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ANALYSIS OF THE LEGAL INSTRUMENTS ON WAT POLLUTION IN NIGERIA

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Abstract

The challenges of water pollution have advanced into a severe menace in Nigeria, it has caused deaths and irreparable loss of lives and living. The accumulation of synthetic chemicals and waste in groundwater and surface water has posed a snowballing peril to future development. The prevalence of water pollution is alarming, this problem has given rise to this paper which takes a purview at the legal apparatus in addressing water pollution and ascertaining the right to clean water and the environment. This paper aims at discussing ways and methods to curtail water pollution in Nigeria and how environmental legislation can effectively tackle this challenge that threatens the quality of water. The methodology adopted is a doctrinal and analytical approach. The paper made use of primary and secondary sources which include local and foreign legislation, case laws, textbooks, journal articles, newspapers, and internet materials. The findings point significantly to the apparent weakness of the enforcement mechanisms of environmental legislation in Nigeria. The conclusion drawn from the foregoing is that if the provisions of the relevant laws are perfected and diligently implemented, there would be fewer water pollution issues to address. In this regard, this paper recommended, amongst others, the review of existing laws on water pollution to make them more effective by way of enforcement in tackling the progressing water pollution challenges. The work also emphasizes strengthening the enforcement mechanisms to achieve the maximum result.

vords- *Water, Pollution, Environmental Laws, Menace, and Water Qua*

1.1 Introduction

According to Auden, "Thousands have lived without love, not one without water, yet while we all know water is crucial for life, we trash it anyway."[1] Auden stresses the value of water. A local proverb says "Water!" It has no enemy.'[2] Water is not a commercial product like any other, but rather a heritage which must be protected, defended, and treated as such.[3] Water is life's matter and matrix, mother and medium,[4] there is no life without water. It is an essential element for the existence of any form of life, it is also important for economic and social growth.[5] For man's life to be continual on earth, water plays an essential role. Vertebrate blood is composed of blood cells suspended in blood plasma which constitutes 55% of blood fluid. This is how vital water is to the human body system, constituting an essential part in the functioning of the body. Water has been in existence before creation and it was upon water that the human world was invariably placed according to the account in Genesis 1: 9.[6] Water from creation was clean and free from impurity. Access to clean water and sanitation are important components of human development. The United Nations Development Programme emphasizes the fact that water and sanitation are among the most powerful drives for human development.[7] Man in his expedition for innovation began to introduce contaminants into water bodies, rivers are now used as disposal channels for dangerous hazard wastes. Many manufacturing processes and services use water as an essential part of production.[8] Without clean water, the lives of people can be severely hampered. Contamination of surface water resources, particularly rivers, tanks, and of the quality of ground water is alarming. Surface water has become unfit for consumption, groundwater has been depleted due to over-extraction and leaching from fertilizer, mining activities, improper sewage disposal methods and others.

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[1] WH Auden, https://www.azquotes.com/author/652-W_H_Auden/tag/water accessed on 10th January 2022.

[2] O Ajai, 'Law Water and Sustainable Development: Framework of Nigerian Law,' (2018) 8 (1) *Environment and Development Journal*, 91.

[3] J Thornton and S Beckwith, *Environmental Law*. 2nd (ed), (London: Sweet and Maxwell, 2004) 205.

[4] A Szent-Gyorgyi, https://www.brainyquote.com/quotes/albert_szentgyorgyi_385453 accessed on the 10th January 2022.

[5] HO Nwankwoala, 'Ground Water Management Systems in Nigeria: Implications for Economic growth' (2010) 7(1), *International Journal of Environmental studies* 25.

[6] A Aluko, 'Water Purity for Environmental Sustainability: A religious Perspective' (2008) (2) *Nigeria Journal of Tropical Geography* 57.

[7] YA Sanusi, 'Water Sanitation and Human Development in the Urban Fringe Settlement in Nigeria. *(2010) 8(17) Theoretical and Empirical Research in Urban Management Journal*. 14-29.

[8] M Llamas, Ground Water and Human Development: E. Bocanegra; M. Hernandez and E. Usunoff (ed), *Ground Water and Human Development*, International Association of Hydrogeologist Selected papers (Balkema Publishers 2005) 25.

Consequently, the problems of water borne diseases have increased significantly in recent years.[9] Research has shown that drinking polluted water and poor waste disposal methods can affect the growth rate of children and eventually determine their intellectual and physical contribution to economic development.[10] In 2017, the Minister of Water Resources, Suleiman Adamu, stated during the "Global Hand Washing Day" in Abuja, that 59,000 children in Nigeria die yearly of water related diseases.[11] During World Water Day, globally, in 2021 it was established that more than 1.42 billion people – including 450 million children – are living in areas of high or extremely high water vulnerability, according to a new analysis released by UNICEF. This means that 1 in 5 children worldwide do not have enough water to meet their everyday needs.[12]

Today, efforts are been accelerated towards achieving SDG 6(àccess to clean water) in Nigeria, as portrayed in the World Water Day 2023 because access to clean water and sanitation is a basic human right.[13] This paper intends to proffer suggestions for water enhancement and good quality via legislations for a healthier society.

1.2 Water Pollution

Water pollution is the contamination of water bodies usually from human activities. Water bodies include lakes, rivers, oceans, aquifers and groundwater. This can occur when noxious substances and contaminants are introduced into water bodies making it unfit for consumption and other activities such as irrigation and industrial needs. In the case of *Southern Water Authority v Pegrum,* the court held that pollution had been committed by the defendant who allowed effluent from his pig farm to run into the lagoon.[14] In the case of *Wrothwell Ltd v Yorkshire Water Authority*, the Court held that water pollution had occurred by allowing herbicide drain into a stream irrespective of not having

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[9] K Singh, 'Environmental Degradation and Measures for its Mitigation with Special reference to India Agricultural Sector.' (2009) 64 (1) 42.

[10] American Children and the Environment. www.epa.gov/sites/default/files/2015-06/documents/ace3drinkingwatercontaminantsreviewpackage3-02-11.pdf accessed 12 January 2022

[11] E Onyeji, 'Children Die from Water Related Disease' (2017) <http://www.premimhmesng.com>accessed 19 January 2022.

[12] **O Timi-Wood,** Water Pollution. www.channelstv.com/2021/03/22/26-5-million-nigerian-children-lack-access-to-water-says-unicef/ accessed on the 20th January 2022.

[13] CSEA AFRICA, World Water Day 2023. Accelerating Efforts Towards Achieving SDG 6 in Nigeria, avaliable at https://cseaafrica.org/world-water-day-2023-accelerating-efforts-towards-achieving-sdg-6-in-nigeria/

[14] (1989) Local Government Review 672

intention to do the act.[15] In *CRC (UK) Ltd v National River Authority*, the factory operator was held to have caused pollution matter to enter water bodies from a fractured pipe carrying fluid. Irrespective of the fracture, the conviction was upheld.[16] In *Vellore Citizens Welfare Forum v Union of India*,[17] an action was filed to restrain tanneries in the state of Tamil Nadu from discharging untreated effluents into agricultural fields, waterways and open lands. About 170 types of chemicals had severely polluted the local drinking water. The Supreme Court stated that irrespective of the industries contribution, it has no right to pollute the water and the environment. In the case of *R. (Environmental Canada v (Northwest Territories Canada)*,[18] the government of the Northwest Territories was charged for discharging raw untreated sewage from the Iqaluit sewage lagoon into the water of koojesse. The territorial government was convicted and fined $49,000.00 and in the case of *Peter Waweru v Republic*,[19] liquid waste was discharged into the river. It was stated by Justice Nyama of the Kenyan High Court that a development that threatened life is not sustainable and should be halted.

Akanle[20] believes that generally, the sources of water pollution fall under two categories:

I. Pollution of poverty results from poor living conditions, unhealthy surroundings and primitive economy and technology.

II. Pollution of affluence is caused mainly by population growth, development of technology and the resulting improvement in having standard said consumption habits are usually associated with economic growth.

1.2.1 Major sources of Water Pollution

a) **Pollution Caused by Agricultural Activities:** - Water plays a role in maintaining the ecological balance. Agricultural[21] practice is a mainstay that depends on water. Agriculture around the world is the leading cause of water pollution.[22] Every time it rains, fertilizers, pesticides and animal wastes from farms and livestock operations wash nutrients and pathogens

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[15] (1984) Criminal Law Report LR 43
[16] (1995) ENVLR 131
[17] (1996) AIR SC 2715
[18] (1993) 12 CELR 55
[19] (2008) CHR 187
[20] O Akanle, 'A Legal Perspective on Water Resources and Environmental Development Policy' (1981)12 (1) *Nigeria Law Journal* 2.
[21] Agriculture refers to Cropping Activities, Livestock and Aquaculture.
[22] All you need to know about water pollution, https://www.nrdc.org/stories/water-pollution-everything-you-need-know, accessed on the 21st January 2022.

such as bacteria and viruses into water ways. Water pollution from agriculture harms the health of humans. For example, some pesticides accumulate in water and lead to ill effects on humans which led to the banning of certain broad-spectrum and persistent pesticides such as DDT and other organophosphates.[23] Also, a blue baby syndrome in which high levels of nitrates in water can cause methaemoglobinaemia – a fatal infant illness.[24] The livestock sector has grown tremendously in almost all countries, the associated waste, including manure, has serious implications for water quality. A new class of agricultural pollutants in the form of veterinary medicines (antibiotic vaccines and growth promoters) has emerged. They are transported from farms through the water to drinking water sources and ecosystem.[25]

Large- scale agricultural production and the use of chemicals portends danger to surface and ground water,[26] agriculture has now overtaken industrial waste water in pollution of surface and ground water, nitrogen from agriculture run-offs into water bodies resulting in increased development of algae and the associated phenomenon of eutrophication, making water useless for many purposes.[27] Cases have shown that domestic and wild animals have died after consuming polluted water. Agriculture contributes to water pollution (and the main targets for water pollution control; are nutrients, pesticides, salts, metals, herbicides, organic carbon and others.[28] When fertilizers are applied at a greater proportion than they are fixed by soil particles or exported by soil profile (e.g. by plant uptake) water pollution can occur. Also, when excess nitrogen and phosphate which are used in agricultural practices leak into the ground water-ways, they can be dangerous.[29]

In livestock production, feedlots are sometimes found on the banks of water courses so that animal wastes (e.g., urine) can be released directly into that water. Fertilizer is one of the leading causes of water pollution.[30] Pesticides include

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[23] Javier Mateo-Sagasta and others "A Global water – Quality Crus and the role of Agriculture food and Agriculture Organization of the United Nations FAO (2017) <https:// www.fao.org>

[24] *Ibid*

[25] *Ibid*

[26] I Daubner,'Problems of Water Pollution Related to Agricultural Production' (2019) < https: www.nap.edu/read/191791 > accessed 23rd February 2022.

[27] *Ibid*

[28] *Ibid*

[29] MY Angelo and others, 'Maintaining a Healthy Water Supply while Growing a Healthy Food Supply: Legal Tools for Cleaning up Agricultural Water Pollution' (2014) <https://scholarship.law.ufledu/facultypub/466accessed> 23rd Feburuary 2022, 103 – 1041.

[30] JF Par et al, Agricultural Uses or Organic Amendments: A Historical Perspective. (1992) 7(1) *American International Journal* 13.

insecticides, herbicides and fungicides used excessively in many countries.[31] When they are not properly managed, they can pollute water resources with carcinogens and other toxic substances that can affect humans.

b. Oil and Water Pollution

Oil blowout is another source of water pollution across the world. In Nigeria January 1980, about 421,000 barrels of oil were released into the riverine environment of Rivers State during the spill incident from the funiwa well blow out. Oil pollution in water stimulates the growth of bacteria and accelerates oxidation rate with a resulting oxygen depletion which inhibits biological life.[32] A 2018 study by the Journal of Health on pollution found that more than 12,000 oil spill incidents have occurred in the rich region between 1976 and 2014.[33] The people of Gokana in Ogoni can hardly eat fish from the river or drink water from a borehole which has been contaminated by crude oil or kerosene.

Many spills that have occurred cannot be accounted for and no proper cleanup exercise has ever taken place. All these oil spills washed away into the aquatic habitat have destroyed aquatic life and made the water unfit for any reasonable use. Today, upstream oil exploration and production activities provide economic and social benefits but are however not without environmental cost.[34] The discharge of petroleum effluents into brackish water bodies in the Niger-Delta ecological Zone is assumed to contribute to the deterioration of the biological qualities of the receiving water bodies.[35]

In the Niger delta, deliberate or accidental discharge of waste chemicals into the ambient environment and aquatic ecosystem is unabated, causing degradation and pollution of the aquatic habitat. The incidence of oil in the water being consumed by the local communities has serious health implications. Some toxic metals in the oil[36] could be dangerous. Ingestion of toxic metals from oil spills which have been transported into drinking water bodies can lead to various illnesses.[37] Those people who are involved in fishing and farming have since

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[31] P Schreinenemachers, Agricultural Pesticides and Land Use Intensification in High, Middle and Low Income Countries (2012) 37 (1).

[32] R Idubor, 'A Critical Appraisal of the Sources of Water Pollution' in I. Atsegbua (eds) *Selected Essay on Petroleum and Environmental Laws* (Department of Public law University of Benin) 121- 132

[33] Bukola Adebayo, 'Nigeria: 'Contaminated Lands and Water New Inquiry into Oil Spills in Niger Delta https://allafrica.com/stories/201903310193.html 2019, accessed 26th February 2022.

[34] A Ekpoudo et al, 'Legal Approach to Causes and Consequences of Oil Spillage in Nigeria' (2017)

[35] I. N Ezemonye, 'Heavy Metals Concentration in Water, Sediments and Selected Fish Fauna in the Warri River and its Tributaries' Ph.D. Dissertation of the University of Benin 2009.

[36] CO Okoye and LA Okunrobo, 'Impact of Oil Spill on Land and Water and its Health Implications in Odu – Gboro Community SagamuOgun State, Nigeria' (2014) (1) *World Journal of Environmental Science and Engineering*.1-21. <www.scenrp.com/impactofoil> accessed February 26th 2022

[37] EG Chroinium (CR) and Barium (BA)

lost their source of livelihood as people no longer trust eating contaminated fish and their environment have become infertile for farming. Oil spills have also interfered with the recreational activities of the riverine people of the Niger Delta, such as boating, diving, and angling.[38] The damage caused by oil spills in the environment varies with the amount and toxicity of the oil spilled.

c. Mining and Water Pollution

Mining is the process of extracting minerals and metals from the earth and mining activities have been discovered to have negative water quality impacts. The risk of pollution from mining sites persists even after mining activities have ceased.[39] Mining activities pollute the environment and aquatic body by emission dust containing heavy metals into the atmosphere, spilling mine tailings, and a generally large quantity of acidic drainage containing heavy toxic metals.[40] Some states in Nigeria, such as Zamfara, have been battling with uncontrolled and illegal mining activities leaving lots of environmental hazards and water pollution resulting in several deaths in various communities is traced to environmental exposure to lead from the processing of lead-rich mine or gold extraction in Daretu village. Studies have confirmed the presence of high lead, Cadmium, Zinc in human blood and hand-dug-wells in the village.[41] Mining activities affect human health by consumption of polluted water. Contamination of water sources can also have negative effects on aquatic habitats and biodiversity. An estimate of more than 400 children has died and about 4,000 under the age of 5 are at the risk of death or serious short and long-term irreversible health effects.[42]

The *Medecins San Frontiers* (MSF – Holland) Mission found that drinking water from wells did not meet WHO's (World Health Organization's) and Nigeria's standards. Water in ponds was found to be often highly contaminated (frequently

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[38] Certain Identified Illness caused by Oil Spills Include Ulcers, Kidney and Liver Damage, Irritation of the body, Stomach upsets, Nausea, Dysentery and others.

[39] AY Ugya and others, 'Water Pollution resulting from Mining Activities: An Overview' (2018) Proceedings of the 2018 Annual Conference of the School of Engineering & Engineering Technology (SEET), The Federal University of Technology Akure.

[40] H Cheng and other, Geochemical Processes Controlling Fate and Transport of Arsenic in Acid Mine Drainage and Natural System (2009) https://pubmed.ncbi.nlm.nih.gov/19070955/ accessed February 28th 2022

[41] U Udiba and other, Impact of Mining Activities on Ground water quality status, Daretu village, Zamfara Nigeria. < Archives of Applied Sciences Research 2013 5(1) 151 – 158 https://www.scholarsresearchlibrary.com/articles/impact-of-mining-activities-on-ground-water-quality-status-dareta-village-zamfara-nigeria.pdf accessed 28th February 2022.

[42] Vanguard Newspaper 400 Children Died from Lead Poisoning Vanguard Publication, *Nigerian Daily Newspaper* 2011

left the rivers contaminated.[57] Domestic contamination of waterways occurs as a result of poor sanitary and sewage systems. Toilet wastes are discharged through a septic system and other household liquids directly into storm drains or into the street.[58] Drainages are blocked due to improper disposal of waste causing overflow during floods into clean water bodies. In Lagos, sewage and trash is emptied into the lagoon are where fishes are harvested.[59]

Poor land waste disposal contaminates ground water. Pollutants found in hectares from refuse dump include chloride and nitrate.[60] Abattoirs observe poor sanitary conditions, animal feaces, blood and waste water from slaughter houses are channeled into rivers, lakes, wells and reservoirs used by people or operated close to rivers and wash directly into the river bodies. Research conducted in the Minna area from wells close to Minna Central Abattoir showed that the water was polluted and needed to be treated before use and had fallen below the World Health Organization (WHO) standard for drinking water.[61] In states or cities like Makurdi, water works is located adjacent to the north bank cemetery and this is not healthy to the water in the River Benue Basin which is distributed to the inhabitants of Makurdi metropolis.[62] Acting within the terms of discharge consent does not act as a defense to a civil action. In the case of *Wheeler v JJ Saunders Ltd,* it was stated that a planning permission cannot license what is otherwise a nuisance[63] which results in pollution.

1.2.1.1 Consequences of Water Pollution

a) Reproductive damage within wildlife in the ecosystem.
b) Stillbirth and miscarriages amongst pregnant women who consume chemical- laden polluted water.
c) Swimming in such contaminated water can cause skin rashes, health problems like skin cancer, typhoid fever and stomach sickness.
d) Water pollution can cause flooding as a result of accumulated waste and soil erosion.

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[57] LT Kigigha and others contamination of River Nun at Amassoma, Bayelsa State, Nigeria due to Microbial Diversity in sediment, (2018) 2(2) *Environmental and Toxicology studies Journal* 3

[58] ZN Garba and other, Domestic Water Pollution among Local Communities in Nigeria. Causes and Consequence (2011) 52(4) 592 – 603.

[59] *Ibid*

[60] *Ibid*

[61] O Chukwa,'Analysis of Ground Water Pollution from Abattoir Waste in Minna, Nigeria' (2008) 2(4) *Research Journal of Dairy Sciences* 77

[62] A Aligba, Issues of Environmental Protection and the Law: The Benue Experience.

[63] (1995) 2 AER 697 in S. Ball and S Bell. *Environmental Law* ,(Britain: Blackstone Press Limited, 3rd ed 1995)

e) Sickness emanating from drinking polluted water could lead to death or permanent deformity.
f) Suffocation of aquatic life from oil pollution[64]

1.2.1.2 Incidences of Water Pollution

a. In a locus Classique case in London in 1854 there was an outbreak of cholera and Dr. John Snow after an investigation found that the death of over 500 persons could be traced to a public water supply within 50 yards which had been contaminated.

b. Nigeria battles with cholera which has ravaged about 18 states including Anambra, Ebonyi, Kaduna, Katsina, Yobe, Sokoto and others.

c. In Enugu 240 persons were detected to have manganese and chromium in a high concentration above World Health Organization (WHO) standard in their blood samples believed to have entered from water-based sources.

d. In January 2021, January 14 persons were said to have died from cholera after drinking contaminated water in Guma and Agatu local government in Benue State.

e. In April 2021 in Gbaramatu community Delta state oil spill had contaminated their drinking water, killing all the fishes causing stench and over 100 women staged protest against chevron.

f. On the 14th of May 2021 in Manjibi local government of Kano State, there was an outbreak of cholera claiming the lives of 8 persons and 60 hospitalized. Also, in Sokoto contaminated water claimed the life of 3year old boy from the Auwula Isah Helele family.

g. In November 2021, Residents of Sangana Community, Bayelsa embark on a speed boat protest against gas leakage, water pollution.

h. In Febuary 2023 Residents of Ogalle and Bille sought justice from the London High Court against shell for contaminating their major source of drinking water.

In *Case of Shell Petroleum Development Co. v. Tiebo vii.*[65] Claims for special and general damages were awarded for the oil spillage into land, water, creek,

[64] HA Suleiman and H Abdulkadir, 'Consequences of Water Pollution and the Way forward among Local Communities in Nigeria', (2017) 3(3) *International Journal of Geography and Environmental Management*.17

[65] (1996) NWLR (Pt. 445) at 657

that there is positive interest on the part of the government towards ensuring that its citizen not only has access to clean water but also that the right becomes a right that may soon be entrenched in the constitution to make it enforceable. Some instruments which have expressly enshrined entitlement to clean water to which Nigeria is a signatory include the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW),[77] the African Charter on the Rights and Welfare of Children,[78] and the United Nations Convention on the Rights of the Child.[79] The African Charter provides for the right to enjoy the most attainable state of physical and mental health and the right to clean water can be read into the African charter. Even South Africa has enshrined the right to water in its constitution.[80]

"The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses. An adequate amount of safe water is necessary to prevent death from dehydration, to reduce the risk of water related diseases and to provide for consumption, cooking, personal and domestic hygiene requirements. Babolobi said[81] that "the right to water places certain responsibilities upon the government to ensure that people can enjoy "sufficient, safe, accessible and affordable water without discrimination".

1.5 Assessment of Specific National Laws Related to Water

(a) The Nigerian Constitution

The Nigerian Constitution makes provision for the protection of the environment including water. As earlier pointed out, the Nigerian Constitution does not provide for a right to water of certain quality or quantity. The Constitution simply states that "the state shall protect and improve the environment and safeguard the water, air and land, forests and wildlife of Nigeria."[82] The constitution has backed up the preventive principle by the provision that the state shall protect, improve and safeguard the environment. Management of water resources is provided for under the Second Schedule, Part 1 item 64 of the

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[77] Article 14 (2)

[78] Article 14. Entered into force on 29/1/99

[79] Article 24

[80] Section 27 (1) (b) and 92) South African Constitution 1996 State, everyone has the right to have access to sufficient food and water...

[81] B Babalobi, 'Implementing the Right to Water in Nigeria' (former General Secretary of the West African Wash journal network) 2011, https://washjournalists.wordpress.com/2011/06/14/implementing-the-right-to-water-in-nigeria/ accessed March 1 2022

[82] Section 20, 1999 Constitution

Constitution vesting such authority on the Federal Government concerning water management. As earlier suggested, the right to clean water could and should be entrenched in the Constitution as a justifiable right.

(b) **NESREA ACT of 2007**

The NESREA Act[83] provides that the agency shall collaborate with appropriate agencies to ensure that public health and welfare are protected by enhancing the quality of water. In direct relation to water pollution control, the NESREA Act provides that the Agency shall enforce compliance with policies, standards, legislation, and guidelines on water quality, environmental health and sanitation including pollution abatement.[84] The Agency is to specifically enforce compliance with guidelines and legislation concerning the sustainable management of the ecosystem and the development of Nigeria's natural resources.[85] The Agency is empowered to make regulations and standards for the protection and enhancement of the quality of land resources and natural water shed, including prevention of flood and erosion.[86]

The NESREA Act prohibits discharging of harmful quantities of hazardous substances into the waters of Nigeria unless such discharge is permitted or authorized under any law in force in Nigeria.[87] Any person who is found guilty of discharging any hazardous substance into waters of Nigeria is liable to a fine not exceeding one million naira or a term of five years imprisonment.[88] In case of a corporate body, upon conviction, such a corporate body is liable to a fine not exceeding one million naira and an additional fifty thousand naira for every day the offence persists.[89]

(d) **The Water Resources Act (WRA)** The Water Resources Act of 1993 [90] was promulgated to promote the optimum planning, development and use of Nigeria's water resources and other matters connected therewith. Such powers to use and control of all surface and ground water are vested in the Federal Government.[91] Also, to ensure the application of appropriate standards and

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[83]National Environmental Standard and Regulation Agency (Establishment) Act, No. 25, 2007 LFN
[84]Sec 7(d) NESREA Act
[85]Sec 7 (e NESREA Act
[86] Sec 26 (1) NESREA Act the legislature enacted subsidiary regulations under NESREA some which include (MEMPROIMR) 2009, National Environmental (coastal and Marine Area Protection) Regulation. (NECMAPR) 2011, and National Environmental (Surface and Ground Water Quality Control Regulation (NESGQCR) 2011 and (NEMPCOIMR) National Environmental
[87]Sec 27(1) NESREA Act
[88]Sec. 27(2)
[89]Sec 27 (3)
[90]Water Resources Act 1993, Cap W2 Laws of the Federation of Nigeria 2010.
[91]Sec.1 WRA

techniques for the investigation, use, control, protection, management and administration of water resources,[92] the Minister is empowered to prohibit or regulate the carrying out of any activities on land or water which are likely to interfere with the quality and quantity of water in any water cause or ground water.[93] The Minister may revoke the right to use water where such right overrides the public interest. The Minister may refuse to issue a license, for the carrying out of any activity on water in the watercourse of ground course.[94]

Interference with the quality or quantity of water constitutes an offence and any person who commits an offence under the WRA is liable upon conviction to a fine not exceeding two thousand naira or a term of imprisonment for a period not exceeding six months or to both such fine and imprisonment.[95] The provisions of the WRA seem to be focusing more on water management and use and less emphasis has been placed on water pollution. Water pollution preventive mechanisms should be boosted and stricter liability and compensation should be improvised.

(d) The Oil in Navigable Water Act

This Act[96] is the founding law dealing solely with the industrial waste generated by oil production. It applies directly to prohibited areas (within Nigerian territorial waters and designated prohibited areas (outside Nigerian territorial waters preventing discharge of oil from skills into water.[97] This Act specifically makes provision for acts of pollution by oil carrying vessels in Nigerian territorial waters leaving other human induced act of pollution not captured such as industrial pollution, domestic pollution and others.

(e) The Environmental Guidelines and Standard for the Petroleum Industry in Nigeria[98]

The Department of Petroleum Resources is enjoined to ensure that petroleum industry operators do not degrade the environment in the course of their operation. This of course includes water, air and land. Section 5 provides for Environmental management practices aimed at ensuring that unforeseen, identified and unidentified environmental issues are contained and brought to an

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[92]Sec 1 (1)(c)
[93]Sec 8 (d)
[94] Sec 11 (a)
[95]Ibid
[96] Oil in Navigable Waters Act 1968
[97]Sec 3 ONWA
[98]EGAPSIN 1991 revised and up dated in 2002, 2016, 2018

acceptable minimum.[99] Discharges from drilling fluids are prohibited in sensitive zones i.e. land, swamp, near shore and shallow offshore (Zero discharge Zone) areas.[100] There shall be no overflow, leakage or seepage.[101] Waste generators shall be responsible for the management of the wastes from cradle to grave.[102] Part III, section 4 of the guidelines provides for treatment and control of waste. Produced formation water represents the largest volume of polluted effluent threat to human population through drinking of water from contaminated rivers or wells.[103] Produced water can have high level of trace metals, phenol compounds and toxic materials. Therefore, to preserve, restore and maintain the chemical, physical and biological integrity of the nation's waters, oil and gas installation operators shall be required to ensure that the level of pollution control technology deployed are in line with Best Practicable Control Technology Currently Available (BPCTA).[104]

The aim of EGAPSIN is to provide environmental standards and requirement that must be met by operators. And it identified three primary sources of pollution in the oil industry as oil spills, discharge of effluents and gas flaring,[105] setting out express prohibition and limitations that set to eliminate negative environmental footprints by these categories of pollution.

On the contrary, EGAPSIN needs to have its prescribed environmental standards more comprehensive and rigorous in line with international best practices, transparency and accountability in interpretation and implementation. The Criminal Code frowns at any person who corrupts or fouls the water of any spring, stream, well, tank reservoir place so as to render it less fit for the purpose for which it is ordinarily used, is guilty of a misdemeanor and liable to imprisonment for six months or a fine.[106]

(f) The River Basin Development Authority[107]

They are government agencies involved in the management of water resources for agricultural and other purposes. Each authority is to work to improve agriculture and rural development through irrigation and control of river pollution. They provide the guidelines and standard for water quality in Nigeria.

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[99] Sec 5 EGAPSIN
[100] Part II Sec. 3.36
[101] Part II Sec. 5.4 – 4
[102] Part II sec 5.4.9
[103] Part III Sec 4
[104] Part III sec 4.1.3
[105] See IMF report, p. 44
[106] Sec 245 Criminal Code 1990
[107] River Basin Development 1976

The function of the authority is to undertake comprehensive development of both surface and underground water resources for multi-purpose use with particular emphasis on the provision of migration infrastructure and the control of flood and erosion and for water shed management.[108] In relation to water pollution control RBDA provides for the comprehensive development of surface and underground water .The Minister shall cause a copy of each of the report made to be submitted to the president and also send a copy to the governor of the state.[109]

The River Basin is meant to undertake the development of underground water resources, promote agricultural development. RBDAs need to be more effective in their responsibilities. The poorly constructed dams account for consistent energy crisis in Nigeria. They have not been able to address the issue of scarcity of food at household and national level which is one of the reason they were created. In the area of efficient, clean and safe drinking water their impact is not visible. Many rural and urban centre do not have access to clean drinking water.

(g) **National Water Resource Institute Act**[110]

The aim of the act is promotion and development of training programmes and courses on water resources. Duties include engineering research functions related to such major water resources project as may be required for flooding control, river regulating, reclamation, drainage, irrigation, domestic and industrial water supply, sewage and sewage treatment.[111]

Promoting and establishment of a uniform national data collection system relating to surface and subsurface water resources.[112] Also promoting co-operation in water resource development management with similar bodies in other countries with international bodies connected with water resource management and operations.

1.6 Water Policy in Nigeria

The Nigeria Water Policy[113] was established in 2004. Previous approaches to water resources development and management involved treating water as a public social good. It is centralized and entails top – down command and control mechanisms. In order to overcome deficits, this policy has been created in new

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[108] Sec 4(a) RBDAA
[109] Sec 10 RBDAA
[110] National Water Resource Institute Act 1985
[111] Section 2(1)
[112] Section 2(d)
[113] NWP 2004

ways to manage and control water resources for present and future generations without compromising water resources.[114]

Emphasis is on water quality and quantity being managed interdependently and in an integrated manner which is consistent with broader environmental management approaches.[115] The policy takes into cognizance other international treaties on water. This highlights the fact that water development and management should be conducted on a participatory, co-operative basis with decision making occurring at the lowest appropriate level.[116] This policy, as far back as 2000, had a target of improving from 40% to 60% in 2003, 80% in 2007 and a 100% coverage of safe supply of water in 2011 so as to ensure supply of good quality, affordable, free access for all.[117]

1.6.1 Guiding Principle on Water Resource Policy[118]

The guiding principles of the National Water Resources Policy are:

I. The water policy shall be subject to and consistent with the Constitution in all matters including the determination of the public interest and the rights and obligations of all parties, public and private, with regards to water.
II. All water, wherever it occurs in the water cycle, is a national asset and resource common to all, the use of which shall be subject to national control. All water shall have a consistent status in law, irrespective of where it occurs.
III. The objective of managing the quantity, quality and reliability of the nation's water resources is to achieve optimum, long term, environmentally sustainable social and economic benefit for society from their use.
IV. There shall be no ownership of water but only a right (for environmental and basic human needs) or an authorization for its use. Any authorization to use water in terms of the water law shall not be in perpetuity.
V. The planning and management of Nigeria's water resources shall take place within a framework which facilitates awareness and participation among all users at all levels.

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[114] *Ibid*
[115] *Ibid*
[116] KE Chukwu, 'Water supply Management Policy in Nigeria: Challenges in the Wetland Area of Niger Delta' (2015) 2 *European Scientific Journal* 303- 312.
[117] *Ibid*
[118] National Water Policy Federal Republic of Nigeria 2004

VI. Water resources shall be assessed, developed, apportioned and managed in such a manner as to enable all users to have equitable access taking into account the sustainability of the resource

VII. Water quality and quantity are interdependent and shall be managed in an integrated manner, which is consistent with broader environmental management approaches.

VIII. Water quality management options shall include the use of economic incentives and penalties to reduce pollution; and the possibility of irretrievable environmental degradation as a result of pollution shall be prevented.

IX. The management of water resources shall seek to harmonize human and environmental requirements, so that the human use of water does not individually or cumulatively compromise the long term sustainability of aquatic and associated ecosystems

X. The operational management of water resources and services shall be decentralized to the lowest practicable level in accordance with the established 8 hydrological areas (HA) as the basic units of water resources management in Nigeria.

XI. International water resources, specifically shared river systems, shall be managed in a manner that optimizes the benefits for all parties in a spirit of mutual co-operation. Allocations agreed for downstream countries shall be respected.

XII. Water quality management options shall include the use of economic incentives and penalties to reduce pollution so that beneficiaries of the water services shall contribute to the cost of its establishment and maintenance on an equitable basis.

XIII. The resource base shall be protected against any kind of pollution. The protection measures shall be based on both regulatory and market-based approaches to waste management, applying the "polluter pays" principle.

XIV. For the purpose of improving water related environmental conditions, abstraction fees for raw water shall be charged for the commercial use of it.

1.7 International Legal Instruments in Relation to Water Management and Usage

Noteworthy in this regard is the fact that the 2004 Water Policy in Nigeria was guided by some international treaties signed for the formulation of its Water Resource Policy.[119] They include:

1. The UN Conference on the Human Environment (Stockholm, 1972);
2. The Ramsar Convention 1975;
3. The International Drinking Water Supply and Sanitation Decade Launch (Mardel Plata, 1977);
4. The Convention on the Protection and use of Trans-boundary Watercourses and International Lakes, Helsinki 1992;
5. The World Conference on Water and the Environment (Dublin 1992);
6. The First World Water Forum of the World Water Council (Marrakesh, 1997);
7. The Drinking Water and Environmental Sanitation Conference on the implementation of Agenda 21 (Noordwijk, meeting of Ministers, 1994);
8. The United Nations Convention on the Laws of the Sea (1982);
9. The MARPOL International Convention for the Prevention of Pollution from Ships 1978; and
10. The OSPAR Convention for the Protection of the Marine Environment of North East Atlantic 1998.

1.7. Conclusion

In conclusion, both pollutions caused by development and pollution caused by lack of development are on the increase, far-reaching measures are necessary if catastrophe is to be avoided in the future.[120] This means, addressing the issues of water pollution has become essential as water pollution has been shown to cause water impairment and create hazards to public health through toxicity or the spread of disease. The problem of water quality degradation of rivers, streams, wells and, water bodies, in general, is evident time after time. Solutions to this problem have been found in the implementation of effective legislation for the discontinuing of contaminant's emissions. Emission abatement measures have led to great improvements in water quality.[121] Moreover, for environmental legislation to be more effective and have more efficacy in solving

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[119] Water Policy 2004

[120] B. Dybern. "Water Pollution: A Problem with Global Dimensions." *Ambio*, Springer, Royal Swedish Academy of Sciences (1974) 3 (4), 139.

[121] R Allan Freeze and JA Cherry, *Groundwater Pollution in the United States of America* (USA: Prentice-Hall Inc.) p.384

water pollution problems, there has to be better enforcement practice,[122] innovative regulatory strategies and the courts have to be entrusted with the role of ensuring enforcement. In reality, confronting water pollution problems involves effective management and it is an enduring process. Water standards must be set and the environment protected continuously. Regulations must also be elaborate and specific to cover various aspects of environmental problems such as water pollution. However, it has to be noted that the success of Nigerian environmental legislation in tacking water pollution problems is dependent on the management of the details which includes; careful consideration of every regulatory permit, reviewing water quality standard, trying to determine emission targets, identification and curtailing point source of water pollution, more prescriptive and specific action- forcing laws, monitoring, strengthening sanctions, insistence on clean-ups, and persistence on companies annual environmental reports. The fact of environmental matters is that enforcement puts the flesh on the bones of its regulatory systems.[123] Again, enforcement can be perceived in some quarters as getting in the way of economic progress, forgetting that such progress can be destabilized by poor environmental quality. Enforcement has financial implications which have contributed to the lack of the political will to enforce water pollution laws. The collective problems of water pollution being faced in Nigeria require collective a response which is the lesson of the tragedy of the commons. For Nigeria's environmental legislation to effectively address the complex environmental problems in the area of water pollution, the said environmental laws must also address the issues of democracy,[124] accountability, justice[125] and, effectiveness. This is so because enhancing compliance with the rules of an international and national agreement, the effectiveness of different regulatory and enforcement techniques is largely determined by the nature of the problem.[126] A scenario like a serious deterioration in the environmental quality of water can be used as an objective measure of the inadequacy or ineffectiveness of the legal system to achieve

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[122] Carolyn Abbot. 'Enforcing Pollution Control Regulations: Strengthening sanction and Improving Deterrence' (Oxford: Hart Press, 2009) 1

[123] *Ibid*

[124] K. Shrader – Frechette, '*Environmental Justice: Creating Equality, Reclaiming Democracy*' (New York: Oxford University Press, 2002) 6.

[125] *Ibid*

[126] Australian law reform commission, principled regulation: Civil and Administrative penalties in Australian federal Regulation (ALRC, Canberra, 2002) see http://www.austlii.edu.au/au/other/alrc/publication/report/95 accessed on the 25 August 2019.

sustainability in the use of the rivers.[127] Based on the foregoing discussions, the following recommendations are hereby made:

(a). Identifying and categorizing environmental problems and determine the type and source of pollution as either a point source and non-point source in water pollution to apply appropriate legislation successfully. The regulation of point source of water pollution through permits and licenses is necessary.

(b) Entrenching a more comprehensive legal framework for the environment that is comprehensively unified which places more focus on legal compliance, a framework that covers all types of threats to water pollution and, also includes effective enforcement mechanisms.

(c). Enhancement of Environmental Courts and Increment in Fines and Penalties.

Environmental courts should be established and enhanced to try matters specifically on water pollution and environmental damage.

(d). Water pollution law enforcement and monitoring for effective tackling of water pollution problems, there has to be enforcement of environmental laws and regulation at both national and local levels.

(e) There should be Tougher Measures Aimed at Reducing Water Pollution. Legislation has been put in place to stop these destructive tides. Clean rivers mean less costly and safer drinking water and more water available for other purposes.[128] Water pollution laws and the polluters- pay- principle should be enforced. Laws to improve our water as a whole require stringent restrictions and enforcement procedures.

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[127]Birne and Boyle Ibid

[128] D L Bender et al, '*Opposing View Points Environment* (San Diego: Greenhaven Press, Inc, 1990) 350