Fall 12-18-2020

The Contribution of a Global Ethics Approach to Health and the Environment in the Niger Delta Region

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THE CONTRIBUTION OF A GLOBAL ETHICS APPROACH TO HEALTH AND THE ENVIRONMENT IN THE NIGER DELTA REGION

A Dissertation

Submitted to the McAnulty College and Graduate School of Liberal Arts

Duquesne University

In partial fulfillment of the requirements for

the degree of Doctor of Philosophy

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December 2020

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ABSTRACT

THE CONTRIBUTION OF A GLOBAL ETHICS APPROACH TO HEALTH AND THEENVIRONMENT IN THE NIGER DELTA REGION

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December 2020

Dissertation supervised by Gerard Magill, PhD

The dissertation presents a global ethics approach that connects health and the environment in the context of the Niger Delta Region. The people of the Niger Delta region in Nigeria are experiencing major catastrophes that connect health and the environment. In the bid to ameliorate these pivotal problems, this dissertation undertakes an ethical analysis that connects health and the environment. Insofar as these problems can be characteristic of other regions in the world, a global ethics approach is adopted. This global ethics approach adopts as a hermeneutical context the principles in the UNESCO Declaration on Bioethics and Human Rights. Thus, the UNESCO Principles will provide an interpretative perspective for the global ethics analysis in each of the normative chapters to highlight the connection between health and the environment. Instead of merely applying the UNESCO articles linearly to the chapter topics, the approach adopted pursues two goals: first, to explain how the analysis in the chapters

is consistent with and can be enlightened by the UNESCO articles; second, to explain how the chapter analysis can elucidate the UNESCO articles to bolster their relevance for other related issues. Consequently, attaining a sustainable environment that enhances human health is vital to human beings in the present and future generations. Like other global bioethical problems, the Niger Delta environmental and health problems have a global implication. The UNESCO Declaration principles that guide the discussion in this dissertation assumes immediately that human beings as global citizens have responsibilities to each other irrespective of one's nationality. Therefore, this dissertation urges all human beings toward the respect for human dignity and human rights, protection of the environment, biosphere and biodiversity, protection of future generation, solidarity and cooperation, social responsibility, sharing of benefits, non-discrimination and non-stigmatization, respect for cultural diversity and pluralism, promotion of justice, equality and equity among others. It concludes that the proper utilization of these principles in policies that connect health and the environment in the Niger Delta region of Nigeria will help to improve the existing problems. It was, therefore, recommended that the Nigerian government, multinational oil firms, and miscreants should redirect their steps toward the proper implementation of environmental/health policies that are beneficial to the people.

DEDICATION

This dissertation is dedicated to the Environmental Human Activist, Dr. Ken Saro-Wiwa, and many others who sacrificed their lives for the emancipation of the people of the Niger Delta region in Nigeria.

ACKNOWLEDGMENT

Let me begin by acknowledging the Almighty God for His love, mercy, and good health granted to me throughout my entire program. May God be praised now and forever. Amen!

My deepest appreciation goes to my mentor and dissertation director, Professor Gerard Magill, who, despite his tight schedules, offered professional insights, suggestions, and corrections that led to the successful completion of this dissertation. Thank you, my academic mentor and erudite professor. You are always a motivator.

Also, I am thankful to each of the members of my committee, Dr. Joris Gielen and Dr. Peter Osuji C.S.S.p, for accepting to read my dissertation. I appreciate all your guidance and feedback on this dissertation. Likewise, I express my special thanks to Glory Smith. Her special love, concern, and support for me were quite remarkable. I am equally thankful to all faculty members of the Department of Theology, especially Professors George Worgul, Elochukwu E. Uzukwu, C.S.S.p, Dr. Marinus Iwuchukwu, Dr. Elisabeth Vasko, and Dr. Gerald Boodoo for their unique roles in my academic pursuit.

Also, I appreciate my beloved bishop, Most Rev. Dr. Camillus A. Etokudoh, for his fatherly encouragement, love, and support. Similarly, I say a big thanks to the Auxiliary Bishop of Port Harcourt Diocese, Most Rev. Dr. Patrick S. Eluke, for his endless love, concern, and support. I extend my sincere thanks to the entire presbyterium of Port Harcourt Diocese. Many of you have demonstrated your concern for me through prayers, calls, visits, and financial support. On a special note, I appreciate the immense support of Msgr. John K. Wangbu and Fr. Camillus O. Njoku toward my further studies at Duquesne University. In the same vein, I thank Fr. Francis Normakoh, Msgr. Pius Kii, Fr. Louismary Okeyia, Fr. Emmanuel Osigwe, Fr. Polycarp Henetu,

Fr. Innocent Orduah, Fr. Jerome Etenduk, Fr. Raymond Luther, Fr. Polycarp Nwidam, Nebo, Fr. Bernadine Anaele, Fr. Raphael Kpeden, and Fr. Damian Pronen, to mention but a few. I would not have been able to navigate these years without your assistance and support. May God reward and bless you abundantly.

My special thanks go to the Catholic Bishop of Pittsburgh Diocese, Most Rev. David Zubik, and his Auxiliary Bishop, Most Rev. William Waltersheid, the clergy team and parishioners of Divine Mercy Parish, Pittsburgh for offering me a befitting accommodation and caring for me. Again, I express my sincere gratitude to my special friends and staunch supporters, Rev. Carmen A. D'Amico and Michele Fagan. I thank Mr./Mrs. Andrew James, Dr. Yinka Aganga-Williams, Dino Ciabattoni & Debbie Dibucci, John Corcoran, and Dr. Josephine Crame for their special care. Also, I thank all at the Spiritual Care Department of UPMC Mercy Hospital and Allegheny General Hospital. In addition, I appreciate some of my colleagues here in Pittsburgh, Frs. John Odeyemi, John Mark Ogu, James Odeoye, Innocent U. Onuh, Edward Muge, Nicodemus Okafor, and Ferdinard Okafor. You all were very helpful to me.

May I equally register my most profound gratitude to my own family for their loving care and support. Lastly, I would also wish to recognize and appreciate all my friends and well-wishers in Nigeria and the United States for your various assistance and motivation. Of course, your love and affection have been a source of inspiration in making this dissertation a reality.

Augustine Lezorgia Wayii

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LIST OF ABBREVIATIONS

ACHR	American Convention on Human Rights
ACHPR	African Charter on Human and Peoples Rights
AHRQ	Agency for Healthcare Research and Quality
AIDS	Acquired Immune Deficiency Syndrome
ANVISA	Agencia Nacional de Vigilancia Sanitaria (National Health Surveillance Agency Brazil)
AZT	Azidothymidine (Zidovudine)
BCE	Before the Common Era or Before the Current Era
B. P	British Petroleum
CDSCO	Central Drugs Standard Control Organization
CIOMS	Council for International Organization of Medical Sciences
CT	Computed Tomography
DNA	Deoxyribonucleic acid
ECtHR	European Court of Human Rights
EMEA	European Medicines Evaluation Agency or European Agency for the Evaluation of Medicinal Products
EIA	Environmental Impact Assessment
FDA	Food and Drug Administration
FEPA	Federal Environmental Protection Agency
FMEA	Failure Modes and Effect Analysis
GCP	Good Clinical Practice
HIV	Human Immune-deficiency Virus
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICH	International Conference on Harmonization
ICU	Intensive Care Unit
IDH	Infectious Disease Hospital
IEC	Independent Ethics Committees
IPCC	Intergovernmental Panel on Climate Change
IRB	Institutional Review Boards
ISMP	Institute for Safe Medication Practices
IUCN	International Union for Conservation of Nature
MHLW	Ministry of Health, Labor and Welfare
MOSOP	Movement for the Survival of Ogoni People
NAFDAC	National Agency for Food and Drug Administration and Control
NBAC	National Bioethics Advisory Commission
NCDs	Non-Communicable Diseases
NDDC	Niger Delta Development Commission
NDHD	Niger Delta Human Development
NDPVF	Niger Delta People's Volunteer Force

NDV	Niger Delta Vigilantes
NDVS	Niger Delta Volunteer Service
NESREA	National Environmental Standards Regulation Agency
NGOs	Non-governmental Organizations
NISER	Nigerian Institute of Social and Economic Research
NNPC	Nigerian National Petroleum Corporation
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of the Petroleum Exporting Countries
PIC	Prior Informed Consent Procedure
POPs	Persistent Organic Pollutants
RCA	Root Cause Analysis
SEHN	Science and Environmental Network
SPDC	Shell Petroleum Development Company
UDBHR	Universal Declaration on Bioethics and Human Rights
UDHR	Universal Declaration of Human Rights
U. N	United Nations
UNCED	United Nations Conference on Environment and Development
UNCRC	United Nations Convention on the Rights of the Child
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNHR	United Nations Human Rights
WCN	World Charter for Nature
WCED	World Commission on Environment and Development
WHO	World Health Organization
WMA	World Medical Association
WMO	World Meteorological Organization

CHAPTER ONE: INTRODUCTION

The people of the Niger Delta region in Nigeria are experiencing major catastrophes that connect health and the environment. In the bid to ameliorate these pivotal problems, this dissertation undertakes an ethical analysis that connects health and the environment. Insofar as these problems can be characteristic of other regions in the world, a global ethics approach is adopted. Therefore, the thesis is to present the contribution of a global ethics approach to health and the environment in the Niger Delta Region.

This global ethics approach adopts as a hermeneutical context the principles in the UNESCO Declaration on Bioethics and Human Rights. That is, the UNESCO Principles provide an interpretative perspective for the global ethics analysis in each of the normative chapters to highlight the connection between health and the environment. Instead of merely applying the UNESCO articles in a linear manner to the chapter topics, the approach adopted pursues two goals: first, to explain how the analysis in the chapters is consistent with and can be enlightened by the UNESCO articles; second, to explain how the chapter analysis can elucidate the UNESCO articles to bolster their relevance for other related issues.

The analysis is divided into six chapters. Chapter one treats the introduction, chapter two discusses the degradation of the environment and health in Niger Delta region, chapter three treats the integration of human rights with respect for the environment, chapter four deals with the integration of care ethics with the precautionary principle, chapter five treats adopting a systems approach for health and the environment, and chapter six deals with the conclusion.

The dissertation presents a global ethics approach that connects health and the environment in the context of the Niger Delta Region. This global ethics approach adopts as a hermeneutical context the principles in the UNESCO Declaration on Bioethics and Human Rights. Hermeneutics refers to interpretation approaches. In the dissertation, hermeneutics refers to the reciprocal engagement of the UNESCO principles with the ethics analysis in the chapters. As mentioned above, the UNESCO articles as adopted in this dissertation pursues two goals: first, to explain how the analysis in the chapters is consistent with and can be enlightened by the UNESCO articles; second, to explain how the chapter analysis can expound the UNESCO articles to strengthen their relevance for other related issues. That is, hermeneutics in the dissertation refers to this reciprocal influence between the UNESCO articles and the analysis in the various chapters.

Thus, Articles 8 "Respect for the Vulnerability and Personal Integrity," 14 "Social Responsibility and Health" and 17 "Protection of the Environment, the Biosphere and Biodiversity" of UNESCO declaration are used to enlighten the discussion on the exploitation of vulnerable population as a global bioethical problem in chapter two.

Also, this global ethics approach highlights the connection between human rights and the environment, as discussed in chapter three. The two sections of the chapter explore the relationship between human rights and the environment, emphasizing justice, equity, and sustainable development. This discussion occurs within the context of these UNESCO principles: Article 3 on the relation between Human Dignity and Human Rights; Article 4 on the relation between Benefit and Harm; Article 10 on Equality, Justice, and Equity; Article 11 on Non-discrimination and Non-stigmatization and Article 17 on Protection of the Environment, Biosphere, and Biodiversity.

Similarly, the global ethics approach highlights the connection between care ethics and the precautionary principle, as discussed in chapter four. The two sections of chapter four explore the integration of care ethics with the precautionary principle to protect the environment. This discussion occurs within the context of these UNESCO principles: Article 16 on Protecting Future Generations; and Article 17 on Protection of the Environment, Biosphere, and Biodiversity to highlight the need for caution in these ecological arenas.

In addition, the global ethics approach highlights the need for a systems approach for health and the environment, as discussed in chapter five. The two sections of chapter five explore the significance of a systems approach in relation to the debate on patient safety in healthcare and the debate on clinical trials in research. This discussion occurs within the context of these UNESCO principles: Articles 5-9 that highlight the connection between Autonomy, Consent, and Vulnerability; Article 12 on Respect for Cultural Diversity and Pluralism, Article 13 on Solidarity and Cooperation, Article 14 on Social Responsibility and Health, and Article 15 on Sharing Benefits.

More importantly, this dissertation with its global ethics approach will emphasize the fact that the protection and conservation of the environment play a significant role in the enjoyment of human rights, especially the right to life and health. Hence, attaining a sustainable environment that enhances human health is, therefore, vital to human beings in the present and future generations. Consequently, in recent times, there has been continuous interest in the sustainability of the global environment and human system through various conferences. Beginning with the 1972 Stockholm Declaration, the Brundtland Commission of 1987, the Rio Declaration of 1992, the 1981 African Charter, etc., all attest to the fact that every human being has the fundamental right to an environment adequate for his/her health and well-being. Also,

various works of scholars have highlighted the necessity of a safe and decent environment that enhances human health.[1] Despite the multiple documentation at the global, regional, and national levels for environmental protection and sustainability, it is regrettable to state that the "common home" of the Niger Delta region has gone through a series of ecological crises because of pollution and degradation. The several decades of oil exploration activities in the area have had disastrous impacts on the environment with its attendant health hazards on the people. Although various scholars have dealt with the Niger Delta problems from different perspectives as they mainly focus attention on the remote and immediate causes of the crisis in the region;[2] abuse of human rights;[3] environmental degradation and conflict,[4]etc., none have used the UNESCO's global ethics approach to connect health and the environment. The existence of the vacuum in the review of dissertations and theses demonstrates the uniqueness of this proposed dissertation topic. Therefore, it has become imperative for this dissertation to use a global ethics approach to address health and environmental issues in the Niger Delta region.

Finally, to further achieve its goals, this dissertation uses materials from scholars who have written about the problems in the Niger Delta region. Likewise, other relevant materials dealing with the subject matter from different fields of study like theology, law, history, etc., will be cited.

The sections below summarize the chapters in the dissertation.

Chapter One: Introduction

The dissertation presents a global ethics approach that connects health and the environment in the context of the Niger Delta Region. This global ethics approach adopts as a hermeneutical context the principles in the UNESCO Declaration on Bioethics and Human Rights. Hermeneutics refers to interpretation approaches. In the dissertation, hermeneutics refers to the

reciprocal engagement of the UNESCO principles with the ethics analysis in the chapters. Instead of merely applying the UNESCO articles in a linear manner to the chapter topics, the approach adopted pursues two goals: first, to explain how the analysis in the chapters is consistent with and can be enlightened by the UNESCO articles; second, to explain how the chapter analysis can elucidate the UNESCO articles to bolster their relevance for other related issues. That is, hermeneutics in the dissertation refers to this reciprocal influence between the UNESCO articles and the analysis in the various chapters.

Chapter Two: Degradation of the Environment and Health in the Niger Delta Region.

2.1. Historical Background of the People of Niger Delta Region in Nigeria:

The discussion in this section focuses on the geography and the people of the Niger Delta region in Nigeria. Also, it considers the colonial impacts on the people of the Niger Delta region.

2.1.1 Niger Delta Region: The Geography and the People

The Niger Delta is one of the most extensive wetlands in the world and the site of most of Nigeria's biodiversity.[5] The Niger Delta region comprises nine states of the Federal Republic of Nigeria, namely Rivers, Bayelsa, Akwa-Ibom, Delta, Edo, Cross River, Abia, Ondo, and Imo that account for approximately 90 percent of the value of Nigeria's export.[6] Also, the Niger Delta has fertile agricultural land, forests, rivers, creeks, and coastal waters teeming with fish and various aquatic creatures. It is advantageously located in the Gulf of Guinea, which has 5-7 percent of the world's petroleum reserves.[7] Again, the region has a population of more than 21 million and covers a geographical area of more than seventy thousand square kilometers. Most of the indigenous peoples depend mainly on farming and fishing for their livelihood.[8] Additionally,

the Niger Delta region has five major linguistic and cultural groups, which include the Delta Cross, Ijoid, Edoid, Igboid, and Yoruboid, and each is made up of many sub-groups.[9]

2.1.2 The Colonial Impacts on the Niger Delta Region

Historically, the Niger Delta as a region predates Nigeria's emergence as the British colony by at least a decade. It later became an active center of Nigerian economic activities from colonial times. The geography of the Niger Delta and its economy, to some extent, made the force of colonial capitalism on the area different from that on the other communities in Nigeria.[10] Meanwhile, the amalgamation of the Northern and Southern protectorate by the British that took place in 1914 was basically to centralize the administration of the colony to facilitate its exploitative tendencies by foreign capital.[11] The amalgamation only enabled the colonial masters to loot the resources of the people without any adequate development[12] even worst with the enactment of the Minerals Ordinance of 1912 that placed the sole right of ownership over minerals on the Crown, her Royal Majesty.[13] It was this same 1912 Mineral Act as amended in 1913 and 1914 that remained in place until Shell (i.e., the first multinational oil company) came to the Niger Delta region in 1937 to prospect for crude and to impoverish the region as taught by their predecessors.

2. 2 Exploitation of Vulnerable Population as a Global Bioethical Problem

This section considers the Niger Delta region as the most vulnerable population in Nigeria, while emphasizing on the impacts of oil exploration on the environment and health of the people. This section looks at major environmental issues that impact human health as well as a framework of actions for a healthy environment and healthy people.

2. 2.1 The Most Vulnerable: Rich Region, Poor People

Today, the people of the Niger Delta region remain the most vulnerable group in Nigeria. The environmental degradation, injustice, and greed have left many children, women, older people, as well as the young people in vulnerable conditions. Oil of poverty is a massive reality in the Niger Delta region whose wealth has caused their poverty by nourishing the prosperity of those dishonest leaders and multinational oil firms.[14] Thus, Sobrino describes it as poverty that is "dialectical…poverty because there is wealth, and there is wealth because there is poverty."[15] Again, "we might wonder whether there is anything more tremendous and terrifying, anything better calculated to fill us with trembling, than the situation of poverty and daily death of humanity's poor"[16] as experienced by the "crucified people" of the Niger Delta region in Nigeria.

2.2.2 The Impact of Oil Exploration on the Environment/Health of the Niger Delta People

From the available statistics released by the Department of Petroleum Resources show a total of 4,835 incidents of oil spillage occurred between 1976 and 1996.[17] Additionally, the Human Rights Watch report avers that "Nigeria flares more gas than any other country in the world: approximately 75 percent of total gas production in Nigeria is flared."[18] Buttressing on this, the Environmental Human Rights Activist and President for the Movement for the Survival of Ogoni People (MOSOP), Ken Saro Wiwa avers that the Niger Delta environment (Ogoni land in particular) has been "completely devastated by three decades of reckless oil exploitation or ecological warfare by Shell…. It is omnicidal in effect. Human life, flora, fauna, the air, fall at its feet, and finally, the land itself dies." [19] The various oil pollutions in the region have contaminated their natural drinking water, fishing areas, and agricultural field. Of course, multiple researchers have documented facts on the toxic effects of crude oil on human health.[20]

2.2.2.1. Major Environmental Issues that affect Human Health

Moreover, this dissertation goes on to outline and to assess some of the emerging environmental crises or issues that have a significant impact on human health. Moeller considers the environment in terms of four mechanisms by which various factors affect people's health. Human beings are faced with numerous environmental hazards, such as physical, chemical, biological, and socio-economic hazards.[21]

Also, various environmental issues like air quality, water quality, and sanitation, climate change, biodiversity loss, and ecosystem impact significantly on human health. As reported by the World Health Organization (WHO), air pollution is a major environmental risk to health and is predicted to cause approximately two million premature deaths worldwide per year.[22] Also, the absence of clean water resources and sanitation amenities appears as one of the most critical environmental health problems confronted today by a vast portion of the world's population, particularly those living in developing countries of Africa, Latin America, and Asia. Again, climate change, also referred to as global warming, is one of the major environmental problems confronting the 21st century.[23] Still, losses to biodiversity or biological diversity have become so massive that the rate of loss may by now be more than the rate of variation implicit in the evolutionary process.

2.2.2.2 The Framework of Actions for a Healthy Environment and Human Health

This section adopts the report of the "Second Session of the United Nations Environment Assembly of the United Nations Environment Programme" held in Nairobi, 23-27 May 2016, to advocate for a clean environment in the Niger Delta. Hence, a framework of four integrated lines of actions is suggested to address the nexus of environment and health in the Niger Delta region.

These four lines of actions are 1) detoxify, 2) decarbonizes, 3) decouple resource use and change lifestyles, and 4) enhance ecosystem resilience and protection of the planet's natural systems.[24] Therefore, it is vital for Nigeria as a nation to make an environment where people live and work healthier; otherwise, millions of people will continue to become ill and to die too young.

Chapter Three: Integration of Human Rights with Respect for the Environment.

In this chapter, the global ethics approach is used to highlight the connection between human rights and the environment. Thus, the two parts of this chapter explore the relationship between human rights and the environment, emphasizing justice, equity, and sustainable development. This discussion occurs within the context of these UNESCO principles: Articles 3 on the relation between Human Dignity and Human Rights; Article 4 on the relation between Benefit and Harm; Article 10 on Equality, Justice, and Equity; Article 11 on Non-discrimination and Non-stigmatization; and Article 17 on Protection of the Environment, Biosphere, and Biodiversity.

3. 1 The Relation Between Rights and the Environment

This section treats the conceptual framework of human rights and the environment, the various abuses of human rights in the Niger Delta region, and the environmental legislative framework for the promotion and protection of environmental human rights. The section emphasizes on a human rights-based approach to environmental protection.

3. 1.1 Conceptual Framework of Human Right and Environment

The thought of human rights is as old as the history of human society.[25] The term "human rights" came into use after the Second World War for what had been by tradition identified as 'natural rights' or 'right of the man.'[26] The United Nations defined human rights as those rights which are inherent in our state of nature and without which we cannot live as humans.[27] In the

same vein, human rights constitute those rights that one has specifically because of being a human being.[28] Human rights are subjective in the sense that they are possessions of individuals who acquire them because of their ability for rationality, autonomy, and agency.[29]

Also, the word "environment" as derived from the French word "Environ," which means "surrounding." The term "environment" implies "physical, biological, social and cultural conditions affecting people's lives and the growth of plants and animals."[30] It refers to the "conditions under which any person or thing lives or is developed; the subtotal of influences which modify and determine the development of life or character."[31] Also, Etuonovbe defines the environment as the conditions and circumstances that affect people's lives. It is the complex of physical, chemical, and biotic factors that act upon an ecological community or an organism and eventually determines its form and survival.[32] However, in ecological terms, the word "environment" covers an array of the ecosystem. An ecosystem comprises of both living and non-living components and their physical surroundings: - land, water, air, etc.

3.1.1.1 Abuse of Human rights in the Region

a. Abuse of the Right to a Safe and Healthy Environment: According to the World Commission on Environment and Development states that "All human beings have the fundamental right to an environment adequate for their health and well-being."[33] In like manner, the United Nations' Draft Principles on Human Rights and Environment further declare that "All persons have the right to secure, healthy and ecologically sound environment."[34] These include "such rights as the right to be free from excessive pollution of the land, water or air, or pollution from noise, the right to enjoy unspoiled nature, and the right to enjoy biological diversity."[35] On the whole, the right to a decent environment can be either for individuals or groups as the case may be. Thus, following the reality of the environmental and health catastrophes, it becomes

very pathetic to be abreast with the outright violation of environmental rights in the Niger Delta region by the Nigerian government, multinational oil firms, and saboteurs.

b. Abuse of Civil, Political, Economic, Social, and Cultural Rights: In the opinion of Sands, civil and political rights, which are substantive, settle on procedural and institutional rights.[36] Civil and political rights are likewise able to create practical and enforceable obligations concerning environmental and interrelated issues. Civil and political rights which are appropriate to environmental protection consist of the right to life; the right to equal protection against discrimination;[37]prohibition against cruel, degrading and inhuman treatment; the right to an efficient remedy by capable national tribunals for acts violating fundamental rights; the right to be given information; the right to a fair and public hearing by an independent and unprejudiced tribunal.[38] On the other hand, economic, social, and cultural rights "allow human rights bodies to consider whether substantive environmental standards and conditions are being maintained at satisfactory levels."[39] These rights include the right to a standard of living adequate for health and well-being; the right of all peoples to freely dispose of their natural wealth and resources; safe and healthy working conditions; right to enjoy scientific progress and its applications; the right to the highest attainable standard of health (including improvement of all aspects of environmental and industrial hygiene).[40]

3.1.1.2 Environmental Legislative Framework for the Promotion and Protection of Environmental Human Rights

3.1.1.2.1. International/Regional/National Environmental Instruments

Many of the international environmental instruments in a straight line or in some way, identify the relationship between human rights and environmental protection. The first

authoritative statement supporting the relationship between human rights and the environment emerged from the 1972 Stockholm Declaration.[41] After the Stockholm Declaration, many other widely accepted declarations supporting the individual's right to the environment have been adopted."[42] Some of them are the 1987 Brundtland Report, 1992 Rio Declaration, 1998 Aarhus Convention,[43] 1999 Bizkaia Declaration,[44]etc.

At the regional level, there are essential instruments like the 1981 African Charter,[45] the 1999Additional Protocol to the American Convention on Human Rights in the Area of Economic and Social Rights (the Protocol of San Salvador),[46]then in 2005, the Council of Europe adopted a "Manuel on Human Rights and the Environment,"[47]1996 Declaration of Santa Cruz,[48]etc.

Moreover, apart from international and regional laws, there are national environmental instruments. For instance, Nigeria experienced severe and various environmental problems that gave rise to environmental regulations. Most laws that were not petroleum-related had only a minor bearing on the environment. Outstanding amongst these was the 1987 Factories Act, the 1978 Land Use Act; the 1979 Energy Commission of Nigeria Act; the 1985 Endangered Species (Control of International Trade and Traffic) Act; the Sea Fisheries Act (later repealed by Sea Fisheries Decree 1992); and the 1986 River Basins Development Authorities Act, Federal Environmental Protection Agency Act of 1988 (FEPA Act) repealed by the National Environmental Standards Regulation Agency (NESREA) Act 2007,[49]etc.

3.1.1.2.2 Human Rights-Based Approach to Environmental Protection/Respecting the Procedural Environmental Rights of the Peoples

3.1.1.2.2.1. Human Rights-Based Approach to Environmental Protection:

Linking human rights with the environment creates a rights-based approach to environmental protection that places the people harmed by environmental degradation at its center. The relationship between human rights and environmental protection is mainly concerned with the protection of a safe and sustainable environment to the advantage of humankind.[50] Quoting Hausermann, Nyamu-Musembi, and Cornwall describe the human-rights based approach as a set of instruments, procedures, or principles with a normative content which raises certain ideals and symbolizes specific visions of what should be done.[51] The essence of the human rights-based approach is to broaden access to justice, and curative redress provides different means of addressing issues of justice, equity, fairness, and right.[52] Thus, this dissertation argues that the human-rights based approach to environmental protection has several benefits compared to environmental regulatory mechanisms.

3.1.1.2.2.2. Respecting the Procedural Environmental Rights of the Peoples:

Environmental procedural rights refer to "the ability of citizens to obtain environmental information in possession of public authorities."[53] Citizens must have access to information that is connected to the environment and activities that might have an impact on the environment or public health. On this note, Somanathan avers that people who are given trustworthy information about risks and environmental hazards might be more willing to raise environmental quality standards to increase welfare[54] as well as ensuring long term solutions to the various environmental problems.[55] Secondly, environmental procedural rights consist of the right to

participate in environmental decision processes. Thirdly, it implies access to justice, which is the right to seek judicial remedies at any level.[56] Finally, environmental procedural rights are a means to bring about a balance between environmental priorities and the economy while taking cognizance of the deserted issues of public welfare.

3.2. Principles of Environmental Justice, Equity and Sustainable Development

3.2.1. Overcoming Environmental/Health Issues through the Principles of Environmental Justice, Equity, and Sustainable Development.

This section examines the principles of environmental justice, equity, and sustainable development in the light of environmental and health issues in the Niger Delta region. These principles are closely connected to their mission.

3.2.1.1 The Principles of Environmental Justice:

According to Torres, any action that has predictable negative consequences for racial minorities can be an act of environmental racism.[57] The most critical issue in international environmental racism is the incident of the transboundary movement of hazardous waste.[58] Vasquez reiterates that environmental racism is used when a government or corporation follows policies that disproportionately impact minorities.[59] For instance, the multinational oil companies operating in the Niger Delta region have turned the region into toxic dumping grounds. The people of this region are excessively exposed to environmental contamination that threatens their health. It is against this background that the "Environment Justice Movement" has emerged in the United States and other parts of the world to talked about environmental justice.

Environmental justice is about social transformation aimed at meeting basic human needs and enhancing our quality of life, environmental protection, human rights, economic quality,

health care, housing, and democracy.[60] It implies both the idea that all people have an equal right to a clean and healthy environment and the regrettable reality that some groups bear a disproportionate burden of exposure to environmental harms.[61] Therefore, this dissertation adopts the principles of the "First National People of Color Environmental Leadership Summit in Washington, D.C." to address the environmental problems in the Niger Delta region.

3.2.1.2 Equity as a Panacea for Environmental Inequality or Discrimination

Equity connotes fair treatment for all citizens. However, there is considerable inequity in Nigeria, which has affected mostly the lives of the people of the Niger Delta. There is a severe inequity between groups and geographical areas, as well as never-ending poverty passed between generations. People's access to and dealings with major institutions are created by power balances in political,[62]economic, [63] and socio-cultural[64] fields, often leading to unpleasant integration and social segregation.[65] Quoting Cahill, Mackler advances that "commitments to values such as the need for responsible stewardship for the earth's resources, the intrinsic dignity of each human person, and the love of neighbor"[66] are necessary for any given society. Also, in the World Development Report (2006), the concept of equity is a normative one that has a long history in philosophical, religious, and cultural traditions.[67] It is a principle that is concerned with equality, fairness, and social justice. In other words, the notion of equity emanates from the idea of moral equality, that people ought to be treated as equals. This means that, regardless of many differences, all people share a common humanity, and because of this, we must think about how each of them should be treated. Therefore, it is of utmost importance to incorporate the principle of equity into environmental policies.

3.2.1.3 The Principle of Sustainable Development

Sustainability in this context implies a long-term ability of an area to support its population without undesirable effects on the other people, species, or areas.[68] Thus, this dissertation advocates for the integration of the principle of sustainable development in environmental/health policies. Landon observes that at the 1992 Earth Summit in Rio de Janeiro, Brazil, several principles connecting an integrated approach to the environment, health, and sustainable development were decided upon, alongside a plan for future action. Hence, the first principle is that human beings are at the center of concerns for sustainable development. The World Commission on Environment and Development Report, 1987 defines sustainable development as the development that meets the need of the present without conceding the ability of future generations to meet their own needs.[69] These basic needs include food, shelter, work, and health care for all people, and they must be offered in a way that prejudices none of them and conserves the environment and its resources.[70] In the words of the bishops, humans are given the authority to exercise "stewardship over all material creation that should neither abuse nor squander nature's resources."[71]

3.2.2. Connecting the Environment, Human Health, and Sustainable Development

Today we are faced with a continuation of discrepancies between and within nations, an aggravation of poverty, ill-health, hunger, illiteracy, and the continuing worsening of the ecosystem on which we depend for our well-being. Against this backdrop, Vibhute states that it is essential for all states to preserve and use the environment as well as natural resources for the benefit of present and future generations.[72] The environment, of course, is a common heritage for humanity that needs to be protected. Access to a clean and healthy environment remains the fundamental right of all human beings.[73] Furthermore, the quality of the environment and the

nature of any economic developments taking place are major determinants of the health of people in that environment. The "crucified peoples" of the Niger Delta region are sick because of neglect or violence. The calamities on the people are the product of economic exploitation as well as unfair political and economic structures.[74] For this reason, this dissertation emphasizes that environmental/health policies should be able to reflect the fact that "we are all called to protect human life, promote human dignity and pursue the common good."[75]

Chapter Four: Integration of Care Ethics with the Precautionary Principle.

In this chapter, the global ethics approach is used to highlight the connection between care ethics and the precautionary principle. The two sections of the chapter explore the integration of care ethics with the precautionary principle to protect the environment. The discussion in this chapter occurs within the context of these UNESCO principles: Article 16 on Protecting Future Generations and Article 17 on Protection of the Environment, Biosphere, and Biodiversity to highlight the care and the need for caution in these ecological arenas.

4.1. The Care of Our Common Home

As discussed in chapter two, various environmental issues affect our common home. These include air quality, water quality, and sanitation, climate change, as well as biodiversity loss and ecosystem disruption. It has become obvious that human activities have detrimental impacts on the Earth system to transgress the fixed environmental state of the Holocene, which in turn have major consequences for the planet. It is highly debatable that the earth has been permanently altered by human activity as well as production practices such as the production of mining waste, misuse of agricultural chemicals, and the burning of fossil fuels. These

human activities have caused groundwater pollution, soil and air pollution, and the devastation of wildlife access strips leading to significant burdens on the environment.[76]

4.1.1 The Usefulness of Care Ethics for the Common Home

The ethics of care was developed as a promising alternative to traditional ethical theories like utilitarianism, deontology, and virtue ethics.[77] While these traditional theories emphasize the notion of society as the autonomous, rational individuals with stress on duties, rule, rights, justice, universality, impartiality, satisfaction and utility; care ethics is based on the notion of an individual that is interdependent, relational, and stresses on the importance of relationships and emotion-based virtues like mercy, care, sensitivity, benevolence, reconciliation, and friendship.[78] Again, Held avers that the ethics of care emphasizes the moral force of the obligation to respond to the desires of the dependent. The social responsibility to care for the oppressed and the environment is one ethical root of human rights.[79] Thus, Pope Francis observes that "The earth, our home, is beginning to look more and more like an immense pile of filth….Once beautiful landscapes are now covered with rubbish."[80] Hence, we must care for ecosystems and the webs of life as our natural home.

4.1.2. Fostering Environmental Stewardship in the Niger Delta Region

The need to promote improved human-environment interactions through stewardship in the Niger Delta region is very pertinent. Environmental stewardship, as defined by the Environmental Protection Agency (EPA), implies the concern for environmental quality common to those whose actions affect the environment, reflected as both a value and practice by individuals, communities, government organizations, and companies.[81] Indeed, there is a pressing need to protect, care for, or responsibly use the environment in pursuit of environmental and social outcomes in different social-ecological contexts. Considering the deplorable condition

of the Niger Delta region, this dissertation encourages people or groups to take stewardship actions in protecting the environment.

4. 2. Application of the Precautionary Principle

4.2.1. The History and Meaning of the Precautionary Principle

Precautionary principle originates from the German socio-legal tradition. It was introduced into English as a translation of the German word *Vorsorgeprinzip*.[82] By and large, two formulations may be the standard examples of the precautionary principle. The first one was adopted at the United Nations Conference on Environment and Development in Rio de Janeiro (1992)[83] while the second one was introduced at the Conference organized by Science and Environmental Network (SEHN) (1998).[84]

Also, there are so many definitions of the precautionary principle. The most globally accepted definitions result from the Rio Conference: where there are threats of serious or unalterable damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation[85]and the 1998 Wingspread Statement with similar language: when an activity advances threats of harm to either human health or the environment, precautionary actions should be carried out even if some cause and effect relationships are not yet recognized scientifically. [86]

Apart from the ethical foundation of the precautionary principle, it is also seen as a legal norm.[87] It is generally adopted as a legal risk management tool in international environmental law and regulation, particularly in the marine environment.[88] In fact, since its introduction, the precautionary principle has been used in modern international laws as well as domestic laws that relate to the environment.[89]

Also, the precautionary principle is regarded as a new model for risk management. Due to the complexities and inadequacies of ecological risk assessment, the precautionary principle is now being considered as the new model for risk management.

4.2.2 Precautionary Principle as a New Model for Risk Management

This section goes further to discuss the principles that guide the application of the precautionary principle and its implementation in environmental/health policies.

4.2.2.1 Principles that Guide the Application of the Precautionary Principle in Environmental/Health Policies

The general principles of risk management remain suitable when the precautionary principle is invoked.[90] According to the European Commission, the principles or elements of the precautionary principle are proportionality, non-discrimination, consistency, an examination of the benefits and costs of action or lack of action, and examination of scientific developments. Here, proportionality means that measures involving the precautionary principle should not be disproportionate to the preferred phase of protection. Except there are objective justifications for doing so, the principle of non-discrimination suggests that similar situations must be treated differently and that different situations must not be treated in the same way.[91] Furthermore, the principle of consistency implies that measures should be constant with the measures previously implemented in similar situations or using similar methods. Examining benefits and costs under precautionary principle entails that the overall cost of action and those of inaction, in both the short and long-term, must be compared. Also, measures under the precautionary principle should continue if the scientific data are insufficient.[92]

4.2.2.2 The Need for Precautionary Approach in Environmental and Public Health Policies in the Niger Delta.

A precautionary approach to environmental as well as public health decision-making is urgently needed, especially in the Niger Delta region of Nigeria. In the views of Tickner, Raffensperger, and Myers, the precautionary principle is a new way of thinking about public and environmental and health protection and long-term sustainability. It tasks us to make fundamental changes in the way we permit and restricts hazards.[93] Although this approach poses threats to government agencies and polluters and is to be expected to lead to powerful resistance, there is a need for a precautionary approach to the environmental policy in Nigeria. A precautionary approach to public health and environmental decision-making comprises these components: carrying out the precautionary action before scientific certainty of cause and effect, goal setting, looking for and assessing alternatives, shifting burdens of proof, developing democratic and thorough decision-making measures and methods.[94]

Chapter Five: Adopting a Systems Approach for Health and the Environment

In this chapter, the global ethics approach is used to highlights the need for a systems approach for health and the environment. The two sections of the chapter explore the significance of a systems approach in relation to the debate on patient safety in healthcare and the debate on clinical trials in research. The discussion of this chapter occurs within the context of these UNESCO principles: Articles 5-9 that highlight the connection between autonomy, consent, vulnerability, privacy and confidentiality as well as Article 12 on Respect for Cultural Diversity and Pluralism, Article 13 on Solidarity and Cooperation, Article 14 on Social Responsibility, and Article 15 on Sharing of Benefits.

5. 1. Systems Approach for Patient Safety

5. 1.1 General Framework of Patient Safety in Health Care System

The consciousness of medical harm, as well as efforts to lessen it, are as old as medicine itself tracing back to Hippocrates' classic dictum to 'abstain from harming or wronging any man.'[95] Thus, in 1999, the Institute of Medicine published "*To Err is Human, Building a Safer Health System*" as a landmark report.[96]

Patient safety has become the foundation stone for high-quality care.[97] Thus, patient safety means "the avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the process of healthcare."[98] Similarly, Carbo and Weingart define patient safety "as freedom from accidental medical injury."[99] Likewise, the Institute of Medicine defines patient safety as "the prevention of harm to patients."[100] All the definitions are pointing to one thing: avoidance of harm. Thus, patient safety is accomplished through a system of care delivery that avoids errors, learns from the mistakes that do occur. A significant aspect of a patient safety system is a culture that reassures healthcare professionals, patients, and others to be more watchful in recognizing possible or actual errors, taking proper steps to prevent, and lessen harm.[101]

5.1.1.1 Medical Errors that affect Patient Safety Culture

The Institute of Medicine defines a medical error as the failure of a strategic action to be accomplished as intended or the use of a wrong plan to achieve an aim.[102] There are different kinds of medical errors that affect patient safety in health care organizations. They include medication error, surgical error, diagnostic error, human factor, and errors at the person-machine interface, transition and handoff errors, and team and communication errors.[103]A medication

error refers to a failure in the treatment process that leads to or has the possibility of harming the patient.[104] Also, surgical errors in the health care system are many. Some surgical problems happen regardless of unsullied care, while errors cause others. Surgeries account for a moderately high percentage of both adverse events and preventable adverse events.[105] In addition, diagnostic errors have affected the patient in major ways. Schiff et al. define a diagnostic error as "any mistake or failure in the diagnostic process leading to a misdiagnosis, a missed diagnosis, or a delayed diagnosis."[106]

Furthermore, human factors and errors at the person-machine interface connote immediately how human factors engineering can improve the safety of person-machine interactions as well as the environment in which health caregivers work. Human factors analysis implies that human beings have limitations as imperfect beings.[107] Also, transition and handoff errors are apparent in the health care system. Transitions are the fact of medical life. Transitions of care mean the movement of patients between health care providers, settings as well as home as their circumstance and care require change.[108] Likewise, handoffs imply the practice of shifting primary authority and responsibility for clinical care from a leaving caregiver to an incoming one.[109] Again, teamwork and communication errors are now serious errors that hindered patient safety culture in general. Hence, Leonard et al. state that effective teamwork, as well as communication, is vital for the delivery of safe and high-quality patient care.[110]

5.1.2 Basic Models/Principles for Patient Safety in Health care System

In this section of the dissertation, two major models and some principles will be examined. The two models are systems thinking/Swiss Cheese model and complexity theory/complex adaptive system. In the views of Wachtar and Gupta systems thinking, which serves as the present-day approach to patient safety, replaces "the blame and shame game." Systems' thinking

is a model that admits the human condition specifically that human errs, and settles that safety depends on creating systems that go before errors and either avoid or catch them before they cause harm. The Swiss cheese model" by the British psychologist James Reason serves as a mental model for system safety.[111] Again, the systems' thinking model highlights that medical errors should be scrutinized from their root causes and not just the smoking gun, sharp-end error. On the other hand, complex issues bear the highest level of risk. Therefore, creating a patient safety culture in healthcare system involves the design of systems to make risky interferences consistent.

Furthermore, there are ethical principles that necessitate patient safety culture in the health care system. These principles are human dignity, do no harm (non-maleficence), and the principles of utility, justice, transparency, and accountability. The core goal of any health care system is to protect, sustain, and encourage the safety of care delivered to the public.[112] For these reasons, ethical issues are well-thought-out as the essential conceptual foundation for patient safety in the health care system.[113]

5.1.2.1 Applying Patient Safety Models/Principles to Environmental Issues in Nigeria's Niger Delta Region

Wangbu advances that the crises in the Niger Delta region rotate around some outstanding essential issues such as environmental pollution and destruction, legislation of disempowerment and subjugations, politics of marginalization and exclusion, social and political exclusion, as well as Land Use Act (1978).[114] It is against this backdrop that this section of the dissertation applies patient safety models/principles to the environmental issues in the Niger Delta region. Macchi et al. describe safety models as the background, fundamental assumptions directing the understanding of how an organization functions and fails.[115] With the systems thinking model,

there is an acknowledgment of human condition, namely, that human errors are inevitable. Therefore, there is a need to apply safety measures by creating systems that forestall errors and either avoid or catch them before they cause harm.[116] However, one of the fascinating aspects of the Swiss cheese model, which this dissertation has found more useful for the environmental issues in the Niger Delta, is the root cause analysis. So, a root analysis of the ecological problems in the Niger Delta region is paramount. Human errors from several Nigerian leaders, multinational oil companies, and saboteurs have caused an unsafe environment for the people of the Niger Delta. Therefore, this dissertation calls for environmental/health crises to be addressed from their roots.

Furthermore, the ethical principles that promote patient safety cultures like respect for human dignity, non-maleficence, utility, justice, transparency, and accountability must be underlying principles that shape the laws and policies that help to safeguard the Niger Delta environment.

5.2. Systems Approach for Clinical Trials

Oil exploration and exploitation activities are vital contributors to the disease burden in the Niger Delta region; hence, this section of the dissertation considers it pertinent to set up an ethical framework that will guide the conduct of clinical trials in the Niger Delta region. While clinical trials are essential to moving healthcare forward in terms of promoting the development of indigenous drugs and health, measures must be put in place to overcome the exploitation of a vulnerable population.

5.2.1. The Notion, Types, and Phases of Clinical Trials

Clinical trial refers to the potential, biomedical or behavioral research study of human subjects that is planned to answer specific questions about biomedical or behavioral interventions such as drugs, devices, vaccines, treatments or new ways of using identified drugs. Clinical trials

are used to control whether new biomedical or behavioral interventions are harmless and useful.[117] Thus, clinical trials are usually designed to answer two fundamental questions, namely, "Does the new treatment work in human beings? Is the new treatment safe for human beings?"[118] Again, there are five different types of clinical trials, according to Farmer. They include treatment trials, diagnostic trials, preventive trials, quality of life trials (supportive care trials), and screening trials.[119]

Furthermore, the testing of new active substances in human beings are carried out in different phases.[120] There are four phases in clinical trials. Phase I helps to establish the safety and toxicity profile of the test drug.[121] Phase II clinical trials study the biomedical or behavioral intervention in a bigger group of people at least several hundred to ascertain the effectiveness and to further assess its safety. Phase III studies examine the efficacy of the biomedical or behavioral intervention in large groups of human subjects at least from several hundred to several thousand by relating the intervention to other standard or experimental interventions.[122] Phase IV is post-marketing surveillance.[123] Still, phase IV monitors drug for adverse effects.[124]

5.2.1.1 Significant Participators in Clinical Trials and their Roles

This section examines the significant participators in a clinical trial. These participators include the drug regulatory authority, sponsor, investigator, monitor, clinical trial services providers, trial participant, and institutional research board/ independent ethics committee.

The drug regulatory authority has the responsibility of reviewing and approving clinical trial protocols as well as ensuring that every clinical trial complies with the national regulations and international guidelines.[125] The sponsor initiates a clinical trial by obtaining permission from the drug regulatory authority or authorities of other countries, depending on the nature of the trial. The overall responsibilities of a clinical trial sponsor include initiating a clinical trial plan as well

as submission to the regulatory authority or authorities for approval.[126] The responsibility of the investigator is to conduct or supervise clinical trials. According to the ICH GCP Guideline, the investigator(s) should be an expert through education, training as well as experience to assume responsibility for the proper conduct of the trial.[127] Besides, data safety monitoring boards consist of doctors as well as other scientists not involved in the study.[128] The monitors oversee the quality and integrity of data gotten from clinical trials and the rights and safety of human subjects that are involved in the study. Also, the monitor reviews the investigator's report and submit the same report to the sponsor.[129] The clinical trial services provider deals with the outsourcing of tasks that are related to clinical trials. They act as independent companies offering research services for biotech and pharmaceutical industries.[130] Also, trial participants are selected from an ordinary pool of patients at the trial site, but occasionally by referral from other health centers or through local advertisements. Clinical trials are conducted using both healthy volunteers (healthy participants) as well as unhealthy volunteers. Finally, an institutional research/independent ethics committee is very crucial in the conduct of any clinical trial. Therefore, it is the responsibility of the ethics committees to guarantee that the liberty and well-being of the human subjects are protected and that national and international ethical and legal requirements are maintained.[131]

5.2.2 Clinical Trial as a Global Bioethics Problem or Concern

Quoting H. Bloch, Ignoumenidis, and Zyga aver that history overflows with examples of people with power using humans as guinea pigs. However, Nazi human experimentation, which took place in the concentration camps during the Second World War, is the most provoking. With all the atrocities committed by medical researchers in Germany for using involuntary vulnerable participants drawn from Nazi concentration camps led to the Nuremberg Code of

1947. The Nuremberg Code was established as the first universal document governing human subjects.[132] Again, the World Medical Association (WMA) further developed the ethical principles laid down in the Nuremberg Code. Its deliberations in due course found expression in the Declaration of Helsinki.[133]Apart from the Declaration of Helsinki, there exist several documents that prescribed guidelines for the ethical conduct of clinical trials and research in general, such as the Nuffied Council on Bioethics. The Ethics of Research Related to Health Care in Developing Countries; Council for International Organization of Medical Sciences (CIOMS); World Health Organization (WHO); and the ICH GCP Guideline.[134] However, this study will examine the general ethical requirements of clinical research, as outlined in the Declaration of Helsinki and the ICH GCP Guideline. The choice of these two documents is partly because of the scope of this dissertation, as well as their emphasis on the human research ethics code of practice.

5.2.2.1 Clinical Trials in Developing Nations Vis-à-vis Ethical Principles for Conducting Clinical Trials in the Niger Delta Region.

5.2.2.1.1 Clinical Trials in Developing Nation: No doubt, there are various barriers to conducting clinical trials in developing countries. Alemayehu et al. identify a lack of financial and human capacity, lack of research environment, ethical and regulatory system obstacles, operational barriers, and competing demands as major barriers for conducting clinical trials in developing countries.[135] Notwithstanding these barriers, Ten Have asserted that "outsourcing clinical trials in developing countries can speed up the research process and therefore possible approval of the new medication."[136] But then, the clinical trial becomes "problematic if it targets vulnerable populations that do not benefit or are possibly harmed since different ethical standards are applied."[137] The report has shown that clinical trials in Africa and other developing

nations do not always follow the laid down ethical guidelines. Of course, such negligence places research participants at risk of being harmed or having their rights dishonored.[138] On this issue, Johnatty warns that trials in developing nations should not become a new form of neo-colonialism. Instead, she encourages researchers to see their role as assisting, guiding, and teaching, but not taking control.[139]

5.2.2.1.2 Ethical Framework for conducting Clinical Trials in the Niger Delta Region:

This dissertation considers it pertinent to set up an ethical framework that will guide the conduct of clinical trials in the Niger Delta region. In the opinion of Kasper, basic ethical principles for clinical trials are common, but their interpretation and understanding may vary slightly among cultures and countries.[140] Nevertheless, the principles of human vulnerability, autonomy/respect for personal integrity, nonmaleficence, beneficence (sharing of benefits), and justice (distributive justice) must guide clinical trials in the Niger Delta region. For instance, the principle of "respect for human vulnerability and personal integrity" hint at the responsibility of taking into deliberation the vulnerability inherent to all human beings.[141] Likewise, the principle of nonmaleficence obliges researchers and their sponsors to abstain from causing harm to research participants during clinical trials.[142] The principle of beneficence implies a declaration of moral obligation to act for the benefit of others.[143] Thus, the principle compels every researcher in a clinical trial to promote the good of the research participants as well as their host country. Therefore, modifying the design of the clinical trials towards the minimization of risks/harm and maximization of benefits is of great importance.[144] Furthermore, to give more credence to the principle of sharing of benefits is the principle of justice. The principle of justice implies "fair, equitable, and appropriate treatment in light of what is due or owed to persons."[145]

Justice requires a fair balance between burden and benefit, both at the individual and societal levels.[146]

Chapter Six: Conclusion

Like other global bioethical problems, the Niger Delta environmental and health problems have a global implication. Thus, this dissertation adopts a global ethics approach that uses the UNESCO Declaration principles to contribute to health and the environment in the Niger Delta. The environmental/health problems in the Niger Delta region like any other global bioethical issue that can affect other areas or future generations if nothing is done to salvage the situation. The UNESCO Declaration principles that guide the discussion in this dissertation assumes immediately that human beings as global citizens have responsibilities to each other irrespective of one's nationality. This approach urges all humans towards the respect for human dignity and human rights, protection of the environment, biosphere and biodiversity, protection of future generation, solidarity and cooperation, social responsibility, sharing of benefits, non-discrimination and non-stigmatization, respect for cultural diversity and pluralism, promotion of justice, equality and equity among others. For this reason, the dissertation advocates for the proper utilization of these principles in policies that connect health and the environment in the Niger Delta region. Also, it raises an ethical voice that urges the Nigerian government, multinational oil firms, and miscreants to redirect their steps toward the proper implementation of environmental/health policies that beneficial to the people. Finally, by way of moving forward in this dilemma, this study recommends four areas of immediate sensitization: safety culture, responsibility, management, and legislation.

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CHAPTER TWO: DEGRADATION OF THE ENVIRONMENT AND HEALTH IN THE NIGER DELTA REGION

2. 0 Introduction

According to the World Population Review, Nigeria is the eleventh largest producer of oil in the world,[1]and this has been made possible through the Niger Delta region. For this reason, Wangbu remarks that "the wealth of Nigeria as a nation lies in the Niger Delta region. Without Niger Delta oil, Nigeria will be gasping for breath."[2] However, this oil-rich region over sixty-three has experienced the worst form of environmental degradation, oppression, and injustice.

For this reason, Articles 8 "respect for the vulnerability and personal integrity,"14 "social responsibility and health," and 17 "protection of the environment, the biosphere and biodiversity" of UNESCO declaration are used in this chapter to enlighten the discussion.

Thus, Article 8 "respect for human vulnerability and personal integrity" of UDBHR stipulates that "*in applying and advancing scientific knowledge, medical practice and associated technologies, human vulnerability should be protected, and the personal integrity of such individuals respected*."[3] Likewise, Article 14 "social responsibility and health" of the UDBHR states that:

1. *The promotion of health and social development for their people is a central purpose of governments that all sectors of society share.*
2. *Taking into account that the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion,*

political belief, economic or social condition, progress in science and technology should advance:

a. *Access to quality health care and essential medicines, especially for the health of women and children, because health is essential to life itself and must be considered to be a social and human good;*
b. *access to adequate nutrition and water;*
c. *improvement of living conditions and the environment;*
d. *elimination of the marginalization and the exclusion of persons on the basis of any grounds;*
e. *reduction of poverty and illiteracy.*[4]

Again, Article 17 "protection of the environment, the biosphere and biodiversity" specifies that: *Due regard is to be given to the interaction between human beings and other forms of life, to the importance of appropriate access and utilization of biological and genetic resources, to respect for traditional knowledge and to the role of human beings in the protection of the environment, the biosphere, and biodiversity.*[5]

Considering the above UNESCO Articles, the discussion in this chapter wonders to what extent have the multinational oil companies and the Nigerian government considered these vital principles in their oil exploration activities in the Niger Delta region? The Niger Delta is rated by environmental experts as the most oil-impacted environment and the polluted area in the world, and the main contributor to this is the persistent flaring of associated gas during oil production.[6] These in no small measure have contributed to the vulnerability of the entire people of that region. Of course, the Nigerian government, multinational oil companies, and miscreants are blamed for destroying the natural and human environment of the local communities through their

non-implementation of adequate environmental/health policies that are used globally. In fact, people's rights to life, a healthy environment, health, food, etc. are in jeopardy.

2.1. Historical Background of the People of Niger Delta Region in Nigeria

The discussion in this section focuses on the geography and the people of the Niger Delta region in Nigeria. Also, it considers the colonial impacts on the people of the Niger Delta region.

2.1.1 Niger Delta Region: The Geography and the People

The Niger Delta is one of the largest wetlands in the world and the site of most of Nigeria's biodiversity. The Niger Delta region comprises of nine states of the Federal Republic of Nigeria, namely Rivers, Bayelsa, Akwa-Ibom, Delta, Edo, Cross River, Abia, Ondo, and Imo.[7] These nine states have 95 percent of Nigerian oil reserves that account for 90 percent of government revenue as well as 95 percent of its export receipts.[8] Also, the Niger Delta has fertile agricultural land, forests, rivers, creeks, and coastal waters teeming with fish and various aquatic creatures. It is advantageously located in the Gulf of Guinea, which has 5-7 percent of the world's petroleum reserves.[9] As against the 1995 World Bank report, that gives the total land area of the Niger Delta as 20,000 sq. Km, Tamuno avows that the Niger Delta has a landmass of about 70,000 sq. Km.[10] The ecosystem of its multifaceted ecological mix covering the coastal islands, massive mangrove, and freshwater swamp forests and a low land forest zone has experienced quick changes in recent times from natural and human-made disasters. The natural disasters include flooding, topographic, edaphic, erosion, etc. while human-made disasters are mineral oil exploration and corruption as well as the construction of dams.[11]

Additionally, the Niger Delta region has more than 40 ethnic groups, speaking over 250 local dialects.[12] However, the region has five major linguistic and cultural groups, which include the Delta Cross, Ijoid, Edoid, Igboid, and Yoruboid, and each is made up of many sub-groups.[13] The Delta Cross comprises mainly the Ogoni, Ikwerre, Etche, Abua, Ogba/Egbema, Obolo/Andoni, and Odual in Rivers State, and the Oron, Ibibio, and Ibeno in Akwa-Ibom/ Cross Rivers States. The most renowned in this group is the Ogoni people of Rivers State because of its agitation for political autonomy and resource control. The Ijoid people are recognized to have elongated settlement history in the Niger Delta. This group occupies almost the whole of Bayelsa State, and they are also found in Rivers, Delta, Akwa-Ibom, Edo and Ondo States. The Edoid group comprises largely of Edo State, the Degema of Rivers State, and the Engenni and Apie-Atissa of Bayelsa State. The Igboid and Yoruboid are the smallest group in the Niger Delta region, although they are two of the largest ethnic groups in Nigeria. The main Igboid groups comprise of the Ikwerre, Ekpeye, Ogba, Egbema, and Ndoni people of Rivers State and the Ukuwani in Delta State. The main Yoruboid groups are the Ilaje and Ikale in the borders of Ondo State as well as the Itsekiri of Delta State.[14] On the whole, Monsi states that the people of the Niger Delta region comprise over 50 main ethnic groups and a greater number of cultural as well as linguistic entities.[15]

Also, in the 1991 census, the region has a total population of 20.5 million (10.133 million males and 10.329 million females), while the projected population for 2005 is 28.9 million, rising to 39. 2 million by 2015 and 45.7 million by 2020.[16] However, most of the indigenous peoples depend mainly on farming and fishing for their livelihood.[17] Due to their subsistence agrarian vocations, their incomes are minimal and cannot even afford them balanced diets.[18]

2.1.2. The Colonial Impacts on the Niger Delta Region

Historically, the Niger Delta as a region predates Nigeria's emergence as the British colony by at least a decade. It later became an active center of Nigerian economic activities from colonial times.[19] In fact, the geography of the Niger Delta and its economy, to some extent, made the force of colonial capitalism on the area different from other communities in Nigeria.[20] As stated by Chukwu, who visited Benin city in the 15th century for commercial reasons, the Europeans had known the Niger Delta region as a commercial area. It was this visit that moved other European merchants, adventurers, and missionaries in the 19th century to come to the Niger Delta with other economic and political reasons.[21] Although many European countries like Portugal, France, Germany, Belgium, and Great Britain scrambled among themselves to hold on the Niger Delta environs and its profitable businesses, only Britain did everything within its power to safeguard its economic and political interests in the region.[22] With the so many rivers and sea that crisscrossed the Niger Delta region, colonial capitalism basically developed these natural routes of transportation to facilitate the movement of palm produce, the main export of the country then, to the seaports for straight on shipment to Europe. On the other hand, the importation of goods and services was also brought in through these routes into the country. Consequently, the colonial transportation system put in place disrupted the natural fishing activities of the Niger Delta people, among others. The subtle ecology of the region made it simply vulnerable to interruption.[23]

Furthermore, the amalgamation of the Northern and Southern protectorate by the British in 1914 centralized the administration of the colony to facilitate its exploitative tendencies.[24] The only bond of political unity between the colony and any of its parts like the Niger Delta area and the colonial state after 1914 was in the person of Sir Frederick Lugard. The amalgamation only

empowered Lord Lugard to supervise the economy of the Niger Delta area, mostly the financial proceeds that accumulated from the export of palm produce, among other exports from the area without the development of the people and societies.[25] The amalgamation only allowed the colonial masters to loot the resources of the people without any adequate development[26]even worst with the enactment of the Minerals Ordinance of 1912 that placed the sole right of ownership over minerals on the Crown, her Royal Majesty.[27] It was this same 1912 Mineral Act as amended in 1913 and 1914 that remained in place until Shell (i.e., the first multinational oil company) came to the Niger Delta region in 1937 to prospect for crude and to impoverish the region as taught by their predecessors. With the amendment of Mineral Ordinance in 1914, licenses for oil production in Nigeria was granted mainly to British companies and individuals. In 1937, the Shell D'Arcy Company, both owned by Shell and by British Petroleum (B.P.), was granted special exploration and production rights in the country. This control was retained until 1955 when Mobil came in the field for the very first time for oil exploration. In 1959, still under colonial administration, the Petroleum Profits Tax Ordinance initiated a fifty-fifty profit share between the government and oil companies. In 1967, the government forced OPEC terms on the oil firms operating in Nigeria, making sure that much better royalties were paid.[28] Again, in 1968, Companies Decree required all companies operating in Nigeria to become Nigerian corporations. Today, these multinational companies operate as joint ventures; however, they continue to make all decisions in their day to day activities. The major onshore oil exploration and production activities embarked on today by foreign oil firms in Nigeria are in joint ventures with the Nigerian National Petroleum Corporation (NNPC), which serves as the nation's oil company.[29] However, to continue its exploration and the marginalization of the Niger Delta

region, the Constitution of the Federal Republic of Nigeria stipulates that all minerals, oil, and gas in Nigeria belong to the federal government.

Also, the history of the conflicts in the Niger Delta region cannot be disentangled from the history of British colonial administration and oil exploration in the nation.[30] As noted by Habiba, during the colonial administration, the British forced colonial rule to protect their capital and use the colonial administrators as servants of imperialism. These colonial administrators who ruled from 1900 to 1960 were formed to serve as tools for economic exploitation. The colonial masters used the prevailing social institutions to protect their economic exploits. This condition gave rise to suffering and cultural perplexity.[31]

Besides, early relations between Europeans and Niger Delta peoples were dominated by slavery and the slave trade. Thus, slavery formed the nature of the conflict, collaboration, and competition for economic and political superiority between and among the many ethnic groups that exist in the Niger Delta region.[32] Slavery was the crucial economic factor, means of production, and way of life in the Niger Delta region for more than three hundred years, starting in the late fifteenth century.[33] Available records of slave shipments from Bonny and Old Calabar by English slave traders show that between 1650 and 1800 about 1,010,000 slaves were shipped from the Bight of Biafra ports; between 1690 and 1807, another 1,069,100 slaves were shipped by the English traders from the port cities in the Bights of Biafra and Benin.[34] The Portuguese, French, Dutch, Swedish, and British slave traders traded with local elites. Disagreements over lack of payment intermittently ended in pitched gun conflicts between Africans and European traders, and the cross-fertilization of ideas among the many diverse groups was rampant.[35] Moreover, it was crystal clear that the Niger Delta people have always demonstrated a sense of hostility towards external domination. For instance, the clash between King Jaja of Opobo and

the British that resulted in Jaja's exile in 1886; the famous Akassa raid on the Royal of Niger Company in 1895 by King Koko of Nembe and the 1895 crisis between Nana Olomu (the then Itsekiri Governor of Benin River) and the British were some of the peoples' resistance to external domination.[36]

2. 2 Exploitation of Vulnerable Population as a Global Bioethical problem

This section considers the Niger Delta region as the most vulnerable population in Nigeria, while emphasizing on the impacts of oil exploration on the environment and health of the people. This section looks at major environmental issues that impact human health as well as a framework of actions for a healthy environment and healthy people.

2. 2.1 The Most Vulnerable: Rich Region, Poor People

The Niger Delta region is considered as the most vulnerable people in Nigeria. There are two types of vulnerability: general or universal vulnerability and special or accidental vulnerability. It would interest you to know that the Niger Delta people suffered from both types of vulnerability. The general or universal vulnerability is a vulnerability that is inherent in all human beings.[37] Fineman describes it as "a universal, inevitable, enduring aspect of the human condition."[38] On the other hand, special or accidental vulnerability develops from the environment in which humans are living. In this scenario, some people are more vulnerable than others since they are more insecure about threats or more sensitive or have less adaptive capacity. Here, people are made vulnerable by their society.[39] So, the present condition of the Niger Delta people corresponds to Neil Adger's definition of special vulnerability as described above. Adger defines vulnerability as "the state of susceptibility to harm from exposure to stresses associated with environmental and social change and from an absence of capacity to adapt."[40] The Niger Delta

region in Nigeria is marvelously endowed with natural resources. Yet, as the treasure base of the nation, the region has persisted under threat from swiftly worsening environmental and socio-economic situations.[41] According to Ten Have, categorizing persons or populations as vulnerable indicates that they are in danger of being harmed. "They can be subjected to many different forms of wrongful treatment: neglect, abuse, discrimination, exclusion, and oppression."[42] Also, vulnerability is an indicator of social inequality, especially from the political point of view.[43] Quoting Nancy Scheper-Hughes, Ten Have describes that the people are exposed to everyday violence. They live in a long-lasting state of vulnerability with "routinization of human suffering."[44] Thus, Kamweri reiterates that the notion of vulnerability is frequently used concerning those in less developed countries with the necessary provision for socio-economic development, to improve individual freedoms and dignity.[45] So, the portrayal of the developing countries as vulnerable indicates the responsibility of defending and protecting them so that they will not be harmful or ill-treated.[46] For this reason, the UDBHR insists on "the obligation of taking into consideration the vulnerability inherent to all human beings."[47]

Even though oil has brought economic development to some nations of the world, Nigeria's Niger Delta region has been impoverished by the activities of these oil industries. The condition of the Niger Delta people is bothersome when one thinks about the amount of wealth extracted from this region. For example, "from 1970 to 1988, the Federal Government received a total of $183.1 billion from oil from the Delta."[48] Also, stressing on the injustice done to the Oloibiri community, among others, a foreign staff of Shell BP once said: "I have explored for oil in Venezuela, I have explored for oil in Kuwait, I have never seen an oil-rich town as completely impoverished as Oloibiri."[49]

Moreover, the discovery of "crude oil has come to pit the Niger Delta region against the economic interests of the Nigerian government.[50] It has led the Niger Delta region to experience two kinds of cruel wars. First, a long-time ecological war levied by the multinational oil companies operating in the region, and second, the political war of oppression and greed, which dispossesses the Niger Delta of their right and wealth.[51] Presently, there are a good number of civil society groups in the Niger Delta region advocating for fiscal federalism, self-determination, resource control, and equity.[52] Of course, these indigenous groups are compelled to ask for compensation from the Federal Government and the multinational oil film for the many years of looting, abandonment, and destruction of their ecosystem through non-violent means.[53] However, in recent times some of the youths have used violent means in agitating for their rights. Hence, Osigwe observes that "this expression of grievances has taken two approaches, namely, the elite who employ dialogue with government and the multinational oil companies, and the unemployed youths who have taken to armed violence and the kidnapping of key employees of the oil companies." [54]

Nevertheless, the first protest of unhappiness by the people of the Niger Delta region over their status in the sovereign nation of Nigeria took place on February 23, 1966. This protest was organized by Isaac Jasper Adaka Boro, an Ijaw by ethnic origin. Boro, with over 159 of his compatriots, staged a secessionist effort under the banner of the Niger Delta Volunteer Service (NDVS), announcing an independent Niger Delta Peoples Republic. At last, he was killed in 1968 under bizarre circumstances. Also, angered by the situation of the Niger Delta people, the Movement for the Survival of Ogoni People (MOSOP) was formed. This movement emerged in an attempt to rescue the Ogoni people and the entire Niger Delta region from internal colonialism and environmental strangulation as well as challenging the horrible, disgraceful and

repressive system imposed by the military regime in Nigeria. This led Dr. Ken Saro-Wiwa to walk away from his business and writing career and sacrifice it all for the Niger Delta cause. He argues that the attitude and activities of Shell in the Niger Delta were colonialist, whereas in Europe and elsewhere, they employ a different set of behaviors.[55]

Still, there are some law-abiding youths from the Niger Delta because of frustration have formed militant groups. These groups are aggressively looking for ways to transform the economic, political, and social conditions in the Niger Delta region. By so doing, they have resorted to violent means, which, of course, is detrimental to the region. Some of these militant groups are opportunistic and are going about their private interests, for example, the Niger Delta Vigilantes (NDV) led by Ateke Tom and the Niger Delta People's Volunteer Force (NDPVF) led by Mujahid Dokubo-Asari. These two major groups have formed other smaller groups that are spread across the region to control petroleum resources through oil "bunkering," that is, an act of tapping of an oil pipeline and taking out the oil into a barge for sale.[56] Citing an anonymous laboratory scientist, Osuigwe gives a sharp picture of how "bunkering" started in the region, that part of the problem of the Niger Delta is complete abandonment by every successive government that has been in power. The Niger Delta people have been mistreated for a long time, and what the government will always do is to keep making promises to them of water, light, infrastructure. The government would always say that everything is in the pipeline: water in the pipeline, light in the pipeline, infrastructure in the pipeline, and because the Niger Delta people are looking for that thing in the pipeline, you see vandalism. So, we have vandalism in the Niger Delta today because they are tired of achieving those things in the pipeline.[57]

Today, oil of poverty is a colossal reality in the Niger Delta region whose wealth has created their poverty by nourishing the prosperity of those corrupt leaders and multinational oil firms.[58]

Sobrino calls it as poverty that is "dialectical…poverty because there is wealth, and there is wealth because there is poverty.[59] Again, "we might wonder whether there is anything more tremendous and terrifying, anything better calculated to fill us with trembling, than the situation of poverty and daily death of humanity's poor"[60] as experienced by the "crucified people" of the Niger Delta region in Nigeria. The Niger Delta people are made vulnerable because of a lack of access to healthcare, education, electricity, housing, good road, etc. They are poor and hungry because jobs, wealth and income are not well circulated to them. Therefore, this dissertation reiterates that the government and the multinational oil companies should be aware of the vulnerability of the Niger Delta people. This condition "requires the care of others, the responsibility, and solidarity of others in the recognition and the non-exploitation of that condition."[61] Thus, Article 8, "the principle of respect for human vulnerability and personal integrity" of the UDBHR, therefore, evokes the need for special protection for a vulnerable population. It calls for responsibility and solidarity from both the Nigerian government and multinational oil companies towards the vulnerable people of Niger Delta. Likewise, Article 14 (solidarity and cooperation) of UDBHR highlights that "any decision or practice shall pay due regard to the solidarity of human beings and encourage international co-operation to the end."[62] Vulnerable populations are the object of solidarity, and solidarity identifies humans as inherently vulnerable. At the same time, international cooperation from the ethical standpoint should not be motivated by selfishness but by concern for common goods.[63] Lastly, Article 8 of UDBHR goes further to assert that "both at the social and international level, that the benefit of some should not be attained by exploiting the weakness of others, as well as the understanding that the greater wellbeing of only some will make the rest, the excluded, even more vulnerable."[64] This principle brings about a new logic in ethical reasoning that emphasizes "the solicitude of

obligations that are due to all."[65]

2.2.2. The Impact of Oil Exploration on the Environment/Health of the Niger Delta people

The discovery of crude oil in commercial quantities in the Niger Delta region marked another turning point in its history. Crude oil was first discovered in 1956 in Oloibiri in the present day Bayelsa State. Successive oil discovery took place in communities like Afam, Bomu, Ebubu, Umuechem, and Korokoro in Rivers State.[66] The export of crude oil started in 1958, even though large quantities only started to flow from 1965.[67] In effect, "between the mid-1950s and 2005, approximately 5284 oil wells have been drilled in more than 1,500 communities in the Niger Delta,[68]with the average production of 2.4 million barrels a day.[69] It is based on this fact that Nigeria is viewed as the leading producer of petroleum in Africa and the major producer of sweet (almost sulfur-free) crude oil among OPEC member countries.[70] The major oil firms that later joined Shell Bp in the region are Texaco, Mobil, Tennessee Nigeria Incorporated now called Tenneco, Gulf, Nigeria Agip Oil Company, Safrap now called Elf and Esso West Africa.[71]

Today, because of the rising profile of oil exploration and production activities owing to the participation of many oil companies, the region is now major prey to environmental pollution and deprivation.[72] In the view of Eweje, the Niger Delta region is one of the most endangered regions in the world due to acts of environmental pollution that result from gas flaring and oil spillage.[73] Omotola uses the term "environmental apocalypse" to highlight the environmental situation in the Niger Delta. For Omotola, the term is devised to describe the increasing impact of oil pollution and gas flaring in the Niger Delta region.[74] Likewise, Watts uses the "resource curse" to a region endowed with resources that continued to be the least developed.[75] The multinational oil companies operating in the Niger Delta region have turned the region into toxic

dumping grounds even when they are aware that there is neither the organizational capacity nor the technical expertise required to dispose of dangerous wastes appropriately. The peoples of this region are excessively exposed to environmental contamination that threatens their health. Underscoring this fact, Monsi avers that "the effects of oil and gas exploration and exploitation on the Niger Delta territory are many and varied with pernicious impacts on the environment, economy, and health of the people."[76]

Furthermore, the late Environmental Human Rights Activist and President for the Movement for the Survival of Ogoni People (MOSOP), Ken Saro Wiwa once remarked that the Niger Delta environment (Ogoni land in particular) has been "completely devastated by three decades of reckless oil exploitation or ecological warfare by Shell…. It is omnicidal in effect. Human life, flora, fauna, the air, fall at its feet, and finally, the land itself dies."[77] The environment of the Niger Delta region has impacted heavily on the health of the people. For this reason, Environmental groups have often "accuse the oil companies of operating double standards; of allowing practices in Nigeria that would never be permitted in North America or Europe."[78] Again, quoting Nsuke, Wayii opines that "Shell had operated… for over 50 years and left nothing other than a completely devastated land."[79]

Also, there are excessive gas flaring, oil spillage, and pipeline vandalization in the Delta region. From the available statistics released by the Department of Petroleum Resources show that a total of 4,835 incidents of oil spillage occurred between 1976 and 1996,[80] and these incidents have continued to date. However, the highest oil spillage that happened in Nigeria was an offshore well blowout in January 1980. As contained in the World Bank report, between 1976 and 2006, there were 9,005 informed cases of oil spills with a spillage of about 10.1 million barrels, of which only 2.4 barrels were recovered, whereas the rest were kept back in the

environment. Also, about 6,500m barrels of oil were spilled in 700 isolated occurrences each year in Delta, Rivers, Bayelsa, and Akwa-Ibom states.[81] The occurrences of oil spills and their effect are wide-ranging across the ecological zones, with more spillages in the land than swamp and off-shore operations. The effects of oil spills can be very lasting basically because the destruction of plants and farmlands remain in so far as spilled oil block the supply of oxygen as well as destroying important nutrients in the soil.[82]

In addition, the Oil Spill Intelligence Report has it that over 200,000 barrels of oil (8.4 million U.S. gallons) were emitted from a Texaco facility into the Atlantic Ocean and destroyed over 340 hectares of mangroves.[83] The mangrove forest is predominantly vulnerable to oil spills.[84] Although the SPDC official policy states that "all hydrocarbon and chemical spills in the vicinity of the company's operations shall be cleaned up in a timely and efficient manner,"[85] the Niger Delta environment remains a disaster. As stated in the 1995 World Bank Report, the various oil spills in the Niger Delta region result from corrosion of oil pipes, poor maintenance of infrastructure, leaks during processing at the refineries.[86] Also, human error, as well as deliberate vandalization or theft of oil, are among the causes of oil spills.[87] Effluents from the two refineries at Warri and Port Harcourt are regularly released, after treatment, into neighboring rivers and creeks. Communities that are close by have always protested over the outcome of these effluents on fish stocks,[88] yet no due attention is given to them by the Nigerian government and the multinational oil firms. On a more serious note, Nigeria is earmarked to flare more gas than any other country in the world. Nigeria is noted as being responsible for a quarter of global fares.[89] Given more support to this fact, the Human Rights Watch report avers that "Nigeria flares more gas than any other country in the world: approximately 75 percent of total gas production in Nigeria is flared."[90] Gas flaring creates severe damage to humans and plants. The

continuous environmental problems in the Niger Delta region have impacted unsympathetically on the environment and health of the people. Just for one ethnic group (Ogoni) in Rivers State, "the U.N report said the pollution of Ogoniland would take 30 years to clean up."[91] The various oil pollutions in the region have contaminated their natural drinking water, fishing areas, and agricultural field. Various researchers have documented facts on the toxic effects of crude oil on human health.[92] Yet Article 17 "protection of the environment, the biosphere and biodiversity" of the UDBHR stipulates that "even when we promote human rights, the protection of the whole ecosystem, the biosphere, and its biodiversity should not be forgotten."[93] So, it is in the interest of humankind and human health to preserve the welfare of the biological species and other ecosystems, since the state of the environment is the key component of health, and good health is a fundamental human right.[94] Corroborating on this viewpoint, Article14 "Social Responsibility and Health" of UDBHR insists on the "improvement of living conditions and the environment" and "taking into account that the enjoyment of the highest attainable standard of health is the fundamental rights of every human being."[95]

However, what is imperative in the human right to health is access (the right to seek care and not be prohibited from doing so with a duty-bearer assuming responsibility for the provision of care) and provision (the right to be provided with the best care conceivable with a duty-bearer having the responsibility to guarantee that such provision is made available).[96] The environment has seriously impacted on the life expectancy of the Niger Delta people. Even though life expectancy in the Niger Delta region is likened to that of the rest in Nigeria, it tends to be lower in the more economically disadvantaged communities. So, citing available figures from 2000, the average life expectancy is 46.8 years; still, the current figure may have fallen to about 43 years because of the economic deprivations of the prevailing years and the increasing impact of HIV &

AIDS.[97] Moreover, as noted in the 2006 Niger Delta Human Development (NDHD) Report, "the crude death rate for the Niger Delta region was 14.7 per 1,000 people in 2003….Low life expectancy, of course, is also a reflection of high mortality rates."[98] Highlighting on this, the NDHD report states that as against the life expectancy index of 0.78 for Saudi Arabia as well O.70 for Indonesia in 2003(UNDP 2005), the Niger Delta oil-producing Local Government Areas of Bakassi in Cross Rivers State had 0.392, Burutu of Delta State had 0.433, Brass of Bayelsa had 0.458, and Bonny of Rivers State had 0.471.[99]

2.2.2.1 Major Environmental Issues that affect Human Health:

Over the ages, human beings have recognized the role of the environment in disease etiology. Hippocrates (460-388 BCE) mentions environmental, behavioral, dietary as well as constitutional conditions as factors through which we can advance the investigation of whatsoever. Of course, ancient people were quite aware that some illnesses were environmental; thus, they worked so hard to dispose of human waste, protect water resources, and to bury the bodies of diseased animals.[100] Again, in the early 1800s, the dominant theory was that epidemics came through "spontaneous generation" from a "miasma atmosphere," which was connected to environmental conditions as well as poor sanitation. However, a more contemporary take on this non-mechanistic approach to preventing illness is practiced by health practitioners who look for a wide-ranging social, behavioral, or environmental cause of illness, somewhat than a very definite cause, and who emphasized avoidance of environmental carcinogens and hygiene as preventive actions.[101] The environment has a tremendous influence on various aspects of human well-being, and countless diseases can be introduced, encouraged, continued, or stirred by environmental factors. Therefore, the connections of people with their environment are a significant component of public health.[102] Moreover, the authorization to guarantee and protect

the health of the public is an inherently moral one. It goes with it a commitment to care for the wellbeing of others, and it involves the control of an element of power to carry out the order.[103] The first crucial approach to environmental control and regulation is to recognize particular physical, biological, social, and chemical factors that represent dangers to health or well-being and to transform the environment in a manner that protects people from dangerous exposures.[104]

Moeller considers the environment in terms of four mechanisms by which various factors affect people's health. Human beings are faced with numerous environmental hazards, such as physical, chemical, biological, and socio-economic hazards. [105]A brief look at each of these environmental hazards or environmental factors will show how much they have impacted on human health:

i. Chemical hazards: Even though chemicals can offer numerous advantages, but they also have their disadvantages. Some chemicals can have unwanted effects, such as cancer-causing (carcinogenic) effects, mutagenic effects, reproductive effects, or allergenic effects, or they can disrupt susceptible ecosystems. We presently use more chemicals in larger quantities and a much greater number of applications than ever before.[106] We have both natural and human-made chemicals in the environment. The negative impact human-made chemical hazards include many of the artificial chemicals we produce, such as pesticide, plastics, disinfectants, toxic wastes, as well as preservatives used in foods. Natural chemical contaminants that occur in the environment are mercury, and heavy metals lead. Also, natural chemical hazards are produced by some organisms like the compounds in dairy and peanuts that can trigger allergic reactions in human beings.[107] Therefore, this dissertation invites the nation of Nigeria to implement the various chemical conventions like the Rotterdam Convention on Prior Informed Consent, the Stockholm

Convention on Persistent Organic Pollutants, etc. to phase out predominantly harmful substances.

ii. Physical hazards are physical processes that happen obviously in the environment. For example, noise, particles in the air, and radiation are all physical environmental factors that can harmfully disrupt human health.[108] Other physical hazards include natural catastrophes like tornadoes, volcanoes, drought, earthquakes, landslides, and blizzards. However, not all physical hazards are isolated events; some are unending, like ultraviolet radiation, which is considered a hazard because of its impact on DNA and can trigger human health issues like cataract and skin cancer.[109] On this note, the dissertation calls for measures that create a conducive physical environment that can improve human health. Accordingly, there is a need to remove sources of noise that produce noise above the undisputable standards. It is very urgent to work out ways of achieving air quality where releases of substances detrimental to health affect people. Likewise, it is urgent to reduce the harmful effects of radiation on the people.[110]

iii. Biological hazards come from ecological interactions between organisms. People are made vulnerable to biological effects in the outdoor environment, the working environment, and the indoor climate.[111] Also, biological contaminants include various disease organisms that are present in food and water, those that can be transmitted by animals and insects, and those that can be transmitted by person-to-person contact. Some examples of biological hazards are bacterial infections, malaria, viruses, bacterial infections, and tuberculosis.[112] Hence, this dissertation proposes standard protection by lessening the pathogenic micro-organisms to the extent that it will not trigger effects that are detrimental to health.

iv. Socio-economic hazard: this results from one's location, socioeconomic status, occupation, and behavioral choices. People who lived in economically distressed neighborhoods are less healthy than those who live in more rich areas.[113] Thus, this dissertation advocate for an urgent step to be taken by nations, especially in Nigeria, to improve the socio-economic situation of the Niger Delta people.

Furthermore, let us assess some of the emerging environmental crises or issues that have effects on health and the environment:

i. Air Quality**:**

As reported by the World Health Organization (WHO), air pollution is a significant environmental risk to health and is predicted to cause approximately two million premature deaths worldwide per year.[114] In the past two to three decades, improved urbanization, as well as industrial development in developing nations, has caused steady deterioration of air quality that poses a substantial danger to health for vast sections of the human population. Thus, the WHO approximates that as many as 1.4 billion urban inhabitants worldwide are exposed to polluted outdoor air that surpasses WHO air quality guiding principle for pollutants such as nitrogen dioxide, sulfur dioxide, and particulate matter.[115]

Besides, indoor air poses a more significant danger to human health. Thus, Zhang and Smith mention that more than 25 percent of the people in the world don't have electricity in their homes. Of those 1.5 billion people, 83 percent live in rural areas and 17 percent in urban areas. Households without electricity rely on solid fuels like wood, dung, coal, and crop waste for their energy needs. Energy is needed for cooking and the source of light at night. [116] Indoor air

pollution happens when people living in poorly aired homes are exposed to extreme smoke and a range of airborne pollutants that emanate from fuel-burning sources, such as cooking stoves and other heat-generating devices.[117] Indoor air pollution may cause respiratory problems specifically for young children and women who devote hours a day using biomass fuels in cooking.[118] Polluted indoor air can cause any number of health complications such as headaches, eye irritation, sneezing, heartburn, drowsiness, dermatitis, etc. These health issues can come as a result of breathing destructive pollutants such as carbon monoxide (from smoking, stoves, space heaters); formaldehyde (from carpets, paneling, ceiling tile); particulates (from fireplaces, smoking, dusting); nitrogen oxides (from gas stoves, kerosene stove); radon (diffusion from the soil); volatile organics (from smoking, cooking, solvents, paints); sulfur dioxide (from kerosene heaters); and ozone (from photocopying machines).[119] Also, it is projected that some 3.5 billion rural inhabitants worldwide are exposed to high levels of indoor air pollutants, which have been selected as one of the four most dangerous public health problems globally. The other three issues are HIV/AIDS, waterborne diseases and tobacco use, and smoking.[120]

ii. Water Quality and Sanitation

Human beings, animals, and plants need water for drinking. A supply of water is essential for the survival of life. The primary functions of society need water, for instance, cleaning for public health, cooling for an electrical generator as well as consumption for industrial processes.[121] So, water is essential for drinking and cooking, hygiene (hand-washing and bathing), and cleaning (washing clothes, cleaning cooking pots, and cleaning homes). Improved access to water is also associated with better-quality health. With more water available for hygiene, the occurrence of diarrheal diseases reduces.[122] The absence of clean water resources and sanitation amenities appears as one of the most critical environmental health problems confronted today by a

considerable portion of the world's population, particularly those living in developing countries of Africa, Latin America, and Asia. In these regions, water supply and sanitation facilities are quickly failing and are functioning at a fraction of their fixed capacities. This causes severe and dangerous diseases to the population, specifically among infants and young children. With fast industrial development, water contamination by a series of toxic chemicals and harmful wastes has heightened an already severe water pollution issue that is related to infectious diseases.[123] Thus, major causes of water pollution consist of industrial waste dumped into the water by factories, refineries, and water treatment plants; accidental leaks and spills of chemicals and industrial products; mining operations, leaking landfills, pesticides, herbicides, fertilizers, stormwater runoff, sewage, and wildlife/animal waste.[124]

Furthermore, Jacobsen stresses the need for everyone to have access to an adequate supply of water, which is a requirement for life. She opts for consideration for the five key aspects of water access such as quality, quantity, proximity, reliability as well as cost. Here quality means that water should be clean enough for use. It must be free from viruses, bacteria, and parasites that can cause infection, and must also be free from damaging chemicals and residues. By quantity, it means that water must be enough for the people to remain hydrated and clean. The United Nations recommends a minimum of 50 liters per person per day. By proximity, it means that the source of water must be very close to the home so that distance does not stop people from getting to the water they need for their use. By reliability, it implies that the water source must be accessible and working all the time, or home must have access to suitable water storage as well as water treatment methods like filtering, boiling, and the use of chemicals like chlorine. By cost, it means that water should be made affordable to the people at the least minimum amount necessary for healthy living.[125]

Despite the five key aspects of water access by Jacobsen, the WHO has projected that 1.1 billion people do not have access to drinking water resources, whereas 2.4 billion people have insufficient sanitation amenities, which results in many water-related serious and chronic diseases. For this reason, some 3.4 million people, especially young children, die each year from water-borne infectious diseases like intestinal diarrhea (cholera, dysentery, and typhoid fever) produced by microbially polluted water supplies that are connected to deficient or non-existent sanitation and sewage disposal facilities.[126] People without an improved sanitation system are at a bigger risk of infectious diseases that are spread through fecal-oral contact. In fact, "six Fs" that signify feces, fields, fluid, fingers, food, and flies are used sometimes in describing the factors that contribute to fecal-oral diseases. This implies feces are not appropriately disposed of, ending up polluting the fields (soil) and fluids (bodies of water). Still, the fecal matter can get into the hands of those who regularly touch the ground, and the fingers transfer the fecal matter to food if hands are not washed before cooking the food or to the mouth if hands are not washed before eating. Again, flies can spread feces to food and water and flourish where fecal matter is in the open. The danger of fecal-oral diseases rises when there is not enough fluid (water) to wash hands frequently.[127] Therefore, it is very crucial to develop measures for addressing these water-related environmental health problems, especially in developing countries. Simple point-of-use disinfection methods and availability of clean storage vessel may be compelling. The use of sodium hypochlorite as a disinfectant can serve the purpose in rural areas. Also, the widespread use of sanitary latrines in rural areas, along with the introduction of sewage treatment systems in urban areas of developing countries, can be a major solution to water pollution problems. [128]

Finally, the best plans for lessening diarrhea and parasitism is through adequate water supplies, excreta disposal, and hygiene promotions that stresses on regular washing of hands with soap.[129]

iii. Climate Change

Climate change, also referred to as global warming, is one of the major environmental problems confronting the 21st century.[130] The world typically reaches an agreement that somewhat actions need to be carried out about climate change. For that reason, in 1988, the Intergovernmental Panel on Climate Change (IPCC) was formed by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to evaluate the scientific knowledge on global warming. Thus, in 1990, the IPCC resolved that there was a far-reaching global agreement that climate change was human-induced. Based on the IPCC report, an international convention for climate change, the United Nations Framework Convention on Climate Change (UNFCCC) occurred. For that reason, the 1992 United Nation Framework Convention on Climate Change (UNFCCC) as adopted at the Rio Conference defines climate change as a change of climate which is ascribed directly or indirectly to human activity, that modifies the structure of the global atmosphere and which is in addition to natural climate unpredictably noticed over corresponding periods.[131] Climate change occurs from both human and natural causes. Therefore, Burroughs says that apart from the anthropogenic sources, there are natural forces which include cyclical ocean currents, atmospheric-ocean interactions, tidal forces, sunspots, and solar activity, orbital variations, and volcanic eruptions also contribute to global temperature changes.[132]

Also, consecutive discoveries by the Inter-Governmental Panel on Climate Change (IPCC) indicate a global near consensus among researchers that the atmospheric concentrations of gases,

together with carbon dioxide, methane, and nitrous oxide are increasing, and have consequences of increasing temperatures through the 'greenhouse effect.'[133] The natural 'greenhouse effect' is essential to sustain a continuous, comfortable temperature on Earth; otherwise, it would be a 30-degrees cooler. Some of the greenhouse gases absorb energy that is radiated from the surface of the earth, and so warm the atmosphere. This means that the earth is kept warm by the greenhouse effect. Nevertheless, contemporary lifestyles have resulted in human activities discharging huge amounts of greenhouse gases, especially carbon dioxide and methane, into the atmosphere, thereby increasing the greenhouse effect and pushing up the temperatures.[134] The IPCC report has it that global emissions of greenhouse gases have increased by 70 percent between 1970 and 2004 because of human activities.[135] Also, about 6.5 billion tonnes of carbon dioxide are released each year globally, frequently through burning coal, oil as well as gas for energy.[136] Supporting this view, Rockstrom, and colleagues state there is an obvious rise in global mean temperature to no more than 2 °C directly above the pre-industrial level. Yet, the proposition has been that human changes to atmospheric CO2 concentrations must not surpass 350 parts per million by volume. Also, it was proposed that radiative forcing must not surpass 1 watt per square meter directly above pre-industrial levels.[137] Consequently, the IPCC cautions that if the world lingers a fossil-fuel-intensive pathway during the 21st century, existing concentrations of greenhouse gases possibly will increase more than fourfold by the year 2100. Therefore, the global average surface temperature will increase 4.0-degree Celsius (7.2-degree Fahrenheit) by the end of the 21st century. Likewise, Ahmed, in a report avers that upsurges of greenhouse gases in the atmosphere may cause extensive global warming by the middle or late part of the 21st century. This may, in turn, alter local and regional weather patterns, leading to several considerable environmental as well as public health impacts such as the movement of vector-borne

diseases(like dengue fever and malaria) to the northern latitude; heated-related stress will be on the increased; more occurrences of life-threatening weather events(like drought, floods, and storms); higher production of air pollutants and certain allergens; uncontrollable sea-level rise on coastal populations, alterations in forestry patterns and interruptions of agricultural production.[138] Considering its effect on agricultural production and coastal flooding and weather event, "Human Development Report" indicates that climate change might leave an extra 600 million people facing serious starvation by the 2080s over and above the level in a no-climate change situation. Also, between 2000-2004, about 262 million people are affected each year by fierce tropical cyclones, floods, and drought, and over 98 percent of these millions of people are living in developing countries.[139] Again, with the global and regional depletion of stratospheric ozone, an intensification in ground-level exposure to damaging ultraviolet radiation would arise, generating occurrences of skin cancer, cataracts as well as possible destruction of the immune system of the body. At the same time, enlarged ultraviolet radiation on the surface of the earth from the lessening of the stratospheric ozone would cause increased levels of ground-level ozone and different photochemical oxidants that have severe impacts on human health.[140]

It is based on the effects of climate change on the environment and human health that the international communities in 1998 adopted the "Kyoto Protocol to the United Nations Framework Convention on Climate Change." The Kyoto Protocol invites the member states to work diligently in reducing atmospheric discharges of greenhouse gases that are connected to global warming through a 'nationally-based emission-reductions' program; the creation of international mechanisms for trading emission credits; and the provision of technical support to developing countries of the world.[141] Again, after several years of consultations on a new climate agreement, in which countries would participate, the Parties of the UNFCCC at the 21st UN

Conference on Climate Change in Paris in 2015, accepted a universal, legally binding global agreement on Climate known as the "Paris Agreement." The purpose of the Paris Agreement is to provide a global action plan that will assist the world in circumventing inevitable and hazardous climate change by restricting global warming to well below 2 degrees Celsius.[142]

iv. Biodiversity Loss and Ecosystem Disruption

According to Ten Have, the word 'biodiversity' came into use for the very first time in the 1980s. "It refers to the variety of life on Earth. At the level of genes, it means the variety of genes within and between species. At the level of species, it refers to the diversity of animals, plants, and micro-organisms….At the level of ecosystems (such as deserts and tropical rainforests) the focus is on the environment in which species live and develop"[143] In other words, it refers to "variety and variability at the genetic, species and ecosystem levels, and includes diversity within individual species, diversity among species, and the diversity of their ecosystems and habitats."[144] However, the prolongation of life on Earth hangs on the connections between these three levels of biodiversity (such as levels of genes, species, and ecosystem).[145] Losses to biodiversity or biological diversity have become so massive that the rate of loss may by now be more than the rate of variation implicit in the evolutionary process. In this same light, Cox expresses that annihilation of habitat and connected extinction of species are hastening at such a phenomenal rate that it now gives the impression that our age will be recalled in distant periods, not for our better-quality use of digital data transmission and the flowering of information technology. However, the ineffaceable mark we nowadays engrave on the record of time will not easily vanish, for we have preferred to extinguish biological species.[146] Whereas biological species extinction has happened during evolutionary history, it is nowadays held that since the first-time human beings evolved on earth some 120 000 years ago, the rate of biodiversity loss

has accelerated by factors of 100 to 1,000 times. Hence, leading ecologists nowadays approximate that more than 25 percent of all species on earth may become extinct within the next half-century because of the present rates of biodiversity loss.[147] Of course, the biodiversity is currently under severe threat, and as estimated, one-third of all animal and plant species will be reduced in 2030.[148]

Furthermore, Ahmed opines that there are numerous causes for the loss of biodiversity such as fast population growth with its additional devastation of forested areas; high consumption rates of natural resources; global climate change; air pollution and acid precipitation; extensive use of toxic substances and pesticides, freshwater wetlands, savanna grasslands, as well as marine resources and other natural ecosystems.[149] Loss of biodiversity raises thoughtful, ethical questions. What values are at stake when biodiversity is lost? Many people are of the view that species or ecosystems which embrace biodiversity have value autonomously of human interests, and this view can be recognized by anyone who admits the moral standing of non-human creatures such as farm animals and their wild relations. The value of a species could be a function of the intrinsic value of its members together with their individual or collective value for other species.[150]

Moreover, biological diversity is a source for food and new medication, yet most species that are unidentified are easily extinguished recklessly.[151] Like other environmental crises, the loss of biodiversity has both direct and indirect bearings on human health. The most direct effect is the interruption of natural ecosystems, whereby local and regional food webs are devastated for permanently, leading to a deterioration of marine fisheries as well as reduced forest and agricultural production. Such a lack of traditional food resources in many sections of the world might cause serious malnutrition, illnesses as well as death to the peoples. On the other hand,

indirect effect ensues through the loss of many curatively valuable biological organisms, including previously undiscovered sources of plants, animal and microbial species that have possibly therapeutic products, medicinal drugs, and antibiotics.[152] Giving more credence to this fact, Pongsiri et al. accentuate that the destruction of habitat destruction and the loss of biodiversity linked with biotic homogenization can give rise to the occurrence and spreading of infectious diseases among human populations. It happens so easily because of the spread of nonindigenous vectors and pathogens. Also, the loss of predators as well as hosts that dilute pathogen spread can strengthen the occurrence of vector-borne diseases.[153]

With the above environmental issues faced by the Niger Delta region, this dissertation urges the Nigerian government through its environmental agencies to be more proactive in providing measures that protect the people from environmental and health threats.

2.2.2.2 The Framework of Actions for a Healthy Environment and Human Health

The healthy environment remains a sine-qua-non for the full enjoyment of basic human rights such as rights to life, quality of life, health, sanitation, food, and water. The connection between environment and health is documented in several of the United Nations human rights treaties. The UNEP report states categorically that "the health and well-being of current and future generations are intrinsically linked to the state of our environment and lifestyles."[154]

However, the failures on the parts of the global population to ensure adequate preservation of the environment have impacted human health and led to the death of several people. Consequently, the report at the "Second session of the United Nations Assembly of the United Nations Environment Programme" states that "in 2012, an estimated 12.6 million deaths globally were attributable to the environment, 23 percent of all deaths worldwide." From the geographical standpoints, Sub-Saharan Africa has 23 percent of deaths attributable to the environment. It is the

only region that the problem of infectious, parasitic as well as nutritional diseases is more serious than non-communicable diseases. Nevertheless, non-communicable diseases are even on the increase. Also, the highest proportion of deaths attributable to the environment compared to the total number of deaths happens in South-East Asia, with 28 percent and Western Pacific with 27 percent.[155] The primary environmental risks are poor air and water quality. Others are exposed to harmful chemicals; however, through climate change, waste management and insufficient workplace,[156] ecosystem degradation, unintended urbanization, and unjustifiable lifestyles likewise contribute to those diseases that harmfully affect the health and well-being of the people.[157] This means that the air that we breathe, the food that we consume, the water that we drink, and the ecosystems which survive us are projected to be accountable for the 23 percent of all deaths worldwide.[158] Deaths from noncommunicable diseases (NCDs) are generally attributable to air pollution, amount to as much as 8.2 million of these deaths. Noncommunicable diseases such as heart disease, cancers, chronic respiratory disease, and stroke now amount to nearly two-thirds of the total deaths produced by unhealthy environments. In the same vein, deaths from infectious diseases, such as malaria and diarrhea, are frequently connected to poor water, waste management, and sanitation.[159]

Furthermore, the report provides details of some of those diseases with the highest preventable disease burden from environmental risks, in disability-adjusted life years:

i. Diarrhoeal Diseases: The report says that diarrhoeal diseases are due to 57 percent because of environmental risks, 57 million years of life lost or lived with disability due to poor water, sanitation, hygiene;

ii. Accidental injuries (other than road traffic) are due to 50 percent because of environmental risks, 74 million years life lost or lived with a disability because of work-related risks as well as poor home and the safety of the community;

iii. Road traffic injuries are due to 39 percent of environmental risks, 31 million years of life lost or lived with a disability because of poor land-use planning, poor road design, and traffic system environment;

iv. Asthma results from 44 percent of environmental risks, 11 million years life lost or lived disability because of air pollution, indoor mold and dampness, second-hand tobacco smoke, and occupational asthmagens;

v. Malaria results from 42 percent of environmental risks, 23 million years of life lost or lived with a disability because of poor waste, water, and environmental management;

vi. Cancers result from 20 percent of environmental risks, 49 million years life lost or lived with a disability because of air pollution, poor protection of workers, management of chemicals and radiation;

vii. Cardiovascular diseases result from 30 percent of environmental risks, 119 million years of life lost or lived with a disability because of household and air pollution, second-hand tobacco smoke, and exposure to chemicals;

viii. Lower respiratory infections occur from 35 percent of environmental risks, 51 million years life lost or lived with a disability because of household and air pollution, and second-hand tobacco smoke;

ix. Musculoskeletal diseases are due to 20 percent to environmental risks, 23 million years life lost or lived with a disability because of occupational stressors, prolonged sitting, poor work postures, carrying water and solid fuels for household needs;

x. Chronic obstructive pulmonary disease results from 35 percent of environmental risks, 32 million years of life are lost or lived with a disability because of household air pollution, and exposure of workers. [160]

Following the above statistics, in 2007, the WHO International Health Regulations entered into force and are officially binding on the 194-member States of WHO, including Nigeria. Through the guiding principle, WHO proposes the scientific basis for the standard and regulation setting to discuss major environmental health issues, especially air quality, as well as drinking water quality. As a follow-up, in June 2014, the United Nations Environment Assembly made some resolutions on air quality.[161] To complement the resolutions made at the United Environment Assembly, the World Health Assembly, in May 2015, passed a resolution on mitigating the health effects of air pollution.[162] Meanwhile, several environmental agreements contribute greatly to both environmental and human health. Hence, chapter three of this dissertation will examine in detail some of these environmental agreements. However, of great importance is the vision and mission of the Strategic Plan for Biodiversity 2011-2020, implemented under the Convention of Biological Diversity. Its main objective is to sustain a healthy planet that will provide life-sustaining benefits crucial for the people.[163]

Moreover, human beings depend on healthy ecosystems as they contribute to healthy communities and societies. Hence, it is important to appreciate how biodiversity, as well as ecosystem functioning, make available goods and services vital for human health. These consist of nutrition and food security, medicine, fresh water, and clean air, climate balance, spiritual and

cultural values, as well as supports economic development and local livelihoods.[164] Consequently, this dissertation reiterates that a healthy environment can go a long way in preventing diseases that attacked human beings. The World Health Organization report states that fashioning and preserving healthy environments ought to be a priority of main prevention.[165] Of course, there is growing evidence to show that the connection between environmental change and health is no longer just of future concern but something that must be given attention here and now. Since the discovery of oil in the Niger Delta region, the people have suffered continuously from diseases that result from environmental risks to date. Yet, the Nigerian government, along with multinational corporations, are doing nothing to salvage the health and well-being of the people. Considering the situation of the Niger Delta people, this dissertation urges the Nigerian government and the multinational companies to take seriously the 2016 UNEP report, which says, "investing in a healthy environment is investing in the health and well-being of current and future generations."[166]

In like manner, the "Intergovernmental Panel on Climate Change and the Millennium Ecosystem Assessment" caution that morbidity and mortality from environmental risks are now evident in many parts of the world and will keep on overgrowing except serious efforts are taken to redress the human reasons of ecological changes.[167] Hence, a framework of four integrated lines of actions from the report of "Second session of the United Nations Environment Assembly of the United Nations Environment Programme" is emphasized in this dissertation as part of the remedies to the Niger Delta environmental/health crises. The report is apt for this dissertation because it addresses the nexus of environment and health. These four lines of actions are 1) detoxify, 2) decarbonizes, 3) decouple resource use and change lifestyles, and 4) to enhance ecosystem resilience and protection of the planet's natural systems.[168] Dexocity implies the

removal of damaging substances from and /or alleviate their impact on the environment in which we live and work. This framework of action will assist in addressing air pollution by reducing black carbon released by domestic and non-domestic sources and other pollutants and certify that emission concentrations do not surpass the recommendation of WHO. Decarbonize means reducing the use of carbon fuels and, in so doing, emissions of carbon dioxide through the replacement of non-carbon energy. Decouple resource use and change lifestyles connotes that significant health benefits can be gained from decoupling changes in the food sector, in energy consumption, in water use, and through recycling and more sustainable domestic consumption. Lastly is the enhancement of ecosystem resilience, which involves building capacity for the environment, economies, and societies to ensure adequate protection of the environment.[169] Consequently, the Nigerian government and the multinational companies must ensure that clean air and water, green spaces and sanitation, and safe workplaces for the people of Niger Delta. All these requirements will help to boost the quality of the life of the people, lessen mortality and morbidity, advance productivity of workers and their families; advance healthier lifestyles; improve the lives of children, women, and older people.[170] These four lines of action will equally help in restoring and preserving tainted ecosystems as well as lessening stresses to the natural systems of the earth to improve ecosystem services that support human health. These actions will also help to lessen contact with natural disasters, prevent the development of new pathogens and disease epidemics, contribute to the enhancement of nutritional diet quality as well as food security.[171] Therefore, it is imperative for nations, especially Nigeria, to take action to make environments where people live and work healthy; otherwise, millions of people will continue to become ill and to die too young.[172] It is on this ground that some of the diseases and injuries, or

their groupings, to the environment have been reviewed above to provide an overall picture of the disease burden that could be prevented through healthier environments.[173]

2.3. Conclusion

The Niger Delta remains to this day a region that is obviously gifted with the significant deposits of crude oil and gas reserves. Yet, it is regrettable to mention in this dissertation that the significant environmental/health problems in the region are legion. The Niger Delta deplorable condition results from weak environmental/health policies as well as long-lasting social injustice/corruption by the Nigerian government, multinational oil companies, and saboteurs. The region is extremely polluted with catastrophic consequences for the totality of the quality of life and the economy of the people. The degradation of public health from oil pollution has kept the region as the most vulnerable region in Nigeria. Therefore, this chapter argues that the Nigerian government and the multinational oil companies should act fast in implementing mechanisms that protect the life and health of the region's inhabitants and its ecological systems from further deterioration.

The Nigerian government can work effectively through the various environmental agencies to ensure that there is proper implementation of the UNESCO Articles. The environmental agencies are encouraged to carry out their duties with thoughtful and sustainable efforts, shunning all forms of corrupt practices, and with the vision that a safe and healthy environment enhances the prosperity of human beings.

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CHAPTER THREE: INTEGRATION OF HUMAN RIGHTS WITH RESPECT FOR THE ENVIRONMENT

3. 0 Introduction

In this chapter, the global ethics approach is used to highlight the connection between human rights and the environment. Therefore, the two parts of this chapter explore the relationship between human rights and the environment, emphasizing justice, equity, and sustainable development. This discussion occurs within the context of these UNESCO principles: Article 3 on the relation between Human Dignity and Human Rights; Article 4 on the relation between Benefit and Harm; Article 10 on Equality, Justice, and Equity; Article 11 on Non-discrimination and Non-stigmatization; and Article 17 on Protection of the Environment, Biosphere, and Biodiversity.

Hence, before delving into the main section of this chapter, an elucidation of the UNESCO Articles that enlighten the discussion on the connection between human rights and the environment would be suitable:

Article 3 on the relation between Human Dignity and Human Rights:

1. Human dignity, human rights, and fundamental freedoms are to be fully respected.

2. The interests and welfare of the individual should have priority over the sole interest of science or society.[1]

Starting with the 1948 Universal Declaration of Human Rights which upholds that acknowledgment of the inherent dignity of all members of the human family is the basis of

freedom, justice, and peace in the world; this principle has been at the heart of most international human rights instruments, particularly those prohibiting slavery, suffering, heartless and debasing treatments and discriminations of all kinds. This principle reflects a real concern about the need to ensure respect for the inherent value of every human being and of humanity. It is an intrinsic value of every human being. However, there is what is known as "individual dimension" and "collective dimension" of human dignity. The "individual dimension" of dignity is the foundation of all rights and freedoms and leads to the need to promote self-determination and protect people against any degrading treatment. On the other hand, the "collective dimension" refers to the value of humanity, including future generations. Hence, if all human beings have inherent dignity and should be respected unconditionally, it follows, therefore, that the larger group they belong to also possesses, in a derivative way, intrinsic value. In bioethics, the notion of dignity expresses an obligation of non-instrumentation of persons.[2] In the view of ten Have, human rights offered a suitable global framework for two reasons: universality and emancipatory force. Universality implies that everyone is eligible for human rights because they belong to the human species. It is a principle that transcends the issue of cultural diversity. It gives us the insight that rights and human dignity are more significant than economic growth and free markets. Also, this principle as an emancipatory force has provided inspiration and empowerment, enabling and encouraging images of a better future, producing new chances for people, and changing the situations of human existence. Again, the principle of human dignity and human rights offers an effective bridge between the moral and legal language of common humanity and practical actions in specific settings.[3] Therefore, in this chapter of the dissertation, a human rights approach is used to address the discriminatory practices, marginalization, and power differences, especially in the Niger Delta region. As noted by Mann, "the human rights

framework provides a more useful approach for analyzing and responding to modern public health challenges than any framework…."[4] In sum, this article on human dignity and human rights offers the necessary background for responding to the concerns about humanity.[5]

Article 4: Benefit and Harm:

In applying and advancing scientific knowledge, medical practice and associated technologies, direct and indirect benefits to patients, research participants, and other affected individuals should be maximized, and any possible harm to such individuals should be minimized.[6]

Article 4 of the Declaration applies the ethical principle of beneficence and non-maleficence. Having recognized the central place of dignity in human rights and ethics, it considers the obligations of the human species for other living beings and the biosphere. This implies that only the human species can act in such a way that it can responsibly do direct and intended good or harm to the biosphere. Only human species can be responsible for their welfare and that of the biosphere. Also, the attribution of dignity to human beings suggests respect by human beings for other living creatures in the biosphere; it indicates stewardship for the care of the biosphere. Again, inherent dignity is a property of being human that generates the universal moral obligation to do good for and avoid harm to other human beings. This Article entitles all human beings to an inviolable moral claim to freedom from intentional harm. Nevertheless, the Article entails that the likelihoods of harm are morally acceptable only if the maximization of benefit as well as the minimization of harm is a universal ethical necessity. Thus, the application of this Article rests on the maximization of benefits and minimization of harms, especially to patients and research subjects whose interest and well-being should take precedence over the interests of

science or society.[7] Likewise, this same Article applies to chapter five in the discussion on patient safety in the healthcare system and clinical trials in research.

Article 10-Equality, Justice, and Equity:

The fundamental equality of all human beings in dignity and rights is to be respected so that they are treated justly and equitably.[8]

As stated by d'Empaire, human beings are not physically, genetically, mentally, or psychologically equal, nor are they equal in principles or values, however, it is mostly acknowledged and required that human beings are considered equals in terms of dignity, justice, freedom, opportunities, rights, benefits, and obligations. Thus, according to this Article, justice and equity can only be achieved if every human being is treated equally in his/her dignity and rights.[9] These three principles of equality, justice, and equity are fundamental in ethics, and they are regarded as part of any ethical system. These principles represent a model, a goal to be reached by any society in resolving inequalities, injustices, and inequities. It is against this background that it has become imperative for this dissertation to employ these principles to address health and the environmental issues in the Niger Delta region. Justice implies giving to each person what is due to each. Whether it is distributive justice, social justice, environmental justice, or intergenerational justice, the aim is giving everyone his or her due. Also, quoting Rawls, d'Empaire says that equity is a fundamental requirement in terms of justice. Equity occurs when every member effortlessly defines and agrees to take the rules, benefits, and charges. So, the Declaration re-echoes the vital challenge of pursuing the accomplishment of these three principles (equality, justice, and equity) and others in the context of development and uses of biotechnology and its relationship with human life. The emphasis is that all humans

ought to be considered equally and treated justly and equitably when developing and applying scientific knowledge and related technologies.[10]

Article 11-Non-discrimination and non-stigmatization

No individual or group should be discriminated against or stigmatized on any grounds, in violation of human dignity, human rights, and fundamental freedoms.[11]

More elaborately as expressed in the Fourth Draft of the Declaration: "*In any decision or practice, no one shall be subjected to discrimination based on any grounds intended to infringe, or having the effect of infringing, the human dignity, human rights or fundamental freedoms of an individual, nor shall such grounds be used to stigmatize an individual, a family, a group or a community.*"[12]

This Article addresses two related issues, such as discrimination and stigmatization. However, before Article 11 of UDBHR, Article 7 of the Universal Declaration of Human Rights provides that "All are equal before the law and are entitled without any discrimination to equal protection of the law. All are entitled to equal protection against any discrimination in violation of this Declaration and against any incitement to discrimination." Likewise, Article 2 of the Convention on the Elimination of All Forms of Racial Discrimination commits State Parties to not involve in racial discrimination, including through any institutions or public authorities, to not give backing to any racial discrimination by any organization or person, and to take positive actions to bring an end to racial discrimination by any organization or person. Also, the term "stigmatization" as used in this Declaration connotes communications or other conduct that negatively characterizes a person or group in the context of the application of life sciences, medicine, and the related technologies and in such a way as to infringe upon their human dignity,

human rights or fundamental freedom. Thus, Article 11 serves to apply this body of law to the realities raised by ethical issues linked with life sciences, medicine, and related technologies.[13] Therefore, this Article is used in this dissertation to condemn the discrimination and stigmatization against the Niger Delta people by the Nigerian government and multinational oil companies operating in the region while advocating policies/measures that lead to promoting non-discrimination and non-stigmatization.

Article 17: Protection of the Environment, the Biosphere, and Biodiversity

Due regard is to be given to the interaction between human beings and other forms of life, to the importance of appropriate access and utilization of biological and genetic resources, to respect for traditional knowledge and to the role of human beings in the protection of the environment, the biosphere, and biodiversity.[14]

This Article emphasizes that human beings, as an important part of the biosphere, have the tasks and obligations towards all other forms of life. According to the 1992 UN report, humans are managers but not the owners of the biosphere. Therefore, we have the moral and ethical responsibility to safeguard and preserve it for its sustainable use to meet the present needs and those of future generations. However, over the past few periods, scientific work has shown that human activities have triggered unexpected and unprecedented alterations in the planetary life-support system. For this reason, this Article stresses the interrelation between humans and their ecological environment. [15]

Also, this Article reminds us that while we employ the present and future developments in bioscience for the benefits of humans, the protection of the whole ecosystem, the biosphere as well as its biodiversity should not be overlooked. Conserving the capacity of ecosystems must go

in tandem with the improvement of living standards and the promotion of human development (as well as the introduction of any developments of science and technology for this purpose). Moreover, it is in the interest of humankind and human health to protect the wellbeing of the biological species and their ecosystems, since the state of the environment is an important determining factor of health, and good health is a fundamental human right.[16] Thus, the need for environmental justice, equity, and sustainable development are very crucial in a world that is becoming more crowded, more polluted, less stable ecologically, and more vulnerable to disruption.

3.1 The Relations Between Rights and the Environment

The right to a safe and healthy environment remains the requirement for the enjoyment of fundamental human rights.[17] Nevertheless, in the Niger Delta region of Nigeria, the relations between environmental protection and human rights violations have been significantly abused by the governments, multi-national oil companies as well as lawless groups from within and outside the region who go about vandalizing oil pipes and doing illegal bunkering.

Thus, this section of the chapter examines the conceptual framework of human rights and the environment, abuse of human rights in the region, and environmental legislative framework for the promotion and protection of environmental human rights.

3.1.1 Conceptual Framework of Human Rights and Environment

i. Human Rights: The thought of human rights is as old as the history of human society.[18] The term "human rights" came into use after the Second World War for what had been by tradition identified as 'natural rights' or 'right of man.'[19] Also, the historical origins of human

rights can be traced to ancient Greece and Rome. The Greek relates this idea to the pre-modern natural law doctrines of Greek Stoicism while the Roman declares that all men are equal and born free, according to the law of nature. In addition, the notion of human rights in the present-day usage can be recognized with early Christian philosophy or with the beginning of medieval constitutionalism by thinkers.[20] The term is being traced to the writings of Thomas Aquinas (Summa Theologica), Hugo Grotius (De jure belli ac pacis), Thomas Hobbes (Leviathan), and documents such as the Magna Carta (1215), the Petition of Rights (1628) and the English Bill of Rights (1689).[21] Also, in 1948, the United Nations, under the Universal Declaration of Human Rights (UDHR), offers a comprehensive understanding of how individuals should be treated.[22] The Universal Declaration of Human Rights came right from the experiences of the Second War, which had led to dramatic human rights abuses. The UDHR represents the first time that it was internationally documented that human rights are appropriate to every human being and that all human beings are well-thought-out as equal. Even though the UDHR of 1948 is a landmark document in the history of human rights, it has been disapproved for recognizing only the rights of the individual, rather than those of communities as well as the right to a safe living environment.[23] The United Nations defined human rights as those rights which are inherent in our state of nature and without which we cannot live as humans.[24] In the same vein, human rights constitute those rights that one has specifically because of being a human being.[25] They are fundamental rights due to all human beings, regardless of nationality, place of residence, language, gender, color, religion, national or ethnic origin. Also, human rights are subjective in the sense that they are possessions of individuals who acquire them because of their ability for rationality, autonomy, and agency.[26] Universal human rights are frequently articulated and guaranteed by law, in the forms of general principles, customary international law, treaties, etc.

Also, international human rights law gives authorization to the government of nations to act in certain ways or to refrain from certain acts to protect and promote human rights as well as fundamental freedoms of individuals or groups. From the overall assessment, the UNHR document underlines clearly that human rights are universal and inalienable; indivisible, interrelated, and interdependent; equal and non-discriminatory. Human rights require both rights and obligations.[27]

Also, human rights are considered to have evolved in three generations of rights. In the view of Taylor, the first-generation rights of civil and political rights are derived from the 17th and 18th-century reformism and political philosophy of liberal individualism and economic laissez-faire.[28] Many of these rights are spelled out in the Universal Declaration especially from Articles 2-21 such as the right to life, liberty, and security of person; the right to a fair and public trial; the right to own property and not be arbitrarily deprived of it; freedom from slavery or involuntary servitude; freedom from torture; freedom of thought, conscience, and religion.[29] Again, the second generation rights of economic, social, and cultural rights emerged from the socialist and human welfare traditions. These rights are spelled out in Articles 22-27 of the Universal Declaration. They include the right to social security, the right to education, the right to a standard of living adequate for health and well-being, and the right to work and to protection against unemployment. Also, the third generation of rights is usually called "solidarity rights." These include the right to participate in and benefit from the common heritage of humankind, the right to political, economic and cultural self-determination; the right to economic and social development; the right to peace; the right to humanitarian relief, and the right to a healthy environment.

ii. Environment: the term 'environment' is generally used and has a broad range of meanings and interpretations. The term 'environment' in widespread usage means 'nature.' In its most literal sense, the term 'environment' as derived from the French word "environ" means "surrounding." The term "environment" implies "physical, biological, social and cultural conditions affecting people's lives and the growth of plants and animals."[30] It refers to the "conditions under which any person or thing lives or is developed; the subtotal of influences which modify and determine the development of life or character."[31] Also, Etuonovbe defines the environment as the "conditions, circumstances, etc. affecting people's lives. It is the complex of physical, chemical, and biotic factors that act upon an organism or an ecological community and ultimately determines its form and survival.''[32] The term "environment" comprises all living and non-living things which surround us. Thus, the main components of the environment include a). atmosphere or the air; b). lithosphere or the rocks and soil; c). hydrosphere or the water; and d). biosphere or the living component of the environment. In other words, in ecological terms, the "environment" covers an array of the ecosystem. An ecosystem consists of both living and non-living components and their physical surrounding: - land, water, air, etc. Also, the Environmental Impact Assessment Act of Nigeria defines the concept "environment" as including land, water, and air, including all the layers of the atmosphere, all organic and inorganic matter and living organisms, and the interacting natural systems.[33] The environment is the greatest gift to humanity. It is the basis for the existence of humankind.

Also, there are three environmental theories, such as deep ecology, social ecology, and ecofeminism.[34] The core principle of deep ecology is that the whole of the living environment has the right to flourish and live like humans. The main argument of the deep ecologists is that human beings and organisms have equal right to exist and that human beings are by no means

greater creature than other species. Social ecology is based on the conviction that nearly all our present ecological problems originate in deep-seated social problems. The main argument by the social ecologist is that ecological problems cannot be understood, let alone solved, without a careful understanding of our existing society and the irrationalities that dominate it. This implies that economic, cultural, ethnic, gender conflicts, etc., lies at the core of the most severe ecological disruptions we face today apart, to be sure, from those that are formed by natural catastrophes. For Bookchin, social ecology has mostly focused on the environmental crisis on an authoritarian mentality and hierarchical organization of power with the social structure as its primary source.[35] Ecofeminism refers to a political as well as social movement that stresses the relationship between feminism and environmentalism. The ecofeminist view is that there is a link between social movements, nature, and women's oppression. The theory draws a connection between nature, domination, sexism, racism, and social inequalities. Ecofeminists argue that human beings dominate nature as men dominate women. Ecofeminists seek to understand what causes the oppression of women and the environment and how to safeguard the situation.[36]

Despite the different environmental theories, the environment has been acknowledged as a vital contributor to the realization of good health or ill health.[37] The crux of the matter is that the misappropriation or mismanagement of the components of the environment could hinder the health, peace, and socio-economy of a nation.[38] Thus, environmental degradation is said to have taken place when the environment is damaged, or it becomes less valuable.[39] Consequently, users of the environment need to plan a way for their sustainability, which can be attained through the construction and development of suitable environmental protection policies.

3.1.1.1. Abuse of Human Rights in the Region:

The discussion of the abuse of human rights in the Niger Delta region will be done in two sections: abuse of the right to a safe and healthy environment and the abuse of civil, political, economic, social, and cultural rights.

a. Abuse of the Right to a Safe and Healthy Environment

In the contemporary period, the environmental issue is debatably one of the most important global agenda. At the same time, the relationship between human rights and environmental issues has become a subject of strong debate. The connections between human rights and environmental protection are multifaceted and mutual. It has become commonly accepted through legislation and jurisprudence that failure to respect, guarantee, and realize domestically and internationally human rights can cause environmental destruction by overlooking the needs of individuals and groups who can contribute to environmental protection as well as economic development. Also, failure to preserve natural resources as well as biodiversity can weaken human Rights.[40] In a similar vein, Boyle affirms that the link between human rights and the environment connotes the fact that a suitable environment is a prerequisite for living a life of dignity and value.[41] Hence, the condition of the environment has nowadays become a global problem that ought to be addressed globally. The reason is simply that every human person has a right to live in a healthy environment. According to Solo, the right to a safe and decent environment implies "the right to be free from excessive pollution of the land, water or air, or pollution from noise, the right to enjoy unspoiled nature, and the right to enjoy biological diversity."[42] Sadly enough, the right to a safe and decent environment among others has been abused by the Nigerian government, multinational oil companies as lawless groups against the Niger Delta people. The people of the Niger Delta region mainly depend on the environment for

their livelihoods. Yet, environmental issues such as pollution, loss of biodiversity, global warming, etc. as discussed earlier in chapter two directly interfere with the enjoyment of their fundamental human rights. For this reason, in 1996, two non-governmental organizations took a complaint before the African Commission on behalf of the Niger Delta people of Nigeria in whose region Nigeria as a nation exploits its massive oil resources. It was this case that led the African Commission to expand on the scope of the right to a satisfactory environment.[43]

Meanwhile, it was to safeguard the rights of the vulnerable population that environmental protection and human rights became an international agenda for the first time in 1972, at the UN Conference on Human Environment. The Declaration of the United Nations Conference on the Human Environment (popularly called Stockholm Declaration of 1972) stated categorically that human beings have the right to live "in an environment of a quality that permits a life of dignity and well-being" and that human beings bear " a solemn responsibility to protect and improve the environment for present and future generations."[44] Also, the document of the World Commission on Environment and Development (Brundtland Commission of 1987) states that "All human beings have the fundamental right to an environment adequate for their health and well-being."[45] The Brundtland Commission, among other issues, was saddled with the responsibility of finding ways in which the concern for the environment may be translated into better cooperation among nations concerning matters of development and resource use. Again, it was given the task of generating processes in which all nations could talk about their environmental concerns and those of the world over the long term. Similarly, the Rio Declaration on the Environment and Development of 1992 stipulates the rights of the population as well as the responsibilities of every individual in the protection of his or her environment. Although the right to a clean environment is not granted directly in the Rio Declaration, it declares that "human beings are in

the center for sustainable development. They are entitled to a healthy life in harmony with nature."[46] Likewise, the United Nations' Draft Principles on Human Rights and Environment of 1994 declared that "All persons have the right to secure, healthy and ecologically sound environment."[47] The Draft Declaration is the first international instrument that widely talks about the linkage between human rights and the environment. It establishes that recognized environmental and human rights principles represent the right of everyone to a secure, healthy, and ecologically sound environment. To this effect, the right to live in a healthy and ecologically sound environment was included among human rights in the second half of the 20th century.[48]

Moreover, the integration of certain environmental rights into regional and national legal instruments have helped to establish the environment as a human rights issue. Both the African and American regional systems contain direct references to a right to the environment. Whereas the American Convention on Human Right bestowed the right to the environment on individuals, the African Charter on human and peoples right bequeaths the right jointly to the people. According to the African Charter, "all peoples shall have the right to a satisfactory general environment favorable to their development."[49] Meanwhile, Chiara notes that the European system has circumvented the acknowledgment of a stand-alone right, supporting the advancement of procedural approaches to environmental rights instead.[50] However, from the above declarations, it is obvious that an unhealthy environment and the enjoyment of human rights are not mutually exclusive; in fact, a safe and healthy environment and the promotion of human rights are gradually being regarded as entwined.

b. Abuse of Civil, Political, Economic, Social, and Cultural Rights

Apart from the abuse of the right to a safe and healthy environment, there is an abuse of civil, political, economic, social, and cultural rights in the Niger Delta region. In the opinion of Sands, civil and political rights, which are substantive, settle on procedural and institutional rights.[51] Civil and political rights are regarded as "first generation" rights that are very crucial in realizing the full dignity as well as the value of human beings in society. Civil and political rights bring about moral and political order in society. These rights are contained most clearly in the Universal Declaration of Human Rights (1948) as well as International Covenant on Civil and Political Rights (1966). These rights are essential to assuring a political order supportive of sustainable development. Civil and political rights can defend civil mobilization about equity and environmental protection.[52] They are likewise able to create practical and enforceable obligations concerning environmental and interrelated issues. Civil and political rights which are appropriate to environmental protection consist of the right to life. The right to life has wide-ranging environmental relations. It could be connected to any environmental disruption, like air and water pollution that directly causes the death of many human beings. Also, the right to equal protection against discrimination; prohibition against cruel, degrading and inhuman treatment; the right to an efficient remedy by capable national tribunals for acts violating fundamental rights; the right to be given information;[53] the right to a fair and public hearing by an independent and impartial tribunal;[54] the right to take part in the conduct of public affairs; prohibition against arbitrary deprivation of property;[55] as well as the right to protection against arbitrary interference with privacy and home.[56] Many of the principles set out in the 1972 Stockholm Declaration, and the 1992 Rio Declaration reflect civil and political rights.[57]

On the other hand, economic, social, and cultural rights are so often considered as "second generation" rights. These rights provide substantive standards for the well-being of an individual. These second-generation rights generally have a direct bearing on both human and environmental conditions.[58] They "allow human rights bodies to consider whether substantive environmental standards and conditions are being maintained at satisfactory levels."[59] The social and economic rights are a group of rights geared towards the recognition of a minimum level of social and economic standard of living.[60] Again, human economic and social rights emphasized human development and stemmed from the inherent dignity and freedom of the human being. Their content is contained in the International Bill of Human Rights, which in our context consists of the Universal Declaration of Human Rights (UDHR), the International Covenant on Economic, Social and Cultural Rights (ICESCR), and the African Charter on Human and Peoples Rights (ACHPR). Economic and social rights comprise of rights such as the right to an adequate standard of living and health, the right to work and social security, the right to education, the right to science and culture, and the right to clean environment. A cursory look at these rights will lead to a better understanding:

i. The right to a standard of living adequate for health and wellbeing:[61] this right seeks to foster for everyone a standard of living adequate for the health and well-being of individuals and their families. This right supposes that everyone shall enjoy the necessary subsistence rights, i.e., right to food and shelter. The right to food indicates the right to adequate and good food, and freedom from hunger, starvation, and malnutrition. It implies that people can feed. An upshot of this right is the right to safe, accessible, and affordable water for personal and domestic uses. Next to food is clothing, shelter or housing is the most vital human need. However, their right to adequate food and water is increasingly under pressure. The right to health implies the right to

the highest attainable standard of health (including improvement of all aspects of environmental and industrial hygiene).[62] The right to health is being violated even with the air, land, or water pollution that are experienced by the Niger Delta people. Every individual shall have the right to enjoy the best achievable state of physical and mental health, to medical attention when sick, and to the prevention, treatment, and control of epidemic, endemic, work-related and other diseases. Also, the human right to health care implies that clinics, hospitals, and doctors' services must be available, acceptable, and of good quality for everyone.[63]

ii. The right to work[64] and the right to social security:[65] the right to work comprises the right to free choice of employment; to safe and healthy working conditions;[66] to protection against unemployment; to freedom from forced and unequal labor; to equal pay for equal work; to just and favorable remuneration; and to rest and leisure including reasonable limitation of working hours and periodic holidays. Also, the right encompasses the right to form and join trade unions for the protection of people's interests. The right to social security is an upshot of the right to work. The right is a system of providing essential social services, income support, and or social insurance to vulnerable people in the occurrence of unemployment, disability, sickness, and old age, etc.

iii. The right to education[67] is the right to free and necessary primary education for all; to available secondary education; to the accessibility of technical and professional education; to tertiary education to all based on merit; to adult literacy program; and special education for physically challenged people. The right to culture and science[68] means everyone has the right to contribute freely in the cultural life of the community, to enjoy the arts to share in the scientific improvement and its benefits, and to the advancement and protection of morals and traditional values recognized by the community. It is a right to enjoy scientific progress and its

applications;[69] The right to a safe and decent environment implies that all peoples shall have the right to an overall satisfactory environment favorable to their development as well as to the enhancement of all features of environmental and industrial cleanliness. Other social, economic, and cultural rights include the right of all peoples to dispose of their natural wealth and resources freely,[70] the right of peoples to self-determination and pursuit of chosen economic and social development,[71] as well as the protection of children against social exploitation.[72]

Moreover, since human social and economic rights focus on human wellbeing and development, it is interesting to note here that the people of the Niger Delta region have suffered a total denial of these rights by the Nigerian government and their agencies. There are continuous obstructions to the application of these rights in the Niger Delta region because of corruption and unworkable policies. Besides, Sands observes that environmental degradation could be connected to the abuse of each of these rights that are stated above.[73] Directly or indirectly, ecological degradation in the region is already affecting the enjoyment of the right to life of the people. Environmental degradation in the area has caused the severe displacement of individuals and communities or induced them to live in an unhealthy environment. The standard and quality of life of the people of the Niger Delta region are degrading every day because of the continuous pollution and gas flaring. If reasonable measures are not undertaking to salvage the situation, those living in the Niger Delta region will continue to suffer from adverse health because they are in higher exposure to disease.

3.1.1.2. Environmental Legislative Framework for the Promotion and Protection of Environmental Human Rights

Under this section, the discussion focuses on some of the major international, regional, and national (Nigeria) environmental legislative frameworks that serve as guidelines for the protection of environmental human rights.

3.1.1.2.1. International/Regional/National Environmental Instruments

Various international environmental instruments directly or indirectly identify the relationship between human rights and environmental protection. The basic fact is that the protection and conservation of the environment play a significant role in the enjoyment of human rights, especially the right to life and health,[74]as treated above. Although the Universal Declaration of Human Rights (UDHR), the International Covenant on Civil and Political Rights (ICCPR), and the International Covenant on Economic, Social and Cultural Rights (ICESCR) didn't give an explicit mention of a human right to a healthy environment, their references to rights have some indirect bearing on a healthy environment.[75] Also, these instruments remain the starting point on the issues of human rights. However, in this section, some of the well-known international, regional and national instruments that paved the way for environmental debate and discussion on environmental protection as human rights issue as well as a development concern shall be reviewed. The essence of reviewing some of these international, regional, and national instruments is to deepen awareness on the part of the Nigerian government and their environmental agencies toward policies that reflect a global standard.

a. International Environmental Instruments:

This section begins with environmental instruments that connect environmental protection, human rights, and economic development (see from i-vii) as well as the environmental agreements that regulate the movement of hazardous materials (see from viii-x).

i. The 1972 United Nation Conference on Human Environment (Stockholm Declaration):

The Stockholm Conference took place from June 5- 16, under the leadership of the Canadian Maurice Strong, who served as the Secretary-General. The Stockholm Declaration of 1972 was the first authoritative statement that ignited the recognition of the relationship between environmental protection, human rights as well as economic development. The main aim of the Stockholm declaration was the preservation of the human environment as well as the improvement of human life. The Stockholm Declaration highlights the responsibility of humans to protect and preserve the environment, to allow for equitable access to natural resources as well as sharing the benefits of all-natural resources.[76] For this reason, Principle 1 of the Declaration states, "Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that allows a life of dignity and well-being." It goes further to say that "he bears a solemn responsibility to protect and improve the environment for present and future generations."[77] The Stockholm Declaration is often considered as one of the foundation stones of the international policy on sustainable development. Some of the key concepts from the Stockholm declaration are the human environment, common interest, quality of life, well-being for the present and future generation, cooperation, responsibility as well as economic underdevelopment.[78] While quoting Sachs, Chiara expresses that the Stockholm conference achieved to set the environment as a global issue. Thus, the environment was not merely seen as

a synonym of nature but is a more complex concept about nature and its codependent. The Stockholm declaration made it clear that developed countries shall financially and technically support those undeveloped countries that lack the resources to protect their environment with the global aim of guaranteeing more promising conditions for the enhancement of the quality of life for all people and their future generations.[79] Thus, Principle 12, recommends that "resources should be made available to preserve and improve the environment, taking into account the circumstances and particular requirements of developing countries."[80] Still, on this issue, seven proclamations in the Stockholm document talked about the comprehensive nature of environmental problems and the need for extensive cooperation among the nations to resolve them.[81] This is well articulated in one of the "proclamations" that "a growing class of environmental problems will require extensive cooperation among nations and action by international organizations in the common interest."[82] Besides, twenty-six principles are stated in the Stockholm document to guide the various nations through their responsibilities in environmental preservation. The principles are planned around four main points, such as i). the right to all people to a healthy environment, ii). Intergenerational integrity, iii). Assistance to developing countries and iv). Protection from pollution. On pollution, the Stockholm conference focuses exclusively on air and water. So, concern for developing nations was entirely around problems triggered by such industrial pollution. [83] In sum, the purpose of the Stockholm conference was to "inspire and guide the peoples of the world in the preservation and enhancement of the human environment."[84] Also, Ferrero and Holland observe that out of the principles created by this Human Environment Conference came the founding of the United Nations Environment Programme (UNEP). Today, the UNEP represents the environmental conscience of the United Nations system.[85]

ii. The World Charter for Nature (1982):

The World Charter for Nature (WCN) was declared in 1982 under the backings of the United Nations. The World Charter for nature is the first non-binding document accepted by the United Nations General Assembly that creates the concept of the rights of nature, recognizing the global needs of the environment for substantive and procedural protection from adverse impacts of development. This charter is often viewed as a statement of ethical as well as ecological principles.[86] The preamble of the Charter highlights the major theme of the document by saying that long-lasting benefits from nature hinge on the preservation of vital ecological processes and life support systems, and upon the variety of life forms, which are endangered through habitat destruction and excessive exploitation by human beings. The document buttresses further that every form of life is unique, deserving respect, notwithstanding its worth to humankind. To accord other organisms such as acknowledgment, human beings must be directed by a moral code of action.[87] The WCN document is seen as the first attempt that respect of the natural world was formally supposed as the core reason for protecting the human environment. In the WCN document, reliable ecological concerns emerged for the first time, unlike the Stockholm declaration that focuses more on the economic and social concerns of humankind. The WCN document recognizes the interconnectedness between development and the environment, predominantly ecosystems, and demands that the various nations should preserve their biodiversity. Although the WCN document notes the impact of unsustainable consumption and production, and the right of public participation, the concept of optimum sustainable development was not incorporated explicitly in the World Charter for Nature. Also, the term "nature," as used in the WCN document, implies non-human with no comprehensive understanding that human beings are part of nature.[88] In addition, quoting Wood, Chiara

observes that UN countries have disapproved of the WCN document for being too ambitious in directing all countries to assume behavior that curtails aggressive environmental effects without providing legal binding to those proclamations. Nevertheless, the WCN remains a cherished document for intensifying current environmental rights and the insistence of conserving nature even at the international level. The interesting thing about the WCN is that it contributes to form a right that does not only stresses on human species but also non-human species.[89]

iii. 1987 Brundtland Report:

The World Commission on Environment and Development (WCED) was established as an independent body of the United Nations General Assembly in 1983. The Chairperson that led this great Commission was Ms. Gro Harlem Brundtland of Norway and Dr. Mansour Khalid of Sudan as Vice-Chairperson. Since Mrs. Brundtland chaired the Commission that the final document is often called "Brundtland Report." The World Commission on Environment and Development, which met at Stockholm in 1987, presented its report, Our Common Future, to the UN General Assembly. With the Brundtland Report, it was fully established that environment and development are connected. In other words, the Report strengthens the idea that environment and development are interdependent.[90] Still, the view of a trade-off relation between environment and development is also deep-rooted in the Report. So, without a proper sense of sustainable development, "many present development trends leave an increasing number of people poor and vulnerable, while at the same time degrading the environment."[91] Therefore, the Brundtland Report insists on vital economic reforms for long-term sustainable growth to become a real tool for modifications in lifestyles. In line with this Report, poverty and environmental degradation, as experienced by the Niger Delta region, can only be solved through sustained economic growth. In a similar development, the United Nations Association of Canada's document

expresses that for environment and development to agree, development must be sustainable, which means that "nature must be used on the basis that can be sustained into the distant future."[92] Also, one of the unique features of Brundtland Report was the widening of the notion of sustainable development as a development that " meets the needs of the present without compromising the ability of future generations to meet their own needs."[93] Whereas the World Charter for Nature stresses on the conservation of natural resources, the Brundtland Report stresses the use of scarce resources to bring about development.[94]Again, the Brundtland Report calls for more chances for trade and economic growth that would assist developing nations in becoming self-sufficient. Other issues that are prominent in the Brundtland Report are human health, poverty, population growth, environment, quality of life, and urbanization.[95]

iv. 1992 Rio Declaration

The 1992 United Nations Conference on Environment and Development (UNCED) took place in Rio de Janeiro, Brazil, from June 3-14. For this reason, it is popularly known as the "Rio Conference" and its outcome document as the "Rio Declaration."[96] The Secretary-General of the UNCED was Maurice F. Strong of Canada while Tommy Koh of Singapore chaired the conference. The Rio Conference was held to mark the 20th anniversary of the 1972 United Nations Conference on the Human Environment that took place in Stockholm.[97] The Rio conference is noted for bringing some new elements into environmental debates. The 27 Principles of the Rio Declaration contained the entire scope of concerns that the world must directly struggle to protect the planet. The 27 Principles of the Rio Declaration guide national environmental behavior and secure general rights and obligations on environmental protection.[98] Apart from its emphasis on environment and development, the Rio Declaration treats other environmental principles such as the principles of common but differentiated responsibilities, the

precautionary principle, and public participation. The Rio declaration reports the problem of poverty and the call for differential action by evolving a principle of solidarity in the cooperation-the principle of common but differentiated responsibility. As stated in Principle 7 of the Rio Declaration, the "Principle of Common but Differentiated Responsibility" implies a broad understanding of the breach existing between developed and developing nations. However, this breach is noticeable in the various contributions to global environmental degradation and in the various capacity of States to carry out corrective actions. Moreover, the principle of common but differentiated responsibility encourages a solidarity process in cooperation as a different way of addressing the problem of poverty and environmental degradation. Like the Brundtland Report, Rio Declaration emphasizes the strong anthropocentric approach partly by encouraging the precautionary principle for the prevention of environmental problems. The precautionary principle, as stated in Principle 15 of the Rio Declaration, connotes that when scientific uncertainty occurs concerning the possibility or the degree of environmental harms caused by an activity, decision-makers should wisely reflect whether to permit this activity to take place or not. The precautionary principle insists that avoiding harm to the environment might be less expensive than cleaning up later. However, a more detailed explanation of the precautionary principle shall be treated in chapter four of this dissertation. Besides, Principle 10 of the Rio Declaration stresses the importance of participation, access to information, as well as access to judicial proceedings concerning issues on the human environment.[99]

Furthermore, Ferrero and Holland aver that at the Rio Conference, countless non-governmental organizations (NGOs) arranged and distributed numerous drafts, but no official United Nations "Earth Charter" was recognized. The only recognized document from the meeting was the Rio Declaration on Environment and Development.[100] Whereas Stockholm

Conference is noted as having a governmental profile, Rio Conference witnessed unprecedented participation from non-governmental organizations.[101] Also, like the Brundtland Report, Rio Declaration further develops the notions of sustainable development, the global economy as well as global ecology. In the view of Atapattu, the Rio Conference was an event that marks the confirmation of sustainable development by the international community. For Atapattu, sustainable development involves environmental protection, economic and social development, peace and security, and governance. Over and above all, Atapattu considers Rio Conference as an effort to "strike a balance between environmental protection and economic development."[102] Likewise, Principle 1 of the Rio Declaration emphasizes the right to development and contemplates the protection of the environment as an important part of the development process. It stresses that States have both the right to exploit their resources as well as the duty to guarantee that their activities will not destroy the environment. Even though not legally binding, the Rio Declaration is a significant political obligation for each country to join environmental issues with economic decision making.[103]

Lastly, because of the Rio Conference, the "Sustainable Development Commission" as a new United Nations body was created. Also, the Earth Council and World Business Council for Sustainable Development as two new international institutions were inspired by the event.[104]

v. The 1994 Draft Declaration on Human Rights and the Environment:

An international group of experts on human rights and environmental protection on May 16, 1994, assembled at the United Nations in Geneva and drafted the first-ever declaration of principles on human rights and the environment. These experts were assembled at the invitation of the "Sierra Club Legal Defense Fund'' on behalf of Mrs. Fatma Zohra Ksentini, who was the Special Rapporteur on Human Rights and the Environment for the United Nations Sub-

Commission on Prevention of Discrimination and Protection of Minorities. Mme Ksentini has since 1989 chaired a study on the linkage between human rights and the environment. Therefore, the Draft Declaration remains the first international instrument that broadly talks about the relationship between human rights and the environment.[105] The Draft Declaration reveals that recognized environmental and human rights principles represent the right of everyone to a secure, healthy, and ecologically sound environment. It goes further to highlight the environmental aspect of recognized human rights, which include: the rights to life, health, and culture. Also, the Draft Declaration talks about procedural rights, especially the right to participation required for an understanding of substantive rights. Again, it designates duties that link to the rights, duties that apply to individuals, governments, international organizations, and multinational corporations.[106] Even though the Ksentini report is the first document to point out the content of the human right to a healthy environment in precise terms,[107] Boyle opines that the UN agencies and States failed to give a satisfactory remark to it.[108] In the same vein, Wolfe states that the Ksentini report lacks reference to solidarity rights, notwithstanding its stress on the collective nature of obligations; hence, he considers it as a "kitchen-sink approach to environmental rights."[109]

vi. International Union for Conservation of Nature (IUCN)

IUCN was established in 1948 at Fontainebleau, France, to encourage nature conservation and the ecologically sustainable use of natural resources. IUCN was formerly known as the International Union for the Protection of Nature (1948–1956) and the World Conservation Union (1990–2008). The IUCN remains the oldest global environmental organization in the world that has its headquarters in Gland, Switzerland.[110] The IUCN's activities are organized into several theme-based programs ranging from business

and biodiversity to forest preservation to water and wetlands conservation. The activities of IUCN are planned into numerous theme-based programs extending from business and biodiversity to forest preservation to water and wetlands conservation. IUCN through the various member organization, implement and promote national conservation legislation, policies and practices; supports and participates in environmental scientific research as well as operating and managing the different fieldwork projects worldwide. All the activities of IUCN are directed by a global program, which is approved after every four years at the IUCN World Conservation Congress by the member organizations.[111] In the past, IUCN has been condemned for always putting the needs or welfares of nature above those of human beings and, at the same time ignoring economic deliberations and the welfares of indigenous peoples and other traditional owners of the land. In recent years, its closer relations with the business sector have caused controversy.[112] Another criticism leveled against IUCN is the fact that all over its history, it has mostly been 'Northern focused' (i.e., had a West-European) or North-American viewpoint on global conservation. Added to this is the fact that the IUCN president, chairs of commissions, and most of the staff came from western countries not until the 1990s when it started working with the indigenous people. Thus, the IUCN at the 2016 World Conservation Congress introduced a new membership category for indigenous peoples' organizations in appreciation for their role in preserving the planet. Presently, the IUCN has become more decentralized in its operations and more global in areas of staffing.[113] Also, people have criticized the cooperation between IUCN and Shell. Again, while quoting Barbara Bramble, a senior international affairs advisor at the U.S-based National Wildlife Federation, Block says that people are very disappointed about how companies use the name of IUCN on their advertising material. Of course, their actions drag IUCN into the mud. Again, concerning its public connection with

Shell, many in the broader environmental community maintain that Shell, notwithstanding its new support of renewable energy, continues its essential legacy of human rights abuse and environmental degradation, especially in Nigeria's Niger Delta region.[114] However, IUCN remains dedicated to its partnerships with the business sector, seeing sustainable development as a way to safeguard the long-term protection of natural areas and species.[115] The IUCN has been granted observer status at the United Nations General Assembly. The IUCN is being funded by several governments, foundations, corporations, agencies, and member organizations. The IUCN is famous for its Red List of Threatened Species that was established in 1964. The aim of the "Red List" is to offer the conservation status of animal and plant species around the world. The Red List provides systematically based information about the survival of species. It encourages public education about biodiversity as well as conservation efforts that impacts governmental policies.[116]

vii. The Earth Charter Initiative

The Earth Charter Initiative can be traced back to the 1948 International Union for the Conservation of Nature and Natural Resources (IUCN). As examined above, the IUCN emerged to create a World Charter for the Protection of Nature. Again, one of the recommendations of "Our Common Future*"* was the suggestion that governments should draft a "Universal Declaration on Environmental Protection and Sustainable Development" in the form of a "new charter." Therefore, this recommendation or endorsement led Maurice Strong, the Secretary-General of the 1992 Rio Earth Summit, to implement an Earth Charter a target of the Summit. Though, the North and the South failed to arrive at an agreement on principles for such a charter. On this note, Strong established the Earth Council to carry out the uncompleted business of the

1992 Rio Summit. Consequently, the Earth Charter Secretariat was established with its base at the University for Peace in Costa Rica. [117] Immediately, the Earth Council in union with Green Cross International created the Earth Charter Commission as an autonomous, international body. Eventually, the Earth Charter Commission carried out the drafting process and the Earth Charter consultation, permitted the final text of the Earth Charter, and launched the Earth Charter in 2000. Although the Earth Charter mission started as a United Nations creativity, it was projected further and accomplished by a global civil society initiative.[118]

Presently, the Earth Charter is regarded as a declaration of fundamental ethical principles for creating "a just, sustainable and peaceful global society in the 21st century. It sought to inspire in all people a new sense of global interdependence and shared responsibility for the well-being of the whole human family, the greater community of life, and future generations." [119] Therefore, it offers a new and comprehensive ethical plan that guides the move to a sustainable future. In other words, the Earth Charter is concerned with the shift to sustainable ways of living as well as sustainable human development. Moreover, the Earth Charter identifies that the goals of ecological protection, the eradication of poverty, respect for human rights, democracy, equitable economic growth, and peace are mutually dependent and inseparable. Furthermore, the International Earth Charter Initiative was formed in 2006 as part of the first restructuring and evolution of Earth Charter activities. Hence, its goals remain to encourage the propagation, use, endorsement, as well as the execution of the Earth Charter.[120]

Having seen those international environmental instruments that connect more deeply environmental protection, human rights, and economic development, this dissertation examines further other international environmental agreements that provide guidelines and regulations on

the movement of hazardous materials. These include the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the Stockholm Convention on Persistent Organic Pollutants.[121]

viii. The 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention)

The Basel Convention was adopted in 1989 and came into force in 1992 to respond to worries about toxic waste from industrialized countries being dumped in developing countries and countries with economies in transition. The main purpose of the Basel Convention is the control and reduction of transboundary movements of hazardous and other wastes. The Basel Convention enforces rigid rules on the transboundary movement of hazardous wastes by these management procedures: 1). the Prior Informed Consent Procedure (PIC) should be employed for transboundary movements between Parties, that is, the State of export shall inform, in writing, all the States affected by any anticipated transboundary movement of such wastes. Again, the State of export shall not permit the exporter to begin the transboundary movement pending when she has obtained the written consent from the State of import and the State of shipment. The Basel Convention necessitates each party to present suitable national/ domestic legislation to stop and punish illegal traffic; to carry out suitable actions to reduce waste generation; to guarantee the accessibility of facilities for the disposal of hazardous wastes within its region; to ban all persons under its national control from hazardous wastes or other wastes unless such persons are permitted or authorized by law to carry out such operations.[122]

ix. The 1998 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (the Rotterdam Convention)

The Rotterdam Convention was accepted in 1998 and entered into force on February 24, 2006. By May 12, 2006, over 106 countries and the European Community were the parties to the Rotterdam Convention. The Rotterdam Convention is intended to encourage collective responsibility and supportive efforts amongst Parties in the international trade of certain hazardous chemicals. It aims at protecting human health and the environment from possible harm as well as contributing to their environmentally sound use; by enabling information exchange about their features; by making available a national decision-making procedure on their import and export and circulating these decisions to all Parties. In other words, the Rotterdam Convention serves as a beneficial environmental instrument that offers importing Parties with authority to make informed decisions on which of those chemicals they want to obtain and to reject those that they are unable to manage without harm. Currently, thirty-seven chemicals that consist of twenty-four pesticides, six severely hazardous pesticide formulation, and seven industrial chemicals are protected by the Rotterdam Convention.[123]

x. The 2001 Stockholm Convention on Persistent Organic Pollutants (the Stockholm Convention)

The Stockholm Convention was accepted in 2001 and entered into force in 2004 with 124 parties. The Stockholm Convention on Persistent Organic Pollutants (POPs) is a global treaty that ensures the protection of human health as well as the environment from highly hazardous, long-lasting chemicals by curbing and eventually eradicating their production, trade, use, release, and storage.[124] The Convention makes available measures for the global protection of human

health and the environment against the 12 Persistent Organic Pollutants (POPs) of utmost concern (usually refers to as the "dirty dozen).[125] The Convention pursues the eradication or control of production as well as the use of all deliberately produced POPs. Also, the Convention pursues an ongoing lessening and, where possible, final eradication of releases of accidentally produced POPs. Persistent Organic Pollutants (POPs) refers to those "chemical substances that persist in the environment, bioaccumulate through the food web, and pose a risk of causing adverse effects to human health and the environment."[126]

b. Regional Environmental Instruments

At the regional level, there are two main important instruments such as the 1981 African Charter on Human and People's Rights (ACHPR) and the American Convention on Human Rights (ACHR)[127]especially 1988 Additional Protocol to the American Convention on Human Rights within the area of Economic, Social and Cultural Rights. Other regional environmental instruments are the European Convention on Human Rights and the Aarhus Convention.

i. 1981 African Charter on Human and People's Rights

The African Charter of Human and People's Rights adopted in Algiers on June 26, 1981, became a compelling quasi-judicial body for the promotion and protection of human rights all over the African continent. It is seen as the principal regional instrument to guarantee the human right to a healthy environment. As x-rayed in the previous sections, Article 24 of the African Charter remains very crucial to the peoples' right to a general satisfactory and decent environment. It states, "all peoples shall have the right to a satisfactory general environment favorable to their development." In the view of Atapattu, Article 24 appears not to offer an

absolute environmental right. In fact, it slightly limits the potential reach of the right to a healthy environment as it is connected to development.[128] In like manner, Scheinin expresses that the African Charter protects solidarity rights with a collection of provisions on collective rights that supports the right to development with real dimensions.[129] Again, the African Charter document contains economic, social, and cultural rights and civil and political rights. This viewpoint is expressed even in the preamble that civil and political rights cannot be separated from economic, social, and cultural rights from their beginning and their universality.[130] The African Charter document is popular for its communal aspect. Unlike other international instruments, the African Charter tags people as the solitary holder of rights.[131]

Also, pointing to the total violation of the right to a healthy environment by the Nigerian government against the Niger Delta people, the case between the Social and Economic Rights Action Center for Economic and Social Rights v. Nigeria speaks volumes about the situation in the Niger Delta region. This is the only case of environmental degradation that results from oil exploration in the Niger Delta region that was brought before the African Commission based on Article 24 that accords the peoples' right to a satisfactory and decent environment. Of course, this very case serves as a milestone decision that applies in a straight line a variety of economic, social, and cultural rights. In addition, the Commission in Paragraph 51 links the right to a satisfactory and decent environment to economic and social rights in as much as the environment impacts the quality of life and the safety of the individual.

Against this backdrop, the African Commission has found that the Nigerian government with their cohorts (i.e., the Nigerian National Petroleum Company and Shell Petroleum Development Corporation) truly violated the peoples' right to a clean and healthy environment as stipulated in Articles 16 and 24 along with other violations.[132] The Commission observes that the oil firms

have exploited oil reserves in Niger Delta, especially Ogoniland, with no regard for the health or environment of the local communities, placing toxic wastes into the local waterways and environment in abuse of relevant international environmental standards. The subsequent pollution of air, soil, and water has had grave health impacts on the peoples. Besides, the government of Nigeria has overlooked and smoothed these abuses by engaging the military and legal powers of the nation at the disposal of the oil firms. Again, the government of Nigeria has neither supervised activities of the oil firms nor required safety actions that are ordinary procedures within the company. The Nigerian government has suspended from the Ogoni community's information on the hazards created by oil explorations in the region. Ogoni communities have not been involved in the decisions affecting the development of Ogoniland.[133] Also, the Nigerian government has refused to give authorization to researchers and environmental organizations from entering into the Niger Delta region, especially in Ogoniland, to commence studies on health and environmental crises. The Nigerian government has disregarded the worries of Ogoni communities regarding oil development and has retorted to dissents with colossal violence and executions of Ogoni leaders, especially with the hanging of Ken Saro Wiwa and eight others. Moreover, the government of Nigeria does not involve oil companies to make a consultation with the Niger Delta communities before the commencement of oil activities, even if the activities have severe and direct threats to them. In a similar development, the government of Nigeria has devastated and endangered the Niger Delta food sources through the variability of ways. The government of Nigeria has contributed to reckless oil development that has polluted the water and soil upon which Niger Delta peoples depended on fishing and farming activities.[134]

Whereas the Commission acknowledges the right of the Nigerian government to produce oil as a source of income to fulfill the economic and social rights of the citizens, it emphasizes that such activity should not be allowed to harm the environment. It insists on the governments to discontinue from directly threatening the health and environment of their peoples.[135] In Paragraph 52 of ACHPR, it imposes an obligation on the states to take reasonable measures "to prevent pollution and ecological degradation, to promote conservation, and to secure ecologically sustainable development and the use of natural resources."[136] Apart from the substantive elements which emphasized freedom from pollution, environmental degradation, and other activities that affect the environment and wellbeing of the people, the Charter has its procedural elements as well. The procedural elements confer rights such as the right of access to information, the right to participate in the process of decision making as well as the right to seek redress on conditions that interfere with the enjoyment of the right to environment.[137]

ii. 1988 Additional Protocol to the American Convention on Human Rights within the area of Economic, Social and Cultural Rights

The relevant provision of the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social, and Cultural Rights adopted in San Salvador on November 17, 1988. The protection of economic, social, and cultural rights was included through the San Salvador Protocol to the existing human rights system of the Organization of American States. The San Salvador Protocol offers a more detailed construction of the right to a healthy environment than those existing in the soft law instruments. It places the right of a healthy environment inside economic, social, and cultural rights.[138] Article 11 of the San Salvador Protocol states that "everyone shall have the right to live in a healthy environment and

to have access to basic public services." It goes on to say that "the States Parties shall promote the protection, preservation, and improvement of the environment."[139] Nevertheless, Shelton opines that the right to a healthy environment, as stated above, is far from being implementable as it was not included in the list of rights subjects to the individual complaint process.[140] The Inter-American system reports environmental rights mostly in cases of indigenous peoples as well as natural resources exploitation, stating that environmental quality in a straight line affects the right to life, food, and health. The emphasis on the rights of the minority permitted the acknowledgment of the collective character of environmental procedural rights, particularly access to justice. The Inter-American system equally imposes on the state to adequately share the benefits of resource exploitation.[141] Moreover, from 1961-2018 the Inter-American Commission on Human Rights has carried out various studies and given seventy-one (71) Country Reports with special attention to human rights, health, and environment.[142] Although many of these Country Reports shed light on the topic under consideration, the1997 Report on the Situation of Human Rights in Ecuador has a semblance to the situation of the Niger Delta people.

The Ecuadorean experience resonates very well with the state of affairs in the Niger Delta region for which this dissertation is being carried out. Concerning the situation in Ecuador, the Commission was replying to the claims that oil operations were polluting the air, water, and soil. Consequently, several people in the area are suffering from gastrointestinal problems, chronic infections, skin diseases, fever, diarrhea, and rashes. The peoples of Ecuador were undivided in appealing that oil exploitation activities, particularly the dumping of toxic wastes, endangered their lives and health. For this reason, the Commission expresses that "the realization of the right to life, and to physical security and integrity is necessarily related to and in some ways dependent upon one's physical environment," also, "where environmental contamination and

degradation pose a persistent threat to human life and health, the previous rights are implicated."[143] Following this abysmal situation of the peoples of Ecuador, the Commission recommends that measures should be taken by the states to protect the fundamental rights to life and physical security. It advances that protection of the right to life, as well as physical integrity may be achieved through actions that enable the individuals to guard and claim those rights. The mission to protect against environmental situations that threaten human health necessitates that individuals must have access to information, participate in appropriate decision-making processes, as well as seeking redress in court. Also, the Commission concludes that respect for the fundamental dignity of the human person is the principle that inspires the ultimate protection of the right to life and physical well-being. Situations of severe environmental pollution that lead to bodily illness, impairment, and misery on the part of the public are unreliable with the right to be valued as a human person.[144]

iii. European Convention on Human Rights

The European Convention on Human Rights (ECHR), which was formally called the "Convention for the Protection of Human Rights and Fundamental Freedoms," is an international convention that protects human rights and political freedoms in Europe. The newly formed Council of Europe drafted the ECHR in 1950. The Council of Europe was formed after the Second World War for two purposes: To guarantee the protection of certain essential rights and freedoms and to contribute to the formation of stable democracies governed by the rule of law across Europe to defend human rights, the rule of law, and to inspire democracy in Europe. The European Convention on Human Rights developed from the United Nations' Universal Declaration of Human Rights and was signed in 1950 and entered into force on September 3,

1953. All Council of Europe member states is a party to the Convention. Also, the Convention established the European Court of Human Rights (ECtHR) to judge cases of human rights violations by a state party against the people. At the same time, the Committee of Ministers of the Council of Europe monitors the implementation of judgments.[145]

Unlike the African and American systems, the European system on the developments of the environment is different and very limited. However, the European system serves as a paradigm to other regional systems since it is the most widely developed of the human rights systems and has created a wide-ranging jurisprudence.[146] Nevertheless, Weber states that the European Convention on Human Rights did not explicitly recognized the right to a healthy environment or even considered the environment to have rights of its own.[147] But then, Desgagné argues that the European Court of Human Rights now identifies environmental quality as an element for the enjoyment of human rights. It identifies environmental protection as a compelling public interest that might explain the restraint of individual rights.[148] Records of environmental issues at the European Court are claims of pollution and are brought on the ground of Article 8, which spells out that: 1. Every human being has the right to respect for his/her private and family life, his/her home as well as his/her correspondence 2. There shall be no intrusion by a public authority with the exercise of this right excepting that such as is in accord with the law and is needed in a democratic society in the benefits of national security, public safety or the economic well-being of the country, for the prohibition of crime or disorder, for the defense of moral or health, or the defense of the rights as well as freedoms of other humans.[149]

Article 8 and others are interpreted to cover environmental cases. For instance, Shelton talks about the Lopez Ostra v. Spain case that was brought before the European Court of Human

Rights (ECtHR) in 1994. In this case, the applicant assumed a breach of Article 8 against her and her daughter because of fumes released by a waste treatment plant which functioned alongside their living apartment. Therefore, the applicant filed a suit to point out the negative health effects on them. Hence, the ECtHR ruled that Spain did violate Article 8 in failing to balance the interest of the economic well-being of the town against the enjoyment of the privacy rights by the applicant. According to the ECtHR, "that severe environmental pollution may affect individuals' well-being and prevent them from enjoying their homes in such a way as to affect their private and family life."[150]

iv. Aarhus Convention

The UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters popularly called Aarhus Convention was adopted at the Fourth "Environment for Europe" Ministerial Conference in Aarhus, Denmark on June 25, 1998, and it entered into force on October 30, 2001. The Aarhus Convention is a new form of environmental agreement that connects environmental rights and human rights, government accountability, and environmental protection. [151] Principle 10 of the 1992 Rio Declaration was of immense importance for the expansions that led to the Aarhus Convention. However, issues that were discussed at the Aarhus Convention had been addressed earlier by the 1990 UNECE Draft Charter on Environmental Rights and Duties before the Rio Conference.[152] The Aarhus Convention identifies the procedural rights of access to information, public participation in decision-making, and access to justice in environmental matters, usually called "the three pillars." These "three pillars" bring about the protection of the right of every person of the present as well as future generations to live in an environment adequate to his or her health

and well-being. Hence, the Aarhus Convention states that sustainable development can be attained only through the participation of all stakeholders. [153] Also, the main aim of the Aarhus Convention is to establish good relations between the people and governments. The Aarhus Convention offers public rights and imposes on Parties and public authorities' responsibilities concerning access to information and public participation.[154]

The Parties to the Convention are obliged to make the required provisions so that public authorities (at the national, regional, or local level) will contribute to these rights to become operative. The Convention provides for:

1). Access to environmental information: the right of every person to obtain environmental information that is thought by public authorities. This can consist of information on the state of the environment, but also on guidelines or measures that are taken, or on the condition of human health and safety. For Ebbesson, the obligations connected to environmental information in the Aarhus Convention contain two parts: 1.) guaranteeing public access and creating means for collection and distribution of information; 2.) Parties are obliged to keep and bring up-to-date information through to those concerned (see Article 5 (1)).[155] Petitioners are eligible to obtain this information within one month of their request even without stating their reason for the information. However, Article 4 (3) states that any individual, regardless of his/her interest, may claim access to any environmental information, except that the information is considered confidential. The release of the information is not permitted if it would harm a.) the confidentiality of the public proceedings; b.) international relations, c.) national defense, d.) public security, e.) the fair administration of justice, f.) intellectual property rights, or g.) confidential commercial message. The above exceptions, as stated in Article 4 (4), should be interpreted in an obstructive way taking into justification the public interest served by the

disclosure. Nevertheless, any request that is rejected must be made in writing, preferably within one month of the request.[156]

Concerning the second aspect of the obligation, authorities are required to make relevant information on the state of the environment, legislation, international treaties, and other documents available in a transparent manner through electronic databases, public lists, and national reports, etc. More importantly, each party shall develop stages to gradually establish a comprehensive national system of pollution inventories or registers on an organized computerized and openly available database.[157]

2). Public participation in environmental decision-making: Again, the people should be given the right to take active participation in environmental decision-making. Here, public participation can be viewed from dual aspects. On the one hand, civil society, its interest, and its awareness. On the other hand, public authorities, and their willingness to move the society as well as their degree of transparency. While the interest of the society cannot be controlled or standardized, the attitude of the government towards public participation can be measured and regulated.[158] Public authorities should make adequate arrangements to allow the environmental non-governmental organizations and those that are affected to make their remark on certain proposals for plans affecting the environment or programs that relate to the environment. On this note, the Aarhus Convention, as noted by Ebbesson, highlights five ways of enhancing public participation: a.) authorities are expected to offer "early public participation when all options are open and effective public participation can take place" (Article 6 (4)); b.) the authority must inform those that are concerned either individually or by a public notice about the proposed activity, the time frames, the nature of possible decisions, and the place where the information is being held; c.) the peoples should be given a chance to submit their observations and comments

either through hearings or writings; d.) the authority should ensure that in the decision due account is taken of the outcome of the peoples' participation and; e.) finally, authorities should be able to justify their decisions. The right to have the decision legally reviewed should be given to the public.[159]

3). Access to justice**:** This is another crucial aspect of procedural rights. This allows for the right to evaluate actions to challenge public decisions that have been made without regarding the two rights mentioned above or environmental law in general.[160] The right to have access to justice pertains to two types of situations. In the first place, any individual who feels that his or her request for environmental information has been overlooked, rejected, or not treated in agreement with the Convention must be guaranteed access to a review procedure before a court or another autonomous and independent body (see Article 9 (1)). In the second place, anyone who is having an appropriate interest or witnessing the loss of a right must be guaranteed access to a review procedure before a court of law or another independent body, to contest the procedural and substantive authority of any decision, act or omission which may affect the human environment (Article 9 (2)).[161]

v. The 1991 Bamako Convention on the Ban on the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (Bamako Convention)

The Bamako Convention was adopted under the auspices of the Organization of African Unity (now African Union) in January 1991 and entered into force in 1998. The Bamako Convention is an African nations' treaty prohibiting the importation of any hazardous (together with radioactive) waste into Africa. Bamako Convention took place because many developed nations of the world were exporting hazardous wastes to Africa as well as the failure on the part

of the Basel Convention to prohibit the trade of hazardous waste to developing nations. One extreme example is the case that happened in 1987. It was about the importation of 18,000 barrels (2,900 m^3) hazardous waste from Italian Companies (Jelly Wax and Ecomar) into Nigeria.[162] In the same way, the 2006 Probo Koala case that took place in Ivory Coast is another typical example. Here, a European company chose not to obey strict environmental laws at home that shoot up waste disposal costs but as an alternative sought a low-cost solution by transporting and discarding its hazardous waste into an Ivory Coast lagoon of the capital Abidjan in West Africa. This dumping brought death and sickness to many people in Ivory Coast.[163] Like the Basel Convention, the Bamako Convention is even stronger in prohibiting the importation of hazardous wastes or incineration of harmful wastes. Like Basel Convention, Bamako Convention does not specify exceptions on certain hazardous wastes like those of radioactive materials. The Convention guarantees that disposal of wastes is directed in an ecologically sound manner. Also, the Convention helps to encourage cleaner production over the quest of a permitted release method that is grounded on assimilative capacity norms. Finally, the Conventions launches the precautionary principle to the protection of the environment.[164]

c. National Environmental Instruments

At the national level, nations need to advance and reinforce the enactment of national environmental legislation connecting environmental sustainability to enhancing health, as well as the required legal framework for an authentic execution. Therefore, the preoccupation of this section will be to review some of the national environmental laws and regulations from the Nigerian context. The choice of the Nigerian context is because of the topic under consideration. Notwithstanding the international and regional environmental instruments that are examined above and even with environmental laws and regulations that are put in place, Nigeria still

experiences severe and various environmental problems, which Andreen describes as "staggering."[165] Therefore, are all these environmental instruments simply *pro forma*? In what ways are these instruments relevant to the environmental problems of Nigeria's Niger Delta region?

As observed by Ladan, protection of the environment was not a priority during the colonial period in Nigeria. However, the few laws linking the environment prohibit activities that could degrade the environment. These laws comprised the Criminal Code Act of 1916, which prohibited air pollution and water pollution and formed the offense of a nuisance. Also, in 1917 the Public Health Act was enacted. This Act contained provisions of relevance to the regulation of land, water, and air pollution.[166] Of course, what gave rise to environmental regulation was the environmental crisis that happened in southern Nigeria in the 1980s. So, the laws at this time gave attention to the many aspects of petroleum exploration activities and aimed at reducing the pollution that resulted from them.[167] Most laws that were not petroleum-related had only a minor bearing on the environment. Outstanding amongst these was the 1987 Factories Act, whose primary aim was to provide for the registration of factories and the safety of workers exposed to occupational hazards.[168] Also, other critical environmental regulations during this period are the 1978 Land Use Act; the 1979 Energy Commission of Nigeria Act and the 1986 River Basins Development Authorities Act, Federal Environmental Protection Agency Act of 1988 (FEPA Act) repealed by the National Environmental Standards Regulation Agency (NESREA) Act 2007. 1978 Land Use Act, Cap (202) &1 permits all land in the different states to be held in trust for the use and common benefit of all Nigerians. An essential provision in the law is the ownership of all improvements on the land by holders of rights of occupancy, including the groundwater flowing beneath their ground. In 1979, the Energy Commission of Nigeria Act

established the Energy Commission to plan and organize national policies tactically and to thoroughly advance the several energy resources in all their ramifications in Nigeria.[169] In 1986, the River Basins Development Authorities Act recognized 11 River Basin Development Authorities across Nigeria to take on wide-ranging development of surface and groundwater resources. These authorities concentrated more on providing irrigation infrastructure as well as the control of erosion and flood.

However, after participating at the 1972 Stockholm Conference on Human Environment, Nigeria created a federal ministry charged exclusively with the duty for the environment-related issues. Again, in 1975, Nigeria created an Urban Development and Environment Division within its Federal Ministry of Economic Development. In 1982, Nigeria hosted the Inter-Parliamentary Union Spring Meeting. At this meeting, a Committee on Education, Culture, and Environment adopted a draft resolution on the "State of the Environment Ten Years after the UN Conference on the Human Environment." Again, in 1983, the Nigerian Institute of Social and Economic Research (NISER) organized a National Conference with the theme "Development and the Environment." With the Koko crisis in 1987, the Federal Government enacted the Harmful Waste Act (Special Criminal Provisions.) in 1988. This crisis started from an Italian company that smuggled several tons of toxic industrial waste and dumped them at Koko, Delta State, Nigeria. The waste dripped into the surrounding environment and posed a severe threat to the well-being of those living in that community. The Act criminalizes actions concerning the sale, purchase, importation, deposit, or storage of harmful waste, either individually or in combination with others on Nigeria's soil, sea, or air.[170] Still, the Federal Military Government in 1987 promulgated the Federal Environmental Protection Agency (FEPA) Act with the responsibility of managing and protecting environmental resources as well as developing environmental

research technology. Besides, this Act enables all the states of the federation to set up their separate environmental protection agencies with the aim of maintaining good environmental quality.[171] Also, the Federal Environmental Protection Agency articulated the present National Policy on the Environment in 1989, which Egunjobi noted as the most significant positive attainment that Nigeria has ever recorded in terms of environmental regulation.

Meanwhile, in 1992, the Environmental Impact Assessment (EIA) Act was enacted. With this Act in place, the nation could boast of an appropriate law that orders a prior environmental impact assessment of proposed projects. The EIA Act entails that projects belonging to both private as well as public sectors must undertake an initial evaluation if they may cause any damage to the environment. [172] Again, in 1999, the functions of the Federal Environmental Protection Agency were taken over by the Federal Ministry of Environment. In 2007, the National Assembly repealed the FEPA Act and passed the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act (NESREA Act). The Federal government formed this Agency as an establishment under the regulation of the Federal Ministry of Environment, Housing, and Urban Development. This Agency is charged with the responsibility of enforcing environmental standards, regulations, laws, rules, guidelines, and policies. Its roles include the protection and development of the environment, sustainable development of the nation's natural resources, conservation of biodiversity, and environmental technology.[173] Even though the NESREA Act in section 7(c) orders the Agency to implement compliance with the requirements of international agreements, conventions, treaties and protocols on the environment, most of these instruments are so far to be domesticated in Nigeria. Since Nigeria, as a nation, has indicated its intention to be bound by the provisions of the various international instruments, this dissertation is advocating that the government should not shy

away from carrying out its responsibilities as earmarked in the international, regional, and national environmental instruments. As quoted by Ladan, Article 26 of the Vienna Convention on the Law of Treaties says, "every treaty in force is binding upon the parties to it and must be performed in good faith," usually called the Principle of Good Faith (pacta sunt servanda).[174]

3.1.1.2.2. Human Rights-Based Approach to Environmental Protection/Respecting the Procedural Environmental Rights of the Peoples

3.1.1.2.2.1. Human Rights-Based Approach to Environmental Protection

Linking human rights with the environment generates a rights-based approach to environmental protection that places the people harmed by environmental degradation at its center. The relationship between human rights and environmental protection is mainly concerned with the protection of a safe and sustainable environment to the advantage of humankind.[175] Moreover, Donald argues that the human-rights-based approach, when applied to environmental issues on the ground, has the possibility of becoming far-reaching and all-inclusive mechanisms than the products of standard human rights instruments, engaging with the basic and wide-ranging causes of rights violation and lack of rights enjoyment.[176] Hence, Hausermann et al. describe a human-rights based approach as a set of instruments, approaches, or principles with normative content that raises certain ideals and symbolizes certain visions of what should be done. The human rights approach denotes those approaches that allow human rights to be used practicably.[177] The essence of the human rights-based approach is to broaden access to justice, and curative redress provides different means of addressing issues of justice, equity, fairness, and right.[178] Besides, Ling et al. affirm that human rights-based approach is precisely concerned with discovering ways of authorizing those whose rights are deprived of, to evaluate their precarious

situation, to recognize the root causes of their relegation and to take action in defining, claiming and realizing those rights either individually or collectively.[179] Thus, this dissertation argues that a human-rights based approach to environmental protection has several benefits compared to environmental regulatory mechanisms. As stated by Shelton, this approach stresses on the individual and collective entitlements to an exact quality of the environment.[180] The Human rights-based approach allows for a lively engagement of human rights in both social and political procedures that involve an interdisciplinary viewpoint. It emphasizes on re-reading and intensifying the import of the main principles of human rights such as universality, interdependence, indivisibility, non-discrimination as well as equality that are stipulated in the 1948 Universal Declaration of Human Rights. Of course, in Article 1 of 1948, UDHR states that "All human beings are born free and equal in dignity and rights." This implies that all people are eligible for rights by being humans. For this reason, the principle of universality reflects deeply the view that everyone is eligible for human rights in an equal manner. The principle of interdependence of human rights signifies the idea that the satisfaction or abuse of a certain right correspondingly affects an individual's ability to carry out other rights, while the principle of indivisibility connotes that human rights are inherent to the dignity of every human being.[181] In the same manner, Van Boven argues the principle of indivisibility maintains that human rights cannot rank above the other on a graded scale.[182] Moreover, the principles of non-discrimination and equality of human rights are meant to address issues such as discrimination, injustice, and power. The Article of UDHR upholds the principles of non-discrimination and equality. This goes to reiterates the fact that every person is equal before the law and is permitted equal protection of the law against any discrimination. As stated above, both the 1966 International Covenant on Civil and Political Rights (ICCPR) and the 1966 International Covenant on

Economic, Social and Cultural Rights (ICESCR) confirm the principles of non-discrimination (see Articles 2 & 26 of ICCPR and Article 2 (2) of ICESCR) and gender equality (see Article 3 of both ICCPR & ICESCR).[183] In the view of Donald, the principles of non-discrimination and equality would order all procedures, for instance, climate change mitigation and environmental protection actions be executed in a non-discriminatory and gender-sensitive way that guarantees that all concerned individuals and groups can gain equally. Apart from the principles of non-discrimination and equality, other essential elements that are embedded in the human rights-approach consist of accountability, participation, and empowerment. These are viewed as rights that create discourse and prospects for duties and obligations.[184] For instance, the principle of accountability directs an important purpose of the human rights set, which is the execution of duty. It is a principle that permits the process of forming vigorous and suitable redress strategies, postulating commitments of effort on the part of the states.[185] The principle of transparency is firmly related to the principle of accountability that insists on the government to be open, enabling access to, and distribution of information on any decision-making procedure that might influence human rights.[186]Also, the principle of participation is of great importance to environmental issues, as discussed above under the Aarhus Convention. Again, the right to participation in public, political, economic, social and cultural life is documented in several international human rights agreements especially the Universal Declaration of Human Rights (see Articles 21 and 27) as well as the International Covenant on Civil and Political Rights (see Article 25). For this reason, the principle of participation occupies a key position as far as the human rights-based approach is concerned. It serves as an essential aspect of any decision-making process or rights-respecting strategy and a right.[187] The principle of participation enables everyone to a lively, free as well as reasonable involvement in contributing to a political setting

in which human rights and freedom can be achieved. In line with this thought, Article 21 (1) of UDHR accords everyone the right to take part in the government of a country. The citizens are obligated to participate in decisions that may affect their rights.[188] Corroborating on this standpoint, Donald avows that the peoples' participation in decision-making procedures intensifies the chance that those policies would be active, all-encompassing, equitable, and sustainable.[189]

From the above assessments, the motive for human rights-based approaches to environmental issues in the Niger Delta region would be used to recognized legal standards for legal execution and displaying outcomes that lead to respect, protection, and fulfillment of the human rights of the people. Also, human rights-based approaches would help in the application of human rights principles in the guidance and evaluation of those political and social procedures that have transformative potential. The human rights-based approach would help in contributing to the solution of problems rather than just directing to the problems.[190] Hence, Donald maintains that the human-rights-based approach has the potential to address and interrogating basic and systematic causes of vulnerability and disempowerment to environmental damage or poverty.[191]

3.1.1.2.2.2. Respecting the Procedural Environmental Rights of the Peoples

Acknowledging and respecting the procedural environmental rights of the peoples of the Niger Delta region is very crucial. Procedural rights are those rights that give surety to civil liberty of conscience, due process, expression, assembly, and association.[192] Procedural rights remain instrumental to the attainment of substantive rights. Therefore, procedural environmental rights refer to "the ability of citizens to obtain environmental information in possession of public authorities."[193] Firstly, citizens must have access to information that is connected to the environment and activities that might have an impact on the environment or public health. On

this note, Somanathan avers that people who are given trustworthy information about risks and environmental hazards might be more willing to raise environmental quality standards to increase welfare[194]as well as ensuring long term solutions to the various environmental problems.[195] Secondly, procedural environmental rights consist of the right to participate in environmental decision processes. Thirdly, it implies access to justice, which is the right to seek judicial remedies at any level.[196] Hence, Principle 23 of the "1982 World Charter for Nature" opines that all peoples, in agreement with their national regulation, will have the chance to participate either independently or as a group, in the construction of decisions that may have the straight concern to their environment. Again, all persons will have access to the means of redress in case their environment has experienced any form of degradation or harm.[197] In the same light, Agenda 21 of the Rio Convention states that one of the essential requirements for the attainment of sustainable development is wide-ranging participation in decision making. Also, Principle 10 of the Rio Declaration is crystal clear on these issues of the involvement in decision-making and seeking redress in case of environmental harm. It declares that environmental problems are best resolved with the participation of all concerned citizens at the appropriate level. It is expected that everyone should have proper access to information relating to the environment that is kept at the national level by public authorities. Also, information on harmful materials and activities that are carried out in these communities should be given access to the people as well as the chance to participate in decision-making procedures. Likewise, states should help to inspire public consciousness and participation by making information generally accessible. Lastly, actual access to legal and administrative proceedings, plus redress and remedy, should be offered to the people.[198] Substantiating on this same fact, Article 3, Paragraph 8 of the "Espoo Convention on Environmental Impact Assessment in a Transboundary Context," necessitates the Parties to

guarantee that the public of the areas expected to be affected be updated with information and given the opportunities for making remarks or objections on the projected activity.[199] As discussed above, the Aarhus Convention has likewise codified procedural environmental human rights.

In the final analysis, procedural environmental rights are a means to bring about a balance between environmental priorities and the economy while taking cognizance of the deserted issues of public welfare. Therefore, the procedural approach creates the linkage between human rights, environmental protection on governance within the discourse of sustainable development.

Having examined the concepts of human rights and the environment, the various abuses of human rights, as well as the environmental instruments at the different levels, the next section of this chapter discusses the principles of environmental justice, equity, and sustainable development and their usefulness to the Niger Delta region.

3.2. Principles of Environmental Justice, Equity and Sustainable Development

Today, the people of the Niger Delta region in Nigeria is faced with diverse effects of oil exploration activities in its severity and clinical significance. So tremendous was the environmental crisis that it motivated a remarkable wave of grassroots resistance across the Niger Delta region as local communities and victims expressed their fury in the media, in civic protest, and the law courts. Like other regions of the world who are facing a similar situation, the "crucified peoples" of the Niger Delta region in Nigeria are raising their voices to environmental racism or environmental injustice in the region, which have major impacts on the health of the citizenry. Thus, this section of the dissertation examines ways of overcoming the

environmental/health crises in the Niger Delta through an environmental policy design that will incorporate the principles of environmental justice, equity, and sustainable development.

3.2. 1. Overcoming Environmental/Health Issues in the Niger Delta Region through the Principles of Environmental Justice, Equity, and Sustainable Development.

3.2.1.1 The Principles of Environmental Justice

a. Environmental Racism as the Root Cause of the Environmental Justice Movement

Environmental racism is factual. It is just as factual as the racism found in the employment arena, judicial system, and educational institution, etc.[200] Therefore, environmental racism can be defined as "any policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups or communities based on race or color."[201] Thus, Hopkins observes that millions of Native Americans, African-Americans, Latino, Pacific Islanders are confined in polluted environments because of their color and race.[202] Heltzel sees environmental racism as "white supremacy in its ecological form. As white colonists raped the land of the Native Americans and worked it with enslaved African bodies, the land became an object of white colonial control."[203] Reacting to this, Torres advances that "any action that has predictable negative consequences for racial minorities can be an act of environmental racism."[204] So, environmental racism is racial discrimination in the careful targeting of communities of color for the siting of polluting companies as well as toxic disposal. In other words, it is racial discrimination in terms of authorizing the life-threatening presence of toxic substances and pollutants in communities of color.[205] Moreover, environmental racism is racial discrimination in environmental policymaking. it is racial discrimination in the past of not including people of color in the conventional environmental groups, regulatory bodies, and decision-making boards.[206] This ugly situation led to the environmental justice movement in the

1970s and 1980s. Even though standard histories traced this movement to the 1970s and 1980s, it has roots in Native American fights for land control. It all started with an anti-toxin protest in Love canal where over 21,000 tons of toxic waste, New York in 1978. In 1982, a strong environmental justice protest mounted in Warren County, North Carolina, where a dump was built by the state of North Carolina and Warren County to dispose of contaminated soil that was the product of an illegitimate dumping incident by Ward Transformer Company of Raleigh, North Carolina. Of course, this dumping site was built near African communities, obliging the black bodies to bear the burden of illegal pollution. Thus, the environmental justice movement is concerned with the adverse effects' pollution has had on poor communities of color. Indeed, the fight to preserve both the land as well as human lives is a common fight for survival, a fight for justice to be present throughout the whole creation, particularly in places of great marginalization and suffering.[207]

Furthermore, the notion of environmental racism functions likewise in the international arena between and among nations and multinational corporations. Enlarged globalization of the economy of the world has placed unusual tensions on the ecosystems of low-income communities and developing nations occupied mainly by indigenous peoples and people of color.[208] The most important issue in international environmental racism is the incident of the transboundary movement of hazardous waste.[209] Thus, Marbury accentuates that the shipment of harmful waste from developed to developing countries is environmental racism on a global scale.[210] Transboundary delivery of dangerous wastes and poisonous products banned pesticides and carrying across "dangerous technologies" from developed nations, where their laws and regulations are more severe to developing nations with weaker laws, regulations, and infrastructure are evidence of a double standard.[211] Greenpeace's report estimated that between

1989 and 1994, the Organization for Economic Cooperation and Development (OECD) countries exported 2,611,677 metric tons of dangerous wastes to non-OECD countries.[212]

Again, Hopkins expresses that environmental racism robs developing countries the same chances with developed countries to drink clean water, breathe clean air, work in a clean or safe environment, enjoy clean parks and playgrounds. In addition, Hopkins advances that environmental racism and the resulting sicknesses it causes are deliberate and thoughtful policy practices on the part of global financial institutions. To buttress this point, he cites an example of Lawrence Summers, the chief economist at the World Bank in 1991, who released an internal memo that targeted less technologically advanced countries.[213] The memo stresses that the principal intent of the World Bank is to make profits for monopoly capitalist companies at the expense of the health of working-class people and deprived countries in the world. To stress this argument further, we can rightly say that whereas the World Bank memo deals with deprived people and countries of color internationally, the 1975 Trilateral Commission in the United States focuses on the people of color and other previous silent communities within the United States. However, the same deliberate calculations are at work in both cases.[214] Also, it could be said that vulnerable people of color in the industrialized countries of the North have a similar experience with the populations in developing countries that are endangered by industrial polluters. For instance, the struggle of grassroots groups (African Americans) from Norco, Louisiana, and Niger Delta people of Nigeria are alike in that Shell Oil Company and insensitive governments dangerously impact both groups.

Other illustrations of environmental racism from a global perspective are Bhopal (India) and Mexico City disasters in 1984. The Union Carbide chemical plant in Bhopal, India, and the PEMEX liquid propane gas plant in Mexico City blew up, killing thousands and harming over a

million close inhabitants.[215] In 1993, the Ecuadorians filed litigation against Texaco oil company for environmental degradation caused by oil mining in the Lago Agrio oil field.[216] The Freeport-McMoRan, which operates one of the world's biggest copper and gold mines in Indonesia, is being accused of dumping 130,000 tons of waste rock a day into local rivers as means of disposal.[217] Environmental racism, as practiced in the Niger Delta region of Nigeria and other parts of the world, remains a problem that is usually strengthened by government, economic, political, legal, and military institutions.[218] Against this backdrop, this dissertation inquires, "why are some nations held in reserve for hazardous waste whereas others are not? This on-going illegal movement and dumping of toxic and hazardous products and wastes trigger the environmental justice movement.

b. The History and Conceptual Framework of Environmental Justice

The term "environmental justice" originated from the U. S Environmental Justice Movement[219] in the mid-1980s in the context of the struggle for racial equality.[220] In the view of Heltzel, the term "environmental justice" arose as a cautionary legal concept that could be used in support for the residents of economically disadvantaged areas to safeguard pollution control and remediation, as well as sustainable community planning and land use.[221] It develops from the activism of peoples of color in the United States that were harmfully impacted by economic and environmental degradation. Quite a lot of groups arose in the United States to fight against seeming inequities in the dispersion of environmental hazards.[222] So, the task for environmental justice is a social, political as well as a good fight for healthy environments.[223] However, at its initial phases, environmental justice was used as a tool in the campaigning movements, and investigators principally focused it on the connection between poverty and race.[224]

Thus, the US Environmental Protection Agency (EPA) defines environmental justice as the "fair treatment and meaningful involvement of all people regardless of race, color, national origin or income concerning development, implementation, and enforcement of environmental laws, regulations and policies."[225] It goes further to clarify that "fair treatment" implies that no group of people, including ethnic, racial, or socio-economic groups should bear an unequal share of the adverse environmental consequences resulting from municipal, commercial and industrial operations or the implementation of federal, state, local and tribal programs and procedures. At the same time "meaningful involvement" implies that 1) possibly affected inhabitants of the community have a suitable chance to take part in decisions about an anticipated action that will affect their environment and health; 2) the involvement of the public can impact the decisions of the regulatory agency; 3)the worries of all members involved will be well-thought-out in the process of decision making, and 4) the decision-makers have to search for and enable the participation of those that are possibly affected.[226]

Although the term "environmental justice" originated in the United States, today, many social movements in the world have taken their motivation, and to some extent, their direction in advocating for a full range of environmental rights.[227] Laying more support to this view, Chiro avows that environmental justice is now being used by various people to designate a global web of social movements aggressively critical of the inequalities and destructions caused by the unhindered enlargement and neocolonial logic of fossil fuel-driven current industrial movement.[228] Also, the term "environmental justice" implies a just distribution of benefits and risks among the human population and not about justice to the environment.[229] It is as a result of these happenings, researchers and activists of environmental justice contest the disproportionate burden of toxic contamination, waste dumping as well as environmental destruction borne by

low-income societies, colonized regions, and peoples of color.[230] Furthermore, environmental justice is about social transformation aimed at meeting basic human needs and enhancing our quality of life, environmental protection, human rights, economic quality, health care, housing, and democracy.[231] Also, the concept of environmental justice entails both the idea that all people have an equal right to a clean and healthy environment and the regrettable reality that some groups bear a disproportionate burden of exposure to environmental harms.[232] The main push of environmental justice is a change in focus from the environment to the people, for it emphasizes the need for environmental protection.[233] Likewise, McDonald's echoes that the term environmental justice inevitably includes the barest possible definition of what is considered "environmental" and is blatantly anthropocentric in its orientation-putting persons, rather than plants and wildlife, at the epicenter of a complicated web of social, economic, political, and environmental relations.[234] The concept of environmental justice concerns itself mainly with the environmental injustices of these relations, including the ways and means of remedying these harms and circumventing them in the future.[235] Therefore, the environmental justice movement strives earnestly to lessen these disparities so that everyone can benefit from a clean and healthy environment.[236]

c. Environmental Justice as an Ethical Solution to the Niger Delta Problem.

As described by Bullard, environmental racism institutionalizes unsatisfactory implementation, places the burden of proof on the sufferers rather the polluters, trades human health for incomes, legitimizes human contact to destructive chemicals, pesticides, and harmful substances, exploits the vulnerability of economically and constitutionally subjugated communities, generates a business around risk assessment, supports ecological devastation, holdups cleanup actions, and fails to develop pollution prevention and precaution processes as

the primary and overriding approach.[237] It is against this background that this dissertation examines environmental justice" as an ethical principle for ameliorating environmental crises in the Niger Delta region of Nigeria.

Of course, environmental justice, as seen above, remains a global, inter-generational, and national issue in almost every country in the world. People of the Niger Delta region of Nigeria and, of course, other parts of the world are severely affected by climatic changes caused by fossil fuel burnings. Environmental justice, as understood both nationally and internationally, rests on three pillars, such as better access to information at the various stages of decision making, public participation, and access to justice.[238] However, the level of environmental injustices in the Niger Delta region is horrific. The costs of environmental pollution and degradation that is borne by the oppressed, marginalized, and pauperized people of the Niger Delta region, as well as the benefits that should flow to them in the form of employment, skill acquisition program, and provision of basic social amenities are profoundly disproportional. Even the principles of fairness and equity that should trigger or buttress environmental justice are weakened with one likely harmful consequence, environmental crisis.[239]

To this effect, this dissertation recommends the adoption and adaptation of the principles of the "1991 First National People of Color Environmental Leadership Summit in Washington, D.C."[240] to address the environmental/health problems in the Niger Delta.

Thus, the seventeen guiding principles for which this dissertation adopts and adapts for environmental/health crises in the Niger Delta of Nigeria are 1). Environmental justice encourages the sacredness of Mother Earth, ecological unity and the interdependence of all species, as well as the Niger Delta peoples' right to be free from environmental destruction; 2). Environmental justice stresses that public policy should be grounded on mutual respect as well as

justice for all peoples, free from any unfairness or discriminating tendency against the peoples of Niger Delta in Nigeria; 3). Environmental justice orders the right to ethical, balanced as well as responsible uses of land and renewable resources in the awareness of a sustainable planet for both human beings and other living things in the Delta region; 4). Environmental justice demands for universal protection from nuclear-powered testing (especially as it threatens the ultimate right to clean air, land, water, and food), mining, production, and dumping of toxic/hazardous wastes and poisons in the Niger Delta region; 5). Environmental justice upholds the fundamental right of the peoples of Niger Delta to political, economic, cultural as well as the ecological autonomy of all peoples; 6). Environmental justice stresses on the termination of the production of all toxins, radioactive materials, and harmful wastes in the Niger Delta region. Also, this principle demands that all past and present manufacturers be held responsible to the people for depollution and the containment during production; 7). Environmental justice stresses the right of the Niger Delta peoples to take part as equal partners at the various levels of decision making, including needs assessment, planning, implementation, as well as evaluation; 8). Environmental justice confirms the right of all employees to a safe and healthy work environment in the Niger Delta region without being forced to select between a precarious livelihood and unemployment. Still, this principle confirms the right of those who work at home to be free from environmental threats; 9). Environmental justice defends the right of victims of environmental injustice to obtain complete compensation and reparations for the various damages to the environment as well as quality health care for all in the Niger Delta region; 10). Environmental justice reflects the Nigerian governmental acts of environmental injustice against the Niger Delta region as an abuse of international law, the Universal Declaration on Human Rights, as well as the United Nations Convention on Genocide; 11). Environmental justice must

identify a special legal and natural relationship of Niger Delta peoples to the Nigerian government through treaties, agreements, and covenants confirming sovereignty and autonomy; 12). Environmental justice upholds the need for urban and rural environmental guidelines to clean up and rebuild our cities and rural areas in balance with nature as well as respect for the cultural integrity of the communities in the Niger Delta region. It stresses the provision of fair access for all to the complete array of resources; 13). Environmental justice insists on the strict execution of principles of informed consent and a stop to the testing of experimental reproductive and medical procedures and vaccinations on people of color, especially those from the Niger Delta region; 14). Environmental justice condemns the damaging operations of multi-national corporations in the Niger Delta region; 15). Environmental justice condemns the military occupation, subjugation, and abuse of lands, peoples, and cultures, and other life forms in the Niger Delta region. The military is used continuously by the Nigerian government and the multinational oil companies to oppress the people of the Niger Delta region; 16). Environmental justice stresses on the education of present and future generations which underlines social and environmental issues, based on our experience as well as an appreciation of our various cultural perceptions in the Niger Delta region; 17). Environmental justice entails that individuals of the Niger Delta region should make personal as well as consumer choices to consume as little of Mother Earth's resources and to produce as diminutive waste as thinkable. Also, this principle calls for conscious decision-making in contesting and reprioritize our lives to safeguard the health of the natural world for present and future generations.[241]

No doubt, the consistent application of these principles of environmental justice in the framework of the Niger Delta environmental crises will help to strengthen the existing environmental laws, regulations, and policies.

3.2.1.2 Equity as a Panacea for Environmental Inequality or Discrimination

a. Environmental Inequality in the Niger Delta Region

Inequality, as noted by Paul Farmer, is a vital ethical problem of our time.[242] The issues of environmental inequality feature obviously in any environmental justice and sustainable development debates. Environmental inequality is a quite new notion that gained national recognition in the late 1980s and early 1990s due to the efforts of grassroots environmental justice activists and researchers who stated that environmental degradation affects everyone equally. The notion of Environmental inequality addresses how the minority and low-income neighborhoods are disproportionately hampered by environmental hazards[243] Hence, the Brundtland Report of 1987 affirms that environmental inequality is the main environmental problem of the planet. Although environmental racism and environmental inequality can be used interchangeably, environmental inequality stresses on wider dimensions of the connection between environmental quality as well as social hierarchies.[244] Consequently, Downey identifies five types of environmental inequality, such as *discriminatory intent inequality, disparate exposure inequality, disparate social impacts inequality, disparate health impacts inequality*, and *relative distribution inequality*.[245]

Discriminating intent inequality occurs when corporations deliberately place environmental hazards in marginal localities.[246] *Disparate exposure inequality* arises when members of a particular social group are more extremely exposed to some set of environmental toxins that we would imagine if they were randomly circulated across residential space.[247] *Disparate health impacts inequality* happens when the undesirable health effects of exposure to environmental hazards or residential nearness are scattered unevenly across social groups. These hazards go a long way to impact both the physical and mental health of the individuals.[248] The *disparate*

social impacts inequality apart from representing a possible health threat, implies that environmentally harmful neighborhoods are economically and socially and unwanted places to live.[249] *The relative distribution inequality* connotes that individual or group who obtain more benefits than others from the capitalist production and circulation process should accept more share of the burdens of this whole process.[250] As stated in the Universal Declaration on Bioethics and Human Rights, inequality, as well as inequity, are still all around the world, and some of them have dramatic consequences in the less developed countries. In the 2004 Human Development Report, about 800 million people have no access to suitable health care, 1,100 million people live below the poverty line of US$1 per day, 831million people are malnourished, 1,197 million people have no access to clean drinking water, 2, 742 million people have no access to sanitation, and 780 million people are uneducated.[251] Also, WHO reports that the death rate of the poorest children is 2.5 times higher, and over 27 million children have not been immunized or vaccinated against diseases.[252]

Today, there is a widespread environmental inequality in its various forms, as described above in Nigeria, which has affected mostly the lives of the people of the Niger Delta. There is a serious inequality between groups and geographical areas, as well as never-ending poverty passed between generations.[253] Environmental inequalities matter for at least three purposes. The first reason is inherent, based on the normative principle that all individuals have an equal right to a safe environment. The second reason is that environmental quality has vital influences on the circulation of opportunities to lead a healthy and productive life. The third reason is that environmental quality has economic effects on individuals as well as communities.[254] Regardless of the evolution of various principles and rights aimed at solving the problem of inequality and injustices in our world, these issues have become very extensive.

At the global level, Green maintains that the institutions of global governance can help the fight against inequality in eight ways: 1) through the management of the global economy with rules on investment and trade; 2) by organizing thoroughly essential countries like the G.20 to manage the operation of international markets; 3) by reordering technology, knowledge and wealth through aid or other machinery; 4) by preventing environmental or health threats through agreements like the "Kyoto Protocol on Climate Change" and institutions like the World Health Organization (WHO); 5) by circumventing war and restraining abuses during the war through the provision of a better forum for dialogues; 6) by averting influential countries or corporations from injuring weaker or poorer ones; 7) by ensuring a safety net for the most defenseless when calamity strikes and states are reluctant or inept to cope; 8) and lastly, by stimulating beliefs and attitudes, for instance through the UN Convention on the Rights of the Child (UNCRC).[255]

b. Incorporating the Principle of Equity into Health/Environmental Policies

In the World development report (2006), the concept of equity is a normative one that has a long history in philosophical, religious, and cultural traditions.[256] It is a principle that is concerned with equality, fairness, and social justice. In other words, the notion of equity emanates from the idea of moral equality, that people ought to be treated as equals. This is the idea that, regardless of many differences, all people share a common humanity, and because of this, we must think about how each of them should be treated.[257] No wonder the Universal Declaration on Bioethics and Human Rights declares that "the fundamental equality of all human beings in dignity and rights is to be respected so that they are treated justly and equitably."[258] Equity has been considered a concept even more important than justice. Aristotle says, "what is just, then, and what is equitable are generally the same, and both are good, though what is equitable is better."[259] For John Rawls, equity is an essential requirement for justice. Equity

occurs when all members will express and accept the rules, benefits as well as charges. However, human persons are not physically, genetically, psychologically, and mentally equal. They are not also similar in principles and values. But then, it is usually recognized and ultimately required that all humans are well-thought-out as equals in terms of dignity, rights, freedom, justice, benefits, and obligations. [260]

Furthermore, Jones goes further to identify three significant areas or principles of equity. These include equal life chances, similar concern for people's needs, and meritocracy. The first principle of equity that is equal life chances means that there should be no differences in outcome based on factors for which people cannot be held responsible. In other words, there can be no pertinent reason for differences in life chances or outcomes between two people where they have done nothing different from each other. Also, the second principle of equity: equal concern for people's needs means that some goods and services are a matter of requirement and should be distributed proportionally according to the people's level of need and nothing else. There are basic things that are needed by human beings if they are to circumvent suffering aggressive effects on their wellbeing. These necessities of life include food and nutrition, shelter, water and sanitation, health care, physical security and environment, primary education, etc.[261] This second principle implies the distribution of essential goods based on the need of people is proportional to the extent that they are missing them. Besides, the third principle of equity: meritocracy means that the various positions that are occupied in the society, and rewards should be disseminated to mirror differences in effort and skill, based on fair-minded competition.[262] This third principle of equity implies that people applying for positions in society should be considered based on their qualifications for those positions. The appropriate criterion for allotting these positions in the society should be on merit and nothing else. Hence, this third

principle is violated where factors like race, gender, people's family background, social, and political standing are used to allot positions in society. So, for true meritocracy to take place, all people ought to have access to those positions in society, and all people should have the time to have enough opportunity to develop the skills and capacities that are needed for success in society.[263] Furthermore, it is essential to state that these three principles of equity are not in isolation; they play diverse roles concerning each other but are equally supportive.

Additionally, Jones presents three main arguments of why equity should be central to government policy in developing countries. First, equity is of intrinsic worth. Second, equity as co-constitutive of progress. Third, equity as causally central to long-term change.[264] In the first place, equity as having intrinsic value implies that as a normative concept, it is valuable, that is, something 'good' or 'right.' Working to change society to help people get more even chances in life is more than just a means to end, it is worth doing and of itself. Most societies share that equity is a good thing and is valued worldwide.[265] In the second place, equity as co-constitutive of progress connotes that through its relationship with other goals like growth and rights, equity occupies an important place in terms of effecting an image of what expresses 'development' and positive advancement. Equity plays a constitutive growth in reducing absolute poverty. The decline in income inequality taking place together with economic growth quicken poverty reduction.[266] In the third place, equity is instrumental to any development strategy through its causal relations with other vital outcomes, which is a significant factor in securing poverty, social cohesion, growth, and long-term change.[267]

More importantly, Jones highlights salient policy areas that should be prioritized to achieve equity. They are: 1) providing universal public services for fair treatment: This means prioritizing universal access to public services, such as education and health, and improving their

delivery and strengthening the underlying institution; 2) targeted action for disadvantaged groups: this implies that government expenses should favor disadvantaged groups or regions. In fact, quotas should be used to provide access for employment, especially for specific excluded regions or groups. Empowering disadvantaged people is very crucial in this direction; 3) social protection: There is need for the provision of social protection for everyone so that nobody drops below the least level of wellbeing, beyond which unmet need will produce series of disadvantages; 4) redistribution: Jones suggests that "downstream" action is essential to advance equity by reducing inequality. Also, progressive taxation can help if the additional fiscal space fashioned is used to fund interventions that will promote equity. Other priorities are lowing taxes on essential goods and applying taxes on property-inheritance is key, and 5) challenging entrenched power imbalances: Jones states that power relations can be the root cause as well as sustaining inequity. Attacking destructive power relations takes time, and the empowerment of disadvantaged people must be joint with advancing accountability mechanisms and restructuring democratic institutions. Also, Jones suggests that it is imperative to build a lively civil society as well as a self-governing or independent media.[268]

Finally, with the obvious connections between inequality, poverty, and deterioration of health, this dissertation recommends that the principle of equity should guide the development and the execution of environmental/health laws, regulations, and policies in Nigeria and even globally.

3.2.1.3 The Principle of Sustainable Development

a. The Concept of Sustainable Development

The concept of "sustainable development" was brought into common use in 1987 by the World Commission on Environment and Development in its seminal report called "common future." The report of the World Commission on Environment and Development not only provided a stimulus to the principle of sustainable development but also brought into focus the common concerns of people, common challenges that are faced globally, and the actions which are set-up for peace, security, development, and environment. Since then, sustainability has become a major benchmark against which economic development policies are evaluated by national governments, development agencies, and non-governmental organizations.[269] Thus, the World Commission on Environment and Development Report, 1987 defines sustainable development as "the development that meets the need of the present without compromising the ability of the future generations to meet their own needs."[270] This means that development is sustainable if, while achieving it, the needs of the future generations are not compromised. Corroborating on this view, Tietenberg, and Lewis maintain that sustainable development is based upon the idea that previous generations should be free to follow their well-being if, in so doing, they do not reduce the well-being of upcoming generation.[271] So, inter-generational equity is key in sustainable development debate because the resource base of any economy goes to all generations.[272] Stressing this viewpoint, Agyeman et al. aver that sustainability means "the need to ensure a better quality of life for all, now and into the future, in a just and equitable manner, while living within the limits of supporting ecosystems." [273]This description of sustainability by Agyeman and others highlights four important areas of concern: the quality of life, present and

future generations, justice, and equity in resource distribution as well as living within the ecological bounds.[274]

Still, Attfied stresses that sustainable development remains a "development which is sustainable economically, socially and environmentally, and where these considerations are integrated into actual policies."[275] This definition brings out the three-basic component of sustainable development: economic, social, and environment. Ejumudo opines that the economic aspect of sustainability necessitates the society to follow growth paths that produce an optimal flow of income while sustaining their basic stock of human-made capital, human capital, and natural capital. The goals of the economic component of sustainability are to ensure an increase in the production of goods and services, to improve quality as well as satisfying the basic needs or reduction of poverty. The social aspect of sustainable development centers on two key principles of equity and justice. For developmental paths to be sustainable over a period, resources, opportunities, and wealth should be shared equitably. Social equity connotes equal chances to all in education and for other relevant contribution to society in terms of gender equality, social justice, public participation, and cultural diversity. Lastly, the environmental aspect of sustainable development ensures sustainable use of resources, maintenance of a stock of natural capital, and efficient sink function.[276]

b. The Usefulness of Sustainable Development to the Region

From the previous discussion, "inequality and inequity are still all around the world, and some of them have dramatic consequences in the less developed countries."[277] It is against this backdrop that this dissertation argues for sustainable development as a guiding principle in the face of environmental/health crises in the Niger Delta region. Sustainability in this context implies a long-term ability of an area to support its population without undesirable effects on the

other people, species, or areas.[278] As noted above, sustainable development is based upon the idea that previous generations should be free to follow their well-being if, in so doing, they do not reduce the well-being of the upcoming generation.[279] Therefore, this principle compels us to protect both the present and future generations. In line with this thought, Morisaki, in Article 16 of UDHBR, says it is necessary "to safeguard and promote the interests of the present and future generations."[280]

Also, sustainable development as an ethical principle is concerned with growing the normal standard of living of the poor especially at the grassroots level which could be quantitatively measured in terms of adequate food supply, health care system, water supply, educational services, and sanitation, to mention but a few. However, Wall observes that "today human society appears to be struggling to deal with sustainability….Climate change is already causing temperatures to rise, species are becoming extinct at an increasing rate, and other environmental problems seem set to multiply.[281] It is even worse in the Niger Delta region where such a variety of resources and enormous potentials for sustainable development has remained pitifully underdeveloped over a disproportionately extended period.[282] Thus, Monsi quoting Tamuno advances that, "The problem of the Niger Delta region is to find a sustainable solution to a sustained trauma, which has outlasted a succession of colonial and post-colonial administrations."[283]

Furthermore, Nigeria, like some developing nations, is famous for environmental policy failures. Thus, Howes et al. describe three key factors that are responsible for environmental policy failures. In the first place, there are constant economic incentives for both public and private actions to continue to exploit natural resources without any proper thought of the connected damages to the environment. In the second place, governments either do not have the

political will and the capacity to execute concrete sustainability policies that will better the lives of the citizenry. In the third place, key stakeholders are not provided with the necessary information on the importance of sustainability issues as well as the urgent need for change. [284] Therefore, overcoming these three issues will help convince decision-makers in all segments that sustainable development offers a genuine alleyway to a prosperous economy, a better society, as well as a healthy environment.[285]

Consequently, this dissertation recommends that the principle of sustainable development would be made realizable in the region if the 2005 Environmental Sustainability Index Report is put into use. The 2005 Environmental Sustainability Report includes 1) Environmental Systems: A country is more likely to be environmentally sustainable to the extent that its vital environmental systems are maintained at healthy levels, and to the extent to which levels are improving rather than deteriorating; 2) Reducing Environmental Stresses: A country is more likely to be environmentally sustainable if the levels of anthropogenic stress are low enough to engender no demonstrable harm to its environmental systems; 3) Reducing Human Vulnerability: A country is more likely to be environmentally sustainable to the extent that people and social systems are not vulnerable to environmental disturbances that affect basic human well-being; becoming less vulnerable is a sign that a society is on track to greater sustainability; 4) Social and Institutional Capacity: A country is more likely to be environmentally sustainable to the extent that it has in place institutions and underlying social patterns of skills, attitudes, and networks that foster effective responses to environmental challenges; 5) Global Stewardship: A country is more likely to be environmentally sustainable if it cooperates with other countries to manage common environmental problems, and if it reduces

negative transboundary, environmental impacts on other countries to a level that cause no serious harm.[286]

Lastly, this dissertation brings to our consciousness the fact that environmental and health crises remain as major challenges for global bioethics. As stated by Ten Have, it encouraged many individuals to transform their lifestyle and reduce pollution.[287] This dissertation, therefore, echoes that it is the duty of the government as a representative for the present and unborn generations to implement and monitor these principles and if need be, by legislative enactment, to protect the environment and health of the citizenry. Besides, every individual in the society should adopt sustainable development as a guiding principle for deciding on economic, social, and environmental issues.

3.2.2. Connecting the Environment, Human Health, and Sustainable Development

It is a well-known fact that the environmental management practices in the Niger Delta are mostly aberrations from suitable environmental management principles.[288] Landon observes that at the 1992 Earth Summit in Rio de Janeiro, Brazil, several principles connecting an integrated approach to the environment, health, and sustainable development were decided upon, alongside a plan for future action.[289] Quoting Cahill, Mackler advances that "commitments to values such as the need for responsible stewardship for the earth's resources, the intrinsic dignity of each human person, and the love of neighbor"[290] are necessary for any given society. For this reason, Vibhute states that all states must conserve and use the environment and natural resources for the benefit of present and future generations.[291] In the words of the bishops, humans are given the authority to exercise "stewardship over all material creation that should neither abuse nor squander nature's resources."[292] The global concern for the protection and conservation of the

environment, as seen in the various documents, accentuates the fact that every human person has the right to environmental protection and survival.

No doubt the Nigerian government has laid some foundations for environmental management and sustainable development, for instance, the upgrading of Federal Environmental Protection Agency (FEPA) into a full-fledge ministry: Federal Ministry of Environment; the Niger Delta Development Commission (NDDC); the formation of Local Agenda 21 committees at the federal and states levels; inauguration of Environmental Action Plan committees at all levels of government; being a signatory to the Kyoto Protocol and other international treaties that deal with environmental management; introduction of poverty eradication programs and other commitment to environmental management issues are all beautiful steps.[293]

However, in the Nigerian society, there is severe discontinuation between the objectives of the environmental policies and the accurate fulfillment of these policies.[294] By laying more support to this fact, this dissertation examines the function of the Federal Environmental Agency (now called the Federal Ministry of Environment). The 1992 Federal Environmental Protection Agency (FEPA) came into existence with the mission of managing and protecting the Nigerian environment as well as conserving biodiversity and natural resources.[295] The FEPA has as its objectives to secure for every Nigerian a quality environment for their health and well-being; conservation and the use of environmental and natural resources for the benefit of human beings. In addition, its objective is to advance public consciousness and encourage understanding of the vital connection between environment and development. Also, it aims to promote cooperation with other countries, international organizations, and agencies to attain the best use of natural resources as well as the actual inhibition of transboundary ecological pollution. However, without any exaggeration and to give room for improvement, it will be reasonable to say that

FEPA has performed poorly following the above mention objectives. The level of environmental degradation in the Niger Delta and the actions of FEPA to environmental degradation issues are confirmation to the ineffectiveness and disappointment of the agency in Nigeria.[296] Yet article 17 "protection of the environment, the biosphere and biodiversity" of the Universal Declaration on Bioethics and Human Rights stipulates that "even when we promote human rights, the protection of the whole ecosystem, the biosphere, and its biodiversity should not be forgotten."[297] The quality of the environment and the nature of any economic developments taking place are significant determinants of the health of people in that environment. So, it is in the interest of humankind and human health to preserve the welfare of the biological species and other ecosystems, since the state of the environment is the critical component of health, and good health is a fundamental human right.[298] Supporting this viewpoint, article16"social responsibility and health" of the same document insist on the "improvement of living conditions and the environment" and "taking into account that the enjoyment of the highest attainable standard of health is the fundamental rights of every human being."[299] The whole gamut of laws and policies by the Nigerian government does not in any way guarantee the protection of the Niger Delta region, which happens to be the treasure base of the nation. Again, for the sake of emphasis, Howes et al., as stated above, insist on three key things that are responsible for environmental policy failures such as i). the constant economic incentives for both public and private actions to continue to exploit natural resources without any proper thought of the connected damages to the environment, ii). the governments either do not have the political will and the capacity to execute concrete sustainability policies that will better the lives of the citizenry, and iii). key stakeholders are not provided with the necessary information on the importance of sustainability issues as well as the urgent need for change.[300]

From the above discussion, it is no misrepresentation of historical facts to state that there exist unfortunate regimes of environmental management in Nigeria since the beginning of oil exploration activities in the Niger Delta region. The main problem has always been the lack of commitment on the part of the Nigerian government and its appropriate environmental law enforcement agencies to execute environmental policies for sustainability purposes.[301] The activities of the government and the various ecological agencies reveal their weak sustainable development mentality. Nevertheless, to advance the mindset of the Nigeria government and her agencies toward sustainable development in the Niger Delta region, this dissertation espouses the one set of sustainable development goals as proposed by Dave Griggs et al.:

Goal 1: Thriving lives and livelihoods: End poverty and advance the wellbeing through access to education, employment, and information, and lessen inequality while moving towards sustainable consumption as well as production.

Goal 2: Sustainable food security: End hunger and attain long-term food security which includes better nutrition-through sustainable structures of production, distribution as well as consumption.

Goal 3: Sustainable water security: Attain universal access to clean water and basic sanitation and guarantee well-organized allocation through unified water-resource management.

Goal 4: Universal clean energy: Advance universal, inexpensive access to clean energy that reduces local pollution and health impacts and lessens global warming.

Goal 5: Healthy and productive ecosystems: Sustain ecosystem and biodiversity services through improved management, valuation, measurement, conservation as well as restoration.

Goal 6: Governance for sustainable societies: Transform governance as well as institutions at different levels to address the other five sustainable development goals.[302]

In the same vein, the ensuing Tirunelveli Declaration from the Conference on "Global Convergence on a Finite Planet" held in Tamil Nadu, India, in April 2013, focuses on seven areas of moral responsibility for a disadvantaged and future generation.[303] They suggest goals: to reduce social inequality and division; to remedy environmental damage through recompense, rural empowerment as well as emissions trading; to offer education for sustainability as well as training of women; to improve transparent and efficient governance, not least for the sake of sustainability and developmental purposes; to boost economic innovation as well as micro-credit for farmers in food-vulnerable zones; to present suitable technology as well as renewable energy generation; and lastly, to foster cultural traditions as replacements to Western-style consumerism and to reconnect ourselves to nature.[304] With the consciousness that calamities on the people are the product of economic exploitation as well as unfair political and economic structures,[305] this dissertation recommends that the Nigerian government, as well as their various environmental agencies, should urgently adopt and implement these sustainable development goals as stated above.

3. 3. Conclusion

In this chapter, it was evident that environmental degradation and hazards are at the root of human rights violations and represent a significant threat to people's lives and the sustenance of the next generation. The deterioration of oil pollution has hampered the fundamental human rights of the people of the Niger Delta region in Nigeria. Their rights to life, a decent

environment, health, clean water, food, etc. are being denied by events and issues with environmental consequences. The Niger Delta people are suffering from weak environmental policies as well as the corrupt practices of the existing environmental agencies. Thus, this dissertation recommends that the human rights framework should be adopted for the preservation of the environment. In fact, by focusing on respect and equality for individual dignity, the human rights framework will assist all decision-makers to look beyond their circle to see the human and the global consequences of their dealings. Moreover, this dissertation invites various environmental agencies to implement the UNESCO principles that safeguard environmental human rights. These principles include Articles 3 on the relation between Human Dignity and Human Rights; Article 4 on the connection between Benefit and Harm; Article 10 on Equality, Justice, and Equity; Article 11 on Non-discrimination and Non-stigmatization; and Article 17 on Protection of the Environment, Biosphere, and Biodiversity, etc.

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CHAPTER FOUR: INTEGRATION OF CARE ETHICS WITH THE PRECAUTIONARY PRINCIPLE

4. 0 Introduction

There is an unparalleled increase in cruelty and violence against life and nature. Indeed, species are oppressed and routed in a concealed globalization of meanness, a massacre of horrific proportions.[1] Another appalling incident is the societal indifference of gross consequences of un-sustained economic growth accompanied by a tiny and secret vision, which has brought us face to face with a catastrophe of global magnitude. The deteriorating ecologic calamity has continuously been regarded as the most urgent issue and one that is not only hostile to the existence of humanity but to all forms of life on the planet.[2]

Thus, in this chapter, the global ethics approach is used to highlight the connection between care ethics and the precautionary principle. The two sections of the chapter explore the integration of care ethics with the precautionary principle to protect the environment. This discussion occurs within the context of these UNESCO principles: Article 16 on Protecting Future Generations and Article 17 on Protection of the Environment, Biosphere, and Biodiversity to highlight the care and the need for caution in these ecological arenas.

Article 16: Protecting Future Generations and Article 17: Protection of the Environment, the Biosphere, and Biodiversity

Article 16: The Impact of life sciences on future generations, including on their genetic constitution, should be given due regard.[3]

Article 17: Due regard is to be given to the interaction between human beings and other forms of life, to the importance of appropriate access and utilization of biological and genetic resources, to respect for traditional knowledge and to the role of human beings in the protection of the environment, the biosphere, and biodiversity.[4]

These two Articles pose some challenging questions: 1. Why care about the environment for the present and future 2. Do we have obligations to the present and possible people of the future? 3. How do we represent the present and future in present decision-making? 4. What is the usefulness of the precautionary principle to the present and future generations?

These two Articles are meant to safeguard and promote the interests of the present and future generations. They are used when considering the impact of the new technologies on healthcare and the environment. Although before these Articles, some declarations emphasized on the need for present and future generations. For example, the 1987 Report of the World Commission on Environment and Development (Our Common Future) stresses that the needs of present and future generations should be given consideration. Also, the 1992 Rio Declaration on Environment and Development endorses the responsibility for future generations. Likewise, the1997 UNESCO Declaration on the Responsibilities of the Present Generations towards Future Generations, expresses that "the present generations have the responsibility to bequeath to future generations an Earth that will not one day be irreversibly damaged by human activity" (Article 4). Also, it underlines the relationship between humanity, life on earth, environment, and biodiversity.

Furthermore, it is crucial to note that these two UNESCO Articles stimulate the concept of intergenerational justice at the very core of the present-day environmental concerns.[5] As expounded by Agius, the human race is not only the international community together with all

people living at the moment, but it designates the chain of generations who jointly form one community, whether living now or in the future.[6] Hence, these Articles call for a severe assessment of the development of life science and technology that may result in undesired outcomes for the next generations. Thus, the bioethical decision-making procedures should not only consider the effect on the present generations but also try to assess the effects on future generations.[7] To give answers to why we have to care about the future, ten Have mentions three factors responsible for present-day sensibility towards future generations: 1. Technology has changed the nature of human activities. It impacts not only the lives of people now but of those who will live in the future. 2. The reality of today is interdependent and interconnected; for instance, environmental catastrophes in one region (e.g., the Niger Delta) will affect other regions and other generations. 3. The growing consciousness of the finitude as well as the fragility of our existence: "our one and only Earth" demands our care for the future by taking responsibility towards our environment, biosphere, and biodiversity as enshrined in Article 17. Also, we have obligations to the people of the present and possible people of the future. Our moral concern for the current and future generations is necessary. All future generations can claim to the concept of 'common heritage and to the fact that earth's resources belong to all generations. Therefore, it is imperative for the people of the future generation to have others who act on their behalf in the present moment.[8] Thus, taking adequate care and precautionary measures can help to enhance the environment and health of the current and future generations.

4.1. The Care of Our Common Home

Our common home from a global perspective is in a dreadful condition. Troubled by the various harms done to "Mother Earth" by the careless use and exploitation of the created goods,

Pope Francis once asked, "What is happening to our common home"?[9] Pope Francis, therefore, says pithily that "The earth, our home, is beginning to look more and more like an immense pile of filth….Once beautiful landscapes are now covered with rubbish."[10]

Moreover, scholars like Donald Brown rightly observes that human impact on the planet has intensified greatly, not only because of the enormous growth in population, but also because of the new technological power to cut faster, dig deeper, build larger, and navigate more quickly great distances in automobiles, planes, and trucks. For this reason, serious environmental problems have emerged on a global scale.[11] A similar observation was made by Rioual et al., that the earth has experienced various periods of momentous environmental change; the environment of the planet has been bizarrely stable for the past 10,000 years.[12] This period of environmental stability is usually referred to as the "Holocene." Perhaps the stability is because of the nonappearance of huge changes of the planet instigated by human beings.[13] However, with the development of the Anthropocene that started around 1800 with the Industrial Revolution, human beings, as well as the societies, have to turn out to be the key drivers of global environmental change.[14] During this period, human activities have detrimental impacts on the Earth system to transgress the fixed environmental state of the Holocene, which in turn have major consequences for the planet. It is highly debatable that the earth has been permanently altered by human activity as well as production practices such as the production of mining waste, misuse of agricultural chemicals, and the burning of fossil fuels. These human activities have triggered groundwater pollution, soil and air pollution, and the devastation of wildlife access strips leading to momentous burdens on the environment.[15] Once more, a human activity, especially economic activity, is here and now bringing changes to the environments as well as the planetary processes on which we depend on for existence,

health, and well-being. For quite a long time, humans have lived, stirred, consumed, and chased health and well-being as if humanity is different and isolated from nature. Rachel Carson explicitly articulated the implications of this isolation from the natural world in 1962 in her book "Silent Spring."[16] The title of her book emanates from what she predicted as the death and obliteration of birds due to the widespread use of chlorinated pesticides, and she advocated for termination to their unselective use. But in the end, it was obvious that her cause was just, and she was regarded as a heroine in the environmental movement.[17]

Also, Alston notes that in this 21st century, more than any other time in history, the environment is under more continuous danger from human activity. The environmental threats now suffered by the entire humankind are weightier than those in the past.[18] Again, following the research on planetary boundaries, Rockstrom et al. recognize nine earth system processes that, if breached, could cause undesirable environmental change with huge and sure impacts on human beings. The nine earth system processes of the planetary boundaries are biodiversity; climate change; stratospheric ozone layer; chemicals dispersion; land system change; ocean acidification; nitrogen and phosphorus inputs to the biosphere and oceans; atmospheric aerosol loading; freshwater consumption and global hydrological cycle. The notion of planetary boundaries is being used to describe the safe functioning space for humankind concerning the earth system and are related to the planet's processes. However, Rockstrom and colleagues observe that of the nine planetary boundaries, three of them, such as rate of biodiversity loss, climate change, and interference with the nitrogen cycle, have already exceeded their boundaries.[19] Of course, there are lots of incomparable pressure that is being placed on natural resources to meet the needs of our economies and the demands of the growing global population, resulting in air, water and soil pollution, escalating emissions of greenhouse gases, land-use

change, and deforestation, extended urban areas as well as other unsustainable practices.[20] All these changes are having both direct and indirect impacts on our common home. Going further, Pope Francis, in his encyclical "Laudato Si," echoes that the worsening of the environment and society affects the most defenseless people on the planet.[21] In like manner, the Bolivian Bishops' Conference reiterates that "Both everyday experience and scientific research show that the gravest effects of all attacks on the environment are suffered by the poorest."[22] Accentuating the various impacts of environmental degradation on the vulnerable population, Pope Francis observes that the depletion of fishing reserves greatly affects small fishing communities without the incomes to substitute those resources. Also, water pollution predominantly affects the poor who cannot even afford bottled water; and rises in the sea level principally affect the dwellings of disadvantaged coastal populations. Likewise, the warming caused by enormous consumption by some rich nations has some consequences on the poorest areas of the world, particularly in Africa, where an increase in temperature along with drought has shown a disturbing impact on farming activities.[23] In a similar light, Pope Francis quoting Patriarch Bartholomew, declares, "For human beings …to destroy the biological diversity of God's creation…for human beings to contaminate the earth's waters, its land, its air, and its life---these are sins."[24] For this reason, Ten Have advises that since human existence relies on the survival of the planet and the preservation of the common heritage, we all have a global responsibility to care not only for the present generation (intra-generational) but also for the future generations (inter-generational).[25]

Additionally, caring for the ecosystem requires foresight since no one looking for fast profit is concerned with their preservation. However, the cost of the harm caused by such egotistic lack of concern is much higher than the economic benefits to be realized. So, people cannot be silent observers to horrendous injustices done to people if by obtaining substantial benefits imply

making the rest of humankind both at present and in future pay dearly for the cost of environmental deterioration.[26] Therefore, this dissertation supports the position of Maathai, who expresses that at the moment, we are faced with a task that calls for a change in our thinking so that the human race stops threatening its life support system. Everyone is invited to assist the Earth to heal her wounds and in the course of doing so, heal his/her wound. Of course, this will occur if everyone sees the need to come to one's sense of belonging to a bigger family of life.[27]

The bottom-line in this discussion is that the various activities forming part of the process of producing oil and gas have impacted harmfully on the environment and health of the Niger Delta people.[28] Therefore, this dissertation, in the next section, will examine how care ethics can awaken our concern for the common home.

4.1.1 The Usefulness of Care Ethics for the Common Home

The care ethics or ethics of care is a normative ethical theory often considered a type of virtue ethics. Psychologist Carol Gilligan primarily developed care ethics during the 1980s from a feminist standpoint.[29] Ethics of care is sometimes called "ethics of love" or "relational ethics."[30] The ethics of care was developed as a promising alternative to traditional ethical theories like utilitarianism, deontology, and virtue ethics.[31] While these traditional theories emphasize the notion of society as the autonomous, rational individuals with stress on duties, rule, rights, justice, universality, impartiality, satisfaction and utility; care ethics is based on the notion of an individual that is interdependent, relational, and stresses on the importance of relationships and emotion-based virtues like mercy, care, sensitivity, benevolence, reconciliation, and friendship.[32] Reacting to the traditional theories, Plumwood notes that the idea of human exceptionalism not only assumes the world and relationships as totally distinct but suggests human superiority and moral worth over all other life forms. This position inferiorizes animals

and environments and has allowed and continues to allow the Western culture to brutally exploit the natural, animal, as well as the human world.[33] Plumwood added that this ecological model had offered humankind with a "glorified predatory ecological role, which is only too readily given the lineaments of mastery and managerialism."[34] However, while ecological feminism has provided appreciated critiques of various anthropocentrisms and dualisms, it has yet to advance a relational ethic.[35] Therefore, care ethics implies an ethical position that takes affective concern as its basis for action.[36] Again, Held avers that "the ethics of care stresses the moral force of the responsibility to respond to the needs of the dependent."[37]

Nonetheless, over the last few decades, a momentous change in thinking has taken place from care ethics concerned with vulnerable human beings and animals to a more global ethical movement projected at protecting the planet and the ecosystems. This movement is being motivated by scientific warnings concerning the conceivably harmful impact of current drifts on global warming as well as the wide-ranging explorations of planetary space.[38] Thus, the social responsibility to care for the oppressed and the environment is one ethical root of human rights.[39] Hence, this dissertation stresses that human beings should care for ecosystems and the webs of life as our natural home. An ethics of care that considers the interdependence of various organisms and ecosystems while emphasizing the virtue of "caring" for these networks as the moral agents inserted into them has gained a wider audience than in the past. So, considering the environmental crises of our time, specifically the degradation of local ecosystems, pollution, global warming, etc. care ethics, is significant. Care ethics is a substitute to utilitarian and Kantian ethics since its goal is to encourage inter-connectedness, compassion, and empathy with vulnerable human beings and animals or even with ecosystems and species. In fact, by highlighting the interconnection between organisms through a network of living beings, the care

ethics approach offers a more balanced perspective, which can motivate both the protection of species and the preservation of ecosystems, mostly if they are threatened.[40]

Thus, Fien argues that one of the basic elements in need of reassessment through caring in environmental education is the human/nature relationship: "that we talk about 'people and the environment' rather than 'human and nonhuman nature."[41] For Fien, human beings ought to be viewed as part of nature. Loughland et al. observed that many of the young people in general view the environment as 'something that is out there, maybe a place that consists of both living animals and plants, but basically distinct from themselves. For such people, only a smaller number view the environment from the relational standpoint, that is, something that improves and supports their living, and which in turn demands their support and care.[42] So, in the opinion of Martin, caring for the environment implies that human beings ought to understand their relatedness to the environment as a subjective relationship, that is, individual to individual. It requires human beings to develop a relational concept of their environment in ways comparable to interpersonal relationships.[43] In addition, Tronto describes caring as a species activity that embraces the whole thing that we do in preserving, continuing, as well as repairing our world so that humans can live in it in a better manner. That world consists of our bodies, ourselves, as well as our environment, all of which are being searched for to intertwine in a multifaceted, life-supporting network.[44]

Furthermore, Powys and Cuomo state that care ethics has informed a separate set of approaches for an environmental decision that gives voice to a variety of standpoints. In their opinion, the indigenous and feminist movements such as the Mother Earth Water Walk and the Green Belt Movement are enduring examples of the usefulness of on-the-ground environmental care ethics.[45] The indigenous people who are among the principal environmentalists of the

twentieth and twenty-first centuries and paradigms of ethical viewpoints, offer attentive caring for the entwined needs of human and nonhuman communities. Concepts of care are often essential aspects of the practices as well as communications of indigenous environmental movements. Environmental care ethics for the indigenous people seek to highlight the importance of awareness of one's place in a network of diverse connections spanning many diverse parties, humans, non-human beings and entities and collectives; valorize certain skills and virtues, such as the wisdom of grandparents and elders, watchfulness to the environment, and indigenous stewardship practices; reestablish people and communities who are wounded from injustices by rebuilding relationships that can create responsibilities relevant to current environmental challenges such as biodiversity conservation and climate change.[46] To fully substantiate their viewpoints, over 500 Indigenous persons at RIO + 20 Earth Summit advance that environmental policy must respect the close relationship between human beings and the Earth that is integral to them as indigenous people. They see their lands and territories at the core of their existence. For them, there is a separate spiritual, as well as the material relationship with their lands and territories and, are closely related to their survival, preservation, and more expansion of their knowledge systems and cultures, ecosystem management, conservation, and sustainable use of biodiversity. For the indigenous people, caring and sharing among other values are vital in bringing about a more just, equitable, and sustainable world (Peoples of Mother Earth assembled at the site of Kari-Oca, in 2012).[47] The indigenous environmental movement has made great strides in caring for their environment. As far as this dissertation is concerned, the Indigenous Environmental Movement serves as a powerful reminder of the opportunities of using environmental care ethics even in the political context. They have worked

assiduously to achieve the 2007 United Nations Declaration of the Rights of Indigenous Peoples and won several court judgments toward giving care for their common home.[48]

In addition, the feminist's notion of care ethics accentuates the importance of allowing societies to care for themselves. However, eco-feminists are concern about the connections between the domination of nature and the domination of women. In other words, the failures of moral perception and thought found in human relations to nature are indicative of similar failures found in the relations between men and women. For them, there is a parallel that exists between the oppression of women as well as the domination of nature in a patriarchal society.[49] Thus, Lauritzen talks about the relationship that is clear by the image of the web. We are, each of us, at every point in our lives, inextricably tied to others. We are always members of a community.[50] However, Zimmerman extends the idea of community far beyond human species to our relations with other places and ecosystems, animals, trees, and plants.[51] Thus, for the ecofeminist, despite their differences, land, humans, and animals form a moral community. They form elements of a "differential unity," a "concrete universal."[52] So, through the lens of care ethics, the blossoming of the natural environment and health must be understood as inseparably related to the blossoming of persons and health. On this note, our capacity to care for one another hinge on our capacity to sustain a healthy natural environment. Therefore, an ethics of care identifies the importance of a healthy biosphere not only because it can serve our cravings for consumption but because we can work with, in, and through the natural environment to provide and receive care effectively as well as creating and maintaining a safe and sustainable home for the present and future generations.[53]

Furthermore, the African worldview is so rich as far as care ethics of the environment is concerned. Although scholar like Callicot said that African environmental ethics, is

anthropocentric with very little or nothing to provide in the field of environmental care ethics,[54] many others have said that African ethics, and environmental care ethics, is essentially all-inclusive including anthropocentric, ecocentric, as well as supernatural proclivities in its moral worldview.[55] In the African environmental care ethics, all constituents of the surrounding nature are interrelated. Thus, our ancestors respected and care for the environment and understood the relations between nature and themselves. Our ancestors lived in harmony with nature and well-looked-after its valued biodiversity. The African culture acknowledges the interconnectedness and interdependence of all life forms and all that exists on the earth.[56] According to Osuji, there is "an interdependent existence among the earth, its fauna, flora, human and nonhuman, the gods and the spirits, as well as the ancestors (i.e., the living dead) and the unborn."[57] In like manner, Tangwa describes Africa worldview as "Eco-bio-communitarian. That is, the recognition and acceptance of interdependence and peaceful coexistence between the Earth, plants, animals, humans, and the deities."[58] The interdependent web of life among humanity, nature, and spirit in the African worldview has an ethical implication that any human action affects the chain of cosmological connectivity either positively or negatively. Therefore, retrieving the core of environmental care ethics principles in the African worldview will lead to proper care for the environment, especially in the Niger Delta region. Also, Osuji even noted that one of the reasons for the excessive degradation of the environment in Africa is the Africans' penchant for foreign things, including western ethical principles and ideas which has led to the neglect of the wisdom and ethical principles that serve as the core of the ecological sensibility and conservation that are rooted in the African worldview and religious teaching.[59]

In addition, the African worldview is rich in principles that enhance the idea of care ethics of the environment. Some of those basic principles in the African worldview include cosmic

harmony, common good for all, and respect for the earth. Although these principles are interrelated, a brief look at them will help to highlight their relevance to the care of our common home.

In the first place, the principle of cosmic harmony is vital in the African worldview. The notion of cosmic harmony implies that every human person is endowed with an ontological responsibility for the well-being of the whole cosmos. Every action, every movement, as well as every gesture of the human being, has its cosmic repercussions, either as contributing to the cosmic harmony or as destroying the harmony of the cosmos.[60] Likewise, Magesa expresses this idea of cosmic harmony when he says, "human beings must be in harmony not only with animate beings but with entire inanimate creation."[61] For Magesa, this harmony " determines the quality of life of the human community in the universe and the quality of the universe itself."[62] The principle of cosmic harmony demands a harmonious and integrative balance among members of the ecosystem. It entails that the well-being of humankind is intrinsically linked with the harmony among the ecosystem and all its constituents.[63] On this issue, Mbiti added that in the traditional African worldview, the well-being of humankind is intimately connected with the well-being of the whole creation. Therefore, if humans abuse nature or the environment, in the same way, nature will abuse humans.[64] In the second place, the principle of the common good is another crucial principle in the African worldview. The principle of the common good is what every natural entity, not only human beings, need for survival. So, the well-being of both humans and non-humans and other creatures are sought not only based on their intrinsic dignity but also on the fact that all are interconnected. In the African worldview, the notion of communal responsibility for tending the land and using only that which is needed for sustenance is well established.[65] The interrelationships among the past, present, and future are entrenched in the

African worldview. So, caring for the environment is considered part of our moral duties concerning the future generation. The African worldview urges everyone to take seriously the responsibility to not only protect the existence of the unborn but also fight against anything that affects their well-being and potential.[66] Buttressing on the responsibility toward future generation, Wiredu avows, " of all the duties owed to our ancestors, none is more imperious than that of husbanding the resources of the land to leave it in good shape for posterity."[67] The African concept of common good underscores the good of the entire cosmic entities, not neglecting the unborn, human, non-human species, other creatures, and the supernatural. In the third place, respect for Mother Earth is key to the African environmental worldview. The interconnectedness of all life forms and all that exists on the earth bring about respect for Mother Earth. On this issue, Kelbessa writes, "it reflects deep respect and balance between various things… [justice, integrity, and respect as human virtue [are not only] applicable to human beings, but they extend them to nonhuman species and Mother Earth."[68]

Thus, the degradation of the Niger Delta environment is an indication of the disharmony that has occurred within the ecosystem. On this note, this dissertation calls for retrieval of environmental care ethics principles rooted in the indigenous, feminist, and African dimensions of care ethics, along with other related approaches to deepen our knowledge on the care of our common home.

To proceed further in the care for our common home, the next section examines another related concept, "environmental stewardship."

4.1.2. Fostering Environmental Stewardship in the Niger Delta Region

The term "environmental stewardship" entered public consciousness in the middle of the last century in the works of authors like Aldo Leopard's "A Sand Country Almanac," Garret

Hardin's "The Tragedy of the Commons," and Rachel Carson's Silent Spring."[69] Though, since prehistory, human beings have gathered environmental know-how and advanced plans for exploiting. In a bid to assist in regulating and sustaining resource use, people frequently evolved superstitions, taboo, and common rights, formulated laws to advance stewardship. Many societies have managed customs for long periods, even though others have been less cautious and suffered hardships or full environmental and social breakdown.[70] More importantly, every religious tradition demonstrates ecological awareness and great respect for the natural world. From Hinduism to Buddhism to Judaism to Christianity, and others recognize the need for environmental stewardship, and their holy texts request followers to be caretakers of the Earth and its biodiversity.[71] Thus, this dissertation examines the idea of environmental stewardship briefly as enshrined in some of the world religions:

i. Buddhism: The strong connection that people felt with nature is illustrated, particularly in the study of the Buddha's life. Buddhist teachings require every person to consider the right livelihood and the impact that would have on society and the environment. Buddhism teaches that all beings are connected; thus, the idea of separateness is a delusion. The health of the whole is inseparably related to the health of the parts, and the health of the parts is inseparably related to the well-being of the whole. This means that caring for the environment starts with caring for oneself. If one regards nature as a friend as well as a teacher, one can be in agreement with other creatures and valued the interconnectedness of all that lives.[72] Also, quoting Dalai Lama on the Buddhist teaching on environmental stewardship, the UNEP document mentions that our forebears regarded the earth as rich and bountiful. Likewise, many people in the past viewed nature as ceaselessly sustainable, which we now know is the situation only if we care for it.[73]

ii. Christianity: There is a general belief in the Christian tradition that everything is connected. Thus, building up the 'kingdom' implies the rediscovery of the divine order and harmony of creation and putting ourselves into the plan of God. According to the creation narrative in the book of Genesis, God saw that every created thing was good. This depicts certain order, harmony, and complementarities, which were inherently good and necessary. For this reason, Christians realize their responsibility within creation and their duty towards nature and the Creator as an important part of their faith.[74] Using the words of Patriarch Bartholomew as quoted in the UNEP document, "we must regard nature with the same respect and marvel that we reserve for human beings. And we do not need this awareness to believe in God or to demonstrate his existence. Again, we need it to breathe; we need it for us to be.[75]

iii. Hinduism is a religion that is extremely rooted in nature. Quoting Amma on the basic tenet of Hinduism, the UNEP document says, there is a close bond between humanity and nature. For humankind, there cannot be an existence detached from nature.[76] Hinduism has many principles that stimulate the care of our common home. Some significant ones are the harmony necessary between humanity and the natural order and many others, the relations between past, present and future and the concept of the cycle of rebirth, the presence of divinity in all things, the generality of the needs of the community over the selfishness of the individual, etc. Also, in the message of Bhagavad Gita (i.e., the dialogue between Sri Krishna and Arjuna), a life without involvement toward the protection of ecology is a life of sin and a life without a definite purpose or use. Therefore, ecology in totality must be preserved: just a part of it would not suffice since there is an interrelationship among everything in the universe. Also, all kinds of life, such as insects, birds, animals, etc. contribute toward the maintenance of ecological balance.[77]

iv. Islam: the notion of the natural environment, as well as other things which may be called Islamic, has its roots in the Qur'an. It is stated in the Qur'an, offer thyself unwaveringly to the faith and thus follow the nature planned by Allah, nature, according to which He has created humankind. There is no shifting the creation of Allah (30:30).[78] So, a careful study of the Qur'an from an ecological point of view reveals the notion of "Khalifa," which means trusteeship. This concept implies that Allah created human beings to be caretakers of His creation. Therefore, nature does not belong to us to do with as we wish but is given by Allah to our safekeeping. Also, the vital concept of Islam is "Tawheed" (unity). Allah is unity, and His unity is mirrored in the unity of humankind and nature. Our obligation is, therefore, to keep harmony and balance in Allah's creation.[79]

v. Jainism is a religion of ecology, a sustainable lifestyle, and reverence for life. Their religion's entire emphasis is on life in agreement with ecology. The concept of Ahimsa (non-violence) is a very key Jain principle. Ahimsa means more than just wounding others; it means not planning to cause harm to any part of nature. According to Mahavira: 'You are that which you wish to harm.' Therefore, 'do not injure, abuse, oppress, enslave, insult, torment, torture, or kill any creature or living being.' This ancient Jain principle teaches that all nature is held together. So, it implies that if one does not care for nature, one does not care for oneself. Another key Jain principle is not to waste the gifts of nature, and even to reduce one's needs as far as possible. Every human being has a moral responsibility in his/her mutual dealing and relationship with the rest of the universe.

vi. Judaism: The Jewish understanding of nature is grounded in the belief that God created the universe. The Scripture tells us that the earth is given to human beings 'to use and protect.' This implies that everyone should maintain the natural balance of creation. Also, every species was

created for some purpose and should not be interfered with at all. The word 'dominion' as used in the Scripture is not the dominion of an oppressor. Hence, the Jewish teachings forbid the extermination of anything from which humans may benefit.[80] From the book of Genesis, "God said, 'See, I have given you every plant yielding seed that is upon the face of the earth, and every tree with seed in its fruit; you shall have them for food."(1:29).

vii. Confucianism: A core Confucian value is that this world is a valuable heritage passed on to us from our ancestors, and it is a resource assigned to us by many generations yet to come. It emphasizes a sustainable, harmonious relationship between humans and nature. According to them, the "sustainable, harmonious relationship between the human species and nature is not merely an abstract idea, but a concrete guide for practical living." [81]

It was based on the above understanding of environmental stewardship that motivated the United Religions Initiative, Africa, and the All African Conference of Churches, in collaboration with the UN Environment to plan for an Interfaith World Environment Day celebration in Nairobi, Kenya. The gathering has as its theme "Faiths for Earth—We stand together to save Mother Earth, and Together we can Beat Air Pollution." The celebration promoted the Green Rule (treat nature as you would like to be treated). This noble initiative was earmarked for the actualization of Sustainable Development Goals and fulfill the objectives of the 2030 Agenda.

It is against this backdrop that this dissertation urges for an improved human-environment interaction through stewardship in the Niger Delta region. Of course, this is in line with the United Nations Millennium Declaration that calls for the universal practice of "a new ethic of conservation and stewardship." For Palmer, stewardship implies caring for what we value.[82] Thus, between the 1990s and early 2000s, stewardship was generally used to designate a land ethic of care; however, in recent years, it is understood as an important feature responsible for

human preference for visual landscape attractiveness.[83] The notion of stewardship has its origins in cultural traditions as well as religious worldviews,[84] as discussed above. Humans are the stewards of nature; they are accountable for the future of the creation of God and are invigorated to sustain or preserve its fruitfulness strongly.[85] But then some people ignored the notion of stewardship as a Judeo-Christian religious paradigm. Even some reject the idea of stewardship as morally objectionable, linking it to patriarchal, speciesist, sexist, anthropocentric, or inegalitarian models.[86] Nonetheless, these views are not warranted since environmental stewardship is geared toward the elimination of injustice, inequity, cruelty, and bias; thus, action appropriately described as unjust, inequitable, chauvinistic, or cruel will not be required of or be allowed by environmental stewards.[87]

Also, Worrell and Appleby define stewardship as an ethic toward the responsible use (together with conservation) of ordinary resources in a way that takes full and steady account of the interest of the society, future generations, and other species.[88] This notion of stewardship is understood from a primary production perspective that accommodates both the present and future generations. Besides, Chapin et al. consider the concept of stewardship in the context of socio-ecological systems, as a method that aggressively forms trajectories of structures to develop ecological resilience as well as caring for the well-being of humanity through the delivery of ecosystem services.[89]

Presently, there is a move from stewardship to environmental stewardship because stewardship, in its wider sense, was linked with specific occupations. As stated by Welchman, environmental stewardship varies from traditional stewardship. Whereas traditional stewardship is seen as a kind of job performed within a specific period in return for remuneration, environmental stewardship is regarded as a duty that every human person must assume towards

nature without any form of remuneration as such. Also, it is not a role to be performed within a specific period.[90] Hence, environmental stewardship, as defined by the Environmental Protection Agency (EPA), implies the concern for environmental quality shared by all those whose actions affect the environment, reflected as both a value and practice by individuals, communities, government organizations and companies.[91] Even though environmental stewardship is not a complete normative theory like Kantian deontology, utilitarianism, or virtue ethics, it is a role individuals or groups implement in a certain situation. Besides, while environmental stewardship is not a role every person must assume on every occasion, moral decency stresses its implementation by people with the resources to do so in circumstances where wider moral obligations to justice, compassion, and/or sympathy make its performance ethically obligatory.[92] There is always a pressing need to protect, care for, or responsibly use the environment in pursuit of environmental and social outcomes in different social-ecological contexts.[93]

Also, environmental stewardship refers to such various actions as restoring, replanting the trees, restraining harvests, reducing harmful activities or pollution, restoring, fixing more sustainable products as well as creating community gardens. Considering the deplorable condition of the Niger Delta region, people or groups need to take stewardship actions in protecting the environment. Hence, stewardship actions are sets of methods, actions, behaviors, as well as technologies that are useful in protecting and restoring the environment. [94] Of course, different stewardship actions are used to address issues of greater or lesser socio-ecological difficulty. Stewardship actions might take the system of protected landscapes or seascapes for instance, through the formation of biosphere reserves;[95] the making and management of urban green spaces or community garden;[96] the vigorous restoration of degraded habitats through replanting stream safeguards;[97] the creation of marine protected areas to protect species or

habitats; restraining the harvest of single commercially, culturally and recreationally significant species, etc.[98] In the same way, Bennett et al. talk about other stewardship supporting activities like environmental education of resource users or youth; spreading of traditional ecological knowledge; network building activities, environmental governance or policy reforms, scientific or participatory monitoring and research, as well as systems of rewards and punishments. These supporting activities can indirectly inspire and empower direct actions by actors toward the protection, restoration, or sustainable use of the environment.[99]

Furthermore, environmental stewardship aimed at managing all forms of production and consumption that are very likely to destroy the environment. It considers, at the same time, the management of lands or estate. Consequently, guided by the principles of beneficence and non-maleficence, every single individual is urged to exercise environmental stewardship in his/her daily activities.[100] In the view of Borhan and Ismail, "strong environmental stewardship is expressed both in value and practice."[101] Such values are "respect for the environment, on which life depends; acceptance of personal and organizational responsibility for environmental quality; and the need to sustain the environment for future."[102] Also, both capacity and motivation are fundamental concerns for stewardship. Capacity is a key concern because it shows whether individuals or societies can steward their resources. Still, adequate capacity might be present, but some individuals or communities may choose to steward resources though some may not. For this reason, motivation is essential for stewardship. Motivation can be intrinsic and extrinsic.[103] Intrinsic motivation is connected to action that is anticipated to bring personal satisfaction or pleasure through the attainment of psychological needs like the sense of autonomy or well-being, self-acceptance, feelings of competence or self-efficacy, and the need for belonging or affiliation with a group.[104] In the views of Bennett et al., people are intrinsically motivated by ethics,

morals, beliefs, and values in the first place, and are intrinsically motivated by the desire for autonomy, competence, and relatedness, in the second place.[105] The desires for autonomy, competence, and relatedness matched up with the three general psychological needs of self-determination theory.[106] On the other hand, stewardship can be motivated by some extrinsic factors. Extrinsic motivation is connected to the projected accomplishment of detachable outcomes, which include social reinforcements or economic benefits that are outside the self.[107] Hence, stewards can be extrinsically motivated by the seeming direct lost opportunity costs (money, time) and instrumental benefits of stewarding resources. So, environmental stewardship can be motivated by some potential instrumental benefits like direct economic benefits, increases in provisioning, regulating, improved health and well-being, supporting ecosystem services, etc.[108] Again, stewards can be extrinsically motivated by externally provided rewards or sanctions, which can be economic, social, physical, or legal. Above all, both intrinsic and extrinsic motivation can offer the will, inspire the choices, and direct actions that are selected by the stewards.[109]

Moreover, since environmental stewardship activities are performed for human interests and value for nature in general, Welchman instructs that persons who are willing to take up stewardship roles should make an effort to display equitable concern for all values, be it instrumental and non-instrumental, anthropocentric and non-anthropocentric. Therefore, this dissertation urges environmental stewards to take just and equitable account of the welfares of all concerned, avoiding prejudice and favoritism in the delivery of benefits and burdens between those in the present and future generations.[110] More importantly, environmental stewards should be abreast of the three core principles, such as 1). Resource conservation, that is, making the most efficient use of resources (materials, water, and energy) through water efficiency and

conservation; energy efficiency and conservation; solid waste management and conceptualizing waste as a resource; events management; and publications management; 2). Pollution prevention, that is, minimizing contamination of the environment by chemicals or other materials through the vehicle/fleet management; management of the use of chemicals and other hazardous substances; 3): Occupational health and safety achieved through managing indoor air quality; comfort and productivity in the workplace; and emergency and disaster management.[111]

Above all, environmental stewardship is very key to sustainable development. Whereas environmental stewardship focuses only on the natural world, sustainable development includes aspects of social, economic, and environmental sustainability. [112] Finally, environmental stewardship remains an authentic approach in the Niger Delta region for the management of human behavior that degrades the natural resources or values, and not the management of nature itself.

4. 2. Application of the Precautionary Principle

4.2.1. The History and Meaning of the Precautionary Principle

1. The History of the Precautionary Principle:

The declaration of the precautionary principle as an identifiable principle is new. The precautionary principle is thousands of years old because the millennial oral traditions of indigenous people contain the concept of precaution.[113] Yet, its foundation is ingrained in public health thinking of trying to forestall harm in the face of uncertainty.[114] A typical example from medical history that is often mentioned is that of Dr. John Snow, who, in 1854, recommended the removal of the handle of a London water pump to stop the cholera epidemic.[115] Another example

is the 1874 amendment of the British Alkali Act that levied technology-based restrictions on emissions of toxic gases by specific factories.[116] These interventions are precautionary.

Nevertheless, the precautionary principle, as well as its application to environmental threats and their uncertainties, only started to occur as an obvious and lucid concept within environmental science in the 1970s.[117] The modern understanding of the precautionary principle can be viewed from two origins. Some researchers indicate Swedish, whereas others opt for German origin.[118]

Kheifets et al. mention that the precautionary principle arose as a decision rule for controlling environmentally dangerous activities in the Swedish Environmental Protection Act of 1969. The 1969 Swedish Environmental Protection integrates the statement that the simple risk of harm, if inaccessible, permits protecting measures or a ban on the action that is conceivably producing harm.[119] In Article 5 of the "Act on Products Hazardous to Man or the Environment" (Parliament of Sweden, 1973) declares that anybody handling or bringing in products that are dangerous to a human being or the environment shall take such stages and then observe such precautions as are required to avoid or curtail harm to a human being or the environment. Again, anybody making or bringing in such a product must cautiously determine the configuration of the product and its properties from the standpoint of health as well as environmental protection. The product will be branded with the data of importance from the standpoint of caring for the health and the environment.[120]

On the other hand, some scholars aver that the precautionary principle originates from the German socio-legal tradition. Precautionary principle introduced into English as a translation of the German word Vorsorgeprinzip.[121] The literal meaning of the word *"*Vorsorgeprinzip" is the principle of "beforehand or prior care or worry."[122] The word "Vorsorgeprinzip" was used in a

specific situation by which a difference was made between human behavior, which causes hazards on the one hand and hazards on the other hand. In as much as the risks are at stake, the government is to avert these risks from the people. However, if what is noticeable is only a risk of effects, the possibilities of risk prevention must be considered, and if the risk is very high, preventive measures must be put in place.[123] Another translation might be "foresight principle," which implies an anticipatory action.[124] Again, the German word "Vorsorgeprinzip," which translates to the precautionary principle, is traced back to the earliest draft of a bill (1970) considered for safeguarding clean air. The law was enacted in 1974 and covered all possible sources of air pollution, noise, vibrations, and similar processes.[125] However, the term "precautionary principle" is used today in several Environmental Acts in Germany.[126] For instance, the most explicit explanation of the precautionary principle in German environmental policy from a later time says, our duty towards future generations orders that the normal foundations of life are well-maintained and that irreparable forms of damage, such as the deterioration of forests, must be circumvented. Thus, the principle of precaution orders that the harms that are done to the natural world should be avoided in advance.[127]

This day and age, the precautionary principle is found in many international environmental treaties,[128] for instance, in Bremen (1984), London (1987), The Hague (1990), Esbjerg (1995), Bergen (2002), Gothenburg (2006),[129] etc. The precautionary principle was made known at the First International Conference on Protection of the North Sea held in Bremen (Federal Republic of Germany) in 1984.[130] The North Sea became one of the first obvious applications of the precautionary principle due to the wide-ranging damage that had already been done to the ecosystem. For decades the North Sea served as the dumping grounds for phosphorus and nitrogen wastes and many of the polluted rivers in Europe. Also, the North Sea was the site for

oil and gas productions. Nonetheless, the ambiguity surrounding the possible effects of constant waste dumping, as well as the ineptitude of current pollution controls, led the governments of the North Sea to search for joint solutions. During that period, massive carpets of algae hovered over coastal seas, and swimming activities were prohibited on various seashores.[131] Therefore, in 1987, the various representatives from the North Sea States of France, Belgium, Germany, Norway, Sweden, the Netherlands, the United Kingdom of Britain and Northern Ireland, and the Commission of the European Communities assembled for the Second International Conference on the Protection of the North Sea in London. That meeting brought about the "Ministerial Declaration," which holds the viewpoints of the precautionary principle.[132] Also, the Third Conference held in The Hague in 1990 reiterates on the continuous application of the precautionary principle. Again, at the Fourth Conference in Esbjerg in 1995 stresses the application of the precautionary principle to fisheries management policies. Likewise, the Fifth Conference held in Bergen declares that sustainable development is only achievable if environmental policies are based on the precautionary principle.[133]

Furthermore, major international conferences like the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, 1992 United Nations Conference on Environment and Development at Rio de Janeiro, the 1992 Convention on Biological Diversity and the UN Framework Convention on Climate Change have adopted the precautionary principle even with the insertion of cost-effectiveness. Also, the 1992 amendment of the Maastricht Treaty on the European Union accepted the precautionary principle. In the same vein, other national environmental laws in the different countries have started to integrate the precautionary principle either directly or indirectly as a method.[134] By and large, among other numerous international and national treaties and statements of policies that integrate precautionary principles, two major

formulations may be the standard examples of the precautionary principle. The first one was adopted at the United Nations Conference on Environment and Development in Rio de Janeiro (1992)[135] while the second one was introduced at the Conference organized by Science and Environmental Network (SEHN) in 1998 at Wingspread, Wisconsin.[136]

2. The Meaning of the Precautionary Principle

It is already obvious that science, as well as human knowledge in general, cannot make available decisive evidence of all kinds of damage in advance. Such evidence may be inherently unachievable or arise too late to avert grave and irreparable environmental damage. Amid this uncertainty, how would those who are charged with making decisions act in the presence of uncertainty while in search of balancing conflicting goals and objectives? It is indeed the acknowledgment of the current and inherent limitations to scientific knowledge, joined with the constant requirement to take action, anywhere thinkable, to avoid harm before it has happened, even without any established causality that brought about the formulation of what is precautionary for the protection of the environment.[137] So, the term precaution is defined "as a *prudent* and *sound choice of response in the face of uncertainty*."[138] Here, "uncertainty" means a situation in which substantiated proposition of possible adverse impacts are presented, but decisive experimental evidence of harm lacks while "prudent and sound choices" are considered as employing practical and procedural stages to assess possibilities for harm.[139] Against this backdrop, precaution has appeared as a far-reaching principle aimed at supporting environmental protection in the case of uncertainty.[140] Scientific uncertainty about harm is the pivot of the precautionary principle. Of course, human beings cannot know with cast-iron certainty whether a specific activity will cause harm. Thus, if there is a possibility for harm from the activity and if there is uncertainty about the extent of effects, preventive action should be taken to circumvent

harm.[141] In other words, whenever human activities possibly will lead to morally undesirable harm that is scientifically reasonable but uncertain, actions shall be carried out immediately to evade or reduce that harm.[142] The precautionary principle implies forestalling disasters which entail acting before there is robust proof of damage, mainly if the damage may be delayed and irretrievable.[143] Albert Schweitzer once remarked that humans had lost the capacity to foresee and forestall; for this reason, humans may end up destroying the earth.[144] Therefore, this dissertation stresses that to foresee and to forestall is the foundation of the precautionary principle. It has become the dominant leitmotif for environmental as well as public health entrenched in the rudimentary concepts of "first do no harm" and "an ounce of prevention is worth a pound of cure."[145]

Furthermore, many of the international and national treaties and agreements have shown the relevance of the precautionary principle. For instance, the Second International Conference on the Protection of the North Sea in London (1987) developed a thorough and wide-ranging set of protective measures for the North Sea concerning inputs through rivers as well as estuaries of substances that are persistent, poisonous and accountable to bioaccumulate inputs of nutrients. Also, it provides protective measures for the dumping as well as incineration at sea; discharges as well as disposal of radioactive waste; inputs of pollutants through the atmosphere; pollution from offshore installations; pollution from ships; the special needs of the Wadden Sea as well as co-operation on airborne surveillance.[146] Again, the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987 states that "Parties to this Protocol …determined to protect the ozone layer by taking precautionary measures to control equitably total global emissions of substances that deplete it,… bearing in mind the developmental needs of developing countries."[147] Likewise, the Third North Sea Conference held in The Hague in 1990 emphasizes

the continuous application of the precautionary principle against potentially damaging impacts of substances that are persistent, poisonous, and accountable to bioaccumulate even without any scientific evidence to prove that a causal link between emissions and effects.[148] Similarly, the Rio Declaration on Environment and Development, 1992 states that to protect the environment, the precautionary approach shall be extensively applied by states according to their capabilities. Also, where there are threats of serious or irretrievable damage, lack of full scientific certainty shall not be applied as a reason for delaying cost-effective measures to prevent environmental degradation.[149] Equally, the 1992 United Nations Framework Convention on Climate Change (UNFCCC) in Article 3 (3) declares that Parties should take precautionary measures to forestall, prevent or minimize the causes of climate change and lessen its adverse effects. "[150] In addition, the precautionary principle was accepted in a 1992 amendment of the Maastricht Treaty on the European Union. In Article 130, R paragraph 2 urges that community plan on the environment shall aim at a high level of protection considering the variety of conditions in the several sections of the community. It shall be grounded on the precautionary principle and ideologies that precautionary action should be taken. Also, environmental harm should, as a matter of urgency, be remedied at its source, and those who pollute the environment should be told to pay.[151]

Also, the1998 Wingspread Statement states that when an activity advances fears of harm to human health or the environment, precautionary procedures should be engaged even if some cause and effect relationships are not fully established scientifically.[152] Moreover, the Cartagena Protocol on Biosafety (2000) states that in agreement with the precautionary principle as specified in Principle 15 of the Rio Declaration, the goal of this Protocol will be to contribute, to guaranteeing an acceptable level of protection in the area of the harmless transfer, management as well as the use of living adapted organisms ensuing from modern biotechnology that may

have hostile effects on the conservation and sustainable use of biological diversity, also taking into account risks to human health, and precisely concentrating on transboundary movements.[153] Still, the Commission of the European Communities explains that the precautionary principle is used anywhere scientific evidence is inadequate, unsettled or uncertain and initial scientific evaluation specifies that there are rational grounds for worry that the potentially hazardous effects on the environment, human being, animal or plant health may be unreliable with the high level of protection.[154] Again, the 2001 Stockholm Convention on Persistent Organic Pollutants (POPs) 2001 state in its objective that aware of the precautionary approach as delineated in Principle 15 of the Rio Declaration on Environment and Development, the goal of this Convention is to defend human health as well as the environment from unrelenting organic pollutants.[155]

Regardless of the difference in the expression used in formulating the precautionary principle, certain elements are common to its usage. Defur and Kazzuba mention four basic elements of the precautionary principle: there should be a threat of harm, either reliable or known; the situation should be able to present lack of scientific evidence or certainty; cause and effect relationships are not yet recognized, and there should be a necessity or duty to act.[156] This means that the precautionary principle demands that interventions are essential before possible damage arises. For this reason, "a wait-and-see-strategy" is left out. Again, the principle applies when there exist substantial scientific uncertainties about causality, degree, probability as well as the nature of the damage. Also, a simple fantasy or speculation is insufficient to generate a precautionary principle; scientific investigation of some kind is required. Still, since the precautionary principle deals with hazards with ill identified outcomes and probability, the unquantified option is enough to cause the thought of the precautionary principle.[157]

Moreover, the precautionary principle is a solid starting point for sustainable development. With the precautionary principle, there is a move in international thinking and jurisprudence from the assimilative capacity principle to the precautionary principle. The assimilative capacity principle implies that the natural environment can absorb the impacts of pollution to a certain limit. Outside this limit, pollution may generate serious harm to the environment, thereby demanding efforts for its repair.[158] Above all, the precautionary principle remains a critical scientific instrument to lessen hazards to the environment. It is not envisioned as a substitute for a scientific method but somewhat an all-embracing principle that guides decision making even without any systematic or analytical certainty. It offers machinery to compensate for intrinsic ambiguity as well as indeterminacy in natural systems. Also, it provides a standard for accountable, appropriate, and definitive preventive action.[159]

Also, how is the precautionary principle viewed as both ethical and legal norms?

a. Ethical Basis of the Precautionary Principle: The precautionary principle has an ethical foundation, and purposes of the precautionary principle are value sensitive.[160] In a world of growing economic as well as technological globalization, a world whose natural systems and biodiversity are more and more threatened by human activities, there is an urgent need for every individual and organization to take responsibility to admire and care for the community of life. Also, it is pertinent to take whatsoever actions that are required to evade dangers to these values.[161] Thus, the precautionary principle entails an inherent ethical responsibility towards preserving the integrity of natural systems and recognizes the limitation of human understanding.[162] The precautionary principle deals with morally unacceptable harm. Morally unacceptable harm implies harm to the human person or the environment that is: intimidating to the human life or health; severe and, in fact, irreversible; unfair to present or future generations;

imposed without enough thought of the human rights of those that are involved.[163] Hence, the precautionary principle involves an ethical responsibility of ensuring that actions are taken to avoid or diminish that harm. Ethics compels us to do good and do no harm as well as invoking the norms of justice, equity, and respect for autonomy in defending and promoting health and well-being. The precautionary principle serves as a rule for doing good by preventing harm to public health from the delay. When in doubt about the occurrence of a hazard, the precautionary principle insists that there should be no doubt about its prevention or elimination.[164] Also, the precautionary principle has arisen because of the ethical import of delays in the exposure of dangers to the environment and human health. Again, the precautionary Principle serves as an ethical principle for early detection as well as prevention.[165] For environmental activists, the precautionary principle has been described as a commonsensical method of protecting human health and the environment. The precautionary principle has always been used as an important approach in controlling any risks. Risks usually entail some uncertainties, which ought to be bridged by precaution in fashioning any decision to lessen risk.[166] Moreover, discussions on the precautionary principle should reflect the negative effects of human activities on nature, even though these effects do not cause any direct dangers to human beings.[167]

Furthermore, as mentioned earlier in this dissertation, a precautionary approach is key to realizing sustainable development. The two principles are connected in both a theoretical and a historical manner, as evidenced in the Bergen Ministerial Declaration on Sustainable Development.[168] In the view of Steele, these two principles have a common ethical vision that features concern for public goods as well as the rights of future generations and has both been established predominantly in response to problems of environmental degradation. The precautionary principle might be said to advocate the extension of the liberal 'no harm' principle

to take account of damage to public goods and harms to future generations, as well as traditional harms to individual persons. The precautionary principle has a robust commitment to environmental well-being as well as intergenerational equity.[169] The precautionary principle with its connection with sustainable development integrates intergenerational equity in the sense that deliberations of conceivable substantial long-term and future harm offer an adequate reason to act here and now, even though existing interests may not be endangered. The precautionary principle should also hold unto intra-generational equity. The intra-generational principle does not admit an equal sharing of benefits and risks across the world; rather, there ought to be fairness regarding the chances each person has to enjoy a meaningful life under situations of social, economic, and political wellbeing. It is for this drive that the precautionary principle advances that the costs of human risks should not be conveyed from one environment to the environment of other countries.[170] Around the world, the precautionary principle is nowadays fused into ecological decision making, treaties, and regulations. The ethic of precaution offers a moral principle that can impact our efforts toward making decent public policy decisions about the environment. The indiscriminate breakdown of ecosystems, the irreversibility of a species loss as well as long-term interruption of global climate, should challenge us to contemplate our responsibilities to mother Earth, our fellow citizens, and the future generations.[171] The precautionary principle as an ethical norm involves more than watchful expectation, circumvention, and lessening of possible harm from human activities that are in progress or anticipated for the future. Substantiating this point, Jordan and O'Riordan state that the precautionary principle has as its main purpose the instinctively unassuming idea that decision-makers should act in advance of scientific certainty to preserve the environment from harm especially for the well-being benefits of future generations. It stresses that human beings take

care of themselves, their progenies, and the life-preserving progressions that foster their existence.[172] The precautionary principle is viewed as a proactive principle that enables decision-makers to create policies that promote less harm to human health and nature, as well as sustaining the viability of the biosphere.[173]

Still, the precautionary principle is, to a large extent, based on or vindicated by a moral principle that has a long history in ethical theory. The principle is that of culpable ignorance that is traceable to Aristotle and found it very much in line with legal thinking. Hence, the legal positions of various countries make certain available situations for penalizing individuals or groups that are shown to be a position to prevent an accident but failed to make use of some available information.[174] In like manner, the "World Commission on the Ethics of Scientific Knowledge and Technology" refers to culpable ignorance as one of the crucial ethical foundations of the precautionary principle. Ignorance is culpable only if a person does not search for or employ other appropriate information and knowledge, such as general knowledge about the type of circumstance that one may come across. Culpable ignorance could be used to fault a person, or a firm or a State for the harm they have caused even though they were unaware that the harm might follow their action.[175] Consequently, the precautionary principle is rooted in an ethical conviction that occasionally, our very ignorance of likely future harm may be morally culpable. Therefore, this principle stresses that we ought to look for information and knowledge that may relate to uncertain, complex issues, and in doing so, we cannot afford to apply for too narrow a position.[176] The whole point is that people have the moral responsibility to discover if their activities may cause any harm. Even though one may not be morally responsible for every conceivable consequence that one is not entirely conversant with; nevertheless, one may still be morally responsible for acting to intensify the flexibility of the system to evade possible

collapses or calamities.[177] According to Tannert, Elvers, and Jandrig, "when it comes to decisions that affect people's lives and health…carrying out research to diminish uncertainty, and consequentially, risks can become an ethical duty."[178] Also, ethical responsibility entails some freedom of choice in action. Consequently, individuals are morally responsible for the choices they make. This is one of the most vital ethical foundations of the precautionary principle.[179]

b. Precautionary Principle as a Legal Norm: Apart from the ethical foundation of the precautionary principle, it is also viewed as a legal norm.[180] So, the fundamental question that this section shall seek to consider is: "To what extent the precautionary principle is legally binding? The saying that "it is better to be safe than sorry" has been lawfully translated through the precautionary principle. The principle indicates that governments are not to stay away from acting against likely damages, even if the underlying link between human behavior and those damages are not a hundred percent clear.[181] The principle is generally known as developing from the "Vorsorgeprinzip" of German domestic law. From the very beginnings, the precautionary principle has evermore been integrated into an extensive range of hard and soft copy law instruments at the international, regional, and national levels.[182] Fundamentally the precautionary principle is a request to forethought addressed to policymakers who are obliged to make decisions about activities or products that might be harmful to the environment and public health. The precautionary principle is a guiding principle that offers applicable standards for shaping the most realistic course of action in challenging possible dangers.[183] It advocates placing legal restrictions on the activities of independent actors where there is a significant 'chance' of harm to community interests. It is generally adopted as a legal risk management tool in international environmental law and regulation, particularly in the marine environment,[184] climate change,

pollution control, food standards, movement of hazardous materials, and chemical regulation.[185] For instance, the precautionary principle, as enshrined in the Cartagena Protocol on Biosafety, appears to be on its way to becoming legally binding.[186] Citing the United Nation Kingdom document "This Common Inheritance: Britain's Environmental Strategy," Jordan and O'Riordan write that precautionary principle applies principally where there are good reasons for deciding either that action taken on time at moderately low cost may avoid more expensive damage in future, or that irretrievable effects may follow if action is deferred.[187] In fact, since its introduction, the precautionary principle has been used in modern international laws as well as domestic laws that relate to the environment.[188] Likewise, Trouwborst opines that the principle has been highlighted in virtually every single international instrument whose mission is to control human contact and relationship with the natural environment.[189] Whereas widespread investigation has focused on whether the precautionary principle has grown into the principle of customary international law, it may predictably be held that despite the fact it is unmistakably acknowledged as taking the status of customary international law, it can be pronounced as customary international law in some areas.[190] Even though declarations of principles would just be viewed as recommendations lacking binding force, they still have their legal relevance. Of course, the strength of a Declaration, for instance, depends on the degree of its acceptability of the principle that it encompasses. Still, declarations of principles, though not binding, can stimulate the explanation as well as the application of the International laws of member states of the International organizations that considered or recognized the declarations.[191] Therefore, there are two conditions, such as repeated use of State practice and "opinion Juris" that are possible to transform principle into a customary norm.[192] Freestone and Hey advance that for a legal principle to crystallize into customary international law, there must be persistent and unchanging

State practice, which can only be realized if the principle has content that is unchanging and definite enough to recommend a specific behavior.[193] The obvious endorsement by an extensive range of international and national bodies, by a huge as well as an increasing number of international environmental and natural resource treaties, national constitutions, and legislation, and tribunals and courts offer a form of state practice. They equally provide a span of application that must sustain a good argument that the precautionary principle has developed as a principle of customary international law.[194] Although some argue that declarations of principles are not always measured as sources of new international law, they can at least reasonably generate international norms.[195] Going further, Article 38 of the Statute of the International Court of Justice explicitly states that the general principles are also sources of international law. It says, "The Court, whose function is to decide following international law such disputes as are submitted to it, shall apply:…the general principles of law recognized by civilized nations…"[196] Thus, Mendelson avers that "opinio Juris sive necessitates" that is a belief in the legitimately permissible or mandatory nature of the conduct in question, or its necessity is a condition that informs the crystallization of a legal principle into customary international law.[197] For this reason, the precautionary principle has become an essential norm of international environmental law to the point that it has taken an important place in any practical plan for sustainable development and in making sure that the environment is well protected from the consequences of human activities.[198] It is basically on this note that the precautionary principle thrives in declarations, resolutions, and guidelines endorsed in diverse international settings. Of late, lawmakers have been endorsing the precautionary in most important agreements connected with environmental protection. So, it appears indisputable that among the principles originating from international declarations, the precautionary principle is legally appropriate and cannot be

ignored, either by the countries in the international order or by policymakers, legislators, and courts in the domestic domain.[199] Hence, it will be worthwhile if the precautionary principle is incorporated into several pieces of environmental legislation, especially in the Nigerian context for resolving the Niger Delta environmental and health crises.

4.2.2. Precautionary Principle as a New Model for Risk Management

For many years, risk assessment has been an active, evidence-based approach to environmental pollution management.[200] Risk assessment refers to the procedure that regulates the value of risk connected to the actual condition and a known threat or danger, which can be related to the environment, life, health, or property.[201] Initially, a risk assessment was established for mechanical problems such as bridge construction, where technical procedures and limitations are precise and analyzed. After that, risk assessment has frequently engaged the role of predicting or analyzing of the very uncertain and extremely variable event.[202] Risk assessment and risk management are the methods used in defending the populations against deadly environmental hazards. Whereas risk assessment is usually considered as the scientific stage of the exercise, risk management is seen as the policy-making step.[203] Hence, decision-makers are obliged to take risks into account to reach the right decisions.[204] However, attitudes towards risks differ from one individual to the other and across cultures. Some human beings have a risk-seeking attitude, while others have a risk-opposed attitude. But in between the two attitudes are those that have a self-regulating attitude. Although not every risk involves four steps, the 1983 National Research Council report designated a four-step analytic process for human health risk assessment. These four steps are hazard identification, exposure-response analysis, exposure assessment, and risk characterization.[205]

Step 1. Hazard identification involves the identification of the toxins or pollutants that are assumed to cause health hazards. Information for this phase stems from environmental monitoring data, epidemiologic, animal studies as well as other kinds of experimental work.

Step 2. Dose-Response Assessment involves an additional assessment of the circumstances under which the contaminated properties of a chemical may be revealed in vulnerable populations, with specific stress on the quantifiable relation between the dosage and the toxic response.

Step 3. Exposure Assessment entails the level of exposure before or after the application of monitoring controls.

Step 4. Risk Characterization entails the incorporation of information from the first three stages to advance a qualitative or quantitative estimate of the probability that any of the threats related to the agent of concern will be present in exposed people. Risk-assessment outcomes and associated uncertainty are stated in this phase.

However, in the opinion of Landrigan and Transande, risk assessment seems straightforward, accurate, and logical. For this reason, it is desirable, and its application has become extensive. Nevertheless, as presently practiced, both risk assessment and risk management are intensely defective.[206] Of course, there is an increasing consciousness that the behavior of natural as well as social systems is more complicated than scientists had beforehand supposed. Similarly, Biocca affirms that the awareness of risks for environment and health stemming from globalization procedures as well as free use of current technologies is increasing all over the place.[207] Also,

Grandjean says that risk assessment has become more and more complicated because of high drives for organized priority setting and its regular links to cost-benefit analyses.

Meanwhile, risk assessment is based on ideas and flaws that impede its capacity to bring about a safe and sound solution to prospective environmental problems.[208] The condition that decisions must be founded on substantial evidence as well as scientific proof results in the objectification of environmental health and incomplete solutions. Still, risk assessment is only being used in the management and reduction of risks, and not the prevention of risks. Risk assessment creates a false dichotomy between environmental protection and economic growth. Risk assessment places responsibility in the wrong place.[209] In addition, because of the inability of risk assessment to suitably account for incertitude and offer adequate guidance in large-scale and multifaceted environmental health issues, it needs to be enhanced by a general standard that embraces collective decisions within an inclusive setting.[210] It is because of these reasons that the precautionary principle is now being viewed as a new model for risk management.

Thus, instead of using risk assessment to institute "protected" stages of exposure, stages that are inexplicable, it can be used to understand the dangers of action better and to put side by side options for prevention. But the fundamental foundation of policy and decision-making must be precaution and prevention, rather than risk. Thus, Steele states that a precautionary principle is a new approach to public decision-making.[211] Its task "is to develop adequate strategies and tools for dealing with the inherent problems of *uncertainty, complexity, and ambiguity*."[212] Still, to underscore the superiority of precautionary principle over risk assessment, Grandjean elucidates the differences between risk assessment and the precautionary principle: i. Risk assessment is analytic in approach, while the precautionary principle is systemic in approach; ii. Risk

assessment is narrow and targeted, refute by experiment, single and separate, while the precautionary principle is wide and exploratory, has manifold lines of converging evidence, multiple interactions, and only partly separable; iii. Risk assessment aims at eliminating uncertainty and achieving high accuracy while the precautionary principle integrates and learns from incertitude; iv. The models for risk assessment are precise and validated, used in explaining observations, and it is discipline-oriented while the models for precautionary principles are imprecise and tentative, advanced in reaction to observations, and it is multidisciplinary.[213]

Again, the precautionary principle is not a regulation that is only to be functional when confronted with real danger. It is an act of extending the public health warning that prevention is better than cure. The precautionary principle has recently accomplished new significance regarding severe but indeterminate risks to human health and the environment.[214] Of course, the precautionary principle as a new paradigm combines the ethical view of the duty to prevent harm with the certainties of the limitations of scientific consideration. The principle is grounded on identifying that the people must prevent harm and to protect the natural foundations of life in the present day and into the future.[215]

Moreover, Renn and Stirling express that the precautionary principle as a new paradigm is employed in the screening of threats for properties of scientific uncertainty, seriousness, complexity, or socio-political ambiguity to determine their subsequent treatment in regulatory appraisal and management. Still, the precautionary principle has evolved as a new paradigm to encourage good governance through the transparent, accountable, and all-encompassing nature of the regulatory strategy as well as the integration of purposeful and participatory procedures.[216] Likewise, Ashford argues that the precautionary principle can be invoked as a new paradigm on the grounds of democratic decision making as well as burdens of persuasion and proof.[217]

This means that the precautionary principle may be invoked to guarantee a fair decision-making process, as much as to prevent harm. So, in the case of a probable, but extremely uncertain harm, an unbiased result may depend more on an equitable decision-making course than on a defendable argument about the technical precision of an outcome founded on prevailing information. Once more, part of the ways of ensuring fairness includes the burden of persuasion (that is, the description of which party has the burden of representing or rebutting an assumed fact) as well as the burden of proof (that is, the strength of the evidence required to defend action). These two terms are important in the formulation of the precautionary principle.[218] However, Scott emphasizes that the question of the burden of proof remains one of the greatest argumentative points of debate around the precautionary principle. This debate loops around the problematic notions of uncertainty and indeterminacy. "Is a substance, drug, or new technology safe until confirmed hazardous? Or is it hazardous until proven safe? Who should be burdened by – and who should benefit from – the limits of our understanding? Can 'harmlessness' be proven?"[219] Nevertheless, Stebbing, for instance, maintains that harmlessness cannot be established since no number of observations of harmlessness can remove the likelihood that damaging effects may happen anywhere at some time.[220] Be that as it may, all formulations of the precautionary principle are created around anticipatory action before complete scientific certainty is attained. So, there is a point at which evidence is enough to apply the tools of risk assessment.[221]

4.2.2.1 Principles that Guide the Application of the Precautionary Principle in Environmental/Health Policies

The general principles of risk management remain suitable when the precautionary principle is invoked.[222] According to the European Commission, the principles or elements of the

precautionary principle are proportionality, non-discrimination, consistency, an examination of the benefits and costs of action or lack of action, and examination of scientific developments.[223]

1. Proportionality: this means that measures involving the precautionary principle should not be disproportionate to the desired level of protection and must not aim at zero risks. In other words, measures must be proportional to the anticipated level of protection. Nevertheless, there is a situation whereby an inadequate evaluation of the risk may greatly limit the number of possibilities available to the risk managers. Also, a total ban may not be a proportional response to a possible risk. Risk decreasing measures should include fewer defensive substitutions, which make it possible to realize a corresponding level of protection like the reduction of control, proper treatment, tightening of controls, application of provisional limits, etc.

2. Non-discrimination: except there are objective justifications for doing so, the principle of non-discrimination suggests that similar situations must be treated differently and that different situations must not be treated in the same way. Procedures taken under the precautionary principle must be considered to achieve a corresponding level of protection without appealing to the physical origin or the nature of the production process to use different actions subjectively. In a nutshell, measures ought not to be discriminatory in their application.

3. Consistency: Measures should be consistent with the measures previously implemented in similar conditions or using comparable methods. Risk assessments consist of a series of issues to be considered to guarantee that they are as detailed as possible. The goal of consistency is to recognize and describe the dangers, especially by creating a connection between the dose and the effect and evaluating the exposure of the environment or the target population.

4. Examination of the benefits and costs of action and lack of action: A comparison must be made between the most possible positive or negative consequences of the intended action and those of inaction in relationships to the overall cost to the community, both in the short and long-term. The procedures envisioned must produce an overall advantage of lessening risks to an adequate level. Examination of the pros and cons cannot be condensed to economic cost-benefit analysis. It is broader in scope and embraces non-economic deliberations. A society may be eager to pay a higher cost to protect an interest, such as the environment or health, to which it ascribes priority. This examination should include an economic cost/benefit analysis when this is suitable and achievable. Though, other analysis methods, such as those regarding the effectiveness and the socio-economic impact of the numerous possibilities, may also be suitable. In the conduct of such an investigation, the account should be taken of the general principle and the case-law of the Court that the protection of health takes priority over economic considerations.

5. Examination of scientific developments: Measures should be periodically reviewed in the light of scientific progress and corrected as required. The measures should be preserved if the scientific data are insufficient, inaccurate, or unsettled and if the risk is seen to be too high to be forced on society. The measures may have to be altered or ended by a certain time limit, in the light of new scientific findings. However, this is always linked to the development of scientific knowledge and not just time factor. Research should be conducted to produce the extra-scientific data needed for a more objective evaluation of the risk. The procedures should be occasionally reviewed to take account of new scientific data.

4.2.2.2 The Need for Precautionary Approach in Environmental and Public Health Policies in the Niger Delta.

A precautionary approach to public health and environmental decision-making is urgently needed, especially in the Niger Delta region of Nigeria. No wonder, Harari et al. express that greater application of the precautionary principle is needed in developing countries.[224] In the views of Tickner, Raffensperger, and Myers, "precautionary principle is a new way of thinking about environmental and public health protection and long-term sustainability. Correspondingly, Barrett and Raffensperger affirm that the precautionary principle embraces the potential of a new course for addressing multifaceted environmental and health problems, a course that necessitates alternate scientific approaches, regulatory procedures as well as societal values. Thus, they express that if the society indicates to execute the precautionary principle, the precautionary approach can offer an ethically as well as scientifically wide-ranging stability.[225] The reason for this is not far-fetched since the precautionary principle has emerged from unsolved problems of the prevailing decision support styles that result from risk assessment. The precautionary principle provides a rational alternative, especially when the boundaries of the expected consequences are not yet identified, and no solid ground is present for the quantification of probabilities, and ethical frameworks of inter and intra-generational equity are at stake. So, the precautionary principle is being employed in cases where serious adverse effects and surprises can occur with an unknown probability; therefore, it is rational to follow a 'better safe than sorry' strategy.[226]

Moreover, the implementation of the precautionary principle challenges us to make fundamental changes in the way we permit and restricts hazards."[227] Putting the precautionary principle into practice involves institutional change, new relationships, and new regulations as

well as other policy procedures. Of course, breaking through organizational cultures, finding relevant expertise, utilizing participatory instruments, making governments accountable, and building up capacity and monitory systems are some of the steps that can bring about the practice of precautionary principle.[228]

Meanwhile, Marchant and Mossman mention that the precautionary principle over the past quarter-century remains a ground-breaking, inescapable, and important new concept in environmental policy; however, it may also be the most irresponsible, illogical and misguided concept.[229] Some critics maintain that the precautionary principle is dangerous because it could be used to insist on regulatory action on supposed hazards for which there is no complete scientific basis for panic. The principle unreasonably stifling innovation[230] and could increase the harms facing society by hindering the development of new technologies as well as therapeutic products and technologies.[231] Also, while supporting that precautionary stifle technological invention, Graham states further that it harms public health and the environment by distracting attention from known to imaginary environmental hazards.[232] Also, opponents argue that precautionary measures may be very costly as epitomizes in the Rio Declaration (see paragraph 15).[233] Consequently, the precautionary principle has been branded irrational, unworkable, and anti-scientific.[234] Although some scholars continue to argue that precautionary approaches are unscientific and risk-based approaches are science-based alternative; Santillo et al. argue that the ultimate difference between risk and precautionary approaches is not that one employs science and the other does not, but how scientific evidence is used for decision making at the science-policy interface.[235] Likewise, the precautionary approach is, to an extent, less prescriptive in its assessment of the need for action. The precautionary approach does not depend on a need clearly to describe and quantify risks, but somewhat on the more general application of scientific

research as a means for the initial recognition of hazards to human beings, wildlife health or to the environment in its entirety.[236]

Despite its criticisms and challenges, there is a collective agreement to put the precautionary principle at the forefront of environmental and public health policy development.[237] In the view of Thornton, it is crystal clear that the focus of the precautionary principle is the avoidance of risk or reduction of hazards at the beginning of a project or activity by evaluating alternatives along with shareholders or investors.[238] Likewise, Tickner et al. affirm that a precautionary approach to environmental and public health decision-making comprises these components: carrying out the precautionary action before scientific certainty of cause and effect; goal setting; looking for and assessing alternatives; shifting burdens of proof; developing democratic and thorough decision-making measures and methods.[239]

In addition, Santillo et al. highlight that the "Implementation of the Precautionary Principle Action"[240] requires that i.) severe or irreversible damage to ecosystems must be circumvented in advance, both by avoiding harm and by evading the potential for harm; ii.) high-quality scientific research is used as a key instrument for the early discovery of real or potential impacts; iii.) action to guard ecosystem is essential even in the presence of uncertainty, complex indeterminacy, and ignorance; iv.) all future technical, economic as well as social expansions apply an advanced reduction in environmental burden. Thus, it is evident that the practical application of the precautionary principle does not involve a static decision-making standard. Moreover, Goncalves avers that decision-makers should consider possible hazards, and then different measures can be taken from simple cautions to the prohibition of hazardous products or technologies. Besides, the key aspect for any decision-making is how to make an informed judgment about an empirical context.[241]

Although there are variations in a society's preferred level of protection against risk, the suggestion of O'Riordan and Cameron, as quoted by Garnett and Parsons, is paramount. This suggestion connotes that the precautionary principle is to act cautiously when there is enough evidence and where action may be acceptable on sensible judgments of cost-effectiveness and where inaction may perhaps lead to possible irreversible or palpable adversity to the defenders and future generations.[242] Some scholars have contended that precautionary thinking had better be set through participatory decision-making processes, allowing representation of more vulnerable.[243] Other scholars argue that decisions must be created on precaution rather than on risk because of intrinsic and ultimate inadequacies in the present risk assessment standard.[244] Landrigan and Transande continue to assert that risk assessment and risk management, as presently experienced, fail to offer this protection. Hence, the modern approach to risk assessment needs to be altered by applying the precautionary principle to protect the health of the people. For instance, chemicals need to be assumed possibly toxic until confirmed safe; the new practice of discharging unverified and possibly difficult chemicals to the environment to learn only years or decades later of their threats cannot linger. The essence of the precautionary principle is to respond proactively to substantial environmental threats before they cause harm.[245]

4.3 Conclusion

Having seen the pitiable condition of our common home, this chapter of the dissertation challenges everyone to be responsible stewards and managers of our common home where concerns such as sustainability and environmental quality are being encouraged. Also, it is generally accepted that humans can never reach complete cast-iron certainty, never attain total proof, about cause, and effect in multifaceted structures. Therefore, it is imperative and crucial to

appreciate our limits. For this reason, scientific uncertainty is a sine-qua-non for invoking the precautionary principle. The force of the precautionary principle lies in the beliefs about environmental or social resilience and in the capacity of political systems or social groups to act in response to catastrophes. Consequently, this dissertation emphasizes that the incorporation of the precautionary principle into the environmental and public health policies in Nigeria will help to improve the crises in the Niger Delta area. Above all, the UNESCO principles of protecting future generation and protection of the environment, the biosphere and biodiversity must guide the environmental policies in Nigeria.

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CHAPTER FIVE: ADOPTING A SYSTEMS APPROACH FOR HEALTH AND THE ENVIRONMENT

Introduction

In this chapter, the global ethics approach is used to highlights the need for a systems approach for health and the environment. The two sections of the chapter explore the significance of a systems approach in relation to the debate on patient safety in healthcare and the debate on clinical trials in research. The discussion of this chapter occurs within the context of these UNESCO principles: Articles 5-9 that highlight the connection between autonomy, consent, vulnerability, privacy and confidentiality as well as Article 12 on respect for cultural diversity and pluralism, Article 13 on solidarity and cooperation, Article 14 on social responsibility, and Article 15 on sharing of benefits.

Before proceeding to the main section of this chapter, these UNESCO Articles that enlighten the discussion on a systems approach for patient safety and clinical trials will be briefly examined:

1. **ARTICLES 5-9:** These Articles are treated together because of the connection between them.

Article 5: Autonomy and Individual Responsibility:

The autonomy of persons to make decisions, while taking responsibility for those decisions and respecting the autonomy of others, is to be respected. For persons who are capable of exercising autonomy, special measures are to be taken to protect their rights and interests.[1]

Article 6: Consent:

1. *Any preventive, diagnostic, and therapeutic medical intervention is only to be carried out with the prior, free, and informed consent of the person concerned, based on adequate information. The consent should, where appropriate, be expressed and may be withdrawn by the person concerned at any time and for a reason without disadvantage or prejudice.*
2. *Scientific research should only be carried out with the prior, free, express, and informed consent of the person concerned. The information should be adequate, provided in a comprehensible form, and should include the modalities for withdrawal of consent. Consent may be withdrawn by the person concerned at any time and for any reason without any disadvantage or prejudice. Exceptions to this principle should be made only in accordance with ethical and legal standards adopted by the States, consistent with the principles and provisions set out in this Declaration, in particular in Article 27, and international human law.*
3. *Inappropriate cases of research carried out on a group of persons, or a community, additional agreement of the legal representatives of the group or community concerned may be sought. In no case should a collective community agreement or the consent of a community leader or other authority substitute for an individual's informed consent.* [2]

Article 7: Persons without the capacity to consent:

In accordance with the domestic law, special protection is to be given to persons who do not have the capacity to consent:

a. *Authorization for research and medical practice should be obtained in accordance with the best interest of the person concerned and in accordance with domestic law. However, the*

person concerned should be involved to the greatest extent possible in the decision-making process of consent, as well as that of withdrawing consent;

b. *Research should only be carried out for his or her direct health benefit, subject to the authorization and the protective conditions prescribed by law, and if there is no research alternative of comparable effectiveness with research participants able to consent. Research which does not have potential direct health benefit should only be undertaken by way of exception, with the utmost restraint, exposing the person only to a minimal risk and minimal burden and, if the research is expected to contribute to the health benefit of other persons in the same category, subject to the conditions prescribed by law and compatible with the protection of the individual's human rights. Refusal of such persons to take part in research should be respected.*[3]

Article 8: Respect for Human Vulnerability and Personal Integrity

In applying and advancing scientific knowledge, medical and associated technologies, human vulnerability should be taken into account. Individuals and groups of special vulnerability should be protected, and the personal integrity of such individuals respected.[4]

Article 9: Privacy and Confidentiality

The privacy of the persons concerned, and the confidentiality of their personal information should be respected. To the greatest extent possible, such information should not be used or disclosed for purposes other than those for which it was collected or consented to, consistent with international law, in particular, international human rights law.[5]

In addressing ethical issues that relate to clinical trials and patient safety, there is a close connection between Articles 5-9 of the UNESCO Declaration. Also, these articles are directly

related to Article 3 (Human Dignity and Human Rights) that has been discussed in chapter three of this dissertation. Moreover, none of these Articles stand alone; they must be seen in conjunction with each other, articulating diverse dimensions and characteristics of fundamental normative demands.[6] As deliberated by Evans, the concept of informed consent has brought the most critical changes in clinical practice and medical research. Of course, the notion of informed consent has led to the adoption of a patient-centered practice against a paternalistic model of care. The notion of informed consent expresses respect for the autonomy of patients in as much as it involves practitioners to devolve to patients the obligation for undergoing treatment and taking part in medical research and other research. Whereas the practitioners continue to be the expert as regards to medical matters, the patients are the final arbiters both of what would start an appropriate intervention and what would be the necessary outcome.[7] Thus, the principle of informed consent epitomizes a vital ethical and legal prerequisite for medical interventions that defends patients as well as their fundamental human rights to integrity and self-determination.

For this reason, individual consent remains an indispensable requirement for biomedical research and medical care.[8] Moreover, the first and most prominent recommendation about the issue of informed consent is stipulated in the 1947 Nuremberg Code: "*The voluntary consent of the human subject is absolutely essential. This means that the person involved should have the legal capacity to give consent; should be so situated as to be able to exercise free power of choice*…."[9] At least four steps are very crucial in requiring consent. They include disclosure of the information to the research subjects or patients; understanding of the information by the research subjects or patients; voluntariness of decision by the research subjects or patients; and formal consent (it must be signed, or an oral statement must be given in the presence of a witness).[10] Also, for those persons who may lack the capacity to make a decision, there is a need

for substituted decision-makers. There is a need to have representatives enlisted to give proxy consent.[11] Other examples of international instruments that list informed consent as one of the key principles of biomedical research are the Declaration of Helsinki of the World Medical Association (1964), the Council of Europe (1997, 2005), the Council for International Organizations of Medical Sciences (2002), UNESCO (1997, 2003, 2005), etc.[12] Besides, Article 9 on Confidentiality and Respect for Privacy of person has since the beginning relied on the Articles related to autonomy and consent. The use of Article 9 is vital in the contemporary bioethics debate in a legal and institutional context, and on a functional and practical scale. A right to privacy secures control over personal information in numerous ways. It limits access to personal and medical information, and it offers a claim of non-interference in many private domains of the individual. Confidentiality denotes a special and every so often fiduciary relationship between the physician and patient and maintains that shared information shall remain secret, confidential except convincing interest excuses disclosure under domestic law. This Article regulates the dissemination and the use of the ever-growing, specific, movable, and exploitable personal data.[13]

Furthermore, even though consent is the expression of an individual decision, this decision must not consider individual needs and interest only. Somewhat it should consider the needs and interests of others too, who may perhaps be affected directly or indirectly by the consequences of the decision. This is where individual consent connects with social responsibility. This means that an individual has moral obligations toward others. It enhances solidarity and co-operation as enshrined in Article 13. An example is with patients affected by a specific disease by participating in clinical trials discovering new drugs. Nevertheless, this responsibility is not mainly for the research subjects alone, but it extends to health care practitioners involved in

processes requiring consent. Again, this connects Articles 5-9 to Articles 18 (Decision-Making and Addressing Bioethical Issues) and 19 (Ethics Committees).[14] Also, it is important to state that the right to exercise one's autonomy is subject to a limit. These limits are highly restricted and are usually enshrined in the law for rare circumstances that offer protection to the autonomy of others. For instance, legitimately authorized personnel can arrest, question, and detain others for breaches of the law. Again, medical personnel can forcibly detain mentally ill persons for protection and treatment. In addition, those who suffer from severe infectious diseases may be against their will removed from their place of work or residence to protect the health of others.[15]

Also, Article 8 on Respect for Human Vulnerability and Personal Integrity" means the obligation of taking into consideration the vulnerability inherent to all humans. The 1993 Council for International Organizations of Medical Sciences (CIOMS) Guidelines defines vulnerability as "substantial incapacity to protect one's interest."[16] However, as discussed in chapter two, the concept of human vulnerability has two faces: general vulnerability (inherently to all human beings) and special vulnerability that results from socio, economic, and political factors. Although the first is given and difficult to change, it demands care, respect, compassion, and solidarity. The removal of causal conditions can influence the second type of vulnerability. Thus, it calls for social and political action that is based on dignity, respect, and social responsibility. Therefore, research that involves vulnerable populations needs special protection. On this note, researchers are encouraged to use stringent requirements of consent and should limit the risks of contact to harm.[17]

2. ARTICLES 12-15:

Also, this chapter espouses Article 12 on Respect for Cultural Diversity and Pluralism, Article 13 on Solidarity and Cooperation, Article 14 on Social Responsibility, and Article 15 on Sharing of Benefits.

Article 12: Respect for Cultural Diversity and Pluralism

The importance of cultural diversity and pluralism should be given due regard. However, such considerations are not to be invoked to infringe upon human dignity, human rights, and fundamental freedoms nor upon the principles set out in this Declaration, nor limit their scope.[18]

It is an obvious reality that the world we live in is pluralistic; it is a gathering of nations and cultures. Pluralism of culture and values, philosophical, and religious viewpoints influence the principles of bioethics. For instance, full autonomy in some cultures might be restricted by many considerations of the collective good. The spread of infectious disease can warrant actions such as quarantine or compulsory mass vaccination that limits one's autonomy and freedom. Cultural diversity remains an ethical imperative that is not separated from respect for human dignity. It connotes a commitment to human rights and fundamental freedoms, especially the rights of persons belonging to minorities. Human rights guarantee the explicit expression of individual cultures. Also, human rights do not apply one cultural standard, but to some extent, one legal standard of minimum protection required for human dignity. There is not one complete standard for all times and all humans. No one has the whole truth, and the ability to understand the truth in the opinion of others is vital to the ethics of discussion, which is at the heart of bioethics.[19] Therefore, conducting clinical trials in the Niger Delta region demands respect for cultural pluralism.

Article 13: Solidarity and Cooperation

Solidarity among human beings and international cooperation towards that end are to be encouraged.[20]

The principle of solidarity and cooperation is at the core of principles that are connected to fundamental individual freedom. Whereas cooperation is at the domain of liberty, solidarity is mainly that human beings are social beings in the world and living in nature.[21] For Ten Have, global governance will be impossible without cooperation. Without cooperation, human rights will not be achieved. Human beings ought to cooperate with others because they shared common interests, more importantly, for the survival of the planet or global health. Cooperation replaces vertical, top-down interactions with horizontal associations between humans. Simply put, cooperation is a manifestation of equality among partners. It encourages negotiation over the application, incorporation over the expulsion, and exclusion. Also, the principle of solidarity is connected to cooperation. Solidarity implies social bonds between groups of people that prevent a society from breaking down. It expresses that human beings are connected because of their shared identity and common goals. Global solidarity helps to foster the building of a global moral community.

For this reason, human being creates this cooperation and solidarity as a vital instrument for the universal community that brings together every human person. This Article guarantees that transnational and international research will aim mostly in satisfying the needs of the host countries as well as contributing to the resolution of global problems to health and the environment. This Article stimulates cooperation at all levels to save humanity from the evils of exploitation and domination, alienation and slavery, violence and war, the model ideology of absolute individual, etc. If the spirit behind the formulation of this principle is embraced

(especially in the Nigerian context), it will lead to the overthrowing of dictatorships and the rebuttal of practices that are debasing for human beings.[22]

Article 14: Social Responsibility and Health

1. *The promotion of health and social development for their people is a central purpose of governments that all sectors of society share.*
2. *Taking into account that the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition, progress in science and technology should advance:*

   a. Access to quality health care and essential medicines, especially for the health of women and children, because health is essential to life itself and must be considered to be a social and human good;

   b. access to adequate nutrition and water;

   c. improvement of living conditions and the environment;

   d. elimination of the marginalization and the exclusion of persons on the basis of any grounds;

   e. reduction of poverty and illiteracy.[23]

This Article reflects the social aspects of Bioethics. This article stresses on the social determinants of health and its relationship with the main aspects of the people's lifestyles, and their living and working conditions. It is a reality that more than one billion people-one sixths of the total population of the world live in extreme poverty. Poverty is reflected in countless aspects

of the life of individuals and populations living in deprived conditions, especially in developing countries. They lack adequate nutrition, safe drinking water, basic health care, and social services needed to survive. Hence, the 2005 UN Millennium Project acknowledges that poverty, inequality, and disease are some of the main causes of conflict, violence, civil war, and state failures. On a serious note, a world with life-threatening poverty is a world of insecurity.[24] It is against this backdrop that this Article encourages that development in science and technology should advance access to quality healthcare, suitable nutrition, and water, enhancement of living conditions and environment, eradication of marginalization and exclusions of persons as well as the lessening of poverty and illiteracy. This Article discourages any scientific knowledge that harms the environment and health of the people. Therefore, it is pertinent always to put measures to prevent and lessen the risk of misuse and abuse of scientific knowledge. Again, it is proper that multinational companies (especially those in the Niger Delta region) should prevent or remediate the negative impacts of their activities for health, and the well-being of the people.[25]

Also, there are international health policy guidelines that stipulate and promote health as a fundamental human right necessary for social and economic development. So, tackling poor health and inequality remain the core responsibility of government at all levels. To this end, the promotion of social responsibility for health was a major priority at 1997 WHO Fourth International Conference on Health Promotion held at Jakarta, 2000 WHO Fifth Global Conference on Health Promotion at Mexico and 2005 WHO Sixth Conference on Global Health Promotion at Thailand. These conferences made some recommendations that are essential even for a discussion on health and environment in the Niger Delta region. It stresses the avoidance of harm to the health of individuals, the protection of the environment as well as the sustainable use of resources, equity-focused health impact assessments as a vital part of policy development,

etc.[26] Above all, the Article underscores that global problems reverberate common challenges and must be addressed through common action.[27]

Article 15: Sharing of Benefits

1. *Benefits resulting from any scientific research and its applications should be shared with society as a whole and within the international community, in particular with developing countries. In giving effect to this principle, benefits may take any of the following forms:*
   a. *special and sustainable assistance to, and acknowledgment of, the persons and groups that have taken part in the research;*
   b. *access to quality health care;*
   c. *provision of new diagnostic and therapeutic modalities or products stemming from research;*
   d. *support for health services;*
   e. *access to scientific and technological knowledge;*
   f. *capacity-building facilities for research purposes; and*
   g. *other forms of benefit consistent with the principles set out in this Declaration*
2. *Benefits should constitute improper inducements to participate in research.*[28]

This article on the sharing of benefits flows from the principles of justice, social responsibility, and solidarity. Following the notable inequality that exists in the world today, the principle of sharing of benefit has been given due attention in this dissertation. Its primary aim is to defend vulnerable populations by opposing exploitation and inequality. Also, this Article encourages the protection of the environment. It stresses that benefits ought to be shared because the biosphere and biodiversity are common goods. Nevertheless, sharing benefits in a just manner has always been a practical challenge.[29]

Moreover, the principle of sharing benefits has been in use in many contexts. For instance, the 1992 Convention for Biological Diversity stresses on a just and equitable sharing of benefits from the use of genetic resources; the Declaration of Helsinki that authorizes post-trial access by research subjects, etc. So, this principle is beneficial in the context of medical research and the migration of healthcare professionals.

Nevertheless, a more detailed explanation will be given to some of these UNESCO Articles in the sections on ethical principles for patient safety in healthcare systems and ethical framework for conducting clinical trials in Nigeria's Niger Delta region.

5.1. Systems Approach for Patient Safety

There is compelling global evidence that substantial numbers of patients are wounded or harmed while receiving health care. These medical errors have either resulted in an increased length of stay in hospitals or lasting injuries and death for numerous patients. In like manner, Nigeria's Niger Delta people are experiencing untold sufferings and deaths from monumental errors of the Nigerian leaders, multinational oil firms, and miscreants. These preventable errors have caused significant environmental issues like air pollution, water pollution, loss of biodiversity, etc. that are responsible for the various health-related problems in the region.

However, as models/principles such as systems thinking/Swiss Cheese model, human dignity, non-maleficence, justice, etc. are employed in the healthcare system to create patient safety culture; this dissertation, therefore, seeks to adopt these patient safety models and principles to develop a systems approach for Nigeria's Niger Delta environmental issues.

5.1.1 General Framework of Patient Safety in Health Care System

From a global perspective, patients continue to be injured or die at a shocking rate because of human error. The WHO estimates that up to1 in 10 patients are harmed by adverse occurrences in hospitals.[30] It is for this reason that patient safety has become very vital in healthcare organizations. The science of safety is a wide-ranging collection of principles borrowed from other disciplines like aviation, defense, manufacturing, and systems thinking that have been leading the field of safety.[31] However, in the medical field, Vincent expresses that the possibility of harm is integral to the practice of medicine, especially at the borderline of knowledge and experience. The consciousness of medical harm, as well as efforts to lessen it, are as old as medicine itself tracing back to Hippocrates' classic dictum to 'abstain from harming or wronging any man.'[32] The term *primum non-nocere* (first, do no harm) is credited by some historians to Galen and was made known to American and British medical culture by Worthington Hooker in 1847.[33] Again, in 1910, a physician by the name Dr. Ernest Codman opines that understanding why treatments were unproductive was the basis for improving the care of future patients. Likewise, in 1917, the American College of Surgeons endorsed Codman's result system for its hospital standardization project. Also, in 1951, the Joint Commission on Accreditation of Healthcare Organizations emerged to provide voluntary accreditation. The Joint Commission published the "Standards for Hospital Accreditation."

Moreover, Colley and Heinccius rightly observed that for many years, a wide-ranging gamut of health care improvement ingenuities had been underway.[34] There have been efforts engaged in the standardization of patient safety strategies through the Joint Commission for the Accreditation of Healthcare Organizations, the National Committee for Quality Assurance, and others.[35]

Furthermore, in 1979, the Accreditation Association for Ambulatory Healthcare was created to assist ambulatory healthcare organizations in enhancing the quality of care offered to patients. Within the medical as well as surgical specialty societies, anesthesiology has been a leader in patient safety efforts, starting with accumulating anesthetic morbidity and mortality statistics in the 1930s. They advanced into evaluating causes of anesthetic injuries in the 1970s and 1980s. Again, in 1989, the Agency for Health Care Policy and Research was formed. This body was renamed the "Agency for Healthcare Research and Quality (AHRQ) as part of the Healthcare Research and Quality Act of 1999. This body aims to ensure higher quality, make health care safer, more accessible, affordable, and fair for every patient.

Likewise, the American Medical Association, along with several industry leaders, founded the National Patient Safety Foundation in 1997. The National Patient Safety Foundation encourages the measurable enhancement of patient safety in health care delivery. It aims to offer a dominant voice on patient safety and to "lead the transition from a culture of blame to a culture of safety."[36] In 1999, the Institute of Medicine published "To Err is Human, Building a Safer Health System" as a landmark report.[37] It was the first report that delineated the degree of preventable harm in the healthcare system. Besides, the report discusses the causes of the problems and offers recommendations addressed to some levels of intervention. Still, it was the first report that outlined the extent of preventable harm in the healthcare system. This report shows that between 44,000 and 98,000 people died every year due to preventable harm in the hospitals. At the same time, costs each year from preventable harm range between $17 and $29 billion for the United States alone. As a follow-up to ensuring quality and safety in the healthcare system, in 2001, the Institute of Medicine published a report called "Crossing the Quality Chasm, A New Health System for the 21st century." Still to ensure patient safety, Dr. Peter

Pronovost in the year 2001 published on a simple five-item checklist that led to substantial decreases in central line infections. This five-item checklist, when executed in the Michigan Keystone Initiative in 2003, led to an estimated savings of 1500 lives and $100 million across that state.[38]

Unlike the past, when a medical error was hardly ever acknowledged to patients; today, medical error and patient harm are now recognized and deliberated openly by healthcare professionals, politicians, and even by the public.[39] It is on this awareness that patient safety is viewed as a top priority by healthcare professionals, government, and the entire people. What then is patient safety?

Patient safety has become the foundation stone for high-quality care.[40] Thus, patient safety means "the avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the process of healthcare."[41] Similarly, Carbo and Weingart define patient safety "as freedom from accidental medical injury."[42] Likewise, the Institute of Medicine defines patient safety as "the prevention of harm to patients."[43] All the definitions are pointing to one thing: avoidance of harm. Thus, patient safety is accomplished through a system of care delivery that avoids errors, learns from the mistakes that do occur. A significant aspect of a patient safety system is a culture that reassures healthcare professionals, patients, and others to be more watchful in recognizing possible or actual errors, taking proper steps to avert and lessen harm.[44] Buttressing further on this, Runciman et al. define patient safety as "the reduction of risk of unnecessary harm associated with health care to an acceptable minimum."[45] From this definition, specific keywords like risk, harm, and health care are used. Risk implies the probability that an incident will occur while harm means the impairment of the structure or function of the body and any damaging effect resulting from it. Harm may consist of impairments like injury, disease,

injury, disability, suffering, death, etc. “Health care” denotes services obtained by people or communities to encourage, sustain, check, or restore health.[46] Today, patient safety has emerged as a discipline in its own right. Therefore, Emanuel et al. defined patient safety as a discipline in the health-care sector that uses a safety science approach towards the goal of realizing a responsible system of health-care delivery. They advance further that patient safety is a feature of health-care systems whose aim is to lessen the incidence and impact of adverse events as well as making the best use of recovery from adverse events.

Moreover, patient safety relates to the quality of care, but the two concepts are not the same. Safety is an essential subsection of quality. The quality of care, as well as the safety of the patient, is the fundamental values of the Joint Commission accreditation process. Furthermore, in the views of Byers and White, approaching patient safety within health care systems involves a many-sided approach since patient safety consists of several aspects. From the reviews of other scholars, Byers and White state that a comprehensive approach to patient safety consists of six major areas such as structure, environment, people, leadership systems/culture, processes, as well as equipment/technology. Although these six items are overlapping, safety issues are inescapable in all aspects of care. Hence, this approach will offer an ordered way to scrutinize diverse areas using evidence-based research, existing knowledge as well as consensus, and best practices, where research does not exist.[47] In a similar vein, Zacher et al. consider patient safety from a “multilevel perspective” to consist of individual factors, job characteristics, organizational factors as well as interpersonal and team influences. For them, these factors contribute to or obstruct patient safety. For instance, the individual elements that connect to patient safety consist of the people’s work behaviors as well as the number of individual differences that impact these behaviors. The job factors consist of job design and training. The organizational factors include

organizational safety, culture, and climate. Finally, the interpersonal and team factors are patient participation, teamwork, communication, and leadership.[48]

Also, emerging an influential patient safety culture that promotes patient safety and avoidance of harm is essential.[49] Of course, the ability to generate and sustain an influential patient safety culture in healthcare systems is related to better performing healthcare systems or organizations.[50] Improvement in the patient safety culture leads to a more cost-effective healthcare system, reduction of errors, and improved patient outcomes.[51] Patient safety remains a vital pointer of hospitals' organizational performance.[52]

Let us now proceed to examine medical errors that affect patient culture in the next section.

5.1.1.1. Medical Errors that affect Patient Safety Culture

Estimates reveal that in developed countries, as many as 1 in 10 patients receive an injury while receiving hospital care. These harms result from a series of errors or adverse events. Moreover, in developing countries, the possibility of patients getting harmed in hospitals is higher than it is in developed countries. By and large, the Institute of Medicine defines a medical error as the failure of a strategic action to be accomplished as intended or the use of a wrong plan to achieve an aim.[53] Human errors, as well as preventable adverse events in clinical fields, are now generally recognized as an unavoidable feature of health care systems around the world.[54] Medical errors, as well as adverse events, are mainly responsible for this harm. These errors, which may happen at every level of the system, are both common and varied. The degree and potential for errors are massive and are gradually intimidating to become a regular feature of the health care system.[55] Thus, "medical error," "adverse event," and "patient safety," complement one another. For Leape, adverse events have been broadly classified as avoidable and unavoidable, though some suggest that an avoidable adverse event creates an error.[56] However,

there are different types of errors, namely medication error, surgical error, diagnostic error, human factors and errors at the person-machine interface, transition and handoff errors, and teamwork and communication errors. A brief look at each of these medical errors will help to deepen our understanding of medical errors in the healthcare system:

i. Medication Error: A medication error refers to a failure in the treatment process that leads to or has the possibility of harming the patient.[57] It is a preventable occurrence that may cause or lead to improper medication use for the patient. Thus, Roy et al. note that medication misadventure can take place anywhere in the health system from the prescriber to the dispenser to administration and lastly to patient use.[58] Still, Roy et al. maintain that most medication errors are considered latent. Latent errors are "accidents waiting to happen," and the causes of these errors are usually recognizable and can be modified before the error reoccurs. The World Health Organization provides some examples of medication error incidents as prescribing error, dispensing error, medicine preparation error, administration error, and monitoring error.[59]Also, the Institute for Safe Medication Practices (ISMP) identifies the following areas as a potential cause of medication errors: poor drug distribution practices, failed communication, workplace environmental problems. Others are complex or poorly designed technology, access to drugs by non-pharmacy personnel, dose miscalculations, lack of information to prescribers, lack of patient information, as well as lack of patients' understanding of their therapy.[60]

ii. Surgical Error: Surgical errors in the health care system are many. Some surgical problems happen regardless of unsullied care, while errors cause others. Surgeries account for a moderately high percentage of both adverse events and preventable adverse events.[61] A systematic assessment estimates that about 1 in 20 surgical patients experience a preventable adverse event, which relates to perioperative care.[62] Besides, Sarker and Vincent observe that

surgery as a high-risk specialty has been shown to harm patients with one study quoting an annual occurrence rate of adverse events among patients having an operation as 3.0 percent, of which half were preventable.[63] Patient safety issues in surgery include those common to other fields, for example, healthcare-associated infections, medication errors, readmissions, communication mishaps, etc. Other issues that are specific to surgery include wrong-site surgery, surgical fires, etc. The application of universal protocol (which acknowledges that single solutions to surgical problems are meant to fail), teamwork training, and the use of checklists are the best approaches for improving surgical results.[64] In the same vein, Sarker and Vincent reiterate that surgical competency is a combination of technical skill, team performance, communication, and decision making. Thus, these factors affect the surgical patients' pathway from the first pre-operative clinic appointment to the final post-operative discharge clinic appointment. Therefore, to understand and to prevent errors in surgery, it is pertinent to look at this convoluted multi-cogwheel process.[65]

iii. Diagnostic Error: Diagnostic errors have affected the patient in major ways. Schiff et al. define a diagnostic error as "any mistake or failure in the diagnostic process leading to a misdiagnosis, a missed diagnosis, or a delayed diagnosis."[66] Likewise, Singh et al. mention that diagnostic errors happen when patients' diagnosis is missed together, improperly delayed and wrong, as judged by the future appreciation of definitive information, however, these categories of missed, delayed and wrong overlap widely.[67] Thus, Singh et al. divide the diagnostic process into seven stages, such as access and presentation, history taking/collection, the physical exam, testing, assessment, referral, as well as follow-up. For them, a diagnostic error can happen at any stage in the diagnostic process, and there is a variety of patient consequences that are linked to these errors ranging from no harm to cruel harm, including morbidity or death.[68] Also, Wachter

and Gupta observe that despite advances in laboratory testing, information technology, and clinical imaging, the diagnostic error remains a routine.[69] A review of malpractice claims data in the US for the period between 1986 and 2010 state that out of 350,706 paid claims, diagnostic errors accounted for nearly one-third of claims and the highest amount of total payments.[70] Also, in low and middle-income countries, diagnosis creates even bigger challenges as the process is further complicated by inadequate access to care and diagnostic testing resources, a scarcity of qualified primary caregivers, and sometimes of specialists and pre-electronic recording systems.[71]

iv. Human Factors and Errors at Person-Machine Interface: Human factors and errors at the person-machine interface connote immediately how human factors engineering can improve the safety of person-machine interactions as well as the environment in which health caregivers work. Human factors analysis is a crucial step to designing equipment, procedures, tasks as well as work environments because research illustrates that human failures cause 80 percent to 90 percent of errors.[72] Likewise, Wetterneck and Karsh quoting Erin Lawler mention that human factors remain a human-centered science using tools and methods to improve the understanding around human behavior, cognition, and physical capacities and human limitations as well as using this knowledge to designing systems in support of these capacities and limitations.[73] Human factors analysis implies that human beings have limitations as imperfect beings.[74] On this note, experts in this area categorize human errors in three kinds such as knowledge-based (errors that result from lack of knowledge or experience with a particular situation or process); rule-based (misuse or misunderstanding of appropriate data or using the wrong rule); and skill-based (concentration and memory failures, including misplaced tasks).[75] If human errors are not handled well will continue to be the cause of incidents that result in loss of life or injury to

workers. Also, human errors result in financial losses because of damages to the environment as well as damages to the systems or equipment. Mistakes are often related to several factors, including external factors like design of procedures and job performance aids, human-machine interface design, and internal factors such as fatigue. Thus, the objective of human factors engineering will be to minimize the potential for human error and accidents by ensuring that humans perform their assigned activities effectively.[76]

v. Transition and Handoff Errors: Transition and handoff errors are apparent in the health care system. Transitions are the fact of medical life. Transitions of care mean the movement of patients between health care providers, settings as well as home as their circumstance and care permit change.[77] Likewise, Lee et al. aver that clinical handoffs (also called handover, sign-outs or shift report) entail the transfer of professional responsibility as well as accountability for some or all parts of care for a patient, or sets of patients, to another person or professional group on a short-term or lasting basis.[78] Also, Handoffs implies the practice of shifting primary authority and responsibility for clinical care from a leaving caregiver to an incoming one.[79] Thus, Wachter and Gupta observe that handoff and transitional errors are among the most common and consequential errors in healthcare. On this note, the 2006 Joint Commission's evaluation of accredited healthcare organizations credited at least 35 percent of sentinel events to handoff errors.[80] Current estimates connect handoff errors in nearly 80 percent of severe events between 2004 and 2014. Highlighting further on this, Cook et al. aver that healthcare is chock-full of two kinds of transitions and handoffs such as patient-related and provider-related.[81] Some of the examples of patient-related changes include referring patients from primary care providers to subspecialty consultants; admitting patients from emergency units to the ICU; patients leaving ICU to get a computed tomography (CT) scan, and patients that are discharged from the hospital

to go to a skilled nursing facility. Whereas, some examples of provider-related transitions especially when patients are stationary include daytime residents signing out to other residents and leaving the hospital; night shift nurses leaving the hospital and morning nurses taking over from them; recovery room nurses going on break and other nurses covering the patients; oncologist's partners that are covering the hospitalized patients over a weekend, etc.[82] However, efforts to improve the quality of clinical handoffs and transitions must enhance the quality of both written and verbal information. Of course, to ensure precise as well as complete sign-outs, effective handoffs need a setting free of interruptions and distractions. It helps clinicians receiving the sign out to listen actively and engage in a discussion when necessary.

vi. Teamwork and Communication Errors: Teamwork and communication errors are now serious errors that hindered patient safety culture in general. Over 50 years ago, teamwork had less impact on the healthcare organization. Then, quality and safety appeared to be under the control of physicians, and all others played a supporting role. Presently, there is a significant change in this regard. There is persuasive evidence that the quality of teamwork in place determines patients receiving proper care, swiftly and safely. So, ignoring the importance of teamwork and communication to safety and quality healthcare is detrimental.[83] Besides, Leonard et al. state that effective teamwork, as well as communication, is vital for the delivery of safe and high-quality patient care.[84] Teamwork requires collaboration, coordination, as well as communication between members of a team to attain preferred results. Effective teamwork has helped to carry out team goals successfully, while communication failures account for most estimated adverse events in patients.

Consequently, there is a need for standardized communication tools, creating an enabling environment in which every person can speak and express concerns and share common "critical

language" to alert team members to precarious situations. Also, teachings people how to speak up and fashioning the dynamic where they will articulate their worries is a critical factor in safety.[85] Thus, Wachter and Gupta aver that high-functioning teams use strategies such as effective introductions and debriefings. They suggest that policies like SBAR (i.e., situation, background, assessment, and recommendation) and CUS words should be used to improve communications. The use of CUS words involves escalating levels of concern, especially on the part of anyone lower on a hierarchy that needs to get the attention of someone higher up. For instance, it begins with the use of words, "I'm concerned about…," then "I'm uncomfortable…," and finally, "This is a safety issue!"[86] In a nutshell, effective teamwork and communication can help check unavoidable mistakes from becoming consequential, as well as harming patients and health caregivers.

5.1.2 Basic Models/Principles for Patient Safety in Health care System

1. Models for Patient Safety in Health Care System: This section of the dissertation examines two models of patient safety in the health care system. These include systems thinking/swiss cheese model and complexity/complex adaptive system.

a. Systems Thinking /Swiss Cheese Model**:** Wachtar and Gupta aver that systems thinking, which serves as the present-day approach to patient safety, replaces "the blame and shame game." Systems' thinking is a model that admits the human condition specifically that human errs, and settles that safety depends on creating systems that go before errors and either avoid or catch them before they cause harm. Of course, while systems thinking has been the foundation of safety enhancements in other high-risk industries, it has been overlooked in medicine until recently.[87] The Swiss cheese model" by the British psychologist James Reason serves as a mental model for system safety.[88] The Swiss cheese model as taken from numerous accident

inquiries in fields such a nuclear power and commercial aviation underscores that in multifaceted organizations, a single 'sharp-end,' (which could either be the physician making the incision or the person in the control booth in the nuclear plant) error is hardly enough to cause harm. James Reason, therefore, suggests the image of "Swiss Cheese" to explain the occurrence of system failures, such as medical accidents. The "Swiss Cheese" metaphor prevents hazards from causing human losses by a series of barriers. Each barrier has unintentional weaknesses or holes. The holes open and close at random. So, if all the holes are aligned, the hazard gets to the patient and cause harm. Also, Reason's model distinguishes between active failures and latent conditions. Active faults are errors and violations that are caused by people at the service delivery end of the health system. At the same time, latent conditions result from poor decisions made by the higher management in an organization.[89] In this case, more considerable efforts should be engaged at diminishing the holes in the Swiss cheese (latent errors) by generating various overlying layers of protection to lessen the possibility that the holes will ever line up and allow a mistake to result in harm. In this model, there is a need to focus less on the fruitless goal of trying to perfect human behaviors.

Furthermore, the underlying layers of a system are unsafe acts, conditions for unsafe acts, unsafe supervision, and influences of an organization. Unsafe acts of people could be errors (that is, activities of individuals that do not achieve their intended outcome) and violations (that is, willful disregard for the rules and regulations that govern the safety of work). Conditions for unsafe acts of people include substandard conditions of people and substandard practices of people. Unsafe supervision could be inadequate supervision, planned inappropriate operations, failure to correct problems, and supervisory violations. At the same time, organizational

influences are the questionable decisions of upper management that directly affect supervisory practices, conditions, and actions of people.[90]

Again, this model highlights that medical errors should be scrutinized from their root causes and not just the smoking gun, sharp-end error. Therefore, Vincent supplies a useful framework for categorizing the root causes of errors. They include institutional, organization and management, work environment, team, individual staff member, task, and patient.

1. Institutional framework: the errors can result from the insufficient priority given by regulators to safety issues. It could be legal pressures against open discussion as well as preventing the opportunity to learn from adverse events.
2. Organization and management framework: errors can occur due to a lack of awareness of safety issues on the part of senior management as well as policies leading to inadequate staffing levels.
3. Work environment framework: errors occur from heavy workloads, leading to fatigue. Also, errors may occur from limited access to essential equipment and inadequate administrative support.
4. Team framework: errors can occur due to inadequate supervision of junior staff; poor communication among different professions as well as the unwillingness of junior staff to seek help.
5. Individual staff member framework: errors can occur due to a lack of knowledge or experience. It can also result from long-term fatigue and stress
6. Task framework: errors can result from the unavailability of test results or delay in obtaining them as well as a lack of clear protocols and guidelines.

7. Patient framework: errors can occur from distress as well as language barriers between patients and caregivers.[91]

b. Complexity Theory and Complex Adaptive Systems**:** Another essential model to consider while dealing with patient safety is the complexity theory and complex adaptive systems. Vital decisions made, as well as measures taken by individual physicians and nurses, happen in the context of the structure, guidelines, and culture of their organization and healthcare systems. Complexity theory is a subdivision of management thinking which says that big organizations do not function like predictable and fixed machine, in which inputs A and B unsurprisingly lead to result in C. To a certain extent they operate as complex adaptive systems, with elements of codependency, unpredictability, and nonlinearity that must be cherished as we try to make them function effectively.[92] Complex issues bear the highest level of risk. Therefore, creating a patient safety culture in healthcare system involves the design of systems to make risky interferences consistent. Besides, complexity theory holds that the higher the complexity of the system, the more is the tendency for pandemonium. Also, in open and interacting systems, unpredictable events will occur. Nevertheless, the better the therapeutic design, the more robust it is in the face of both foreseeable and unforeseeable failures.[93]

Stressing further, Vincent and Amalberti suggest a model that illustrates three contrasting approaches to safety based on the intrinsic threat within the industry. The three approaches of safety are an ultra-adaptive embracing risk, high reliability managing the risk, and ultra-avoiding risk. For instance, the ultra-adaptive embracing risk connotes that taking risks is the essence of the profession, such as treatment of trauma, military in wartime, deep-sea fishing, drilling industry, etc. Hence, it is essential for experts in these fields to demonstrate their competence, to rely on personal resilience and technology to survive and prosper in adverse conditions. Also,

high reliability managing risk entails that risks are not sought out, but they are inherent in professions like the oil industry, marine, fire-fighters, elective surgery, shipping, etc. In addition, ultra-safe avoiding risk implies that risk should be excluded as far as possible, especially in areas like civil aviation, nuclear industry, public transport, food industry, medical laboratory, and blood transfusion.[94]

Moreover, understanding the differences in risk is necessary because, to achieve safety, we need to match our approaches to the types of problems at hand. Complexity theory and the study of complex adaptive systems connote that individuals within a system are interdependent and creative decision-makers and are highly independent. Added to this is the fact that uncertainty, as well as a paradox, is intrinsic within the system.[95]

2. Ethical Principles for Patient Safety in Healthcare Systems: The need to ensure patient safety in human society is very paramount. There are ethical principles that necessitate patient safety in the health care system. This dissertation will consider the following: human dignity, do no harm (non-maleficence), the principle of utility, justice, transparency, and accountability. The core goal of any health care system is to protect, sustain, and encourage the safety of care delivered to the public.[96] For these reasons, ethical issues are well-thought-out as the essential conceptual foundation for patient safety in the health care system.[97] This dissertation, therefore, considers some of these ethical principles that serve as a guide for patient safety in human society.

a. Human Dignity, Non-maleficence (Do Not Harm), and Principle of Utility

In the opinions of Kangasniemi et al., human dignity serves as a guide for ethical patient safety.[98] The overall ethical motive in all caring encompasses respect for the absolute dignity of

the human person. This dignity entails inner freedom and responsibility for one's own life and that of others.[99] Thus, the Universal Declaration of Human Rights (1948), upholds that the recognition of the intrinsic dignity of every human being is the foundation of freedom, justice, and peace in the world. The principle of human dignity invigorates the real concern about the need to ensure respect for the inherent value of every human person. Hence, the principle of human dignity has been at the heart of most international human rights instruments, especially those banning slavery, torture, inhuman, degrading, and discriminatory treatments of all kinds.[100] It is because of this fact that the concepts of patient safety are entwined with the value of human dignity, and all safety activities are engaged towards the protection and promotion of patient safety. Also, respecting human dignity involves patient safety to be considered with equal provision to all patients without discrimination rising from culturally bound values.[101] Preserving human dignity entails caring for the whole patient with responsibility and respect for the patient's autonomy and willingness to aid the patients whenever they need support.[102]

In addition to human dignity, non-maleficence is another underlying value of patient safety. The ethical principle of non-maleficence compels us to refrain from causing harm to others. Also, the obligations of non-maleficence include not only the requirements not to perpetrate harms but also requirements not to enforce risks of harm. Therefore, Sharpe stresses that the principles of beneficence and non-maleficence constitute the obligation of health caregivers to "do no harm" to patients. The two principles relate to the right of patients to safe care.[103] For this reason, every health caregiver has the moral duty to evade commissions and omissions that could result in preventable harm to patients.

Furthermore, the principle of utility is fundamental as far as patient safety is concerned. In the views of Khushf et al., the aim of patient safety can be justified by the ethical principle of

utilitarianism when the target is population.[104] Patients' rights to safe healthcare may sometimes entail overriding individual rights in the interests of achieving an aggregate benefit across a population. Hence, Johnstone argues that it may be essential and reasonable to overrule certain prima facie rights like confidentiality and privacy, to guarantee the gathering of multifaceted data sets on the occurrence as well as the impact of errors so that problems can be recognized and alleviated.[105] Moreover, instead of individuality, the purpose of this principle is to attain the greatest benefit for the most significant number of people. This principle wants us to do the greatest good for the greatest number, as determined from an unbiassed standpoint that gives equal weight to the legitimate interests of each affected party.[106] Though utilitarians share the belief that we should morally evaluate human actions in terms of their production of the maximal value, they still disagree among themselves regarding which values should be exploited.

Nevertheless, it is reasonable for utilitarians to produce intrinsic goods such as freedom, happiness, health that are valued by every rational person. These goods are valued in themselves, without reference to their additional consequences or the values held by individuals.[107] The dissertation, therefore, corroborates the opinions of Kangasniemi et al. to advance that it is proper for healthcare givers to keep a balance between an individual patient's and group safety as well as formulating plans to avert the commission of unethical acts.[108]

b. Justice, Transparency, and Accountability

Justice, transparency, and accountability are among the underlying ethical patient safety principles in healthcare organizations.

Justice implies fair, equitable, and proper treatment, considering what is due or owed to persons. Furthermore, distributive justice means a fair, equitable, and adequate distribution of

benefits as well as burdens determined by rules that structure the terms of social collaboration.[109] Its scope comprises of plans that allocate various benefits and burdens such as resources, property, taxation, privileges, and opportunities. Thus, to deny benefits to some when others in the same class obtain benefits is unjust. Also, to deny access to equally needy persons outside the described class is unfair. Some of the major issues in the healthcare system that bother on the principle of justice include the nature of the fair opportunity and unfair discrimination in the health system, the defensibility of a right to health care and a right to health, as well as issues of vulnerability and exploitation in research.[110]

Furthermore, transparency is very crucial to patient safety. Thus, Byrnes and Teman describe transparency in a healthcare setting as an environment in which defects are made visible, and learnings are shared easily and without fear or hang-up. It leads to improvement in patient satisfaction rates. Again, transparency can lead to and support better-quality patient outcomes, especially when issues are recognized and fixed. Also, through unbending transparency, preventable error rates are enhanced, and costs are lowered. Still, when an organization values transparency, patients will benefit more from an open, honest, and complete information from their health care providers.[111] For this reason, health care organizations are encouraged to build a culture of transparency. More importantly, joining transparency with good teamwork, and structured communication approaches can enhance the patient's experience. Substantiating further, Botwinick et al. are of the view that healthcare organizations that strengthen transparency in every area advance trust and ethical behavior; enlarge communications with patients and families; develop a system by which to line up quality and safety interventions, in that way enhancing the patient experience.[112]

Moreover, accountability is still an ethical principle that is crucial for a safety culture to develop. Sharpe states that accountability is an individual or organizational requirement that creates safe conditions for patient care as well as achieving justice for harmed patients.[113] Also, Bell et al. highlight the usefulness of collective accountability, that is, accountability that involves the individual clinician, the healthcare team, as well as the institution.[114] Consequently, Wachter and Gupta argue that disclosure of adverse events, regulatory and accreditation solutions, as well as increasing emphasis on public reporting, are ways of promoting collective accountability in healthcare organizations.[115] Similarly, Ghazal et al. stress on full disclosure of a medical error as an important aspect of accountability. Thus, healthcare givers have an ethical duty to reveal information that patients need for informed decision making.[116]

Regarding the monumental errors that impact the environment and health of the Niger Delta people, are there ways that the application of the patient safety models and principles can help in bettering the Niger Delta problems?

5.1.2.1 Applying Patient Safety Models/Principles to Environmental Issues in Nigeria's Niger Delta Region

As discussed in the previous chapters, Nigeria's Niger Delta region hosts the bulk of hydrocarbon reserves. However, instead of its blessing to the people, it is now a curse. The Niger Delta region has suffered intensely from a high level of water, air, and thermal pollution. Environmental pollution and degradation from oil exploration activities have produced severe political, economic, socio-cultural, health as well as other development challenges of national and international dimensions.[117] For many years, the Niger Delta region has been a port of call of environmental conflicts, caused mainly by the phenomenally growing magnitude of environmental insecurity that has manifested in various forms of threats and contradictions

ensuing from the absence or ineptitude of regulating machinery.[118] Hence, the "Nigerian Guardian Newspaper" reports that the Niger Delta predicament is, without doubt, the most compelling expression of the failure of the Nigerian State. The region's calamity has become the sore of the nation, cancer that may eat into the delicate bonds that keep this polyethnic nation together. The region is so gifted with abundant petroleum resources, but regrettably, it is the only region that has benefited the least from the oil resources. The region has remained one of the most poverty-ridden, crisis-prone, as well as underdeveloped parts of the country because a greedy ruling elite has made them so.[119]

Buttressing on this ugly situation, Wangbu advances that the crises in the Niger Delta region rotate around some outstanding essential issues such as environmental pollution and destruction, legislation of disempowerment and subjugations, politics of marginalization and exclusion, social and political exclusion, as well as Land Use Act (1978). The promulgation of Decree No. 51 of 1969 and Land Use Act of 1978 that transfer the ownership of the totality of petroleum products of the Niger Delta as well as the land ownership in Nigeria to the Federal Government and its accredited agents remained one of the significant root causes of the Niger Delta problems. These decrees are steadily arranged to dispossess the Niger Delta people of ownership and occupancy rights to their oil wealth. These are major problems affecting the Niger Delta region, which the Nigerian government has not been able to solve since the discovery of crude oil in 1956.[120] Thus, this dissertation warns that the continuous focus on maximum exploitation of natural resources in the region with little regard for resource conservation and sustainability must stop.

Meanwhile, the condition in the region has worsened due to a lack of safety measures that are not in place. There is a weak legal framework that regulates a safe and decent environment for

the people. Correspondingly, there is a lack of transparency and accountability on the parts of the various federal and state ministries saddled with the protection of the environment. Subsequently, Nwafor observes the problems of these ministries as a lack of inter-ministerial co-operation and co-ordination, the existence of numerous overlapping functions, weak institutional capacity, lack of funding, and bad governance.[121]

It is based on the above synopsis of the Niger Delta crises that this dissertation considers it fit to adopts the patient safety models and principles to address these environmental issues in Nigeria's Niger Delta. Thus, Macchi et al. describe safety models as the background, fundamental assumptions directing the understanding of how an organization functions and fails. Within the organization, the safety management system has been integrated into the management system of the organization for assessing and ending risks and ensuring prerequisites for safety throughout the organization. With the development of technology and with the increased complexity of the industrial world, safety models became more and more advanced.[122] However, as system complexity has improved over time, many accidents or environmental issues have not only resulted from such trigger events; instead, these accidents occur as complex phenomena within normal operational variability of a system.[123] In the opinions of Underwood and Waterson, unfolding accidents in a sequential manner are insufficient. Also, it can lead to equipment or humans at the sharp end of a system being erroneously held responsible for an accident. Of course, this signifies a missed opportunity to learn vital lessons about system safety as well as preventing the accident from re-occurring.[124] With the systems thinking model, there is an acknowledgment of human condition, namely, that human errors are inevitable. Therefore, there is a need to supply safety measures by creating systems that forestall errors and either avoid or catch them before they cause harm.[125] The new field of systems analysis (Swiss Cheese)

suggests that systematic failures or accidents happen from a series of events at various layers of an organization.

Still, one of the fascinating aspects of the Swiss cheese model, which this dissertation has found more useful for the environmental/health issues in the Niger Delta, is the root cause analysis. This model, as used in healthcare organizations, insists that medical errors should be scrutinized from their root causes (that is, the underlying conditions that made an error possible) and not just the smoking gun, sharp-end error.[126] For Emanuel et al., the root cause analysis (RCA) method urges for the investigation of what went wrong when an adverse event has happened. This method is known as retrospection. The root cause analysis method tries to find out what original features of a situation contributed to an adverse event. The root cause analysis approach reviews data and conducts interviews to detect and recognize all contributing causes to restructure the systems to make them harmless in the future.[127] Apart from RCA, another distinctive method of patient safety is prospective. This method deals with the prevention of adverse events in the future. It tries to forestall and avert adverse events through safety design. This action is called "failure modes and effects analysis" (FMEA).[128]

So, a root analysis of the ecological problems in the Niger Delta region is paramount. Like the various medical errors in the healthcare system, human errors from several Nigerian leaders, multinational oil companies, and saboteurs have caused an unhealthy environment for the people of the Niger Delta. For instance, oil pollution in the region results from weak environmental policies, poor maintenance of pipes, breaking of pipelines, tanker accident, oil well blowout, human error, or illegal bunkering, etc. [129] Therefore, this dissertation expects all the major players to address the Niger Delta environmental crises from their roots. Again, this dissertation proposes the need to address perplexing issues like the ecological consequences of oil extraction

and the state of development in the region; the revenue sharing formula in the country about oil-producing nations; the inequitable power relations rooted in the production of oil; the obnoxious laws of marginalization against the region to mention but a few. The complex nature of Niger Delta problems calls for the Nigerian government, the multinational companies, and environmental protection agencies to deal with the various parts that make up the whole. Like the precautionary principle that has been talked about in chapter four, the systems thinking model requires us to catch errors before they happen or block them from causing damages to the environment. It offers us a way to look more deeply at why accidents occurred and to be able to learn from those incidents. Of course, to learn from one's mistakes is one of the critical patient safety principles.[130] Learning from one's mistakes and making proper use of the knowledge acquired is key to success. Therefore, this dissertation urges the Nigerian government to not only do a retrospection of the Niger Delta crises but to design a concrete plan that will project the Niger Delta region to the next level of development. Identifying the root cause of a problem is one thing, proffering solution to that problem is another. So, both the retrospective and prospective methods that emanate from the patient safety model are useful in the face of Nigeria's Niger Delta environmental/health issues. In addition, the systems thinking model boosts adequate teamwork and communication. Both the Nigerian government and the Niger Delta people must work together as a team towards the meaningful development of the region. There is no proper communication between the government and the people. Lack of team spirit and adequate communication have worsened the situation in the region.

Furthermore, the ethical principles that promote patient safety cultures like respect for human dignity, non-maleficence, utility, justice, transparency, and accountability must be underlying principles that shape the laws and policies that help to safeguard the Niger Delta environment.

Treating the Niger Delta people with their inalienable human rights and dignity is crucial. Hence, obnoxious systems that hindered the rights to life, health, and a safe and decent environment must be discouraged. Environmental degradation that perpetrates continuous harm to the people and their environment must be given urgent attention without any political gimmick. Again, the principle of utility targets the population and not individuals. The crises in the region had continued because the Nigerian government and the various oil firms are very good at compensating few elites at the detriment of the entire people. Thus, this dissertation goes further to request that the Nigerian government, as well as the multinational oil companies, should proffer solutions that reach the most significant benefit for the most significant number of people. Also, the Nigerian government should act justly to the Niger Delta environmental problems by providing laws that are fair to the Niger Delta people. Justice hint at fair, equitable, and proper treatment to the people. Distributive justice demands that the Niger Delta people should not only bear the burdens from oil exploration but should equally receive help from oil wealth. Of course, there can be no justice without transparency and accountability. Nigerian leaders are advised to be transparent and accountable to the people. Corrupt practices have kept the nation at a standstill. Therefore, it is now time for leaders to be accountable to the people over the oil wealth from the Niger Delta region.

5.2. Systems Approach for Clinical Trials

The previous section of this chapter has provided overwhelming evidence that a good number of patients are wounded or harmed while receiving health care. This is even worst in the Niger Delta region, where oil exploration and exploitation activities are vital contributors to the disease burden. Therefore, in the bid to give solutions to these health-related problems, many of

the developed countries of the world have invested so much money in the health care system to identify the medical treatments of the highest value. Nevertheless, the implementation of clinical trials, whether in developed or developing countries, involve a rigorous approach founded on scientific, statistical, ethical, and legal considerations. However, there are a lot of aberrations in the conduct of clinical trials in developing countries. Ethical standards and guidelines for conducting clinical trials with human subjects are being compromised, thereby enhancing the exploitation of the vulnerable population. Thus, this section of the dissertation considers it pertinent to set up an ethical framework that will guide the conduct of clinical trials in the Niger Delta region to overcome the exploitation of vulnerable people.

5.2.1 The Notion, Types, and Phases of Clinical Trials

1. The Notion of Clinical Trials:

James Lind is often regarded as the father of clinical trials. This is because, in 1747, he introduced control groups and documented that citrus fruits in diet could prevent scurvy. However, from 1800 onwards, clinical trials had become common. In 1863, placebos were used, and the idea of randomization was introduced in 1923. But then, it was in 1948 that the Medical Research Council, United Kingdom conducted the first trial using a properly randomized treatment, blind assessment, and control groups. So, control, randomization, and blinding are the three bases of clinical trial design.[131]

Therefore, a clinical trial can be defined as a potential, biomedical or behavioral research study of human subjects that is planned to answer definite questions about biomedical or behavioral interventions such as drugs, treatments, devices, vaccines, or new ways of using known drugs, treatments, or devices. Clinical trials are used to control whether new biomedical or behavioral interventions are harmless and effective.[132] Clinical trials are crucial steps in drug

development and are conducted all over the world, both in developing and developed nations. Trials *per se* are not immoral, and there are a variety of reasons to conduct responsible clinical trials in low and middle countries.[133] Clinical trials are research studies that take in patients or healthy people and are intended to test new treatments. Clinical trials are carried out to answer specific questions about health and illness. They aim to find the best ways to: avoid disease and reduce the number of people who become sick to advance survival or increase the number of people cured.[134] So, the overall goal of clinical trials is to help researchers in figuring out what works as well as what does not work in medicine and health care. Clinical trials are usually designed to answer two fundamental questions, namely, "Does the new treatment work in human beings?"[135] Is the new treatment safe for human beings?

2. Types/Phases of Clinical Trials**:**

There are five different types of clinical trials, according to Farmer. They include treatment trials, diagnostic trials, preventive trials, quality of life trials (supportive care trials), and screening trials. Treatment trials deal with experimental treatments, new mixtures of drugs, or new methods to surgery or radiation therapy. Diagnostic trials are carried out to find improved measures for diagnosing a specific disease or disorder. Preventive trials are done to arrive at improved ways of avoiding disease from those who have never had the disease as well as preventing the disease from returning to the people. Preventive trials might take different measures, which include vaccines, medicines, minerals, vitamins, or lifestyle changes. Quality of life trials (supportive care trials) looks for better ways to advance the comfort as well as the quality of life for patients with a chronic disease.[136]

As soon as preclinical pharmacology and toxicology are done, an image would have set up in lower mammals of the dose of a new active substance essential for a therapeutic effect, its

pharmacokinetics, and how this relates to the determined nontoxic dose. However, since results from animal studies cannot be correctly trusted to predict the human condition, the next step, therefore, is to take the drug into the clinic. The testing of new active substances in human beings is done in different phases.[137] Thus, clinical trials are divided into four (4) phases according to the different types, be it prevention trials, diagnostic trials, treatment trials, screening trials, and quality of life trials.[138] These phases are instrumental in gaining a comprehensive view of drug development, for instance, and each phase entails a different method to trial design. Also, it is important to be aware that the phases overlap, which means that the phase I studies may be continuing while phase II has already started. More importantly, the 'International Conference on Harmonization' (ICH) and 'Good Clinical Practice' (GCP) guidelines apply to studies of all phases in clinical trials. [139] The phases are examined below:

Phase I: Phase I clinical trials are carried out on healthy volunteers. Healthy people are used to circumventing the perplexing influence of other diseases as well as other medications.[140] It tests the new biomedical intervention in a small group of people between twenty to eighty for the first time to assess safety, not efficacy. The first aim of this phase is to determine an acceptable single drug dosage. How much drugs can be administered without any serious side effects is determined at this stage. Also, phase 1 encompasses studies of drug metabolism and bioavailability as well as studies on several doses that help to determine proper dose schedules for use in phase II. This phase helps to show the safety and toxicity profile of the test drug.[141] In sum, the pre-occupation of phase I is to answer the main question: Is the new treatment or drug safe? For this reason, it goes further to generate data on plasma concentrations as well as on pharmacodynamic activity, lengthening understanding of the bioavailability of the drug, its clearance policies, metabolites, and other vital issues relating to its behavior in human beings.[142]

Phase II**:** Phase II clinical trials study the biomedical or behavioral intervention in a bigger group of people at least several hundred to find the effectiveness and to further assess its safety. Apart from safety, phase II is designed to answer this question: Does the new treatment or drug work? if a new treatment is discovered to be practically safe, then the next thing in phase II is to find out if it works.[143] Thus, phase II clinical trials involve drug trials with a few numbers of patients that suffer the disease of interest.[144] It is generally the first time that patients, rather than volunteers, are exposed to the drug.[145] For Pocock, phase II trials can occasionally be set up as a screening procedure to choose those fairly few drugs of unaffected potential from the greater number of drugs which are over-toxic or inactive, so that the selected drugs may continue to phase III. This phase is called initial clinical investigation for treatment effect.[146] Phase II studies are carried out in units with specialist investigators and will involve earlier regulatory approval as well as ethics committee approval.[147]

Phase III**:** Phase III is faced with this question: Is the new treatment or drug better than what is already available? Therefore, phase III studies examine the effectiveness of the biomedical or behavioral intervention in large groups of human subjects at least from several hundred to several thousand by relating the intervention to other standard or experimental interventions. In addition, this phase monitors hostile effects and collect information that will allow the intervention to be used safely. It is usually an extended and more focused studies of clinical effectiveness and safety.[148] It is based on this that some people synonymously used the term 'clinical trial' for a full-scale phase III trial. This phase remains the most difficult and wide-ranging type of scientific clinical study of a new treatment. Also, one fundamental rule is that phase III trials are comparative. This implies that one needs to relate the experience of a group of patients on the new treatment with a control group of similar patients receiving standard

treatment. Again, to attain an unbiased assessment of the value of the new treatment, it is better to allocate each patient randomly to either new or standard treatment. This process is known as a randomized controlled trial, which is generally the most unfailing method for conducting clinical research.[149]

Phase IV**:** The question here is: What else do we need to know about the new treatment or drug? Phase IV is being referred to as post-marketing surveillance. As soon as a full-scale evaluation treatment has been done in phase III, in phase IV, a drug is approved for marketing. So, post-marketing clinical trials are usually conducted after a drug has been marketed. This phase is being designed to check the effectiveness of the approved intervention in the general population and to collect information about any hostile effects associated with general use. Also, this phase determines other comprehensive, long-term studies of morbidity and mortality. In addition, phase IV is from time to time used to describe promotion exercises intended to convey a new drug to the attention of a huge number of clinicians.[150] However, at this phase of the clinical trial, the drug has been licensed for treatment, and its usage is constantly checked for adverse effects.[151]

5.2.1.1 Significant Participators in Clinical Trials and their Roles

This section scrutinizes the responsibilities of the drug regulatory authority, sponsor, investigator, monitor, clinical trial services providers, trial participant, and institutional research board/independent ethics committee as major participants in clinical trials. However, this dissertation elaborates more on the institutional research/independent ethics committee because of its unique role in clinical trials.

1. Drug Regulatory Authority: The drug regulatory authority is present in every nation of the world with their different names. For example, Food and Drug Administration (FDA) for the

United States; European Agency for the Evaluation of Medicinal Products (EMEA) for the European Union; the Ministry of Health, Labor and Welfare (MHLW) for Japan; the National Health Sanitary Surveillance Agency (ANVISA) for Brazil; Health Canada for Canada; the National Agency for Food and Drug Administration and Control (NAFDAC) for Nigeria; the Central Drugs Standard Control Organization (CDSCO) for India, etc. The drug regulatory authority has the responsibility of reviewing and approving clinical trial protocols as well as ensuring that every clinical trial follows the national regulations and international guidelines.[152] Clinical trial protocol as a document defines the goal(s), design, method, organization, and statistical considerations of a trial. The trial protocol offers the background and rationale for every trial that is to be embarked upon.[153] The drug regulatory authority ensures quality assurance in the development of new medicines, as well as the production, distribution, labeling, and safety monitoring of medicines, including medicines that are already registered.[154]

2. Sponsor: The sponsor could be an individual or pharmaceutical manufacturer, research institute, or private organization that takes responsibility for and conducts the clinical trials.[155] The Sponsor starts a clinical trial by obtaining permission from the drug regulatory authority or authorities of other countries, depending on the nature of the trial. The overall responsibilities of a clinical trial sponsor include initiating a clinical trial plan as well as submission to the regulatory authority or authorities for approval; development of clinal trial protocol and ensuring that the competent ethics committee properly reviews the trial protocol; selection of qualified investigators as well as provision of complete information to them about test article, its safety and instructions for proper use; financing and management of clinical trial. The sponsor supplies all the facilities and ensures that staff is properly trained, checking of a clinical trial to ensuring

that the trial protocol is being followed, a constant review of adverse events, as well as maintenance of correct trial records.[156]

3. Investigator: The role of the investigator is to conduct or supervise clinical trials. The investigator such as physicians as well as other professionals qualified by training and experience, assist in preparing a general outline of the planned studies that stipulates the period of the study, number of human subjects that would participate in the trials and clinical observations and laboratory tests that would be carried out.[157] According to the ICH GCP Guideline, "the investigator(s) should be qualified by education, training, and experience to assume responsibility for the proper conduct of the trial."[158] Every so often, there is an investigative team comprising of the investigator (principal investigator), one or quite a few investigators, one or some study nurses, etc. Also, the investigative team can belong to academic medical centers, public hospitals, outpatient clinics, commercial research centers, private organizations, and private practices. Nevertheless, the investigator as the responsible leader of the team has the following duties: protecting the rights and well-being of the participants; ensuring that the clinical trial is reviewed by the ethics committee; informing the ethics committee of any adverse events as well as reviewing and reporting any adverse event during the trial; ensuring that the protocol, the Good Clinical Practice, and other guidelines are followed accordingly; protecting participant's identity as well as ensuring that an ongoing informed consent process is carried out for the participants.[159]

4. Data Safety Monitoring Boards: The monitors oversee the quality and integrity of data gotten from clinical trials and the rights and safety of human subjects that are involved in the study. The monitor has the duty of regularly visiting the clinical site to confirm that clinical trials are performed following the arranged plan and that the investigators have followed the stated

guidelines. Also, the monitor reviews the investigator's report and give the same to the sponsor.[160] The monitoring committees aid in evaluating at intervals the progress of a clinical trial, safety data, and critical efficacy endpoints and make a recommendation to the sponsor whether to continue, adjust, or stop a trial. The ethics committee gains much useful information from regular feedbacks from the monitoring committee, which has helped in ensuring that risks trial participants are kept to a minimum.[161] Data safety monitoring boards are used for phase III (and some earlier phase) studies. They are committees made up of doctors and other scientists not involved in the study.[162]

5. Clinical Trial Services Provider: Over the past two decades, the outsourcing of tasks related to clinical trials has increased tremendously. Such outsourcing services can be related to the pre-clinical testing phase, such as animal studies. However, during the main clinical phases, the services given by clinical research organizations can be in the form of project management, trial monitoring, and medical statistics work. In the meantime, there are thousands of clinical research organizations acting as service providers globally. They act as independent companies offering research services for biotech and pharmaceutical industries.[163]

6. Trial Participant: Trial participants are generally engaged from an ordinary pool of patients at the trial site, but occasionally by referral from other health centers or through local advertisements. Though some clinical trials are conducted on healthy volunteers or healthy participants, for instance, studies on preventive medicinal products like vaccines, or when the product is tested for the first time in human subjects, for drug safety and dosage to be found. Of course, these healthy volunteers are normally paid for their involvement in clinical trials. This is because they do not derive any therapeutic benefit from their participation in the study. However, most clinical trials consist of participants with a certain disease that is the target for the test drug,

diagnostic tool, or device. Whether healthy or unhealthy, participation in a clinical trial is voluntary, and participants do not usually have to pay any hospital fees during the period of a trial.

7. Institutional Research Board/Independent Ethics Committee

According to Talbot and Perou, "Institutional Review Boards are the North American (IRB) equivalent of Independent Ethics Committees of Europe (IEC)."[164] Some authors called it the Research Ethics Committee (REC).[165] This implies that the three terms can be used interchangeably. The role of the ethics committee for clinical trials involving human subjects is of utmost importance. Therefore, the ethics committee is a body that is recognized under laws, regulations, and codes to defend the rights and welfare of human subjects. In the views of Eccles et al., this is necessary because research connecting human subjects puts people at risk. Although people are usually exposed to risk, in clinical research, people are exposed to risk in large part for the therapeutic benefit of others. The risks may be physical, social, economic, legal, psychological, or dignitary. Therefore, it is the responsibility of the ethics committees to guarantee that the liberty and well-being of the human subjects are protected and that national and international ethical and legal requirements are maintained.[166] It is based on this important task that the World Health Organization encourages countries, communities as well as institutions to form ethics committees and ethical review systems that safeguard the widest coverage of protection for potential human subjects.[167] So, section 3.1.1 of the ICH GCP guideline states that an IRB/IEC should protect the safety, right, and well-being of all trial subjects. Moreover, special consideration should be given to trials that may include vulnerable subjects. At the same time, the committee will aid in contributing to the maximum achievable quality in science cum the ethics of biomedical research. The IRB/IEC are relevant because they

guarantee that all the proper measures take place, without any legal or ethical deviations. The IRB/IEC assess research proposals with attention to risk and benefit ratios as specified clearly in the Declaration of Helsinki: that the research protocol must be submitted for discussion, comment, guidance, and authorization by a research ethics committee before the study begins.[168] Also, the ethics committees safeguard the protection of research participants, as well as providing the needed information for autonomous consent from the participants. Their responsibility is equally to educate researchers and the community to be conversant with the ethics of research.[169] Also, the ICH GCP document stipulates that the committee (or board) should have a sensible number at least five, who have the qualifications and experience to assess and review science, medical aspects as well as ethics of the proposed trial. Also, the document recommends that the committee should have at least one member whose principal interest is non-scientific and one member who is autonomous of the trial site/institution.[170] In line with the ICH GCP proposal, Perrey et al. recommend a multidisciplinary and multi-sectarian representation in the committees. Diversity among members of the ethics committees about their knowledge and experiences will lead to a comprehensive review. Thus, the committee (or board) should include clinicians, ethicists, lawyers, social scientists, economists, philosophers, representatives of religious or political groups, nurses, and patient groups to limit ideological conflicts.[171] In addition, a balanced ethics review approach must begin with the evaluation of the risk of harm and potential benefits associated with the research. Thus, the concept of 'minimal risk' offers the basis for such a balanced review. A minimal risk connotes a situation where the probability, as well as degree of harm and discomfort expected in research, are not more than those normally met in daily life or during the performance of routine duties.[172]

Furthermore, it is recommended that the committee or board should have written operating procedures and keep written records of its events and minutes of its meetings to comply with GCP. Moreover, all protocols given should be considered at announced meetings, and only members who are present for the discussion may vote. The IRB/IEC shall review documents such as the investigator's brochure, protocol, informed consent form, safety information on the investigational product, and subject information leaflet. The committee or board will assess and review these documents and decide whether the research proposal is ethical.[173] Among other functions, Cohen and Posner would say that subject safety and scientific integrity of the protocol are the core concerns of the committee.[174]

Again, it is the responsibility of the committee to consider the qualification of the investigator, the suitability of the site as well as the continuous review of each on-going trials to find the degree of risk to the trial participants. The IRB/IEC should as well review both the amount and method of payment to the trial participants. More importantly, no trial participant should be admitted to a trial before the IRB/IEC written approval/favorable opinion. Again, no changes or deviation to the protocol to be started unless there is a written approval/favorable opinion of the IRB/IEC. However, there are two exceptions to this rule. First, for the reason of safety, an immediate change to the protocol is important. Nevertheless, the ethics committee should be informed within three days after the implementation of the changes. Second, the committee or board should only be notified where there are logistical or administrative changes in the protocol, for instance, a change of telephone number or email address.[175] The sponsors of studies do the funding of the ethics committee.

Above all, ethics committees as an independent body should always make an unbiased decision, directed by the type of study, on the balance of benefits and harms to study research subjects, the need for informed consent, as well as the need for other safeties.[176]

5.2.2 Clinical Trial as a Global Bioethics Problem or Concern

The globalization of clinical research is, in fact, a reality that must be addressed in global bioethical discourse. The globalization of clinical trials, especially as the human subject, is involved in ethical and scientific concerns. From the global perspectives, Karlberg and Speers state that there are a whole lot of ethical challenges or issues surrounding the clinical trials. These include risk-benefit balance, informed consent process, privacy and confidentiality, scientific evaluation of a clinical trial protocol, vulnerable participants, safety monitoring, secondary analysis of clinical database, participant recruitment procedures, qualification of investigator and research staff, clinical trial registration, financial conflict of interest, dissemination of trial results, clinical trial insurance and indemnity, essential clinical trial documents as well as the operation of the ethics committee.[177] Based on these ethical concerns, this section examines the global benchmarks for clinical trials and the nature of clinical trials in developing countries. The purpose is to provide the global guidelines for the above problems as well as disapproving clinical trials in developing nations that downplay ethical standards.

1. Global Benchmarks for the Ethical Conduct of Clinical Trials

Quoting H. Bloch, Ignoumenidis, and Zyga aver that history overflows with examples of people with power using humans as guinea pigs. They relate that in the ancient time, King Mithridates V1 of Pontus being afraid of poison revealed one of the most well-known remedies

by experimenting with diverse ingredients and trying them out on condemned prisoners. Likewise, when King Louis X1V of France became ill, many of the people with similar symptoms were used by the royal surgeons for the experiment. Many of them died in the process, and they were able to gain insights to carry out a successful operation on the king. In addition, Nazi human experimentation, which took place in the concentration camps during the Second World War, is another typical example. Nazi human experimentation was considered as the Doctor's Trial. With all the atrocities committed by medical researchers in Germany for using involuntary vulnerable participants drawn from Nazi concentration camps, the 1947 Nuremberg Code was established as the first universal document governing human subjects.[178] So, the Nuremberg Code underscored, for the first time, the principle of informed consent. Again, the World Medical Association (WMA) further developed the ethical principles laid down in the Nuremberg Code. Its deliberations in due course found expression in the Declaration of Helsinki.[179]

Apart from the Declaration of Helsinki, there exist several documents that prescribed guidelines for the ethical conduct of clinical trials and research in general, such as the Nuffied Council on Bioethics. The Ethics of Research Related to Health Care in Developing Countries; Council for International Organization of Medical Sciences (CIOMS). International Ethical Guidelines for Biomedical Research Involving Human Subjects; World Health Organization (WHO). Standards and Operational Guidelines for Ethical Review of Health-Related Research with Human Participants; and the ICH GCP Guideline.[180] However, this dissertation will examine the general ethical requirements of clinical research, as outlined in the Declaration of Helsinki and the ICH GCP Guideline. The choice of these two documents is partly because of

their emphasis on the human research ethics code of practice as well as the scope of this dissertation.

a. Declaration of Helsinki

The 1964 Declaration of Helsinki by the World Medical Association is the first set of ethics rules for research in human beings.[181] This vital document, as developed by the World Medical Association (WMA), is accepted globally as the basis for ethical research.[182] In like manner, Talbot and Perou opine that the Declaration of Helsinki is an essential document in the field of human ethics, and it bolsters the principles of ethical decision-making in biomedical research in the whole world.[183] The Declaration of Helsinki consists of thirty-two (32) paragraphs that are divided into four (4) sections: introduction, basic principles for all medical research, medical research combined with clinical care (clinical research), and non-therapeutic biomedical research connecting human subjects (non-clinical biomedical research). Given below is the summary of the basic principles of medical research involving human subjects:

1. Biomedical research connecting human subjects must follow to generally recognized scientific principles and should be founded on sufficiently performed laboratory and animal experimentation, and detailed knowledge of the scientific literature.

2. The design, as well as performance of each experimental process involving human subjects, should be articulated in an experimental protocol, which should be communicated for consideration, comment and guidance to a specially selected committee autonomous of the investigator and the sponsor, given that this autonomous committee is toeing the line with the regulations and laws of the country, in which the research experiment is carried out.

3. Medical research connecting human subjects should be directed only by scientifically trained persons and under the supervision of a clinically experienced medical personnel. The concern for the human subject must always rest with a medically competent person and never rest about the research, even though the participant has given his or her consent.

4. Unless the importance of the aim is in proportion to the inherent risk to the subject, biomedical research connecting human beings cannot justifiably be carried out.

5. Every medical research project linking human subject should be shown by careful assessment of foreseeable risks, in comparison with anticipated benefits to the subject or others. On this, concern for the interests of the participant must always triumph over the interests of society and science.

6. The right of the research subject to defend his or her integrity must always be appreciated. Every form of precaution should be taken to respect the privacy of the human subject, as well as to lessen the influence of the study on the subject's physical and mental integrity and the personality of the subject.

7. Physicians should refrain from engaging in research projects linking human subjects, except they are pleased that the risks involved are believed to be foreseeable. Physicians should end any investigation if the risks are found to outweigh the potential benefits.

8. The physician is obliged to preserve the correct results of his or her research during publication. Reports of experimentation, not in agreement with the principles stipulated in this Declaration, should not be recognized for publication.

9. In carrying out any research on the human being, it is appropriate that each potential participant should be informed of the aims, methods, expected benefits and potential hazards of

the study, and the discomfort it may need. Also, the participant should be informed that he or she is at liberty to refrain from partaking in the study and that he or she is free to remove his or her consent to participation at any time. The physician should then reach the subject's freely-given informed consent, preferably in writing.

10. When gaining informed consent for the research project, the physician should be conscientious if the participant is in a hooked-on relationship to him or her or may consent under force. In that situation, the informed consent should be obtained by a physician, who is not engaged in the investigation, and who is entirely independent of this official relationship.

11. In the case of legal ineptitude, informed consent should be obtained from the legal guardian following national legislation. Also, when the subject is a minor or where the physical or mental ineffectiveness makes it unbearable to attain informed consent, permission from the responsible relative replaces that of the subject, in harmony with national legislation. Again, when the minor child is, in fact, able to give consent, the consent of the minor must be obtained plus the consent of the legal guardian of the minor.

12. The research protocol should always contain a statement of the ethical considerations involved and should indicate that the principles articulated in the present Declaration are fulfilled.

Also, Jemec and Sohl indicate four key elements that are contained in the Declaration of Helsinki. They include scientific design, a risk-benefit evaluation, informed consent, and independent review. For Jemec and Sohl, any good scientific design will allow the researchers to answer appropriate questions with minimum risk to his fellow human beings. Risk and benefit are essential elements of any ethical investigation. An element of motivation is vital for society

and individuals to take the unavoidable risks connected with clinical trials. Informed consent is a process that offers the basis for a completely informed choice by a self-determining autonomous person, and all the requirements are envisioned to protect the autonomy of the individual. Therefore, informed consent must be informative, understandable, competent, and free. The independent review (ethics committee or institutional review board), as treated above expresses the procedures required by the Helsinki Declaration as well as other regulations that govern clinical trials.[184] Even though the Declaration of Helsinki was undoubtedly a product of the World Medical Association (WMA), the values and principles that this document represents are now shared by the world community as the basic ethical reference for global medical research. Also, this document is not a guideline or a set of rules, but it is envisioned to be a set of principles defining the standards that should apply to biomedical research globally. In addition, the Declaration of Helsinki is not a legally binding document; its principles have been integrated into the law of some countries of the world. At the same time, it is regularly used as an appendix to research contract documents.[185]

In the final analysis, the principal objective for conducting clinical research globally is to advance generalizable knowledge to improve health and/ or increase understanding of human biology, human subjects who participate are the means to securing this knowledge. Therefore, the global ethical requirements for such a trial must be to lessen the possibility of exploitation by guaranteeing that research subjects are not used but treated with respect while they contribute to the social good.[186]

b. The ICH GCP Guideline

The ICH GCP Guideline was issued in 1996 by the International Conference on the Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use,

which comprises of the European Union, Japan, and the United States of America. The goal of harmonization is to eradicate meaningless delays in the global development and accessibility of new medicines while upholding the quality, safety, and efficacy of those new products. The harmonization's goal is also to ensure regulatory requirements that protect public health. The ICH GCP's newest version was launch in 1997, and it has become the leading international guideline for the conduct of clinical trials.[187]

So, the ICH GCP Guideline defines "Good Clinical Practice" as a standard for the design, conduct, performance, analyses, auditing, monitoring, recording, as well as reporting of clinal trials that offer a guarantee that the data reported results that are trustworthy and exact, and that the rights, integrity, and confidentiality of trial participants are protected (see section 1.24). In other words, good clinical practice regulations are designed to protect the rights and safety of human subjects participating in clinical trials as well as ensuring the quality and integrity of biomedical research and test data obtained from clinical studies submitted to the regulatory agencies.[188] Besides, the first principle of ICH GCP insists that clinical trials should be carried out in agreement with the ethical principles that have their origin in the Declaration of Helsinki and that are consistent with GCP as well as the relevant regulatory requirement(s) (see section 2.1).[189] Therefore, the general purpose of 'Good Clinical Practice' is to protect the rights of subjects and guarantee the accuracy of data collection. The ICH GCP document is comprehensive and offers united standards for the European Union, Japan, and the United States to enable the mutual acceptance of clinical data by the regulatory authorities of those jurisdictions. Apart from the European Union, Japan, and the U.S, the ICH GCP is viewed as a global ethical and scientific standard for designing, conducting, recording, as well as reporting trials that involve the participation of human subjects.[190] The ICH GCP document because of its

broad nature includes detailed sections listing the tasks of the sponsor, investigator, monitor, and the institutional review board/independent ethics committee as key players of clinical trials.[191]

5.2.2.1 Clinical Trials in Developing Nations Vis-à-vis Ethical Principles for Conducting Clinical Trials in the Niger Delta Region.

5.2.2.1.1 Clinical Trials in Developing Nation

No doubt, there are various barriers to conducting clinical trials in developing countries. Alemayehu et al. identify a lack of financial and human capacity, lack of research environment, ethical and regulatory system obstacles, operational barriers, and competing demands as major barriers for conducting clinical trials in developing countries.[192] Notwithstanding these barriers, Ten Have asserted that "outsourcing clinical trials in developing countries can speed up the research process and therefore possible approval of the new medication."[193] Also, the conduct of clinical trials in developing countries could be driven by great concerns to help developing countries challenge health care problems, thereby reducing the inequality in global health research expenditures.[194] But then, the clinical trial becomes "problematic if it targets vulnerable populations that do not benefit or are possibly harmed since different ethical standards are applied."[195] It is frequently reported that clinical trials in Africa are not always directed according to important ethical guidelines. This places research participants at risk of being harmed or having their rights dishonored.[196] However, on this unethical behavior, Johnatty warns that trials in developing nations should not become a new form of neo-colonialism. Instead, she

encourages researchers to see their role as assisting, guiding, and teaching, but not taking control.[197] Of course, these problematic ethical issues in the conduct of clinical trials have gained disrepute in the wake of the globalization of biomedical research. These issues have involved much attention in recent years, necessitating many recommendations by the NBAC and the Nuffied Council on Bioethics.[198]

Nevertheless, due to the strictness of the Food and Drug Administration (FDA) in Europe and America, so many clinical trials have moved to low and middle-income countries. Although the strictness of the FDA may not be the only reason.[199] However, Finkenbinder declares that the conduct of the clinical trial in developing countries exploits and takes advantage of the abundant research subjects, low level of regulation, poverty and disease, and relatively cheaper cost of clinical trials.[200] In fact, recruiting an adequate number of patients in the developed countries remains the main blockage for medical research; hence companies have turned to low and middle-income countries where they can easily recruit participants to carry out trials. Likewise, operational costs in developing countries are low, and there is a huge number of "treatment-naive" patients. Financing a clinical trial is the key driver behind the outsourcing of clinical research in developing countries. Whereas it costs about $20,000 to recruit a single subject in American clinical research, it only costs about $2,000 per subject in places like India.[201] A current study found that the 20 major US-based pharmaceutical companies were carrying out one-third of their clinical trials exclusively at foreign sites, while the mainstream of their study sites is outside the United States.[202]

Also, looking critically at the conduct of the clinical trials in developing countries, Dr. Baruch Brody of the Baylor College of Medicine, U.S.A, as mentioned by Johnatty, uses the concept of medical imperialism as a criticism against trials for the prevention of vertical

transmission of HIV in developing countries. Brody's criticisms border on injustice, coercion, and exploitation.[203] On the issue of injustice, Brody asks if it is fair to deny a control group life-saving therapy, especially when it is stipulated in the Declaration of Helsinki that the control group should be given assurance that they will not be deprived of access to the best treatment otherwise available to them. Also, Brody explains that some participants join a trial, not voluntarily. So, coercion means a threat and simply offering someone a great opportunity that seems not to be coercive even when it is. In addition, Brody reiterates that it is mostly acknowledged that clinical trials should perfectly be carried out in regions where the host community is expected to benefit from the positive result and where treatment will be made available. However, if the results are expected only to benefit the richer developed countries carrying out the trial, then the host community is being exploited.[204] Stressing this further, Hawkins and Emanuel express that the real ethical abuse not obtaining valid consent or using placebos or not making available drugs confirmed active in the trial or appropriate alternative benefits is that it exploits the people in these developing nations.[205] For this reason, Emanuel et al. propose that clinical trials in developing countries must have the following features to be ethical: social or scientific value, scientific validity, a fair selection of research participants, minimization of risks and benefits, clinical equipoise, review of clinical trial protocol by a competent ethics committee, proper documentation of informed consent as well as respect for enrolled research participants.[206] Nevertheless, Brody warns that richer developed nations are obliged to carry out trials that benefit the human subjects in these nations despite the drawbacks.[207]

Meanwhile, regardless of the stipulations of the various documents dealing with medical research involving human subjects, this dissertation observes that some of the clinical trials that

are carried out in the developing are quite unethical. Consequently, there is a need for researchers to elucidate from the very beginning, whether the standard of care in research is universal or dependent on local circumstances.[208] At this time, countless factors attract public sensitivity to trials in developing countries. This includes the placebo-controlled trials that took place in many developing countries like South Africa, Ethiopia, Uganda, Tanzania, Kenya, Burkina Faso, Zimbabwe, Malawi, and Cote d'Ivoire (Ivory Coast).[209] It was conducted to test the efficacy of short-course zidovudine (AZT) in the reduction of perinatal transmission of HIV/AIDS. These clinical trials have generated a serious ethical issue of whether ethically unacceptable research in a developed country like the United States of America could be ethically suitable in a developing country like Nigeria, South Africa, to mention but a few. Another typical example of unethical conduct of the trial is the 1996 Pfizer's clinical trial in Nigeria that tested the efficacy of Trovan in dealing with epidemic meningitis.[210] In the bid to gain FDA support for the use of its new antibiotic Trovafloxacin Mesylate ("Trovan") on children, Pfizer sponsored a joint American and Nigerian physician team to administer Trovan to residents of Kano, Nigeria in April 1996.[211] The study was conducted at the Infectious Disease Hospital ("IDH"), and almost two hundred children were recruited to serve as test subjects for the new drug.[212] However, at the end of the experiment, eleven children had died, while others suffered a range of symptoms relating to meningitis, including deafness, seizures, lameness, and confusion. Besides, one of the participants was not able to talk or walk. Also, a ten-year-old girl continued to take Trovan for three days as her ailment get worse, only to die though still on Trovan.[213] Nevertheless, Pfizer has claimed "that none of the patients died as a result of the application of Trovan . . . any deaths were the direct result of the meningitis illness and not the treatment provided during the clinical study." [214] Pfizer was criticized for falling short of ethical

standards. The accusations were that Pfizer never gained ethical clearance before conducting the study; Pfizer did not obtain informed consent before recruiting participant and did not inform the study participants that the drug was experimental; Pfizer capitalized on the poor, illiterate and despairing situation of the people; and, Pfizer left the place after conducting the study even though the epidemic was continuing. On this ground, Pfizer was greatly indicted and later agreed to a $75 million out of court settlement.[215]

Again, the Drug Controller General of India announced that deaths during clinical trials numbered 288 in 2008, 637 in 2009, 668 in 2010, and 438 in 2011. From the report, some of the deaths are attributed to the medications, while others are attributed to illness. However, compensation was paid in only twenty-two (22) cases. Strong concerns have been expressed in the lay press and medical journals that these figures for trial-related deaths are underestimates. It was these concerns about the way clinical trials were carried out that resulted in a Supreme Court directed termination of regulatory approval for the conduct of clinical trials in the country. It was not until late 2013 that the Supreme Court of India permitted five pending trials that had been approved by the Drug Controller General of India, requiring that the informed consent process be audiovisually recorded. [216]

These above instances undoubtedly illustrate the exploitation of the vulnerable population. As mentioned earlier, it is to tackle this health problem that this dissertation has given due attention to this section of the chapter to work out an ethical framework that will be used in correcting unethical behavior in conducting clinical trials among vulnerable people, especially in the Niger Delta region.

5.2.2.1.2 Ethical Framework for Conducting Clinical Trials in the Niger Delta Region

It is an undisputed fact that Nigeria's Niger Delta region is the most vulnerable. This region is, therefore, the most attractive for researchers who are using human subjects for experimentation. According to the 1997 Explanatory Memorandum to propose European Clinical Trials Directive, it was said that "*ethics cannot be grafted on to a trial-it must be built in from the outset. Ultimately an ethical attitude must pervade the approach to clinical investigation, its establishment, and follow-through*."[217] In the opinion of Kasper, basic ethical principles for clinical trials are common, but their interpretation and understanding may vary slightly among cultures and countries.[218] Nevertheless, whether in developed or developing countries, the UNESCO principles that guide the discussion in this chapter are fundamental to direct researchers in the conduct of clinical trials. However, this section among others, emphasizes more on the principles of human vulnerability, autonomy/respect for personal integrity, respect for cultural diversity and pluralism, nonmaleficence, beneficence (sharing of benefits), and justice (distributive justice) must be utilized as ethical principles that govern clinical trials. This dissertation gives further explanation to the above principles because of considerable ethical challenges associated with international clinical trials in developing countries. As expressed by Lorenzo et al., such ethical challenges, among others, are justifying the medical and social relevance of the clinical trials to the host community, the quality of informed consent, the standard of care, and post-trial availability of interventions.[219]

a. The Principles Human Vulnerability, Personal Integrity/ Autonomy and Nonmaleficence (At Least do no Harm)

Human vulnerability and personal integrity or autonomy "are inter-related, and these terms are fundamental in the field of bioethical reflection and practice."[220] According to Ten Have and

Jean, the term "vulnerability" was brought into "the vocabulary of bioethics in the ambit of human experimentation… as those exposed to and poorly defended against the maltreatment and abuse of others."[221] In most cases, developing countries are considered a vulnerable population in research. Buttressing on this fact, Ten Have goes further to assert that "the notion of 'vulnerable population' is often used in connection to international research in developing countries."[222] He points out that people from developing countries are made vulnerable through "diminished autonomy."[223] Reacting to this, Beauchamp and Childress espouse that "to respect autonomous agents is to acknowledge their right to hold views, to make choices, and to actions based on their values and beliefs."[224] On this note, bioethics has tried to strengthen the principle of autonomy for informed consent. The principle of respect for autonomy entails respectful action. Respect for autonomy means recognizing the value and decision-making rights of autonomous persons and allowing them to act autonomously. Therefore, informed consent is still a dominant concept for any research with human subjects as far as the global ethics approach is concerned. Though informed consent is a key ethical principle, Acosta et al. mention that it differs among cultures. For instance, in some societies, authorization must be looked for from the community leaders, elders, or spouses before individuals are consulted as seen in the "Gambian Hib Vaccine Trial." Also, in China and Vietnam, the people's committees' approval was necessary before seeking individual consent from all potential adult participants and parents/guardians of children. Likewise, in Pakistan, religious leaders' approval precedes individual consent.[225] Again, substantiating these cultural variances about informed consent, the ethical reviewers from the World Health Organization have recognized that strict adherence to a Western-determined ethical model may be impossible in some cultural backgrounds. Hence, the decision-making process may always need to be tailored to local customs and cultures while

avoiding coercion and deception.[226] This is where the principle of respect for cultural diversity and pluralism is powerful. As noted above, cultural diversity is an ethical imperative that is not separated from respect for human dignity. It points toward a commitment to human rights and fundamental freedoms, specifically the rights of persons belonging to minorities. Again, human rights do not adopt one cultural standard, but to some extent, one legal standard of minimum protection required for human dignity. There is not one complete standard for all times and all human beings. Thus, the ability to understand the truth in the opinion of others is important to the ethics of discussion.[227]

Besides, Hawkins et al., while acknowledging informed consent as one of the universally recognized requirements for the ethical conduct of clinical research, pinpoint that all moral concerns about research must not be reduced to just concerns about consent. But then, the requirements for valid informed consent must include; that those likely human subjects who pass the requirements for decision-making ability should be requested to give consent. Nonetheless, when it is essential to join up with incompetent human subjects, consent must be obtained from a suitable surrogate. Again, there ought to be full disclosure of all proper information, and the human subject must then consent willingly. Otherwise, force and unwarranted enticement are all found as declining the voluntariness, and hence, the legitimacy of informed consent.[228] However, Ignoumenidis and Zyga observe undoubtedly that the concept of informed consent loses its relevance when putting in the context of the developing countries. Unlike in developed countries, in the developing countries, informed consent forms are often designed to protect researchers as well as their sponsors rather than the human subjects that are involved in the research. The participants are often not aware of what the experiment is all about. They may be illiterate people, and as such, one must explain verbally what is written on a paper. Besides, there may be

a problem with translation; however, care is needed if the research is to be successful with the required ethical standards.[229] Informed consent that is signed must reflect the participant's understanding, needs, values, and preferences. Also, as suggested in the Council of International Organizations of Medical Sciences (CIOMS),[230]traditional or local leaders may need to be consulted to achieve courteous access to the community depending on the developing country contexts.[231] Human subjects should be given all the dignity and respect throughout the clinical trials.

Furthermore, integrity, as used by the 1996 Declaration of Helsinki, implies a feature of the acknowledged inviolability of the subject of experimentation, which should not be 'touched' physically or psychologically. The principle insists that precaution should be taken to ensure the privacy of the research subjects and to guard against anything that will hamper the physical and mental integrity or even the entire personality of the human subjects in any clinical trial.[232] So, there is a need for non-interference of others in the private domain of the individual. However, the UDBHR added the word 'personal' to integrity as "personal integrity" for a better understanding when combined with vulnerability. Consequently, this dissertation recaps that the principle of human vulnerability and personal integrity generates the consciousness that a person is vulnerable, is exposed to being 'touched' by the other, subject to various and often subtle forms of exploitation or abuse, irrespective of his/her level of autonomy.[233] Again, this principle offers importance to individuals or groups categorized as vulnerable, for whom it stresses not only protection against being 'wounded' but also respect for their integrity so that they are not lessened to only part of themselves and so abstracted.

Additionally, the principle of nonmaleficence obliges researchers and their sponsors to abstain from causing harm to research participants during clinical trials. The principle of

nonmaleficence urges researchers not to inflict evil or harm to human subjects. Here, researchers must protect research participants in developing countries from the careless imposition of risks. The researchers are obliged not to breach that duty and cause harm.[234]

b. The Principle of Beneficence (Sharing of Benefits), and Justice (Distributive Justice):

Beneficence is an ethical principle that compels researchers to do or promote the good of the research participants as well as their host country. Protecting human subjects from harm by maximizing benefits and minimizing risks is still a crucial ethical consideration in the conduct of clinical research. Therefore, the design of the clinical trials should be modified towards the minimization of risks/harm and the maximization of benefits.[235] This is because the "principle of beneficence refers to a statement of moral obligation to act for the benefit of others."[236] Hence, researchers should ensure that the clinical trials are clinically germane to the health needs of the host country.[237] Likewise, Shapiro and Meslin advance that if the intervention being tested is not likely to be affordable in the host country or if the health care structure cannot enhance its suitable distribution and use, then it would be unethical to request human subjects in that country to take part in a research for whose potential benefits would not be enjoyed by them.[238] In addition, Acosta and others insist that the ratio of benefit-to-risk ought to be reasonable as well as responding to the health desires of the population being studied.[239]

Sadly enough, this dissertation observes that the ethical standards that are used in developing countries are quite different. As Ballantyne truly sees, trial participants in the developed world have every reason to assume that they will be able to access medicines recognized partially because of their involvement in a trial within a reasonable period. Also, this is not the situation

for most patients taking part in clinical research in most developing countries. They often cannot pay for access to such medicines. The danger of exploitation appears large above such types of trials.[240] Thus, Schuklenk suggests that if clinical research can intensify poor people's access to medical care, that is something that must be applied to advance health consequences for such patient populations.[241]

Also, following international and domestic law, the principle of sharing of benefits states that "*benefits resulting from any scientific research and its applications should be shared with society as a whole and within the international community, in particular with developing countries.*"[242] These benefits, among others, are access to quality health care, access to scientific and technological knowledge as well as capacity building facilities for research as possible arrangements of benefit for specific persons and vulnerable populations in developing countries.

However, benefits should not create inappropriate inducements to take part in the research. In addition, the principle of sharing of benefits takes as its priority the recognition of the best life expectancy for all newborns as well as the second basis of optimal development of individuals and societies, which is education and training. For obvious reason, Galjaard expresses that the principle of sharing of benefits was intended to reduce prevailing inequalities to avert a lengthening of the gap between nations as well as building a foundation for future international teamwork where experts from various backgrounds play an equal role.[243] It is against this backdrop that the World Health Organization encourages countries, communities as well as institutions to form ethics committees and ethical review systems that safeguard the most comprehensive coverage of protection for potential human subjects.

Furthermore, to give more credence to the principle of sharing of benefits is the principle of justice. The principle of justice implies "fair, equitable, and appropriate treatment in light of

what is due or owed to persons."[244] Justice needs a fair balance between burden and benefit, both at the individual and society level. It involves being fair to all concerned, so that no person is deprived of a benefit to which he or she is eligible, nor should he or she be disproportionately burdened with risks.[245] This means that research participants should receive the same standard of care and treatment like their counterparts in developed countries. As noted by Angell, using a different yardstick could lead to the exploitation of human subjects in developing countries.[246] Corroborating on this fact, Perrey et al. state that "a globally acceptable effective standard or at least a significant improvement over what is locally available"[247]is recommended. Moreover, distributive justice calls for the right distribution of benefits and burdens as determined by values that structure the terms of social collaboration.[248]

5. 3 Conclusion

The environmental/health issues in Nigeria's Niger Delta region are not beyond solutions; workable measures, if put in place, will automatically change the condition of the people. With the application of patient safety models and principles, healthcare organizations are making commitments toward patient safety culture. Hence, this chapter of the dissertation urges the Nigerian government, multinational oil companies, and other stakeholders to adopt the patient safety models and principles to enhance a safe and decent environment for the people of the Niger Delta region. Also, identifying environmental/health issues from their root causes and designing preventive approaches are better ways of handling these precarious conditions. Likewise, in proffering solutions to health-related problems, this chapter of the dissertation observes with great dismay that clinical trials conducted in developing countries are done without proper adherence to the ethical standards. Therefore, this dissertation urges researchers

that conduct clinical trials in developing countries (particularly in Nigeria's Niger Delta region) to adhere strictly to the ethical guidelines for conducting clinical trials with human subjects.

Finally, this dissertation calls on those concerned with the Niger Delta environmental/health problems to apply wisely the UNESCO principles like human vulnerability and integrity, autonomy, consent, privacy and confidentiality, respect for cultural diversity and pluralism, non-maleficence, beneficence, solidarity and cooperation, social responsibility, justice, sharing of benefits, etc. in their various policies and programs.

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CHAPTER SIX: CONCLUSION

The fore-going discussions in this dissertation have undoubtedly exposed that Nigeria's Niger Delta region has suffered significant problems that connect health and the environment. The Niger Delta region grieved from horrendous atmospheric pollution, damage and destruction of aquatic resources, contamination of natural sources of drinking water, a decline in farm produce due to loss of fertile land, gradual extinction, and migration of wildlife, loss of biodiversity, to mention but a few. Apart from the environmental/health issues, this dissertation revealed that the region is faced with perpetual misery from administrative abandonment, high unemployment, decaying social infrastructure and services, social deprivation, abject poverty, and widespread conflict. Like other global bioethical problems, the Niger Delta environmental and health problems have a global implication. Consequently, this dissertation carefully adopts a global ethics approach that uses the UNESCO Declaration principles to contribute to the health and the environment in the Niger Delta region.

Thus, chapter two that discusses the "degradation of the environment and health in the Niger Delta region," provides the geography and the people of the Niger Delta region in Nigeria. Also, it considers the colonial impacts on the people of the Niger Delta region. Above all, it underscores the Niger Delta region as the most vulnerable region in Nigeria because of the effects of oil exploration on the environment and health of the people. To this end, the chapter highlights the significance of the UNESCO principles such as "respect for the vulnerability and personal integrity" (Article 8), "social responsibility and health" (Article 14), and "protection of the environment, the biosphere, and biodiversity" (Article 17) to be incorporated into policies and programs that deal with the environment and health of the people of Niger Delta.

Also, in chapter three that treats "the integration of human rights with respect for the environment," shows the various abuses of human rights in the region such as abuse of the right to a safe and healthy environment, as well as the abuse of civil, political, economic, social, and cultural rights. Similarly, this chapter highlights those environmental legislative instruments from international, regional, and national levels. These instruments were highlighted in this chapter to provide guidelines for the design of environmental and health policies in the region. Again, this chapter recommends the human rights-based approach to environmental protection as well as respecting the procedural environmental rights of the peoples. The human rights-based approach helps to broaden access to justice, and curative redress provides different means of addressing issues of justice, equity, fairness, and right. More importantly, this chapter stresses the importance of the principles of environmental justice, equity, and sustainable development in the light of environmental and health issues in the Niger Delta region. The entire discussion in this chapter agrees to the global ethics approach that highlights the connection between human rights and the environment, as outlined in the UNESCO declaration. Therefore, this chapter of the dissertation recommends that the UNESCO principles such as Article 3 on the relation between human dignity and human rights; Article 4 on the relation between benefit and harm; Article 10 on equality, justice, and equity; Article 11 on non-discrimination and non-stigmatization and Article 17 on protection of the environment, biosphere, and biodiversity must be utilized to update the environmental and health policies that will enhance the environment and health of the people of the Niger Delta region.

Furthermore, in chapter four that deals with "the integration of care ethics with the precautionary principle," exposed the deplorable condition of our common home. The chapter emphasizes the usefulness of ethics of care as a promising alternative to traditional ethical

theories like utilitarianism, deontology, and virtue ethics. Care ethics is a substitute to utilitarian and Kantian ethics since its goal is to encourage inter-connectedness, compassion, and empathy with vulnerable human beings and animals or even with ecosystems and species. In like manner, this chapter accentuates the need for environmental stewardship in the Niger Delta region. There is always a pressing need to protect, care for, or responsibly use the environment in pursuit of social and ecological outcomes. Also, this chapter emphasizes the relevance of the precautionary principle as a new model for risk management. This chapter notes that inherent limitations to scientific knowledge together with the constant requirement to act, anywhere thinkable, to avoid harm before it has occurred, even without any recognized causality brought about the formulation of what is precautionary for the protection of the environment. Thus, this chapter of the dissertation urges the integration of care ethics and the precautionary principle into the environmental and public health policies in Nigeria. Above all, this chapter recommends that environmental/ health policies that are designed for the interest of the Niger Delta people must adopt the global ethics approach that is underlined in the following UNESCO principles: Article 16 on protecting future generations and Article 17 on the protection of the environment, biosphere, and biodiversity. These Articles offer the prerequisites for caution in these ecological arenas.

Moreover, in chapter five that treats "adopting a systems approach for health and the environment," emphasizes that patient safety is accomplished through a system of care delivery that avoids errors, learns from the mistakes that do occur. A remarkable aspect of a patient safety system is a culture that reassures healthcare professionals, patients, and others to be more watchful in recognizing possible or actual errors, taking proper steps to prevent, and lessen harm. Consequently, this chapter of the dissertation applies patient safety models/principles to the

environmental issues in the Niger Delta region. It recommends the need to implement safety measures by creating systems that forestall errors and either avoid or catch them before they cause harm in the Niger Delta region. Also, it recommends that ecological/health problems must be tackled from their root. In addition, this chapter supports that the global ethics approach that occurs within the context of these UNESCO principles: Articles 5 "autonomy and individual responsibility," 6 "consent," 7 "persons without the capacity to consent," 8 "respect for human vulnerability and personal integrity," 9 "privacy and confidentiality,"12 "respect for cultural diversity and pluralism,"13 "solidarity and cooperation," 14 "social responsibility, and health," as well as 15 "sharing of benefits" must be used in a systems approach for creating patient safety environment and clinical trials that avoid the exploitation of the vulnerable population.

By way of moving forward in this dilemma that connects health and the environment in the Niger Delta region, the global ethics approach urges all human beings toward the respect for human dignity and human rights, protection of the environment, biosphere and biodiversity, protection of future generation, solidarity and cooperation, social responsibility, sharing of benefits, non-discrimination and non-stigmatization, respect for cultural diversity and pluralism, promotion of justice, equality and equity among others. Thus, the dissertation recommends the proper utilization of these principles in policies and programs that connect health and the environment in the Niger Delta region. Again, the dissertation raises an ethical voice that urges the Nigerian government, multinational oil firms, and miscreants to redirect their steps toward the proper implementation of environmental/health policies that are beneficial to the people. On this note, this dissertation demands an immediate utilization of the global ethics approach to deal decisively with four areas of urgent concerns, namely safety culture, responsibility, management, and legislation.

1. Safety Culture: the first concern must be to restore the safety culture in the region. Almost all the oil firms working in the Niger Delta region seem not to be interested in safety. No wonder an oil industry executive once says, "safety is not our top priority, our top priority is getting oil out of the ground, however, when safety and productivity conflict, then safety takes priority."[1] Presently, thousands of barrels of oil are spilling into the environment because of a lack of regular maintenance of the pipelines. Some of these facilities have been in use for decades without replacement. Apart from the poor maintenance of facilities, sabotage is another cause of oil spillage. Oil bunkering has become the order of the day.[2] There is a need to promote safety culture in the Niger Delta region through sensitization. If safety culture is taking as a priority, it will help in reducing harm to the people and their environment. On this note, this dissertation urges the Nigerian government, multinational oil companies, and other agencies that work for the welfare of the Niger Delta people to view safety as a priority. The UNESCO principles of benefit and harm, protection of the environment, biosphere, and biodiversity, the future generation, among others, should be used to encourage safety culture in the region.

2. Responsibility: Another critical concern is to make everyone responsible. A responsible system must be put in place for things to function effectively. All the players in the Niger Delta environmental problems must take responsibility to ensure the safety of the people as well as the environment. Omeje rightly observed that the key stakeholders, clients, and supporters of the political economy seek out to fast-track, secure, and defend oil-related accumulation by despairing measures that may consist of the use of violence, coercion as well as total plunder-not to indicate here the traditional practices like witchcraft.[3] These actions are unacceptable. Environmental issues cannot be ignored as these worries are necessarily tied with the persistence needs of the people who need clean water to drink, unpolluted rivers, and soil to sustain their

living. Thus, this dissertation calls for the principal stakeholders and all others to abide by the UNESCO principles of social responsibility, sharing of benefits, solidarity, and cooperation, etc. in offering urgent solutions to the environmental/health issues in the Niger Delta.

3. Management: management is another vital concern. How are the oil resources managed? In what way(s) are oil resources used to benefit the people? Curbing environmental issues in the area will only be successful if the administration is genuinely committed to proper management of the public goods. There is a need for selfless leaders to be at the helm of affairs. Management must define the strategy for developing safety as well as plans for continuous improvement and development in the entire region. Management has been a significant problem that has kept the Niger Delta region in this pitiable state. Despite the many policies and agencies for the protection of the environment, the management regime in the country is appalling. The corrupt practices by the various environmental protection agencies are horrific. Even the government's efforts to curbing ecological issues through the establishments of developmental commissions (such as Niger Delta Development Board, 1960; Oil Mineral Producing Areas Development Commission, 1992; the Petroleum (Special) Trust Fund, 1995; the Niger Delta Development Commission, 2000; and now the Ministry of the Niger Delta Affairs, 2008)[4] are being used as compensatory mechanisms to their political allies. These elites have used this tactic to gain wealth at the expense of the people. Therefore, this dissertation urges the Nigerian government and their environmental/health agencies to be guided by the UNESCO principles of justice, equality and equity, sharing of benefits, etc. to bring about the adequate management of natural and human resources in the Niger Delta region.

4. Legislation: How to make legislation that is beneficial for the good of the people is very crucial. As said earlier in this dissertation, one of the problems affecting the Niger Delta region is

its weak institutional capacity. Using the words of Wangbu, the area has faced "legislations of disempowerment and subjugation."[5] The nation lacks adequate legislative and institutional framework to address environmental problems in the Niger delta. The onus lies on the Nigerian government to amend laws, advance implementation initiatives as well as clarifying institutional roles and responsibilities. The Nigerian government must efficiently enforce the regulations on oil spills. Ensuring safety culture, responsibility, and management of resources in the region requires adequate legislation and execution of laws and policies that have to bear with health and the environment. Therefore, this dissertation urges policymakers to be guided by the UNESCO principles of non-discrimination and non-stigmatization, respect for cultural diversity and pluralism, justice, equality, and equity among others in enforcing legislation that enhances the environment and health of the Niger Delta people.

However, to achieving these critical concerns, this dissertation recommends seminars, conferences, and workshops at the different levels for Nigerian leaders, ministries for environmental protection, multinational oil companies, Niger Delta people, especially the youths and traditional rulers. The Nigerian government should sponsor it while inviting independent bodies from within and outside the nation to be speakers.

In conclusion, the global ethics approach in the context of UNESCO Declaration principles that this dissertation adopts to enlighten the discussion in the various chapters assumes immediately that human beings as global citizens have responsibilities to each other irrespective of one's nationality. The dissertation has successfully used the global ethics approach to carry out an ethical analysis that connects health and the environment. This undertaking is made toward ameliorating these pivotal problems that connect health and the environment in the Niger Delta region and other regions that are experiencing such issues. Therefore, this dissertation

advises those concerned with the environmental/health issues in the Niger Delta region to implement the UNESCO principles because of its global dimension.

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