and political notion that where an action or policy would occasion severe harm or irreversible damage to human beings and the ecosystem, the state has a duty to intervene to ensure that the public is protected from such adverse exposure before it occurs. The precautionary principle is central to sustainable development, and, in spite of the various definitions and interpretations, has been distilled into the following approaches:

1. Where there are threats of serious or irreversible damage, uncertainty, should not be a reason for postponing action to prevent that damage.
2. Where there are threats of serious or irreversible damage, precautionary measures should be taken even if cause-and-effect relationships are not clearly established.

124. United Nations Conference on the Human Environment, Stockholm, Swed., June 5-16, 1972, *Declaration of the United Nations Conference on the Human Environment*, U.N. DOC. A/CONF.48/14/Rev.1 (June 16, 1972). (Held in Stockholm in June 5-16, 1972, this conference is popularly referred to as the “Stockholm Conference.”)

125. This principle is premised on the notion that it is better safe than sorry. It is often applied in the context of environmental and health implications of human actions which are not immediately discernible.

3. Whenever an action or substance could cause irreparable/irreversible harm, even if that harm is not certain to occur, the action should be prevented and/ or eliminated.¹²⁶

Although the precautionary principle has provided the rationale for a number of environmental health and safety policies, it is limited in that it does not have a precise definition and the scope of its application is uncertain. Furthermore, the precautionary principle does not specify what should trigger the action, what action should be taken,¹²⁷ or at what point the burden of proof shifts from developmental necessity towards ensuring health and safety or environmental protection.

On the other hand, however, a rigid adherence to the precautionary principle has been adjudged perilous on the basis that it has the ability to stifle innovation, which is the catalyst of global economic growth and development. It could also divert the attention of regulators from plausible hazardous risks to speculative and ill-founded ones.¹²⁸ Due to the high research investment required coupled with the dire need for economic growth, many developing countries are incapable of adequately implementing the precautionary principle.¹²⁹

B. THE POLLUTER PAYS PRINCIPLE

This principle advocates that the polluter should bear the expense of carrying out certain remedial measures decided by public authorities to be necessary to ensure that the environment is in an acceptable condition. These measures and costs include accidental pollution control and clean up costs. The polluter pays principle is also referred to as extended producer responsibility. The implementation of the polluter pays principle involves the attachment of fee to the polluting activity which

126. Leeka I. Kheifets et al., *The Precautionary Principle and EMF: Implication and Evaluation*, 4 J. OF RISK RESEARCH 133, 133 (2001).

127. *Id.*

128. John D. Graham, *The Perils of the Precautionary Principle: Lessons from the American and European Experience*, Lecture #818 for the Heritage Foundation (Jan. 15, 2004), available at <http://www.heritage.org/research/lecture/the-perils-of-the-precautionary-principle-lessons-from-the-american-and-european-experience>.

129. The high incidence of diseases that are water supply and sanitation related is a reflection of global economic inequalities and marginalization. The people that suffer the most from these diseases are those that have so few economic resources and for whom the simplest and the least expensive intervention methods to reduce risk of exposure to many pathogens are beyond their means. See Fred Reiff, *The Precautionary Principle Under Fire: Detractors Continue to Challenge Chlorination as Safe Water Solution for Developing Nations*, WATER QUALITY AND HEALTH www.waterandhealth.org/drinkingwater/precaution.html (last visited Apr. 12, 2013) (citing Carlyle Macedo, in his address to the 1992 International Conference on the Safety of Water Disinfection, Balancing the Chemical and Microbiological Risks, International Life Sciences Institute, 1992).

could be in the form of an emission fee or an excise tax on the sale of products associated with the polluting activity.¹³⁰

The principle has been criticized on the basis that, despite the polluter having to pay for its environmental harms, the human activity nonetheless involves the detrimental alteration of the natural environment. Another potential issue, any utilization of air, water, and private property could be adjudged “harming” or “potentially harming” to the environment and susceptible to regulation and taxation under the guise of the polluter pays principle.¹³¹ The polluter pays principle has been further criticized as a skewed principle whose primary focus is to force corporations to bear the cost of cleaning up designated hazardous waste disposal sites instead of the compensation of victims of reckless waste disposal activities.¹³²

C. PRINCIPLE OF SUSTAINABLE DEVELOPMENT

This principle provides for the sustainable utilization of environmental resources, through the maintenance of a stable resources base by avoiding over exploitation of environmental resources. The principle was advanced by the 1992 United Nations Conference on Environment and Development (UNCED) where it was declared, “Human beings are at the centre of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature.”¹³³ The African

130. See Nuclear Safety and Radiation Protection Act (1995 No. 19) Nigerian Safety and Security of Radioactive Sources Regulations (2006) (Nigeria), available at <http://www.nnra.gov.ng/pdf/regulations/Nig%20Saf.%20and%20Security.pdf> (In Nigeria, the Polluter Pays Principle is domesticated in the Radioactive Waste Management Regulation 2006 made pursuant to Nuclear Safety and Radiation Protection Act, which provides that any person generating or managing radioactive waste must apply for and obtain a permit from the Nigerian nuclear regulatory authority); see also NESREA, *supra* note 34, §21 (Section 21 of the National Environmental Standards and Regulation, Enforcement Agency (NESREA) Act 2007 provides for the application of the polluter pay principle in the evacuation of hazardous substances); see also Harmful Waste Disposal Act and the Environmental Guidelines and Standard for the Petroleum industry in Nigeria (EGASPIN) (2002) (Section 12 of the Act provides that the polluter should assume the responsibility for environmental remediation occasioned by their activities.)

131. Roy E. Cordata, *The Polluter Pays Principle: A Proper Guide for Environmental Policy*, 6 INST. FOR RESEARCH ON THE ECON. OF TAX'N STUD. IN SOC. COST REG. & THE ENV'T, 2001, at 2, available at <http://iret.org/pub/SCRE-6.PDF>.

132. *Id.*

133. United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3-14, 1992, *Rio Declaration on Environment and Development*, U.N. DOC. A/CONF.151/26/Rev.1 (Vol. 1), Annex 1, Principle 1 (Aug. 12, 1992); see also United Nations Conference on Sustainable Development, Rio de Janeiro, Braz., June 20-22, 2012, *Rio Declaration on Environment and Development*, U.N. DOC. A/CONF.216/16 (June 20-22, 2012) (The United Nations Conference on Sustainable Development (UNCSD) R10 + 20 or Earth Summit 2012, June 20 – 22, 2012 was convened to secure renewed political commitment to sustainable development and to address new and emerging challenges. The two specific theme of the summit was the sustenance of a green

Charter on Human and Peoples' Rights 1981 similarly provides, "All peoples shall have the right to a general satisfactory environment favorable to their development."¹³⁴

The principle of sustainable development is shrouded in controversy due to the fact that the fundamental coupling of the human system and the ecosystem often gives rise to constant tension between the needs of the people and the preservation of the ecosystem. This has led to divergent opinions and a schism between developed and developing countries. In Nigeria, the desperation for poverty alleviating projects puts the government in a dilemma of balancing policies of rapid industrialization with the preservation of environmental resources. In countries with abject poverty, such as Nigeria, the pull of economic growth usually far outweighs any altruistic quest for sustainable environmental practices.¹³⁵

IV. CONTINUING ENVIRONMENTAL ABUSES AND A VISION FOR THE FUTURE

In spite of the above regulations, their penal provisions, and the intervention of international environmental laws and principles, environmentally abusive practices that adversely impact reproductive health continue to thrive with impunity in Nigeria. To stem this tide engulfing the country, the author recommends as follows:

- (a) Environmental offenses should be more harshly penalized by increasing present fines payable by offenders which are neither stringent enough to deter would-be offenders nor significant enough to impact the operation cost of environmental violators.
- (b) Development of host communities by the provision of social amenities should be facilitated. This would minimize desperate community members resorting to committing environmental crimes as a medium for blackmailing

economy in the context of poverty eradication and establishment of institutional framework for sustainable development.).

134. African Charter on Human and Peoples' Rights ("Banjul Charter"), Organization of African Unity art. 24, June 28, 1981, 21 I.L.M. 58 (1982).

135. See Olawale Ajai, *Achieving Environmental Protection Through the Vehicle of Human Rights: Some Conceptual, Legal and Third World Problems*, 2 U. OF BENIN L.J. 41 (1995) (In Nigeria, due to environmental degradation arising from crude oil exploitation in the Niger Delta, Nigerian waters, air, and soil are polluted from well blowouts, refinery effluents on land and water, leaks from pipelines and storage tanks, spillage from loading operations at terminals, and discharges of oil from motorized boats. Coastal communities have had to contend with the problems of polluted rivers, streams, creeks, and ground water.).

government to be receptive to their demands for better conditions of living.

- (c) Poverty alleviation¹³⁶ programs to improve the lives of citizens with a view to encouraging them to be stakeholders in environmental protection should be expanded.¹³⁷
- (d) Public enlightenment of the citizenry, especially men and women of reproductive age and children, on the delicate balance between environmental health and reproductive health with a view to encouraging them to adopt healthier environmental habits should be implemented. This is increasingly important, as socio-cultural factors have intertwined with environmental factors to render the health status of women in Nigeria comparatively low in accordance with global standards.¹³⁸
- (e) Addressing slum and squatter development, which is a byproduct of rapid urbanization and rural migration, seen by many as a panacea for rural poverty and economic retardation, to minimize such development's deterioration of the physical environment. Overcrowding and unsustainable utilization of available urban resources forces people to live in deplorable conditions, which adversely impacts the reproductive health of these populations. To address the situation, aggressive rural development projects should be embarked on in rural areas to arrest the trend of urban migration leading to expanding slums and squatter communities.
- (f) Pollution arising from gas flaring, industrial waste, and fossil fuel burning generator sets should be minimized by the provision of adequate electricity supply through the

136. Flavia Bustreo et al., *Women's Health Beyond Reproduction: Meeting the Challenges* 90 BULL. OF THE WORLD HEALTH ORG., no. 7 (2012), available at <http://www.who.int/bulletin/volumes/90/7/12-103549/en/>. (“[C]ervical cancer incidence and mortality have become increasingly concentrated in low- and medium-income countries and hence in women who are poor. The same is true of diabetes, cardiovascular diseases, mental disorders and other health conditions.”)

137. See U. Okoye & E. Onyukwu *Sustaining Poverty Reduction Efforts in Through Inter-Agency Collaboration in Nigeria*, in STATE SOCIETY RELATIONS IN NIGERIA, DEMOCRATIC CONSOLIDATION, CONFLICTS AND REFORMS (Kenneth Omeje ed., Adoni and Abbey 2007) (Nigeria's National Poverty Eradication Program has often been handicapped by project substitution, misrepresentation of project finances, diversion of resources, and conversion of public funds to private uses.).

138. OLAIDE OBADAMOSI, REPRODUCTIVE HEALTH AND RIGHTS: AFRICAN PERSPECTIVES AND LEGAL ISSUES IN NIGERIA 139 (Network for Justice and Democracy 2007).

liberalization of the sector to encourage more participants and greater efficiency.¹³⁹ Renewable energy sources should be developed to encourage less dependence on fossil fuel and promote the global “clean” energy initiatives. The diversification of energy sources would also encourage greater competition in the energy sector.

- (g) Nigeria should improve its eligibility to access global funds set aside to assist countries to engage in environmentally healthy habits. For example, Nigeria is haunted by its inability to determine its carbon footprint. This limitation has truncated the nation’s opportunities to benefit from the United Nations Convention on Climate Change (UNFCCC) Green Fund.
- (h) To reduce air pollution, steps must be taken to embrace recycling as an alternative to incineration.¹⁴⁰ Enforcement agencies should be educated to adopt environmentally sensitive modes of enforcing regulatory laws. This education would result in reducing the burning of confiscated materials, ranging from e-waste and seized crude oil from the vandalism of pipelines to food contaminated by radioactive waste that seeps into under-ground water.¹⁴¹

Polluted air adversely impacts reproductive health. There is growing evidence that environmental chemicals can disrupt endocrine systems. Most evidence originates from studies on reproductive organs. Environmentally occurring doses of polychlorinated biphenyls, dioxins and furnace emissions affect humans and have the potential for thyroid disruption.¹⁴² The impact of environmental exposure on fetal

139. The privatization of the Power Holding Company of Nigeria (PHCN) in July 2012, which is aimed at improving efficiency by increasing collection and reducing losses and costs, as well as improving access to electricity and increasing the commercial viability of the power sector. This privatization is expected to significantly improve electricity supply in the country, and to reduce the large-scale dependence on alternative sources of energy like generators and coal which are environmental pollutants.

140. The indiscriminate disposal of e-waste in Nigeria has compromised the air, water, and soil, and has introduced chemical toxins into the food chain with consequential health implications.

141. See Kehinde Akinyemi, *Nigeria: NCS Raises Alarm on Smuggling of Poultry Products*, DAILY TRUST, Apr. 14, 2012, available at <http://allafrica.com/stories/201206150595.html> (The Area Controller of the Ogun state Command of Nigerian Custom Service (NCS), in line with their usual practice, in Abeokuta burnt 985 cartons of products of various description, including frozen chicken and turkey which were smuggled into Nigeria.).

142. See Malene Boas et al., *Environmental Chemicals and Thyroid Function*, 154 EUR. J. OF ENDOCRINOLOGY 599 (2006).

development could be far reaching, as data suggests growth and developmental delays *in utero* influence the risk of heart disease and diabetes in adulthood.¹⁴³

- (i) The porousness of Nigeria's borders should be remedied for greater control of the importation of regulated materials.
- (j) Reproductive health management in Nigeria should be prioritized and specifically provided for in environmental legislation.
- (k) Due to the reproductive health implications of the unsustainable utilization of environmental resources, the rights to a clean environment free from, or subject to, air, water, and land pollution should be accorded the status of a fundamental human right in the Nigerian constitution, instead of a mere objective and directive principle of state policy.
- (l) Justice should be made more accessible for victims of environmental wrongs, as acquiescing to the enrichment of individuals at the expense of the environment without penalty could damage both the environment and psyche of the citizenry. According to Pat Utomi,

The reign of impunity and retreat of the rule of law stokes the fire of mindless pursuit of riches, mainly through corruption and direct stealing. As justice is denied all but the rich and powerful, the desperation to have it and power has filled the corridors of powers with many hardened criminals.¹⁴⁴

- (m) The Nigerian government should be proactive in dealing with common, daily environmental infractions, such as litter on street corners, drains, and gullies, by clearing these areas and transporting refuse to a regulated site and mandating that citizens engage in healthier refuse and other waste disposal

143. Beate Ritz & Michelle Wilhelm, *Southern California Environmental Report Card – Fall 2008: Air Pollution Impacts on Infants and Children*, UCLA INST. OF THE ENV'T & SUSTAINABILITY, <http://www.environment.ucla.edu/media/files/air-pollution-impacts.pdf> (last visited Mar. 22, 2013).

144. Pat Utomi, *On Why Nigeria Remains Backward*, THIS DAY LIVE, Apr. 8, 2012, <http://www.thisdaylive.com/articles/on-why-nigeria-remains-backward/113253/>.

habits.¹⁴⁵ The present monthly environmental exercise embarked upon by states, which is subject to the whims and caprices of Governors who often cancel them to accommodate socio-political activities, is not far-reaching enough to address this widespread problem.

- (n) To mitigate the adverse effects on reproductive health, medical waste should be designated and segregated and disposed of with the requisite care and caution to ensure public safety, instead of the recklessness with which it is presently handled.¹⁴⁶
- (o) The National Reproductive Health Policy and Strategy for Qualitative and Sexual Health for All Nigerians¹⁴⁷ should be prioritized in the implementation of set goals by the Nigerian government.
- (p) The success of the National Environmental Standard Regulations Enforcement Agency and National Oil Spills Detection and Response Agency is pivotal in Nigeria's quest for a healthier environment. The Agencies should be overhauled with a view to making them more responsive to Nigerian environmental harms and associated reproductive health needs. Diseases that adversely affect reproductive health, like yaws, malaria, measles, leprosy, sleeping sickness, and worm infections are dependent on environmental triggers. To stem the incursion of these ailments and to address environmental abusive practices that provide these contagions the fertile ground to thrive in the health of Nigerians, it is necessary for the Nigerian government to implement more aggressive environmental health awareness programs.

145. Government should provide sufficient disposal bins and waste collection vans relative to the waste generated in a particular territory to discourage overflowing bins which often litter the street and leak into underground water supplies.

146. B. E. Bassey et. al., *Characterization and Management of Solid Medical Wastes in the Federal Capital Territory, Abuja Nigeria*, 6 AFR. HEALTH SCI. 59 (2006) ("Medical establishment such as hospitals and research institutes generate sizeable amount of hazardous waste. Health care workers, patients are at risk of acquiring infection from sharps and contamination of environment with multiple drug resistant microorganisms is wastes are not properly managed").

147. In May 2001, the Nigerian Federal Ministry of Health Issued the policy with a view to strengthening reproductive health including the reduction of prenatal, neonatal, and maternal morbidity and mortality.

V. CONCLUSION

Due to the intertwining of reproductive health and environmental health, abusive environmental practices impact the reproductive health system in Nigeria. This reality requires that environmentally protective legislation independently address reproductive health issues with a view to addressing specific problems assailing the efficient provision of health care in the country. Unless this is done, formulation of reproductive health protective policies, without addressing environmental risk factors that impact reproductive health, constitutes an exercise in futility.