



NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
INTERNATIONAL LAW PROGRAMME

**THE EFFECTS OF HUMAN ACTIVITIES ON MARINE
ENVIRONMENT IN NIGERIA**

JAMES MARCUS MARCUS

MASTER'S THESIS

NICOSIA
2021

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MASTER'S THESIS

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NICOSIA
2021

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ABSTRACT

THE EFFECTS OF HUMAN ACTIVITIES ON MARINE ENVIRONMENT IN NIGERIA

Sustainable development is achieved when we rationally use our resources to satisfy our needs while allowing the needs of future generation to be equally achievable. A major source of development empowerment is the water bodies of the world. The marine environment serves as source of economic opportunities, recreation and food; it equally serves as home to thousands of creatures ranging from microscopic algae to the biggest wale. Of all ecosystems in the world, the marine environment is the biggest and it provides us with an edible source of survival, oxygen and employments. Yet, it is certainly the least understood, undervalued and most diverse ecosystem.

Human activities on the marine environment are increasingly damaging the marine ecosystem. Excessive activities like overfishing, oil spillage, plastic dumping, agriculture and industrial waste endanger the environment and account for the death of marine's lives every year. The harmful practices are not only driving the marine creatures into extinction, but seriously affecting the entire universe. Owing to the huge significance of oceans to our economic, social and political lives, much has to be done to regulate the effective use of marine environment so as to minimize damage to this very vital ecosystem.

ÖZ

NİJERYA'DA İNSAN FAALİYETLERİNİN DENİZ ORTAMINA ETKİLERİ

Sürdürülebilir kalkınma, kaynaklarımızı ihtiyaçlarımızı karşılamak için rasyonel bir şekilde kullanırken, gelecek nesillerin ihtiyaçlarının da eşit derecede ulaşılabilir olmasına izin verdiğimizde elde edilir. Kalkınmanın güçlendirilmesinin ana kaynağı, dünyadaki su kütleleridir. Deniz ortamı ekonomik fırsatlar, rekreasyon ve yiyecek kaynağı olarak hizmet eder; Mikroskobik alglerden en büyük balyaya kadar binlerce canlıya eşit derecede ev sahipliği yapar. Dünyadaki tüm ekosistemler arasında deniz ortamı en büyüğüdür ve bize yenilebilir bir hayatta kalma, oksijen ve istihdam kaynağı sağlar. Yine de, kesinlikle en az anlaşılan, az değer verilen ve en çeşitli ekosistemdir.

Deniz ortamındaki insan faaliyetleri, deniz ekosistemine giderek daha fazla zarar veriyor. Aşırı avlanma, petrol sızıntısı, plastik boşaltma, tarım ve endüstriyel atık gibi aşırı faaliyetler çevreyi tehlikeye atmakta ve her yıl deniz hayatının ölümüne neden olmaktadır. Zararlı uygulamalar sadece deniz canlılarını yok olmaya itmiyor, tüm evreni ciddi şekilde etkiliyor. Okyanusların ekonomik, sosyal ve politik yaşamlarımız için büyük önemi nedeniyle, bu hayati ekosisteme verilen zararı en aza indirmek için deniz ortamının etkili kullanımını düzenlemek için çok şey yapılması gerekiyor.

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27. The Prevention Of Pollution By Garbage Regulations, 2012.
28. The Sewage Regulations, 2012.
29. The Sea Dumping Regulations, 2012
30. Water Resources Act, 2004.

LIST OF ABBREVIATIONS

CSR	: COMMUNITY SOCIAL RESPONSIBILITY
DPR	:DEPARTMENT OF PETROLEUM RESOURCE
EEZ	:EXCUSIVE ECONOMIC ZONE
EIA	:ENVIRONMENTAL IMPACT ASSESSMENT
FEPA	:FEDERAL ENVIRONMENT PROTECTION AGENCY
HNS	:HADARDOUS AND NOXIOUS SUBSTANCES
IMO	:INTERNATIONAL MARITIME ORGANIZATION
MARPOL	:MARINE POLLUTION
NIMASA	:NIGERIAN MARITIME ADMINISTRATION AGENCY
NDDC	:NIGER DELTA DEVELOPMENT COMMISSION
NESREA	:NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS ENFORCEMENT AGENCY
NOSDRA	:NATIONAL OIL SPILL CONTIGENCY PLAN
NPA	:NIGERIAN PORTS AUTHORITY
OECD	:ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
OILPOL	:OIL POLLUTION
PPP	:POLLUTERS PAY PRINCIPLE
PP	:PRECAUTIONARY PRINCIPLE
UNCLOS	:UNITED NATIONS CONVENTION ON LAW OF THE SEA.

INTRODUCTION

Background to the Study

There is no gainsaying the fact that the marine ecosystem is of great importance in the overall human environment.¹

Marine is a very vital resource of man. It is something both man and animals cannot do without. A good percentage of the world population rely on marine for a variety of important services like food, transportation, recreation, energy and marine resources. The oceans, seas and waters no doubt constitute a very vital source of variety of living things/ecosystem and other key facets of man's wellbeing. The marine environment/ecosystem also helps in maintaining the planet as a whole.

However, the marine environment has been seriously affected by several human activities. The greater number of wastes released through anthropogenic activities for decades has reached the marine environment especially our oceans. Over the recent decades, due to the several human activities which threaten sensitive species in the oceans and causes illness to human beings and the global population, it will be important to bring to our knowledge that there has been an increased range of changes in the marine environment. There had been habitat destruction and the likes. Some of the marine contamination such as excessive amount of nutrients, excessive water drain (known as runoffs) territorial and global shipping/navigation can pack new germs into the marine environment. That is to say, in the cause of ship/cargo transportation on the seas/oceans, species alien to the oceans are dropped in it endangering the aquatic lives. Furthermore, when runoff flows along the ground, it can pick up contaminants like fertilizers and petroleum which are discharged over the land. It is also noteworthy to state that the marine environment above all provides us with some advantages for man, for example it serves as a major

¹ Fagbohun, O. *et al*; "Protection of Nigeria's Marine Environment: Toward an Agenda for Enforcement of Relevant Laws", (2017), University Press Ibadan, Nigeria.

source of protein to man and also as revenue through raising and harvesting of fish and navigations.²

Again, marine ecosystems are viewed as good location where the sewage and toxic waste are disposed and recycled and drain off of excess to the sea. These toxic wastes generated into the water in turn affect the quality thereby causing harm to the water and human health in general. When water quality is bad, fishing which is a dominant occupation in some parts of Nigeria becomes almost impossible. However, the increase in the amount of contamination discharged into the waters over time and the overutilization of aquatic resources for fresh supplies, irrigation, manufacturing companies and heat stations to meet up with the various needs associated with the rapid population growth, considerably reduce the absorptive capacity of the environment. As such, the double pressure which is released on the waterways/water canals in the long run affects the group of species inhibiting them. When people are unable to engage in their dominant occupation-fishing, they may resort to other means of protecting the environment. Having said that fishing is a major and dominant occupation in Riverine areas in Nigeria, fish is one of the most important aquatic communities concerning man.³ It is also one of the predominantly treasured and cardinal sources of protein accessible to man. Therefore, understanding what it constitutes as well as its food value is very important. This helps the State put up measures to checkmate the activities of man.

The increased human load on our aquatic system is a determined by the fundamental study, inquiry and analysis devoted to unfavorable results of pollution and its possible threat to the marine ecosystems. According to different scientific researches, a harmful outcome of pollution has been noticed and linked to populations of various aquatic organisms inhibiting the groundwater. The decrease of some seafood communities and deprivation/loss of the importance of commercial fishing are among huge

² Gbolagade Akeem Lameed; "Marine Environment and Public Health, Biodiversity Conservation and utilization in a Diversed World", <https://www.intechopen.com>, assessed December 10, 2020 at 11:42pm

³ Subhendu, D; "*Pollution- an International Problem for Fisheries*", (2000), P 400.

changes in the ecosystem.⁴ When this water quality drops and finds its way to the farmland, it also causes poor harvest. This shows that not only water is affected; the surrounding environment is also affected.

Aquatic systems are in many ways being put through pollution pressures which are associated with development and increase in population. The introduction of these pollutants into the marine systems constitutes a major threat to hydro-chemical and habitat features of the marine ecosystem.⁵

Also pollution from exploration and oil companies affects the water too. To cushion the effect some exploration companies go as far as building schools, boreholes and engaging in Community Social Responsibility (CSR) activities in those areas as compensation for the destruction of water and lands as well. An example is the OGONI OIL SPILLAGE which SHELL BP is still battling to clean up. However, Shell has commenced the distribution of funds on indigenes of affected area.

On the other hand, climate change challenges man's ability to devise ways of sustainable management and means to make plans of conserving and maintaining ecosystem services. Climate change has altered the average conditions of our oceans including its temperature. Furthermore, interactions that take place on the marine are also affected by changes in temperature of the ocean, as well as population dynamics. Now the projection of ocean-atmospheric changes caused by human activities like burning of fuels has led to changed patterns of measure and number of species within an area, changes in community arrangement, the way the ecosystem works and far-reaching changes in marine goods and services.

It need also be pointed out that most of water contamination occurs due to leaching and mixing of chemicals from the agriculture practices. Pesticides are toxic substances and they are not naturally occurring substances in aquatic ecosystems. They are introduced directly or indirectly by man.

⁴ Hinton, D. E and Lauren, D. J; "*Biomarkers of Environmental Contamination*, (1990), P. 17.

⁵ Nkwoji, J. A et al, "*Seasonal Variations in Water Chemistry and Benthic Macroinvertebrates of a South Western Lagoon, Lagos*", (2010), P 85.

It will be more efficient if the several countries in the globe will agree, come together and work harmoniously to put up plans to prevent marine pollution and other things which may act as threats to marine environment/ecosystem, rather than each country just acting on its own. In this respect, there are many programmes both globally and locally that in straight manner or incidentally deal with the preservation, protection and conservation of our oceans and waters, as well as the how the resources and managed effectively. These programmes cover the following:

- Research programmes: This programme is planned for the sole purpose of improving, enhancing and strengthening man's practical idea and comprehension of the physical, chemical and biological actions which the maintenance and functioning of marine ecosystem is solely formed, taking into consideration the social cum economic developments and interactivities with the planet and the land;
- Monitoring and assessment programmes: This is intended to observe, check and assess the situation of the marine environment cum pollution. It also monitors and assesses its resources and the changes that take place in the environment resulting from several anthropogenic/human causes;
- Management programmes: This is intended to ensure the oceans, seas, and waters and their resources are used and managed with good intent.

In all, the above mentioned programmes evaluate the regional, national and global conditions and trends of the environment, develop so many global and national laws or legal tools protecting the environment, and also strengthen regulatory bodies and establishments that work in the area of marine management. It is also expected in these programmes, there should be appropriate legislative and administrative measures in accordance with their authority and area of responsibility.

Statement of The Problem

Human/anthropogenic activities occasioned by oil spill, exploitation and lighting, gas flaring, pollution, water hyacinth, water litter, wrecks and introduction of other noxious materials/substances into the marine ecosystem have brought about substantial harm to aquatic life and the ecosystem in general.

Unfortunately, the problem has not really been given normal and genuine attention especially in Nigeria. All these activities constitute serious problem to marine environment and same activities have gone unchecked. These have prevented the benefits we ought to get from marine environment. For example, those whose major means of livelihood depend on fishing do not do that again, reason being that different human activities have affected the aquatic life.

The research identified the following problems:

1. There's increasing rate of marine pollution which comes from oil exploitation and shipping activities which pose threat to the marine environment especially in Nigeria.
2. Lack of data for pollution that occur in a year. Accurate data on pollution occurrences in Nigeria will help put up measures in tackling the problem.
3. Lack of Government agencies saddled with the authority of safeguarding the marine ecosystems from carrying up their tasks. This has made it possible for defaulters to go unpunished.
4. Lack of manpower that will help in the compliance of marine laws and regulations.

Aims and Objectives

The purpose of this research work is to examine and provide an understanding/overview of the different human activities that affect the marine environment, looking at Nigeria as a case study. Also there is a brief analysis of the International and regional environmental establishments and conventions which are relevant to the marine ecosystem, as well as the

development of their work dating back to four decades till present. This broad aim will be achieved by:

1. Introducing the reader to the concept of marine environment, both in Nigeria and a global perspective of it.
2. Discussing the human activities and its effects in marine environment in Nigeria.
3. Discussing the legal protections of this environment in Nigeria cum its strengths and shortcomings.

On the other hand, the objective of this study is to identify the various protections to marine environment. It is intended to find out how and to what extent Nigeria is prepared to put up measures for the protection of this environment for sustainable development to make it a workable solution.

Specifically, the following are the objectives of this study:

1. Determine how far the country has gone in protecting marine life/environment.
2. Determine whether the country's strict adherence to regulatory limits will halt further degradation of the environment.

Scope and Delimitation of Study

The area of this study covers Nigeria's legal instruments/tools available for the safeguarding of marine environment.

However, the study is specifically focused on the series of human/anthropogenic activities which affect marine environment. For the purpose of accurate and effective research work, the strengths and shortcomings of Nigeria's legal tools were fully examined.

The research paper is comprised of three chapters. The work started with the introductory part/aspect of the work. Chapter one deals with the literature review of the work where terms like marine environment, oceans, marine pollution and some principles relating to marine environment pollution were

reviewed. Chapter two deals with the some human activities and the impacts/consequences they have on marine environment in Nigeria. Chapter three looked at the legal tools on protection of marine environment in Nigeria, looking at the strengths and some of the pitfalls/shortcomings in the said legal tools. Some remedies for marine related cases were also examined. Finally, a brief summary was done, conclusion made and some recommendations given.

Significance of Study

Basically, this dissertation work will add to the knowledge of marine environment, its importance and protection.

It will stand act as a basis for additional study, analysis and scrutinization of measures to help keep the Nigeria's marine environment safe and secure.

Finally, it makes an effort to bring to our attention some of the errors/problems associated with the activity of protection of our marine environment and suggest likely solutions on how to improve on the use of our legal instruments to secure the environment and aquatic life.

Research Methodology

This research was conducted in order to assess the human activities and effects marine environment with Nigeria as a case study.

The researcher employed the doctrinal/conceptual approach. This method of research tends to formulate its findings based on some existing theories.

Human activities have fundamentally altered the entire life of the marine ecosystem both in Nigeria and globally.

The work also interrogated and reviewed the efforts being made by Nigeria in using her legal tools to protect marine life.

Overall, all the information provided in the work were located through existing literature studies, textbooks, official documents, Nigeria News Report online, scholarly journals and extensive internet search.

Limitation of Study

The study focused on the various human activities and effects on the marine environment laying emphasis on Nigeria. It did not attempt to go into detail the natural activities that occur in the marine environment. It simply analyzed an aspect of activities which are the human activities, pointed out their effects in the marine environment and looked at the legal protections for the Nigeria's marine environment.

In the course of the research, some challenges were encountered. There were much Nigerian works written on the subject and also looking at it from the global perspective but Nigeria seems less concerned on this issue that is to say that Nigeria is still backward on sustaining the marine environment. Other developed countries take passion in protecting and securing the marine life but Nigeria no doubt is still embedded in her less attentiveness to this area. Foreign authors/publications were easy to assess as regards their measures to help curb destruction of their marine environment. This is not so in Nigeria, although, there are measures but more need to be done.

Finally, the research encountered the problem of resources and time.

CHAPTER 1

1.1 Literature Review

The work examines the various human activities ranging from pollution, water wrecks, marine litters, water hyacinth which affect the marine environment in Nigeria vis a vis quality of water. A comprehensive scope of standard was embraced in explaining the different types of activities that contaminates the marine environment and looking at its effects as well.

One effect of marine pollution is that they harm living organisms; adversely affect the human health, and hinder several activities on water like fishing; reduce the standard and quality for the utilization of sea water and reduction of resources as well.

Different theories and principles in relation to marine ecosystem/environment were examined.

1.2 Historical Evolutions

Life on earth evolved 4 million years ago. The earth's atmosphere was containing volatiles, such as methane, ammonia, hydrogen sulfide, water vapor and carbon dioxide. Those volatiles released from volcanic activities and in the early stage of the earth's formation. Marine is formed when the earth cooled, and water vapor became liquid. Also, asteroids and icy comets hit the primitive earth holding water to the earth. The evolution of life in the marine is explained in many hypotheses. Some of these assumptions are:

The panspermia theory states that the seeds of life exist all over the universe and can be transported from place to place through space. This theory explains that solar radiation and the pressure causes a change in the

interstellar dust. Extremophile microorganisms may travel through space within meteorites, comets and/or asteroids. Another theory is called Special Creation. This theory has widely accepted the theory as it explains the origin of life from a religious point of view. It states that God created life on earth. Spontaneous Origin Theory explains that life evolved from inanimate matter. Life evolved by continuous chemical changes in molecules. The changes affect the molecules making them more stable and persist. By the time these molecules create more complex molecules until the cell is formed. These chemical changes mainly happen in the marine. From all theories, I can accept the theory of Spontaneous Origin, although it cannot, entirely, explain the gap in the evolutionary record. The other two approaches cannot provide any real evidence on how life emerge on life.⁶

1.3 Theoretical Frameworks

Some theories and principles are examined in this work. Some of the principles formed the background of the marine environment pollution.

1.3.1 Polluter Pays Principle (PPP)

The Polluter Pays Principle (PPP) can be seen in many International treaties, regulations and laws that guide and protect marine transportation. However, it can be somewhat difficult when you try to interpret the relevance of this particular principle.

Ordinarily, the simplest interpretation that can be given to polluter pays principle is that the person (polluter), who has in any way, expressly or by implication caused damage to the environment or by his act or omission done some things that led to damage of the environment, should be responsible for the cost of taking reasonable steps decided by requisite authorities to make sure that the environment is restored to its former state after the occurrence of the pollution. In essence, what this principle is saying is that when the environment is destroyed by the acts of any person; who in this case is the “polluter”, it is that polluter that will be responsible for paying

⁶ Sameh. A, “Biological Evolution in the Ocean”, (2016), www.researchgate.net, accessed December 12, 2020 at 10:33pm.

the cost and perhaps returning the environment to the way it was before the pollution. Therefore, in simple terms, the Polluter Pays Principle implies that all the necessary penalties connected with pollution are to be paid by the polluters, not the society.

The Polluter Pays Principle will form the basis of this work. Relating this principle to the present situation in Nigeria, especially the Niger Delta Regions (River, Delta, Bayelsa, Cross River, Edo States); there had been several cases of oil spillages. The most recent was the pollution incident in Ogoni, River State, Nigeria in which Shell BP has been making serious endeavours to clean up the pollution, restore the environment to its origin state if possible and pay for the damage it had caused the environment. The pollution was done by Shell BP and it is the responsibility of Shell BP according to this principle to bear the costs associated with such act. The company in a bid to comply with this principle has gone further to compensate indigenes of the affected areas for damaging their environment.

This Principle was for the first time formally expressed in 1972 by an intergovernmental economic organization, the Council of the Organization for Economic Co-operation and Development (OECD). From that time, it has been embraced as a management tool and many international environmental laws now recognize this principle. A good number of countries in the world have ratified this principle in their national laws. At the moment over 175 countries are parts of this.

As we have it today, the Polluter Pays Principle stands as one of the fundamental principles when it comes to sustainable development and fundamental principles which govern new environmental laws and policies, foundation of predominant laws set for future/possible polluters who infect the land, water and air. With this it will right to say that the Polluter Pays Principle is used as a liability and compensation tool. It can also act as a motivation for persons who contaminate the environment to execute whatever actions which are considered needful to avert future pollution, observe laws/regulations, and avoid extra costs.

The PPP as an important mechanism is also most common throughout vessel source pollution. The International Maritime Organization (IMO), which is a specialized agency of the United Nations responsible for standards which aims at improving the safety and security of shipping all over the world and also to stop contaminations from ships, has applied this Principle in many of the treaties it has entered. Some of the treaties/conventions where this PPP is seen and applied are:

- The International Convention on Oil Pollution Preparedness, Response and Co-operation
- The International Convention on Civil Liability for Oil Pollution Damage
- The Hazardous and Noxious Substances (HNS) Convention

Within the maritime transport sector legal protection, the Polluter Pays Principle implementation has over time gradually developed from economic concept which holds polluters accountable for direct costs of pollution, and demand for polluters to pay for quick response cum costs of removing the pollution or waste. However, legislation may in exceptional cases make provision(s) for the polluter(s) to be relieved of the liability. In essence, there are exceptions to this polluter pays principle. For example, the International Convention on Civil Liability for Oil Pollution Damage relieves the polluter of culpability if he can prove the following:

- That that damage was as a result of an act of war or natural phenomenon which was inevitable.
- That the damage was completely caused by an act or omission with intent to cause harm by a third party.⁷

1.3.2 Precautionary Principle (PP)

This principle promotes for actions or measures taken in other to avert risks. In this case, rather than wait for the environment to get damaged by different human activities, reasonable actions are taken to avert such damage.

⁷ Polluter Pays Principle”, www.clearsea.org, accessed on December 12, 2020 at 8:00pm.

According to some renowned scholars, the term “precautionary principle” dates back to the 1930s. However, it cannot be argued that the precautionary principle appeared in international conventions in the year 1980. The PP had also been applied in various German laws in the 1970s. The principle was in clear and detailed term first specified by the Vienna Convention for Protection of Ozone Layer embraced in 1985 to protect the environment including man’s health against the adverse effects ozone reduction. In 1987, it was restated in the Montreal Protocol on Substances that reduce the ozone layer. It was the awareness on the reduction of ozone layer that propelled international community to raise support for the precautionary principle and this led to the precautionary principle being included in international environment protection documents and policies.

When it comes to the area of maritime occurrences, the precautionary principle serves as a mechanism used to protect the marine ecosystem. Since the first conference that took place in 1984, the precautionary principle has been recommended and featured at so many of the Conferences on the North Sea. Thereafter, the principle and its rationale have been included in various international documents. Some of international documents supporting the precautionary principle include but not limited to the Convention on the Protection of Marine Environment of the Baltic Sea of 1992, London Protocol to the Convention on the Prevention of Pollution by Dumping of Wastes of 1996 and the Agreement for the Implementation of the United Nations Conventions on the Law of the Sea (UNCLOS) 1995.

This principle in essence emphasizes caution and review. The general application of the principle aims at bridging the gap between safeguarding the environment.

However, there seems to be lack of consistent comprehension of the precautionary principle and this has led to the principle being formulated in different international documents. Just like what other International documents have done, the precautionary principle does not emphasize, that the impairment should be serious and not easily reversed thereby leading to repressing the overregulation and non-compliance in practice.

1.3.3 The Trophic Theory

According to Elton's pyramid of numbers and based on his assumptions, Platt and Denmann detailed theory of pelagic life. Elton stated that the density of the elementary flow of energy goes from microorganisms decreases with increasing organism size and that the prey size is relative to that of the predator and that the flow of energy goes from the microorganisms to the large ones. Elton's concluded by saying that the prey biomass needed for the conservation of a predator was a function of two attributes which are the metabolic requirement of the predator and the productivity of the prey.⁸

Within a community, marine populations demonstrate high amounts of mixing and therefore experience high frequencies of inter-and-intra specific interactions with a variety of direct and indirect interactions.⁹

1.3.4 The Sustainable Development Theory and Goals

The theory emphasizes keeping up with the unity and sustainability development as well as improving the marine status. It looks at an enabling environment both land and marine based human activities and tries to put up measures to reduce the effects such activities will have on environment. It also manages our oceans/seas/waters and the services they provide.

The sustainable development theory also highlights adequate growth and development, taking into consideration the marine environment vis a vis all the species average population size in a particular habitat while using natural resources. By extension it is set to improve the quality of human life as well. To put it in another way, sustainable development emphasizes that human society should reduce the gap of wealth and unemployment rate by managing the increase in population and by enhancing social distribution to

⁸ Elton, C; "*Animal Ecology*", (1927), Macmillian, New York, P. 207.

⁹ Stuart A. Sandi & Enric Sala; *Evolutionary Ecology- Using Successional Theory to Measure Marine Ecosystem Health*", (2011), Science and Business Media.

eventually establish a geo-social environment, in which people can be free to live and work in peace, be content and have a high quality of life.¹⁰

Therefore, the sustainable development of marine resources refers to the joint promotion of economy, ecology and society so as to achieve overall sustainable development. It is a development model that thinks about the environment when achieving balanced growth with equity and order.

The sustainable development lays emphasis on the organized development between the use of resource and economic recovery/boom. The countries and regions which have high records of backward economic development must endeavor to move away from the usual traditional development mode which in all sense abandoned protection of environment. The level of modern economy should therefore be enhanced while ensuring the goal of sustainable economic growth in the future.

Therefore, the sustainability development goal aims to sustainably manage and protect marine and coastal ecosystems from pollution, as well as address the impacts of ocean acidification. Enhancing conservation and the sustainable use of ocean based resources through international law will also help mitigate some of the challenges facing our oceans. Sustaining the oceans embodies an approach required to manage our oceans and services they provide. Also the increase in population in coastal areas, regional mismanagement practices and global climate threaten the ocean. Pollution, overfishing, anthropogenic climate change impacts the oceans environment. In all, comprehensive studies and solutions to sustain development of land and marine based human activities and also a reduction of the negative human impacts on the marine environment are required projects and solutions should be designed and implemented also.

¹⁰ Shah M. M; “*Encyclopedia of Ecology*”, (2008), www.sciencedirect.com, accessed December 11, 2020 at 10:25pm.

1.4 Conceptual Frameworks

This research did an overview of the following concepts: marine, environment, pollution and other related terms. These concepts established the foundation of the work in general.

1.5 Meaning and Concept of Marine Environment

Marine Environment covers the oceans, seawater, rivers, brackish water and various smaller pools of water like ponds and wetlands including their interactivities with the air and land.

More than two thirds of surface of the earth is occupied by seas and oceans. The temperature of water varies with location and depth. It is a very essential and integral constituent of life-support system worldwide. It is paramount in the sense that 71 per cent of the earth's surface is being covered by the ocean and it provides us with what we eat, oxygen and occupation. But it is unfortunate to state that despite the benefits, they are most underestimated of all ecosystems. Beginning from the deep oceans to coastal reefs, mudflats to the sea grass beds and oceans, the marine systems provide us with very important services. One of the essential services includes carbon capture from climate and protection from storm surges. Globally, as we growing in population we keep checking and examining deeper into our oceans and seas for resources like fish, oil, gas, minerals and new genetic resources in a bid to keep up with the high level of consumption presently. The resultant effect of this is that it ends up damaging the oceans that sustain us.

With marine pollution, there is threat to our oceans, reduction of our resources as well as climate breakdown. All these threats are basically as a result of various human activities.¹¹

The marine environment is grouped into the following areas:

- a) The Internal waters

¹¹ The United Nations Environment Programme, July 11, 2017.

Internal waters cover all internal waters and water ways inside the baseline. Here, all intermediary zones between the territorial sea and the high sea (that is, the coastal states) are allowed to make laws and regulations for use and also exploit any marine resources contained therein.

However, unlike the situation in the high seas, foreign vessels have no right of free passage within internal waters, save when expressly permitted by the concerned state.¹²

b) Territorial Waters

The territorial waters include the waters by the side of the seashore of state and it also form part of the territory of coastal state. The United Nations Convention on Law of Sea (UNCLOS) allocates uniform 12 international nautical miles as measurement of inland waters from the baseline. Here adjoining the coastal states have rights to make laws that regulate the use and exploitation of natural marine or other resources within limit. Here vessels from all States are allowed right of innocent sovereignty and self-defence and provisions of the convention, allowing the passage of military craft and naval vessels transit passage in strategic straights.

GUYANA V. SURINAME, was a case of international arbitration that came up under the Law of the Sea Convention 1982.¹³ The matter was centered on maritime boundary.

c) The Contiguous Zone

The contiguous zone shall not broaden beyond 24 international nautical miles baselines from which the breadth of the territorial sea is calculated and determined.¹⁴ At the zone, pirates and other unwanted persons, agents and

¹² Amari Omaka, SAN; “*Fundamentals of Maritime, Admiralty and International Water Law*”, (2018), Princeton & Associates Publishers, Lagos, P. 49.

¹³ Amari Omaka, SAN; “*Fundamentals of Maritime, Admiralty and International Water Law*”, (2018), Princeton & Associates Publishers, Lagos, P. 49.

¹⁴ Omaka, C. A; “*Municipal and International Law*”, (2012), Lion Unique Concepts Publications, Lagos, P. 89.

maritime offenders can be waded off or pursued. This makes the contiguous zone an area of hot pursuit under international law.¹⁵

The nature of the contiguous zone makes an area of hot pursuit under International Law. In ***SAINT VINCENT & THE GRENADINES V. GUINEA***¹⁶. The International Tribunal on Law of the Sea (ITLOS) held that the conditions for hot pursuit must have been triggered and persisting before it could be permitted by International Law of the Seas.

d) The Exclusive Economic Zone

The Exclusive Economic Zone (EEZ) is an area of the sea which is a concern to the specified legal regime established in this part. Under EEZ, the rights and authority of the coastal State together with the rights and freedoms of other States are governed by the relevant provisions of the convention.

The exclusive economic zone shall not go beyond 200 international nautical miles from the baselines from which the breadth of the territorial sea is determined. The EEZ is prescribed by the 1982 UNCLOS and was incorporate to check and control the growing incessant clashes by States over fishing right and offshore oil belt ownership. While coastal States enjoined exclusive economic rights in the zone, other non-coastal States were still entitled by international law to freedom of navigation and flight, subject to the regulation of the coastal states.¹⁷

The EEZ was introduced to check the persistent clashes by states over fishing right and offshore oil belt ownership. While coastal States enjoined exclusive economic rights in the zone, the non- coastal states were still entitled by International Law to freedom of navigation and flight, subject to the regulation of coastal states. This was as decided in ***BANGLADESH V. MYANMAR***¹⁸. Also the case of ***JAPAN V. RUSSIAN FEDERATION***¹⁹

¹⁵ Amari Omaka, SAN; “*Fundamentals of Maritime, Admiralty and International Water Law*”, (2018), Princeton & Associates Publishers, Lagos, P. 58.

¹⁶ International Tribunal on Law of the Sea (ITLOS) Reports (1998), International Law Reports Volume 117, Pp 113 -147 (ITLOS)

¹⁷ (*Supra*).

¹⁸. International Tribunal Law of the Sea (ITLOS) Reports 2012, P. 4, 15.

e) Continental Shelf

The continental shelf has to do with the bottom of the ocean and subsoil of the submarine areas which by extension is beyond its territorial sea throughout its land territory up to the outer edge of the continental margin. The continental shelves are usually covered with a layer of sand, silts and salty muds. The distance from the continental shelf is approximately that of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.²⁰ Nigeria's territorial sea is farther than the limits in the Law of the Sea (LOS). The rights exercisable here are impliedly preserved by the 30 mile limit of the territorial sea to the extent of the rights exercisable in that area under LOS.²¹ The case of *BANGLADESH V. MYANMAR*²² is paramount here.

1.5.1 Marine Environment: A Global Perspective

In the world of today, the dangers posed by continued deterioration of the environment has raised serious international awareness. Of all the numerous causes of environmental deterioration in the world, the major cause of are pollution and this has reached alarming rates. Looking at "Global warming" and "Climate change" we face presently, no one can pretend or act indifferent that if urgent steps are not taken to totally stop situation or control at hand, the outcomes are bound to be dire and catastrophic.

No doubt, millions of people all over the globe are dependent on the marine ecosystem and the resources they provide for man's survival and well-being. However, over the centuries, population growth and economic advancement have increased number of human activities that take place on land thereby increased pollution globally which has contributed to degrading the environment and the related ecosystem services. Looking at the general estimate, it can be said that 80% of the pollution contaminations of oceans

¹⁹ International Tribunal Law of the Sea (ITLOS) Reports 2005 – 2007, P. 18, International Law Reports, Volume 143, P. 1 – 35.

²⁰ (*Supra*) P. 61.

²¹ Ayua, I. A et al.; "*The New Law of the Sea and The Nigerian Maritime Sector*", (1998), Nigerian Institute of Advanced Legal Studies, Lagos, P. 117.

²² International Tribunal Law of the Sea (ITLOS) Reports 2012, P. 4, 15.

and coastal waters come from land-based activities. In the present world now, waters and oceans have so deteriorated due to oil spills, ships as well as land-based sources of pollution.

The world's oceans are declining due to numerous coastal development, ship pollution, land based, habitat destruction and other threats.

Globally, marine plays a positive role in human life including the climate system. Damage to the ocean is far-reaching in its effects in terms of productivity, species diversity and resilience. Global ocean activities are putting population risk. People have lived in harmony with the ocean for generations. Fish and sea food from a healthy ocean contribute to our health. The best direct benefit to human health from the ocean is linked to the consumption of fish and seafood.

Globally, ocean helps people to feel good. There is increasing recognition of the value of coastal waters in promoting better mental health. Be that as it may, marine pollution is affecting the viability of marine ecosystem, the accessibility of fish stocks and the likelihood of new pharmaceutical compounds being discovered. Marine pollution can poison us. Anthropogenic organic chemicals, fertilizers and faecal waste from humans and animals can lead to contamination of water and seafood.

In spite of the acknowledged benefits from the ocean and marine services, there are being eroded by a range of anthropogenic pressures such as fishing, transport, coastal industries and cities. That is to say, worldwide developments point to an ongoing determination of coastal waters through pollution. The Biodiversity Research Institute reports that methyl mercury levels in fish and marine mammals exceed one part per million on a net weight basis in many samples from the oceans and seas.

Till date marine ecosystem has lost 19 – 35% of foundational habitats globally such as sea grass, meadows, coral reefs and mangrove.²³ Studies at Open Ocean and coastal sites throughout the globe have also shown that

²³ Policy Brief: Health, the Global Ocean and Marine Resources.

the levels of marine acidity have gone up to about 26 per cent, on average from pre-industrial levels.

1.5.2 Marine Environment in Nigeria

Nigeria as a State has a land area of about 923,768km² which is bounded in the Chad on the North, Cameroon on the East, Atlantic Ocean on the South and Benin on the West.²⁴ Nigeria possesses several water bodies that are spread as saltwater comprising oceans, seas, lakes, rivers and canals. Oceans are the largest water bodies in Nigeria and even the globe. Nigeria's main rivers are Niger and Benue.

The aquatic environment is also habitats to many species including fisheries, some aquatic mammals, reptiles *etcetera*. In Riverine areas static freshwater resources act as habitats for water insects, snails, snakes, aquatic fishes, water hyacinths *etcetera*. On the other hand, in movable water bodies like oceans, streams, rivers; a number of different classes of fishes are located in the saltwater system. Aquatic animals like crabs, sharks, crocodiles, whales, and dolphins are seen in the marine environments.²⁵

About 2.6-3.0 per cent of Nigeria's land area is surrounded with water especially in the Niger Delta area. The Niger Delta area (comprising of Ondo, Edo, Delta, Bayelsa, Imo, Rivers, Abia, Akwa Ibom and Cross River States) is predominated by a low-lying basin drained by the Niger River with so many rivers, seas and streams that is emptied into the Atlantic Ocean.²⁶ The Niger Delta region again consists of roughly 70,000km². It the largest area covered by water in Africa and third largest in the globe.²⁷

So many anthropogenic activities including but not limited to petroleum and gas production, drilling, dredging, pipeline vandalism, bunkering, ship transportation and reclamation of wetland in addition to increased exploration has led to increase pollution/contamination of our water, fish migration or

²⁴ Idu, A. J; “*Threats to Water Resources Development in Nigeria*”, (2015), P. 205.

²⁵ Izah, S. C et al; “The Uncontrolled Bush Burning in Niger Delta Region of Nigeria: Potential Causes and Impacts on Biodiversity In “*International Journal of Molecular Ecology and Conservation*”, (2017), P. 1-

²⁶ Igu, N. and Marchant, R; “Freshwater Swamp Forest Use in the Niger Delta: Perception and Insights”, “*Journal of Foreign Research*”, (2017), P. 44-52.

²⁷ Ohimain, E; “Five Decades Oil Production in Nigeria: Impact on the Niger Delta”, (2012), P. 391.

extinction, and our wetland region of the Niger Delta getting diminished.²⁸ In the area of ship transportation (cargo movement), the ship exhumes smoke and oil which kills aquatic lives. Oil spillage both accidental and normal ones reduce both the quality of water and kills fish.

1.5.3 Marine Environmental Pollution

Marine environmental pollution is the immediate, personal or accidental introduction substances by man into the marine ecosystem which no doubt can cause harm or damage to living organisms, harm to man's well-being, and obstacle to various human activities as well as general impairment to quality of ocean water.

The National Environmental Standards and Regulations Enforcement Agency (Establishment) Act) 2007 specifically Section 37 defines pollution thus:

Pollution means man-made or man aided alteration of chemical, physical or biological quality of the environment beyond acceptable limits and “*pollutants*” shall be construed accordingly”.²⁹

Furthermore, the same section 37 defined Environment thus:

Environment includes water, air and all plants and human beings or animals living therein and inter-relationships which exist among these or any of them.³⁰

Article 2 International Convention for the Prevention of Pollution from Ships 1973 by extension defined harmful substances as pollution of marine environment. Harmful substance is defined thus:

Any substance which if introduced into the sea that is liable to create hazards to human health, harm living resources and marine

²⁸ Adekola, O and Mitchell, G; “The Niger Delta Wetlands: Threats to Ecosystem Services, their importance to dependent Communities and Possible Management Measures- International Journal of Biodiversity Science, Ecosystem Services and Management”, (2011).

²⁹Section 37 of the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007.

³⁰Section 37 of the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007.

life to damage amenities or to interfere with other legitimate uses of sea.³¹

It can be deduced from the above definitions, that any human interference or action which in any way affects the natural attributes of environment to such a degree that the society finds it inappropriate and offensive, qualifies as pollution.

1.5.4 Classifications of Marine Pollution

Marine Pollution can be by direct discharge of waste into the marine, runoff into waters due to rain or pollutants which are released from the atmosphere. In direct discharge, harmful pollutants enter the ocean and seas in form of toxic waste or plastics.

In all, pollution can be classified according to the nature of its origin, either as a point source or non-point source.³²

- 1) Point Source Pollution: This occurs when the source of pollution is known. That is to say that pollution enters the ocean from a confined source. The most common example is directly discharging sewage and industrial waste into the ocean, rivers and seas. It is important to state 80 per cent of pollution comes from land.³³ This type of pollution is common in developing countries, especially Nigeria.
- 2) Non-Point Source Pollution: This occurs when the point of the pollution is not clearly defined. Example, wind-blown debris, dust, oil spill and discharge, surface runoff from agricultural areas which carry with it pesticides, fertilizers and animal waste. This type of pollution can be difficult to control, manage or regulate. Perhaps, the most effective way to control it will be to set restrictions on land use.

³¹Article 2 of the International Convention for the Prevention of Pollution from Ships 1973.

³² Patin, S. A; "Anthropogenic Impact in the Sea and Marine Pollution, (2018).

³³ Duce, *et al*; "The Impacts of Atmospheric Deposition to the Ocean on Marine Ecosystems and Climate, (2009), WMO Bulletin, Vol 38.

1.5.5 Causes of Marine Pollution

In as much as there is awareness and consciousness of the marine ecosystem for various reasons, the truth still remains that steady increase in the level of contaminants in our environments have reduced the water bodies across the globe to levels of irreparable damages. As earlier stated, and based on what studies had shown, it is estimated that 80 per cent of the contaminations on the marine ecosystem can be traced to land and these pollutants come in different forms. As earlier stated also, the pollution happens as a result of various activities undertaken by man. From sewage disposal, pesticides, industrial chemicals, garbage and so many, plastic pollution is the most threatening of them all.

Some of the causes of marine pollution have over the years been a troubling component to oceans, seas and rivers. Some of the causes are highlight below:

- Ocean Dumping

This is the intentional disposal of hazardous waste or other matter from vessels at sea and it could be caused by heavy rains and floods wash trash and debris into the waters. Dumping of refuse can come from manufacturing companies, wastewater treatment plants and ships and disposed into oceans. These no doubt have polluted the oceans so much. Over the years, oceans have been turned into a dumping ground of waste (both chemical and hazardous waste), other wastes originating from the land. Also human waste and sewage water that have been partially treated or even untreated go into the ocean.

It is on record that only companies involved in drilling across the world alone dump 220 million tons into the ocean and this have had hazardous effect on the water quality yearly. Similarly, it is paramount to know that over two-thirds of the aquatic lives in our oceans over the globe have come under

threat from the substances we use daily.³⁴ Ocean dumping is done with little or no knowledge of the impacts it has on the ecosystem

- Land Runoff

This is one of the major sources of ocean contamination. This type of pollution cannot be easily identifiable and as such we can say it comes from the non-point source. Many of the overflows from land go into the sea, taking along fertilizers and pesticides which are harmful. Runoff comes from areas preoccupied with agricultural activities and populated cities and they carry dirt and scrap mixed with carbon posing threat to marine life.³⁵ As the rainwater flows along the surface, it picks litter, oil, poisonous chemicals, fertilizers and other toxic substances.

- Dredging

This is the process of removing sediments from waterway or ocean floor. It is a very significant activity which enhances transportation on the waters and other related activities. However, the activity of dredging changes the structure of soil bringing about the degradation and loss of habitats and other living creatures. It can also disturb the natural balance of rivers.

- Sea level rise

Climate change and global heating are increasing the sea level. This occurs when the earth's climate is heated and this is as a result of the various activities of man like burning of fuel carried out by chemical and radioactive industries. With continued global warming, there will be increased rate of global sea rising which ends up as a serious threat to the plant habitats, fishes, birds and the marine environment in general.

- Oil spills

This is release of liquid petroleum hydrocarbon into the environment especially marine areas flowing from human activity. This is the biggest

³⁴ Paul Watson; "Ocean Action Report: Threat to Marine Environment", www.marineinsight.com, accessed December 9, 2020 at 9:13pm.

³⁵ (*Supra*)

cause of marine contamination. Here, oil is released into the coastal waters which in turn are harmful to marine birds and mammals. Some oil spills can be accidental, which can involve tankers, refineries, pipelines, drilling rigs; while some can be out of carelessness like equipment breaking down. All over the world and Nigeria in particular, there have been cases of several oil spill tragedies and this have been of great concern of contamination of the marine environment. The recorded cases of oil spills have resulted in killing of thousands of marine species.

- Plastic Pollution

It is a problem experienced over the world and which affects the marine ecosystem. This emanates mainly from household waste which is poorly recycled or not recycled at all. Based on evaluation, over eight million tons of plastic waste goes into our oceans on yearly basis and at the rate this is going, it will be right to forecast that by 2050, there would be more plastic than fish in the water bodies across the globe and this indeed is going to be alarming.³⁶ And research had shown that the damage posed by plastic pollution to marine environment is high.

In as much as plastic pollution cannot be controlled overnight, measures can be adopted to control it. In that case, we saying, the plastic containers instead of just disposing them like that can be recycled.

1.6 Summary of Review

The work did an overview of the marine environment. Generally, marine ecosystem encompasses the natural and living conditions at sea, including organisms which live on the sea, biological environments that surround such living organisms, such as seawater, land at sea, and marine atmosphere and human behavior at sea.

³⁶ Paul Watson; “*Ocean Action Report: Threat to Marine Environment*”, www.marineinsight.com, accessed December 9, 2020 at 9:13pm.

The work started with an introduction to the meaning and concept of marine environment in general terms and looked at it from a global perspective. The work also looked at the theories and principles to help in the understanding of the environment and also giving an insight on why there is a degradation of the environment global.

CHAPTER 2

HUMAN ACTIVITIES IN THE MARINE ENVIRONMENT IN NIGERIA

2.1 Nature of Marine Environment in Nigeria

The marine environment ordinarily has to do with the oceans and other areas including the high seas, seabed and even the marine areas under our national jurisdiction. By national jurisdiction, we are referring to the Continental Shelves, Exclusive Economic Zones, Territorial waters *etcetera* (All these have been described in the previous chapter).

Nigeria's marine environment is a vital resource for life on earth and in water. The marine environment performs so many functions- it regulates the climate, accumulate solar energy and also absorb carbon dioxide. In Nigeria, there are 4 different oceans – pacific, Atlantic, Indian and Northern Arctic.

The wetland zone is low lying with heights of not more than 3.0 m above the sea level and are generally covered by saltwater swamp, mangrove swamp, lagoon marshes, tidal channels, beach ridges and sand bars. However, the major distinguishing factor that differentiates the brackish water from the fresh water environment is their different salinity ranges. In this case, the water body salinity is the measure of the sodium chloride content of that water body.

In Nigeria, a lot of activities lead to marine pollution that is, human activities. And majority of these human activities take place on land; only few activities

occur on the sea like marine transportation.³⁷ In all, the activities all go to negatively affecting the marine environment in general.

Nigeria aquatic systems are characterized with different species of sea mammals. Unlike what we could see on land, aquatic mammals are seen at every depth of the ocean. We therefore can assume that life in water is higher than life on land.

The rise in oil and gas production in Nigeria and its improved foreign exchange the country derives from it for the speedy development of industrialization has left the marine environment with various contaminants capable of harming the lives on land and water.

Be that as it may, the life in water is persistently being destroyed by several activities that take place in Nigeria.

2.2 Various Human Activities in The Marine Environment (Nigeria)

Almost everything produced by man or resulting from man's activities can bring about eventual contamination of our ecosystems. This could at the end result to what we call pollution. Pollution is defined as the production and or introduction by man, directly or indirectly of toxic substances or energy into the environment resulting in deleterious effects or which harms living resources, including individuals or interferes with the resources and other uses of the environment.³⁸ By this definition, we could deduce that any activity that interferes with the normal existence of something affects such negatively.

The most important aquatic pollution forms resulting from pollutants are due to human activities and they are organic pollution, eutrophication, acidification, heavy metals, thermal pollution, human introduction (voluntary and accidental) and oil pollution. The major human activities in Nigeria which affect the marine environment are stated and briefly looked at below:

³⁷ Olamide, A; "*Tackling Ship-Generated Marine Pollution at Nigerian Seaports*", www.lawyard.ng,

³⁸ Don-Pedro, K.N; "Pesticide Pollution-Biological Resources for Control and Management" In "*Proceedings of the Conference on Pesticides Pollution Detection and Management at the University of Agriculture*", May 1990, Abeokuta.

- OVERFISHING

It is no doubt that the ocean is the largest source of food in Nigeria and fishing happens to be one of the main sources of livelihood/occupation in Nigeria especially for those who dwell in the Riverine areas (like Rivers, Bayelsa, Ondo, Akwa Ibom States *etcetera*). Fish as we know is a source of protein in Nigeria and even the globe.

However, there have been reports of collapse owing to the activity of overfishing in these major areas. That is to say that overfishing has taken the ton of the day in Nigeria.

Overfishing is a form of overexploitation where fishes are reduced to below accepted level.³⁹ When there is overfishing we notice there is reduced population of fish in the ocean and waters. Some fishes feed on each other for survival, when this is no longer possible; there is extinction of fishes from the waters. The point is not that fishing is wrong but fishing out of proportion is wrong and causes harm/damage.

- OIL SPILLS

Nigeria has a waterfront of approximately 853km in connection with the Atlantic Ocean with an area of about 923,768km².⁴⁰ Oil spills are a common event in Nigeria no doubt. For decades, oil spillage in Nigeria is major human activity that affects the environment especially in the Niger Delta Regions and it is stated that over 40 million liters of oil is spilled every year which result to loss of both human and aquatic lives and damage to our ecosystem. The first oil spillage in Nigeria was in Araromi in Ondo State in 1908⁴¹ and ever since then, the incidences of oil spills in Nigeria have been endless. These oil spill incidences are from oil and exploration companies in the country and they occur as a result of storage facility, material defect, pipeline corrossions *etcetera*. But the main causes of oil spills in Nigeria (especially in the Niger Delta Areas) are pipeline corrosion, sabotage, maintenance issues,

³⁹ “Overfishing”, www.en.wikipedia.org, accessed December 17, 2020 at 7:12am.

⁴⁰The Environmental Impacts of Oil Exploration & Exploitation in the Niger Delta of Nigeria.

⁴¹ Kadafa, A.A; “ The Environmental Impacts of Oil Exploration and Exploitation in the Niger Delta of Nigeria” In “*Global Journal of Science Frontier Research Environment & Earth Science*”, Vol 12, (2012).

theft, equipment failure, accidental and deliberate releases and oil tankers at sea.⁴² In all, statistics show that the oil spills due to pipeline and tanker accidents is 50%, oil production is at 21%, sabotage is rated 28%.

From the several recorded cases of oil spills in Nigeria by Oil companies, Shell BP alone has reported more than 12,000 spills. There are also cases of oil spills in Gokana, Ogoniland, (all of Rivers State). We have also had cases in Lagos State and other States as well.

- SHIPPING/CARGO TRANSPORTATION

This is the movement of goods and services along waterways and it is a major means of movement in riverine areas. Example in Apapa port, Bonny, Onne, Okrika, Calabar *etcetera*, there is a high ship/cargo movement. Some of the sources of this activity are waste water discharge from the ships, oil, garbage, solid wastes and other invasive species.^{43,44} In the course of transportation, these ships can carry aquatic organisms or plants that are alien to that particular marine environment.

In some cases, the ships get spoilt and are abandoned on the sea. This turns out as wrecks on the water, thereby restricting navigation on the seas.

- DREDGING

Originally, dredging as a human activity was done to keep solid/hard materials that settle on water from increasing. This helps also to clear the pathways for ships to be able to pass⁴⁵ and navigate on seas.

However, this activity affects water levels and balance in rivers. It can also hurt fisheries and damage the natural pH of water. This activity is ignorantly done without much recourse to its hazardous impacts on the sea and marine ecosystem in general.

⁴² Nwilo C.P *et al*' "*Management of Oil Dispersal Along the Nigeria Coastal Areas*", (2004), Department of Survey & Geoinformatics, University of Lagos, Nigeria.

⁴³ Umo, I & Nitonye, S; "Effects and Solutions of Marine Pollution from Ships in Nigeria Waterways" In "*International Journal of Scientific and Engineering Research*", (2015), www.ijser.org, accessed on December 17, 2020 at 6:12pm.

⁴⁴ Federal Environmental Protection Agency (FEPA), (1991), "National Policy on the Environment, Federal Ministry of Environment, Abuja.

⁴⁵ Anish; www.marineinsight.com, August 21, 2019.

- OCEAN DUMPING

For long, the oceans have been taken to be a dumping ground for most of the mining companies as well as other manufacturing companies. These wastes turn out to become water wrecks, debris, and water hyacinth on the oceans.

- DISPOSAL OF WASTES (PLASTIC WASTE)

In Nigeria, over 100,000 marine mammals die every year as a result of plastic pollution. In essence, they die after consuming the plastic debris on the water. These mammals either ingests (eat) the plastics or they get entangled by the plastics.

According to report, Africa is most populous country of 853km with over 12.5million hectares of fresh water and ranks second in terms of plastic waste disposal.⁴⁶ Nigeria is not exempted from this. For example, over 60 m plastic sachets consumed by Nigerians are indiscriminately disposed daily. These could be in form of plastic plates, bags and other plastics. When there is heavy rainfall, these plastics are carried into the waters and marine environments generally.

- DISCHARGE OF TOXIC CHEMICALS

Toxic in its simplest term means poisonous. By extension a toxic substance is one that destroys both water and aquatic lives. In Nigeria, there are numerous chemicals used by industries like paint, manufacturing and textile industries. Most of these toxic waste/chemicals come from businesses, refineries and industries. The effluents from the activities of these industries are alarming. It could as well be chemicals used in producing cosmetics, metals or even leathers. It is of importance to note that most of these chemical indiscriminately disposed are untreated and when they are disposed in its raw state, it is more harmful than ever.⁴⁷

⁴⁶ Tope Alake, In Guardian Nigeria News Report, February 26, 2020.

⁴⁷ Tolulope, E.A *et al*; "Physico-Chemical Analysis of Waste Water Discharge from Selected Paint Industries in Lagos, Nigeria" (2019) In "*International Journal of Environmental Research and Public Health*".

At times when these untreated chemicals are discharged into the ground, they thereafter find their ways to the streams and rivers, with great damage to marine life.

- **ILLEGAL OIL BUNKERING/PIPELINE VANDALISM**

Illegal bunkering has to do with crude oil theft and this particular act accounts for 10% of Nigeria's daily production. It involves tapping of crude oil directly from the pipelines. In the course of carrying out this activity, oil is pumped through the pipelines and this sometimes is sold on the high sea. This activity is prevalent in Delta, Rivers, Bayelsa States where pipeline crisscross the region.

Pipeline vandalism on the other hand is an intentional act of destroying pipelines. During vandalism, the pipelines are punctured in order to syphon oil. When this is done, it leads to damage of oil pipelines and ends up causing oil spillage and it in turn is transferred into the water thereby causing pollution of potable water and destroying marine life⁴⁸

2.3 Effects of Human Activities on Marine Environment

Saltwater fishes, marine birds and aquatic mammals (whales, polar bears) face excessive temperatures, loss of breeding areas and bulk movements of species.⁴⁹ These human activities could lead to ocean warming. By this, the ocean absorbs vast quantities of heat arising from too much burning of tyres, fossils, oil bunkering and even gas flaring. These activities also cause the temperature of the ocean to rise; this in turn affects marine species.⁵⁰

Another effect could be acidification. By acidification, we mean a process of becoming more acidic and by ocean acidification the pH of the ocean is reduced over an extended period of time.⁵¹ In Nigeria for example, surface

⁴⁸ Ogbuefi; In www.vanguardngr.com, (2014).

⁴⁹ Laffoley, D & Baxter, J. M; "Explaining Ocean Warming: Causes, Scale, Effects and Consequences", (2016), "Full Region Resource Report", www.iucn.org, accessed December 17, 2020 at 4:15pm.

⁵⁰ Bashir. M, et al; "Impact of Global Warming and Climate Change on Nigeria's Water Resources In *Journal of Ecosystem & Ecography*", (2020).

⁵¹ National Ocean Services, www.oceanservice.noaa.gov.

water bodies of rivers, creeks, streams and lakes are more slightly acidic.⁵² These effects were as a result of activities of gas flaring, waste disposal, burning of fossils such as coals and the likes. This mainly occurs in riverine areas like Delta, Rivers State, Bayelsa States *etcetera*). The water pH of these areas is high compared to other areas in Nigeria. These areas mostly practice activities like iron steel production, smelting of sulfate ore and even tyre burning.⁵³

Some coral reefs in the waters protect the shorelines from destruction of aquatic lives. Where the water becomes acidic, it harms the aquatic species. The acidic nature reduces the amount of carbonate which is a key building block in seawater. It becomes difficult for these coral and other aquatic organisms to form their shells and even when they have developed shells already, the existing shells begin to dissolve.

Another effect could come from overfishing. When there is overfishing, the resultant effects could be that important predators are removed.⁵⁴ It is worthy of note that in the cause of overfishing, some other aquatic lives are prone to being part of the process, example sharks. That is to say that further down the chain other aquatic lives are affected. Again, when overfishing occurs, there may be extinction of certain aquatic lives. For example, if particular specie(s) of fishes are found in a particular river and such class of fish is overfished, there is bound to be extinction of that class of fish. This is not good for the life of water as the presence of such species could add to the lives of other aquatic organisms in the water. Again, another effect of overfishing could be marine ecosystem imbalance. The size of fish remaining changes the way and speed they grow and mature too. When too many fishes are taken away from their environment, there is a disparity that will

⁵²Akporfure R.R; "Acidification Status of Surface Waters in the Niger Delta, Nigeria: A Review of Results and Predictions for the Future" In "*Equatorial Journal of Agriculture and Earth Sciences*", Volume 2, No 1, (2018).

⁵³ Nduka, et al; "Acid Rain Phenomenon in Niger Delta Region of Nigeria" In "*The Scientific World Journal*", (2008), 811-818.

⁵⁴ Overfishing-Threat, www.worldlife.com, accessed December 17, 2020 at 4:55pm.

damage the food cycle and will also lead to dropping of or even loss of other important lives.⁵⁵

Another effect is from oil spills and this could be detrimental in the sense that the effect is not only on fishes but also on the quality of water. When this happens, the main livelihood of those in that area is taken away. The water which is affected is also taken by those people thereby resulting to health challenges for them.⁵⁶

Dredging activities also affect marine life. In as much as dredging helps in flood prevention and free water movement⁵⁷, its negative impact is far reaching. In the cause of dredging, there is water contamination with heavy metals. The heavy equipment/metals used in dredging contaminate the water and when the water is contaminated, it is no longer safe for the marine organisms. Again in the cause of dredging, sea grass beds are affected too. It need be pointed out at this juncture the importance of sea grass to marine lives. The sea grass beds help marine mammals and serve as food source and shelter for them as well. When excavation/dredging happen, such sea grass beds are affected and this is not too good for the marine mammals.

Cargo/ship movement is one of the human activities in waters that have heavy impact on marine environment. Its resultant effects are enormous. Its effects are inevitable provided cargo movement take place. In the cause of this activity, there is oil spill, emission of toxic chemicals from the ship batteries, thereby polluting waters. Also there is spread of invasive species. In most cases, some ships spoil and are abandoned as wrecks; the ships in the cause of movement on the waterways introduce or carry into the waters invasive species like plants, insects. These species in turn form water hyacinths, marine pollutions and marine litters; all these in turn hinder navigation on the sea, fishing activities and also alter the ecological balance of the aquatic systems.⁵⁸ With the litter and hyacinth blocks on the waters;

⁵⁵ Overfishing-Threat, www.worldlife.com, accessed December 17, 2020 at 4:55pm.

⁵⁶ (*Supra*).

⁵⁷ Oladejo, S .O; "Impact of Dredging of Rivers and Major Streams in Osogbo, Southern Nigeria" In "*Western Journal of Medical Sciences*", (2012).

⁵⁸ Balogun *et al*; "Survey of Water Hyacinth Infestation in Ilaje and Ese-Odo Local Govt Areas of Ondo State, Nigeria", (1997), Report No. 2, P. 36.

boats, ships find it difficult to operate freely on the ocean. In all, there is oxygen depletion, hindrance of marine activities including fishing, impairment of quality of sea. By further explanation, if the oxygen content of water is depleted, it dangers the animals and the water generally. This depletion of water can lead to creation of dead zones.

The effects of the human activities are summarized as follows: Degradation of quality of fish and other marine organisms; depletion of population of fish; impairment of water quality; invasive species; total extinction and death of fish and other marine mammals.

CHAPTER 3

LEGAL FRAMEWORK/PROVISIONS ON NIGERIA MARINE ENVIRONMENT

3.1 Legal Instruments/Tools on Marine Environment in Nigeria

The marine environment covers a certain mass of the world population. Its importance is enormous. Therefore, we cannot let the marine pollution and destruction reach a stage of crisis before we take actions to protect it. In a bid to protect the marine environment cum water and the lives of aquatic species, certain legal tools were put in place for the total preservation of marine system. These were put in place to provide the conditions which are required for the continuous life and survival of species generally.

According to Popoola, environment protection comprises of protection of air, and water against pollution.⁵⁹ The International Maritime Organization (IMO), a specialized agency, has already set standards for safeguarding marine environment. It sets standards from International level to prevent vessel source pollution.

We would briefly look at the international instruments developed for the protection of marine environment.

⁵⁹ Popoola, A. O; "International Law & Protection of the Marine Environment: Problems and Challenges for Africa in the 21st Century", (1998).

1. The International Convention for the Prevention of Pollution of the Sea by Oil, 1954.

This Treaty was entered into in 1954, updated in 1962, 1969 and 1971. Prior to the adoption of this treaty, oil pollution of the sea was seen as a major problem in the 20th century affecting so many countries. As a result of this, various countries introduced national regulations to help combat this pollution (within their territorial waters, and one of such regulations was OILPOL 1954). This was made possible by the IMO Convention of 1958. Nigeria was party to this treaty and states were advised to domesticate this law in their respective states.⁶⁰

2. The International Convention on Oil Pollution Preparedness, Response and Co-operation 1990.

This treaty was adopted in November 30, 1990 but came into effect in May 13, 1995. The Convention was to adopt a precautionary principle to prevent pollution and parties to the treaty were enjoined to take adequate measures, get ready for and respond to oil pollution incidents.

3. The International Convention on Civil Liability for Oil Pollution Damage 1969.

This treaty was to give sufficient payment to various persons who suffer harm/injury from pollution because of discharge of oil from Ships.⁶¹

4. The International Convention Relating to Intervention on the High Seas in cases of Threatened Oil Pollution Casualties Convention 1969.

This treaty was adopted in November 29, 1969 and came into operation on May 6, 1975. By April 30, 2007, over 80 countries were signatories to provide a legal backing to the control of oil pollution.

⁶⁰ Convention of OILPOL 1954, www.admiraltylawguide.com

⁶¹ Okorodudu-Fubara, M.T; “*Laws of Environmental Protection*”, Caltop Publications, Ibadan, Nigeria, (1998), P.704.

The treaty was basically to mitigate or totally eliminate oil pollution which arises from an accident on the high sea. It dealt with legal questions which arose from the incident and the ability of a State to take actions on the High Sea in a bid to protect their marine environment⁶² (within their jurisdiction).

5. The Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter 1972. This covers all seas and it is commonly known as the London Convention.

Dumping of waste at the sea is seen as a global problem, hence this convention to help control it and also to encourage region to make provisions supplemental to this treaty. Initially, the convention did not stop/prohibit dumping; the main object was to control it. However, dumping of hazardous substance was prohibited in the sense that it will cause a lot of exposure if allowed.⁶³

6. The International Convention on the Protection of Pollution from Ships 1973.

This is known as MARPOL 73 and modified by the protocol 1978.

Following series of tanker spills that occurred in 1976 and 1977, a document was provided following a convention in 1978, it is to be read as MARPOL 1973. This convention was adopted in order to take action on all forms of International pollution of the sea from dumping rather than just dumping.⁶⁴ The document was to ensure that ships operating meet the requirements for pollution control and maritime safety.

MARPOL Convention happens to be the main International Treaty that covers prevention of pollution on the marine environment by shipping.

It is pertinent to state at this juncture that most of these international conventions/treaties formed the foundation of the Nigerian marine protection

⁶² Amokaye, G.O; “*Environmental Law and Practice in Nigeria*”, (2004), 1st Edition, P. 463.

⁶³ Boyle, A. E; “*Globalization & Regionalization in the Protection of Marine Environment*”, (2000), Cambridge University Press, P. 23-26.

⁶⁴ Amari Omaka, SAN; “*Fundamentals of Maritime, Admiralty and International Water Law*”, (2018), Princeton & Associates Publishers, Lagos.

laws we have today. Some of the Municipal Legislations that deal with marine pollution in Nigeria are:

i. **The Constitution of the Federal Republic of Nigeria 1999, (As Amended).**

The Constitution of Nigeria is the grundnorm. The constitution in Section 20 provides for environmental matters. It therefore makes it an environmental objective States in the Federation to improve and protect the air, land, water, forest and wildlife in Nigeria. It states thus:

“The State shall protect and improve the environment and safeguard the water, air and land and wildlife of Nigeria”.⁶⁵

It went further to complement the above Section by making provision for the prevention of exploitation of human or natural resources in any form.

In Section 12 (1), the Law impliedly establishes that International treaties ratified by National Assembly should be implemented as law in Nigeria.⁶⁶

ii. **Oil in Navigable Water Act, 2004.**

Generally, the Act is concerned with the discharge of oil from ships. The Act prohibits the discharge of all forms of oil and their mixture into prohibited seas of Nigeria.^{67,68} The Act was passed to execute the terms of International Convention for the Prevention of Sea by Oil 1954 to 1962 and to make provisions for the prevention in the navigable waters of Nigeria.⁶⁹ That is to say the Act domesticated in Nigeria the 1954-1962 convention.

Sections 1(1), 3, 6 and 7 are of great importance.

⁶⁵ Section 20 of the Constitution of the Federal Republic of Nigeria, Laws of the Federation, 1999 (As Amended).

⁶⁶ Section 12(1) of the Constitution of the Federal Republic of Nigeria, 1999 (As Amended)

⁶⁷ Adedeji, A.A & Ako R.T; “Legal Response to Control and Management of Water Pollution”, (2007).

⁶⁸ Sections 1, 2(1) &(2) of ONWA 2004.

⁶⁹ Long title of Oil in Navigable Water Act, 2004..

From the provisions of this Act, it is evident that the Act is concerned with territorial waters of Nigeria taking into consideration the nature of oil pollution in Nigeria.

iii. **Harmful Waste (Special Criminal Provisions) Act, 2004.**

This Act was enacted to stop, without lawful authority the carrying and dumping of harmful waste on the air, land and territorial waters of Nigeria.⁷⁰ This is a penal legislation in the sense that the offences are derived from doing any of or omission of any of the acts prescribed in the Act. Of utmost importance are Sections 6, 7 and 12.

iv. **Merchant Shipping (Amendment) Act, 2004**

The Act domesticated most of the International Maritime Convention on Prevention of pollution from ships. The Act deals with various matters relating to ships, including registration, restriction of ships, prevention of collision and safety navigation, investigations into marine casualties and others.⁷¹

v. **National Environmental Standards and Regulations Enforcement Agency (NESREA) Act, 2007.**

The Act was approved drawing from Section 20 of the 1999 Constitution of the state making laws to regulate its environment. In line with that, NESREA Act was for the protection of Nigeria's environment. The Act contains functions of NESREA as an Agency with authority to enforce compliance with laws, guidelines, policies and standards of environmental matters.⁷²

Sections 7, 8 (1) (k), 27 are of great importance.

vi. **Oil Pipelines Act, 2004.**

Nigeria is a country heavily dependent on crude oil. Pipelines are the major means of moving crude oil, gasoline, diesel and even natural gas in Nigeria and in the cause of this, a lot misfortunes are bound to happen, hence the

⁷⁰ Section 2 of Harmful Waste (Special Criminal Provisions) Act, LFN 2004.

⁷¹ Long title of the Merchant Shipping Act, 2004.

⁷² Section 7(a) of NESREA Act, 2007.

creation of this Act. The Act prescribes the procedures to be followed to obtain all necessary licenses and consent for the construction of oil and gas pipelines.

See Section 11(5), 17(4).

vii. **Nigerian Maritime Administration and Safety Agency (NIMASA) Act, 2007.**

This Act is provided in other to protect the maritime environment, promote of maritime safety and security, shipping registration and commercial shipping, and other related matters.⁷³ The Act created the an agency known as the Nigerian Maritime Administration and Safety Agency (NIMASA) saddled with the huge responsibilities and same are as encapsulated in Section 22 (1) of the Act, some of which are marine environment management, wreck receipt and removal, marine pollution prevention⁷⁴, to mention but a few. From those responsibilities, it clearly shows that the Agency is a Maritime Agency.

viii. **Petroleum Act, 2004.**

This was to control exploration of petroleum from Nigeria's territorial waters. This is a principal legislation that regulates the operations of refineries in Nigeria and provides sanctions for defaulters. It provides that no refinery shall operate in Nigeria without a license from the Minister.⁷⁵

ix. **Hydrocarbon Oil Refineries Act, 2004.**

This is to control activities of refineries in Nigeria. The government knows too well of the dangers of hydrocarbon on the environment, hence this Act. This Act is an addendum to the provisions in the Petroleum Act, 2004. It also grants licenses to operate in Nigeria. This is encapsulated in Section 1. It provides thus:

⁷³ Commencement of Nigerian Maritime Administration and Safety Agency Act, 2007

⁷⁴ Section 22 (1) of the Nigerian Maritime Administration and Safety Agency Act, 2007.

⁷⁵ Section 3 (1) of the Petroleum Act, Cap P10, Laws of the Federation of Nigeria, 2004.

“Subject to the provisions of this Act, no person shall refine any hydrocarbon oils save in a refinery and a license issued under this Act”.⁷⁶

The provision went further to prescribe punishment for defaulters.⁷⁷ Also Section 9, there is a duty imposed on all refineries to develop, maintain and sustain prevention facilities against pollution.

x. **Territorial Water Act, 2004.**

This Act was passed in Nigeria after Nigeria participated in the third United Nations Convention on Law of the Sea (UNCLOS III) 1982.⁷⁸ Therefore this law was to govern the Nigerian territorial waters, looking at its compliance with the laid down provisions in the UNCLOS III.

xi. **Exclusive Economic Zone Act, 2004.**

The Nigerian government regulates the activities of its Exclusive Zone through the provision of this Act. It examines the right to manage and control marine resources like fishing, drilling *etcetera*.

xii. **Sea Fisheries Act, 2004.**

It is illegal to take or use poisonous substances to harm fishes within Nigerian waters. The Act therefore makes provision on how to control, regulate and protect sea fisheries in the territorial waters of Nigeria. In a bid to actualize this, Section 1⁷⁹ makes provision for license to fish in Nigerian water. Section 10⁸⁰ prohibits destruction of fish and prescribes fine for defaulters.

⁷⁶ Section 1 of the Hydrocarbon Oil Refineries Act, Cap 45, LFN, 2004

⁷⁷ Section 7 (1) of the Hydrocarbon Oil Refineries Act, Cap 45, LFN, 2004

⁷⁸ Edwin Egede; “The Nigerian Territorial Waters Legislation and the 1982 Law of the Sea Convention” In “*International Journal of Marine and Coastal Law*”, (2004), Vol. 19, P. 151.

⁷⁹ CAP S4, Law of Federation of Nigeria, 2004

⁸⁰ CAP, S4, Law of Federation of Nigeria, 2004.

xiii. **Water Resources Act, 2004.**

This is an Act to improve the quality of water resources and the likes. Of importance are Sections 5 and 6⁸¹ which provide mandate to make plans and regulations for the prevention of pollution and protection of fisheries.

xiv. **Niger Delta Development Commission (NDDC) Act, 2004.**

This Act under it created the Niger Delta Development Commission and empowers same to use distributed funds to address ecological problems (pollution, climate change, environmental degeneration and reduction of resources) which arise from of oil exploration. By Section 7 (1) (b)⁸², the Commission is to come up with plans and to execute projects for the sustainable development in the area of transportation, fisheries *etcetera*. The commission is also empowered to liaise with oil companies on how to control oil spillages, gas flaring and other related activities.

xv. **Environmental Impact Assessment Act, 2004.**

Basically, the Act sets out to assess whether negatively or positively the environmental impacts of a proposed project. Of pertinent importance are Sections 2(1) (4), 13 and 60.⁸³

xvi. **Nigerian Mining Corporation Act, 2004.**

Nigeria has various mining sectors with high valued commodities like salt and iron ore. The Act controls mining refining activities in Nigeria.

Some Nigerian Regulations for the control of marine environment include:

- a. The Sewage Regulations, 2012
- b. The Sea Dumping Regulations, 2012
- c. Ballast Water Regulations, 2012
- d. The Prevention of Pollution by Garbage Regulations, 2012
- e. The Prevention of Pollution Regulations, 2012.
- f. Mineral Oil Safety Regulations, 1963

⁸¹ CAP W2, Law of Federation of Nigeria, 2004.

⁸² CAP N68, Law of Federation of Nigeria 2004

⁸³ CAP E12, Law of Federation of Nigeria, 2004.

- g. Petroleum (Drilling & Production) Regulations, 1973
- h. Petroleum Refining Regulations, 1974.
- i. Oil in Navigable Waters Regulations, 1968

All these regulations are marine environment regulations and same are aimed at both controlling effluents of discharge, prohibition of dumping, oil spillage, fisheries and the likes.

3.1.1 The Strength of The Legal Instrument/Provisions to Limit the Effect of Marine Activities in Nigeria

The essence of good marine protection laws and regulations in Nigeria cannot be overemphasized.

Most of the Laws and Regulations addressed issues of pollution and ways to control it, which if properly implemented could serve the purpose for which they were created. For example, the Oil Pipelines Act, 2004 aimed at controlling pollution of land and water through its provision prohibiting the construction works under or over waterways. Also, the Oil Navigable Water Regulation prevented pollution in navigable waters of Nigeria.⁸⁴

The Laws made provision for impressive array of enforcement mechanism. Examples are permits, licenses *etcetera* granted to most oil exploration companies.

The Regulations were drawn from International Conventions/Treaties of which Nigeria is a party to. The Regulations have set out robust regulatory regime for the marine environment.⁸⁵ Regulatory bodies like Federal Environment Protection Agency (FEPA) which issues standards for water including oil companies operations in Nigeria; Department of Petroleum Resources (DPR) which issues environmental guidelines and standards for the petroleum sector in Nigeria; National Oil Spill Contingency Plan (NOSDRA) which has to do with implementation of national oil spill contingency plan; Nigerian Ports Authority (NPA) which deals with provision

⁸⁴ Shittu, W et al; "Assessment of Policies and Legislation that affect Management of Westland in Nigeria", (2012), www.researchgate.net,

⁸⁵ Akabogu & Associates, "Marine Environmental Management: Implications for Maritime Section", February 2015, International Law Office, www.internationallawoffice.com.

of waste reception facilities.⁸⁶ Above all, the Nigerian Maritime Administration and Safety Agency (NIMASA) happens to be the most active regulatory body as it implements measures to tackle marine pollution. The achievements of NIMASA can be seen when the Agency carried out investigation of pollution incident at Ogogoro Village, Apapa- Lagos; pollution incidence at Warris Jetty, FOT Onne Port- Rivers State; Oil spill at Kiri-kiri Lighter Terminal⁸⁷ *etcetera*. Actions were taken to clean up the wrecks.

3.1.2 The Shortcomings of The Legal Instrument/Provisions to Limit The Effect of Marine Activities in Nigeria

Nigeria has a lot of pollution and marine environment protection laws, yet she harbors the worst oil spillage in the world. In as much as there are laws, there is low adherence to the laws and this is manifest in the following:

- Enforceability and practicability. The preparedness of Nigeria to enforce these laws is doubtful. The government places little or no importance on marine pollution. No serious steps have been taken to know the parties involved in this pollution. The lack of Government's interest can be seen oil spillage in Niger Delta, where such have caused damage and harm to livelihood of people and aquatic lives in general.⁸⁸ Also, it need be pointed out that the implementation of these laws could be said to be hampered by human capacity, infrastructure and funds. In all corruption and bad governance hinder the enforceability of these laws.
- Non feasibility of penalties/fines. The penalties provided in the Laws are inadequate. And this can hardly deter any potential polluter. Again, most of the penalties/fines prescribed in the laws are too lenient. Defaulters are easy to break the laws, pay the fines prescribed with ease and find their way out. This is a regular routine for those in the oil sectors.

⁸⁶ “Onwuegbuchunam, D.E; “An Analysis of Ship-Source Marine Pollution in Nigerian Seaports” In “Journal of Marine Science and Engineering”, (2017).

⁸⁷2010 Annual Report of the Nigerian Maritime Administration and Safety Agency.

⁸⁸ Adedeji, O et al; “Urban Environmental Problems in Nigeria: Implementation for Sustainable Development” In “*Journal of Sustainable Development in Africa*”, (2010), P. 132.

- Low education/ignorance. Although ignorance of the law cannot be said to be an excuse. No provision to educate people on the importance of marine protection. Environmental awareness for those with low literacy levels is the best option to control problems of environmental pollution which transcends to marine pollution. This can be achieved by organizing workshops and seminars to educate the public on the ways they can manage and improve on the environment as well as sustain it. It should be emphasized on the need to protect the environment. We need to show people the adverse effects of pollution and how to mitigate them. They should know that human existence is based on the environment, therefore there is need to sustain it for the future. Aside workshops and seminars, awareness can be done through television, radio and even electronic media (social media). Convincing them can go a long way to motivate everyone to make significant contributions towards safeguarding the environment.
- Lack of commitment to implement. There is no serious commitment to enforce these legal tools. The laws are seen as mere writings on paper which are not properly implemented and enforced.
- Weak institutional agencies. There are so many laws but the Act failed in so many areas to empower regulatory agencies to tackle the root causes of pollutions. The very few agencies put in place are not very active in their work. Hence, there is the need to really look into it.

3.2 Rationale Implications

Natural water covers certain per cent of the earth's surface. No doubt several steps have been taken by the necessary authorities to try and protect the marine environment.

However, much need to be done. Most of these laws are mere paper writings. There should strict penalties to help deter defaulters from falling short of the law. If nothing is done to monitor the activities on the marine environment, in years to come there will be total extinction of aquatic

mammals in the Nigerian waters. This could mean that those who depend on fishing a major means of livelihood will be left with nothing. They could resort to militancy as had already been experienced in some areas of the Niger Delta. This time, it will be brutal.

Again, if no measures are taken to protect the water, it turns out to become poisonous not just to the aquatic mammals but also to humans. This is a circular activity. Somehow, the water is consumed by people around that area and this poses threat to human lives. Also, the poisonous water finds its way to the land thereby destroying the soil system. This could lead to poor harvest in the sphere of agriculture. In all, not checkmating the human activities through laws leads to either harm to the sea fishes/mammals or the threat to human when the poisonous water is consumed or even to the land/plants if the poisonous water finds its way out of the rivers onto the land.

3.3 Legal Argument

Just like other countries, Nigeria experiences the problem of marine pollution, at times it is through industrial activity that happens at ports. Nigeria marine pollution is mostly done by oil and gas exploration and production in the State, mostly the Niger Delta Region which is mostly characterized by rivers, creeks and oceans. Again, marine pollution that arises from petroleum poses a major cause of social unrest in the area and over the years, this has attracted both National and International attentions, though causing Nigeria to take extra steps to curb it. Laws dealing with marine pollution have been examined cum the strengths, the shortcomings pointed out. Ways to strengthen these laws are necessary with a view to ending the environmental challenges. To this, it is worthwhile to state that there is no particular law(s) in Nigeria's statute which deals with the degradation of our marine environment, rather what we have are laws, regulations and International Conventions on this challenge which have been looked at. Example, Section 7 (1) the Nigerian Ports Authority Act which is a key legislation authorizes the Nigeria Ports Authority to control pollution arising from oil or any other substance from ships. It requires the NPA to maintain, improve and regulate the use of ports. Also the Oil in Navigable

Waters Act was promulgated to implement the International Convention for the Prevention of pollution of Sea by Oil (OILPOL 1954 – 1962).

3.4 Remedies to Marine Related Problems

Provided human activities take place, there are bound to be problems. To that effect, some of the laws like the Minerals and Mining Act, 2009, Petroleum Act 2004, Oil Pipeline Act 2004 and many more make provisions for remedies to problems arising from marine activities. Some of the remedies are:

- Damages: this is the mother of all actions in environmental litigation.⁸⁹ However, before this will be availed a victim of pollution, the fault element is very important.
- Restoration and Rehabilitation: This flows from the Polluters Pay Principle. The polluter is to take action to pay and restore the environment to how it was before the pollution took place.
- Resettlement: Here, the affected people could be resettled in another environment if need be.
- Injunction:⁹⁰ This is a legal remedy. The court gives a restraining order refraining the polluter from carrying on such activities that endangers the environment.
- Compensation: This accounts for loss suffered by a victim of pollution.⁹¹ The affected areas are paid certain amount of money as compensation to the damage done. A clear example of this is the Ogoni Oil Spill by Shell. The company has embarked on clean up and payment of cash to ease the pain of those affected. Also, there is a legal support/backing in the following laws: Oil Pipeline Act, 2004 and Minerals Act, 2004.

⁸⁹ Tobi, N; “Judicial Enforcement on Environmental Laws” In “*Law, Human Rights and Administration of Justice in Nigeria*”, (2001), Faculty of law, Zaria, P. 272.

⁹⁰ DemFebo, K .D; “*Litigation Problems in Compensation Claims for Oil & Gas Operations in Nigeria*”, (2009).

⁹¹ Amokaye, G. O; “*Environmental Law and Practice in Nigeria*”, (2004), University of Lagos Press, P. 661.

CHAPTER 4

SUMMARY, CONCLUSION AND RECOMMENDATIONS

4.1 Summary

Just like other parts of the world, Nigeria's marine environment is affected by so many human activities. In as much as natural disasters contribute to the destruction of marine system; the land-based human activities aggravate them a lot.

Nigeria has a lot of industries with over 80 per cent located in coastal zone and with many into in iron, fertilizer plant, and steel, some manufacturing industries like food, plastics, paints, paper, soap and *etcetera*. As a result of the heavy activities taking place in these industries, marine waters serve as disposal area thereby altering the water quality, aquatic lives and the marine environment as a whole. Pollution from oil drilling activities that occur in the Niger Delta Region of Nigeria is still a major concern. Spills from the activities render the marine system in that region unproductive. A lot of fishes die, the water quality deteriorates and by extension affect human lives. Also, pollution from plastics is a popular activity in all the regions in Nigeria. These plastics are carelessly disposed into the waters, oceans and seas. They in turn become marine litters which are very dangerous.

In all the activities flow from ship/cargo transportation, overfishing, dredging, oil spillage, disposal of plastics and so on. These activities affect the marine environment a whole lot. The effects of the human activities are summarized as degradation of quality of fish and other marine organisms; depletion of

population of fish; impairment of water quality; invasive species; total extinction and death of fish and other marine mammals.

To adequately protect, sustain and improve the Nigeria's marine system, so many laws were enacted and Regulations put in place. Most of these Laws and Regulations were derived from International treaties/conventions. Some regulatory bodies were set up to help implement and enforce these laws. The laws may have made some successes starting from the Constitution of Nigeria to the least Environmental Laws and Regulations, there are pitfalls. Although, the numerous laws may not be the problem, there are loopholes if addressed will go a long way in preserving the marine environment.

CHAPTER 5

CONCLUSIONS and RECOMMENDATIONS

5.1 Conclusion

This research showed high level of pollution on the marine environment caused by different anthropogenic activities ranging from overfishing, dredging, pipeline vandalism, ship/cargo transportation *etcetera*. The activities of man happen to be a daily routine and provided humans exist, there is bound to be activities that affect the marine system. The problem of pollution on Nigeria's waters, oceans and seas has become a major concern as it has done much damage to it than good. One of such causing pollution is oil spillage. Other sources could be invasive organisms, discharge from tankers and so on.

Although, the activities of man negatively alter the marine system/environment, some of the effects they have on the environment can be prevented or minimized by taking stringent measures. One of such could be by monitoring the environment that is the area where the pollution emanates from and try to put a stop to it. This research also has clearly shown some of the human activities vis a vis their hazardous effects on the marine system and environment. These effects were examined and were shown to be damaging the marine system as a whole and by extension the human life.

The work also looked at the Nigerian laws protecting and safeguarding the Nigeria's marine environment. These laws are derived from International treaties/conventions of which Nigeria is a party to. It was noted that Section

20 of the Constitution of the Nigeria, 1999 (As Amended) gives power to make laws aimed at regulating the environment, it can arguably be said that the section of the law is not justiciable, in that case Nigeria can only resort to International help. It is evident that Nigeria is not lacking in legislations to protect her marine system. Rather, there is problem of implementation and enforcement of these laws and some of the obstacles under this are corruption, illiteracy, ignorance and the likes. A lot of people ought to know what acts or omissions could cause the environment.

Again, Nigeria lacks the technology and power to properly regulate her marine environment. With poor technologies, it is usually difficult to identify sources of pollutants. This could be non-attentiveness of the stakeholders and Nigeria as a whole to issues of marine system, that is to say the country pays little or no attentions to concerns in the marine environment.

The sustainability of the Nigeria's marine environment/system is paramount. Having endeavored to highlight and discuss some of the human activities and their effects on the marine environment, it is believed that numerous Nigerian laws need to be fully implemented to help protect and sustain the marine environment.

5.2 Recommendations

It is a known fact that anthropogenic/human activities impact adversely on Nigeria's marine environment. These lead to marine pollution thereby endangering marine lives. In as much as these activities vis a vis marine pollution may not be avoided totally, it's effects can be curbed if well managed. It is therefore recommended as follows:

There should be actively implemented policies put in place to checkmate marine pollution. The Nigerian Government and its Stakeholders should put up strong policies to help guide the marine environment.

There should be creation of strong/active agencies and regulatory bodies to oversee and implement the policies/laws and the already existing regulatory bodies should be upgraded to measure up to the current trend.

Again, there should be in force strong polluter pays principle. It should be that whoever is caught polluting the environment should be made to pay to bring back the environment to its former state if possible before the pollution occurred. If the environment cannot be restored, the polluter should be made to pay heavily. Again, the penalties imposed on polluters/defaulters should be harsher and commensurate with the degree of pollution done. This will help deter intending polluters from ever thinking of polluting the environment.

There should be an active collaboration with International agencies in solving marine problems. In other to implement some of the treaties in which Nigeria is a party to, some of these International bodies can assist to manage the country's marine system.

There should be periodic Environmental Impact Assessment to evaluate the environmental impact of development activities. In Nigeria, the Federal Environmental Protection Agency (FEPA) is charged with such responsibility. From time to time, it is advised that the agency assess the activities or projects with a view to mitigate the negative impacts on the environment. This is for sustainable development. In addition to environmental assessment impact, there should specially set up team that would from time to time collate data of messes/pollutions caused by the human activities. With accurate data, the country can focus on the sole source and see a way to tackle such and stop it from reoccurring.

Finally, there should be awareness and education by the Government. Unfortunately, most people do not know the importance of marine. Although, ignorance of the law is no excuse, it will be surprise to state that most of the pollutions are done ignorantly, without know the implication(s). When such people are exposed and taught the importance of the marine system, it will to a large extent help control and sustain the marine life.

The above recommendations suggested will help curb the effects the human activities will have on Nigeria's marine environment.

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