



# IFE JURIS REVIEW

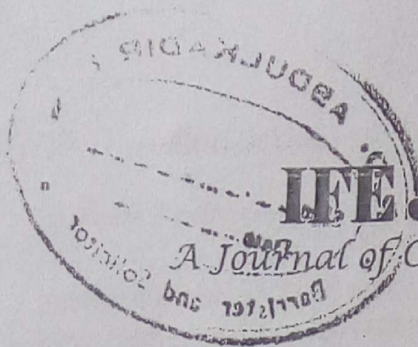
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## ENVIRONMENTAL PROBLEMS IN NIGERIAN MARITIME SECTOR

\*

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### Abstract

The maritime sector occupies a very prominent position in the economy of nations all over the world as it embraces all the maritime related business activities which take place within the country's maritime environment. The growing environmental awareness and a number of oil tanker disaster in the 1960s and 1970s attracted the attention of the international community on the human activities affecting marine environment. The series of oil tanker disasters informed the first United Nations global conference held in Stockholm. The conference showed disaffection on the existing legal regime and recommended immediate action for protection of oceans and seas. In spite of this, the challenges posed by the shipping industry like wanton discharge of oil at sea by vessels have been of serious magnitude. This paper examines the international and national legal frameworks put in place to address the challenges of vessels-sourced pollution. It argues that the challenges facing the maritime sector though high in nature but are surmountable. The paper recommends adequate national legislation and efficient enforcement mechanism in tackling environmental challenges in the maritime sector.

### Introduction

Combating oil pollution from shipping is regarded as one of the first environmental issues ever discussed at the international level. The Stockholm Conference of 1972 provided a decisive impulse to the Third United Nations Conference on the Law of the Sea (UNCLOS III) that was launched in 1973, with the view of adopting a convention dealing with all matters relating to the law of the sea. About a decade after the conference above, the 1982 United Nations Conventions on the Law of the Sea which represents a comprehensive regime for the protection and preservation of the marine environment was adopted. Although, there is

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no specificity as to the concept of "marine environment" under the 1982 UNCLOS, it has been argued that the term refers to the ocean space as a whole, that is, the surface of the sea, the subsoil, the water column, the sea bed and the atmosphere above them.<sup>1</sup> It is essential to mention that shipping is better regulated at the global level due to its global nature.<sup>2</sup>

Environmental pollution in maritime sector has continued to generate unpleasant hazards on health and the environment itself. Some of these problems include oil pollution, solid waste, dredging, air quality, ballast water, sound pollution, sewage and bilge water. Although, there has been localized concern with the problem of pollution since at least the sixteenth century,<sup>3</sup> the recognition of water pollution as a problem of global dimensions is of relatively recent origin and now find its way to legal expression.<sup>4</sup> It would seem that the regulation of pollution must wait until the value of the interests adversely affected substantially outweighs the convenience of a body of water as a dumping place for refuse. If this is so, it would at least partly explain why international solutions have lagged behind domestic ones, why the first conventional anti-pollution rules concerning the oceans did not appear until the middle of the twentieth century, and why no specific customary rules in this

<sup>1</sup> Frank, V, *The European Community and Marine Environmental Protection in the International Law of the Sea*, (The Netherlands, MartinusNijhoff Publishers, 2007), p.12.

<sup>2</sup> Ibid.

<sup>3</sup> The history of pollution laws in England, for example, dates back to the City Air Pollution Act, 12 Rich. 2, c. 13 (1388). The reign of Henry VIII was notable for a number of anti-pollution measures enacted between 1531 and 1543. e.g. an Act for the Preservation of the River Severn, 34 & 35 Hen. 8, c. 9, §§ 1, 2, 6 (1542-43) (attacks on the dumping of ballast and rubbish from vessels in navigable waters); Bill for the Preservation of the Havens in Devon and Cornwall, 27 Hen. 8, c. 23 (1535) (measures aimed at preventing the Cornish and Devon ports from being choked with tin mining debris); Bill for the Preservation of the River Thames, 27 Hen. 8, c. 18 (1535) (fine of 100 shillings for polluting the Thames); Bill of Sewers, 23 Hen.8, c. 5, § 3 (1531) (commissioners of sewers given the duty, inter alia, of keeping sewers and ditches dean).

<sup>4</sup> It is only within the last 15 years that the International Law Institute and the International Law Association, the two major associations of international lawyers, have dealt comprehensively with the pollution of international streams. See 49 *Annuaire de l'Institut de Droit International* (II) (Ann. Inst. dr. ) 370-73 (1961) Comm. on the Uses of the Waters of Int'l Rivers, Int'l Law Ass'n, Report of the Fifty-Second Conference 478 (1966). The formulation of rules of global application must await the 1972 Conference on the Human Environment and the 1973 Conference on the Law of the Sea. Marine pollution has been suggested as one of the major items on the agenda of the 1972 Conference.

See Comm. on Intl Environmental Affairs, U.S. Dep't of State, Pub. No. 8603, Suggestions Developed With the US Government for Consideration by the Secretary General of the 1972 UN Conference on Human Environment 52 (1971).

field have ever emerged. Although the actual volume of the oceans is very small in comparison to the volume of the earth, the seas do cover more than two-thirds of the earth's surface.<sup>5</sup> Little wonder, therefore, that until man reached the present level of industrial civilization he did not perceive that any of his activities could produce detrimental changes in the composition, content, or quality of seawater. Nigerian ports thus stand great risk of facilitating pollution of the Nigerian marine environment through the toxic and noxious harmful substances or energy from oil/chemicals, oil exploration and exploitation because of the fact that Nigeria is a major oil producing country whose ports are used in the process of loading, transportation and unloading of crude and refined oil cargoes and the accidental discharges associated with tankers' collisions. Port environmental pollution can therefore be caused by maintenance dredging of toxic materials, maintenance of superstructure and equipment, development of ports infrastructure, maintenance repairs to ships and ports' industrialization, cargo handling and storage, discharges from ships including ballast waters, shore-based transport operations [i.e. port/city interface], and accidents involving vessels carrying dangerous substances occasioning spillages at ports. This writer is not aware of any assessment carried out by NPA or any government agency or the Federal Ministry of Environment on the types of pollution, sources and environmental effects and solutions to the pollution of any Nigerian port or harbour.

### **The Shipping Activities and Oil Pollution Control**

The term 'pollution' includes any introduction by man of any substance into the marine environment which results or is likely to result in such deleterious effects to harm marine activities and becomes hazardous to human health.<sup>6</sup> The environmental problem of shipping activities as relate to pollution includes the coastal zone resulting from the development and operation of large-scale port facilities, and dredging and disposal of contaminated sediments for navigational purposes. Ships exhaust emissions pollute the atmosphere. Whilst at sea, ships can affect the marine environment through oily discharges, tank-cleaning, or if they have an accident and lose their cargo, although the scale of any impact obviously depends on the location, type and amount of substances released. There is also the effect of marine organisms that ships can carry from one biogeographically area to another in their ballast water or attached to their hulls.

<sup>5</sup>Council on Environmental Quality, *Ocean Dumping, A National Policy* ii(1970).

<sup>6</sup>Article 1(1) (4), UNCLOS 1982.

In tonnage terms, the most important pollutant resulting from shipping operations is oil. The National Academy of Science (NAS) of the United States estimated in 1980 that 3.54 million tons of oil entered the sea every year. Some 1.5 million tons of which resulted from the transport of oil by sea (the remainder came from land-based activities and included industrial wastes, urban run-off and natural seeps). A much greater quantity of oil enters the sea as a result of normal tanker operations, usually associated with the cleaning of cargo residues (clingage) which takes place when the ship is returning from the port of discharge to take on another cargo of oil. During ballasting and cleaning, as much as half of this can be lost overboard unless slops are retained on board. In tonnage terms, this is still probably the biggest source of oil pollution from ships – about 700,000 tons a year.<sup>7</sup>

The Nigerian maritime sector may be divided into shipping services, port services, shipbuilding and repairs as well as maritime education and training subsectors. The sector can also be categorised into inland and coastal trade, and ocean trade segments. Further segmentation is to look at the Nigerian maritime sector from the regulatory and operational view points. Whereas the Nigerian Maritime Administration and Safety Agency (NIMASA) regulates both the ocean and domestic shipping services including the enforcement of Flag and Port State controls, marine environmental matters, seafarers certification, infrastructure and manpower capacity building, the Nigerian Ports Authority (NPA) regulates the port sector. The powers of NIMASA are drawn from the NIMASA Act 2007 as well as from the Cabotage Act 2003 to regulate shipping and implement the provisions of the Merchant Shipping Act (MSA) 2007.

### **International Laws on Environmental Problems in Maritime Sector**

By the principle of public international law, states are under obligation to open their ports to foreign ships except in a situation where the vital interests of the states will be jeopardised.<sup>8</sup> In the course of traversing the sea and access ports of coastal states, ships

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<sup>7</sup> Oni S.I, *Owads Sustainable Coastal Hazard Management In Nigeria International Conference On Estuaries And Coasts* November 9-11, 2003, Hangzhou, China at page 185.

<sup>8</sup> Abdulkadir O.A and Abdul Kader S.Z, "Port Security vs Economic Gain: An Expository of the Malaysian Port and Maritime Security Practice", *IIUM Law Journal*, Vol.21 No.2 (2013), p.265. See also the case of *Saudi Arabia vs Arabian American Oil Company (ARAMCO)* (1958) 27 I. L. R. 117. Abdulkadir O.A and Abdul Kader S.Z, "Right of Ship Access to Port State under International Law: All Bark with No Bite," *Australian Journal of Basic and Applied Sciences*, 6(11) (2012), pp. 215-216. Tasikas. V, "The Regime of Maritime Ports

discharge oil into the sea. The environmental problem of shipping includes greenhouse gas emission, acoustic, and oil pollution. Carbon dioxide emission from shipping is estimated to be 4 to 5 percent of the global total, and estimated by the International Maritime Organization (IMO) to rise by as much as 72 percent by 2020 if no action is taken.<sup>9</sup> The International Laws includes the following:

### **International Environmental Law before the Stockholm Conference**

The 1902 Convention for the protection of Birds Useful to Agriculture was the first global convention to enter into force for the protection of designated species of wildlife. Several early boundary waters treaties contain measures against water pollution. Effort to combat marine pollution appeared during the 1950s. The 1954 London Convention for the Prevention of the Pollution of the Sea by Oil was the first rather tentative step in this direction. The Convention was later modified and reinforced, then replaced in 1973 by a much more detailed and effective convention.

During this period, environmental concerns increasingly appeared in a general international legal text. The 1959 Antarctic Treaty forbid all nuclear activity on the sixth continent and also envisaged the adoption of measures to protect animals and plants. Two or the four 1958 convention relating to the law of the sea prohibited ocean pollution by oil or pipelines and by radioactive wastes as well as damage to the marine environment caused by drilling operations of the continental shelf. A third convention was entirely dedicated to fishing and convention of marine living resources. For the other common area, the 1967, Treaty on Principles Governing the Exploration and Use of Outer Space declared that states should avoid contamination as well as harmful modification of the earth through the introduction or extraterrestrial substances. These factors explain the brevity of time took for international organizations to recognize the emergence of a new problem. The United Nations Economic Commission for Europe, for example, made studies beginning in 1956 about pollution of inland waters and later dumping of wastes. The year 1968 was the turning point, however, with the United Nations, the Council of Europe and the Organization of Organization of African Unity all taking decisive steps.

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Access: A Relook at Contemporary International and United States Law" *Loyola Maritime Law Journal*, 5  
loy.mar L.J 1 (2007), p. 1.

<sup>9</sup> Vidal, J. (2007-03-03). "CO2 Output From Shipping Twice As Much As Airlines" *The Guardian* (London)

### **United Nations Convention on the Law of the Sea (UNCLOS) 1982**

The United Nations Law of the Sea Convention (UNCLOS) 1982 is one of the most innovative and remarkable multi-lateral treaties in world history. The UNCLOS encompasses nearly every use of the oceans resources in its quest to create a new and all-inclusive legal regime of the world's sea<sup>10</sup>. Indeed, not only does the UNCLOS codify existing concepts of the ocean law, such as the territorial sea and contiguous zone, it also creates fundamentally new maritime zones; such as the exclusive economic zone, archipelagic waters and international straits.<sup>11</sup> Thus, the UNCLOS provides exhaustive articles on both the rights and duties of the coastal state, as well as the freedoms and limitations of ocean-going vessels in each respective maritime zone.<sup>12</sup>

The United Nations has responded to marine pollution by charging its specialized agency, the Inter-Governmental Maritime Consultative Organization ("IMCO"), with the dual obligations of improving maritime safety and preventing marine pollution. Yet, despite several major conventions intended to eliminate outmoded tanker designs and polluting practices, oil spills and discharges continue. The significance of this analysis is accentuated by the fact that we now stand on the threshold of a new international legal order for the high seas, one which may have profound implications for the question of maritime pollution. This new order is characterized by two development sin the law: the promulgation of the MARPOL 73/78 Convention and the United Nations Convention on the Law of the Sea. During this same period, the name of IMCO was changed to the International Maritime Commission("IMO"), reflecting in part the new powers it has recently been granted to promulgate binding regulations upon member states.

### **Marpol 73/78**

Since the TORREY CANYON disaster of 1967, IMO has intensified its efforts to fight marine pollution by ocean vessels.<sup>13</sup> In 1973, IMO convened the International Conference on Marine Pollution, whose purpose was to update oil pollution and make it more responsive to contemporary tanker practices. The Conference produced the International

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<sup>10</sup>Abdulkadir O.A and Abdul Kader S.Z, "Right of Ship Access to Port State under International Law: All Bar with No Bite," *Australian Journal of Basic and Applied Sciences*, 6(11) (2012), p.216.

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

<sup>13</sup>McDurman, T. N. Letalik, H. Mills, D. Johnston &E. Gold, "The Marine Environment and the Caracas Convention on the Law of the Sea (1981) [Hereinafter Cited As Caracas Convention].

Convention for the Prevention of Pollution from Ships ("MARPOL 73").<sup>14</sup> MARPOL has been described by IMO as "the most ambitious international treaty covering maritime pollution ever adopted."<sup>15</sup> Its comprehensive jurisdiction embraces not only oil pollution, but all forms of vessel pollution. Most of its technical requirements are set forth in the five annexes to the convention, which address oil, chemicals, tanks and containers, sewage and garbage, respectively. Only the first two of these annexes need be adopted by a party to the Convention.<sup>16</sup>

In particular, Annex 1 maintains the oil discharge criteria of oil pollution, but supersedes and tightens the criteria by reducing the amount of oil and similar substances which can be discharged to 30,000 of the cargo, and totally forbidding discharges in special areas, including the Mediterranean Sea, Black Sea, Baltic Sea, and the Persian Gulf. Annex 1 also establishes construction requirements for such technological developments as load on top systems, oily water separating equipment, double bottoms, and segregated ballast. Ports must install reception facilities for contaminated ballast. The Annex retains the oil record book requirement of oil pollution, insisting that all discharges be recorded therein, and providing that any member state may freely inspect record book entries. Reluctance of nations to adopt MARPOL 73 was attributed to several of the technical provisions of the Convention, including those involving oily water separating equipment, port discharge reception facilities and chemical tankers. As a result, the IMO convened the International Conference on Tanker Safety and Pollution Prevention in 1978, which resulted in a Protocol which effectively

<sup>14</sup> Opened for signature Jan. 15, 1974, reprinted in 12 INT'L LEGAL MAT. 1319 (1973) [hereinafter cited as MARPOL 73]. See Dempsey & Helling, *supra* note 60, at 68; IMCO Doc MP/CONF/ WP 35 (Nov. 2, 1973).

<sup>15</sup> MARPOL 73/78, 4 IMO News 10 (1982). Its drafters hoped that its promulgation might result in "the complete elimination of intentional pollution of the marine environment by oil and other harmful substances and the minimization of accidental discharges of such substances." Mensah, *International Environmental Law: International Conventions Concerning Oil Pollution at Sea*, 8 Case W. Res. J. Int'l L. 110, 117 (1976) quoting International Convention for the Prevention of Pollution from Ships, May 2, 1973, IMCO Doc MP/CONF/WP35 (Nov. 2, 1973), reprinted in 12 Int'l Legal Mat. 1319 (1973), fourth preamble paragraph.

<sup>16</sup> MARPOL 73, *supra* note 182, at art. 14(1). The port state enjoys broad inspection opportunities under MARPOL. See *id.* art. 6(2). It can inspect the vessel's operating certificate issued by the flag state. Where there "are clear grounds for believing that the condition of the ship or its equipment does not correspond substantially with the particulars of the certificate" or where the vessel not hold a proper certificate, the port state can conduct a more extensive examination of the vessel, and/or prohibit the vessel from setting sail "until it can proceed to sea without presenting an unreasonable threat of harm to the marine environment." *Id.* at art. 5(2). See generally K. HAKAPAA, *supra* note 94, at 173.

absorbed the 1973 Convention and ameliorated its stringent technical requirements. The resulting treaty is affectionately referred to as MARPOL 73/78. It was ratified by a sufficient number of states<sup>17</sup> and entered into force on October 2, 1983.

The IMO Secretary-General referred to MARPOL 73/78 as the most important and comprehensive international anti-pollution treaty in history.<sup>19</sup> It addresses not only the discharge of oil at sea, but also prevents the discharge of any "harmful substance," a term which includes "any substance which, if introduced into the sea, is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of these."<sup>18</sup>

### **Nigerian Laws on Environmental Problems in Maritime Sector**

Environmental law in Nigeria is that branch of public law, which contains rules and regulations, which have as their object or effect the protection of the environment. During the colonial era, protection of the environment was not a priority in Nigeria and there was accordingly no policy aimed at preserving and protecting it. Matters relating to the environment were dealt with as a tort of nuisance because disputes in environmental law were not viewed as public matters warranting state intervention. The few environmental related laws criminalized activities that could degrade the environment.<sup>19</sup> It has been stated that more than 1.07 million barrels of oil were spilled in Nigeria between 1960 and 1997, this figure excludes unreported cases.<sup>20</sup> The millions of tonnes of polythene bags and other types of non-biodegradable debris that have been washed by rain water into the aquatic environment constitute new threats to marine fisheries. However, coastal states like Nigeria, to a large extent have power to maintain and preserve marine environment<sup>21</sup> and in order to guarantee the

<sup>17</sup>Note that Nigeria is signatory to this convention.

<sup>18</sup>192 MARPOL 73, *supra* note 182, at art. 2.

<sup>19</sup>Ladan M.T, "Review of NESREA Act 2007 and Regulations 2009-2011: A New Dawn in Environmental Compliance and Enforcement in Nigeria", *Law, Environment and Development Journal*, p.118.

<sup>20</sup>Emeseh, E. "The Limitations of Law in Promoting Synergy Between Environment and Development Policies in Developing Countries: A Case Study of the Petroleum Industry in Nigeria", A Paper presented at the Berlin Conference on Human Dimensions of Global Environmental Change, Held in Berlin from 3-4 December, 2004. See also Badejo, O. T. "Impacts and Management of Oil Spill Pollution along the Nigeria Coastal Areas"(2006), *FIG Publications No. 36*, pp. 119-133 at pp. 123-125.

<sup>21</sup>Abdulkadir O.A and Abdulkader S.Z, "Port Security v Economic Gain: An Expository of the Malaysian Port and Maritime Security Practice", *IJUM Law Journal*, Vol.21 No.2 (2013), p.263.

environmental protection in Nigeria, many legislations have been operational in protection of maritime sector. These include;

### **National Environmental Standard and Regulations Enforcement Agency (NESREA) Act 2007**

This Act replaced the Federal Environmental Protection Agency Act (FEPA), 1988. It is administered by the Federal Ministry of Environment to protect and promote the sustainable development of the environment and its natural resources. It is the major Federal body charged with the protection of Nigeria's environment. Section 7 of NESREA<sup>22</sup> made it mandatory for the Ministry of Environment to ensure compliance with Environmental Laws (Local and International) on Environmental Sanitation and Pollution prevention and also control through monitory and regulatory measures. Section 8(i)(k) of NESREA<sup>23</sup> empowers NESREA to make and review regulations on air and water quality, effluent limitations, control of harmful substances and other forms of environmental pollution and sanitation. Also, section 27 of NESREA<sup>24</sup> prohibits, without lawful authority, the discharge of hazardous substances into the environment.<sup>25</sup> As a control measure, NESREA made it compulsory under the national effluent limitation regulation for industries to have anti-pollution equipment for the treatment of effluent,<sup>26</sup> to submit to the agency the composition of the industry's treated effluents.<sup>27</sup>

In addition, the National Environmental Protection (Population Abatement in Industries and Facilities Waste) Regulation of 1991 forbids industries from releasing hazardous substances into the air, land or water of Nigeria beyond limits set by the agency,<sup>28</sup> it requires industries to report a discharge if it occurs<sup>29</sup> and it also requires industries to submit a comprehensive list of chemicals used for production to the agency.<sup>30</sup>

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<sup>22</sup> NESREA, S. 7.

<sup>23</sup> Ibid, S. 8(I)(K).

<sup>24</sup> Ibid, S. 27.

<sup>25</sup> The offence is punishable with a fine not exceeding, 1,000,000.00 (one million naira) and an imprisonment term of 5 years.

<sup>26</sup> NESREA, National Effluent Limitation Regulation 1(I).

<sup>27</sup> Ibid, S. 3(2).

<sup>28</sup> NESREA, National Environmental Protection (Pollution Abatement In Industries and Facilities Producing Waste) Regulations, 1991, Section 1.

<sup>29</sup> Ibid, Section 4.

<sup>30</sup> Ibid, Section 5.

### **Environmental Problems in Maritime Sector**

The impact of shipping can be positive or negative, but the positive impact far outweighs the Negative impact. The environmental issues are still giving the world enough headache. The major environmental problem are reflected in air quality, dredging, endangered and threatened life species, oil pollution and solid waste explained as follows:

#### **Air Pollution**

The shipping sector is a major source of atmospheric pollutants, particularly carbon dioxide (CO<sub>2</sub>), sulphur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), hydrocarbons including carcinogenic PAHs (Polycyclic Aromatic Hydrocarbons), and particulates (soot). These arise from the combustion of bunker fuel in ships' engines and are emitted to the atmosphere as exhaust gases. In the absence of standardised onshore power supply in ports and harbours, ships burn fuel to generate electricity for lighting, machinery and other onboard needs whilst at berth.<sup>48</sup> The maritime transport sector is a significant contributor to climate change. In 2000, ships' emissions of the greenhouse gas CO<sub>2</sub> in EU seas were 157 million tones.<sup>49</sup> This is more than aviation emissions in EU air space.<sup>50</sup> Shipping currently contributes about 10% of the deposition of SO<sub>x</sub> and NO<sub>x</sub> over wide areas of Europe, and up to 15% in some coastal areas.<sup>51</sup> This adds to acid rain and also to a substantial input of nitrogen to the sea (ICES 2003). Sulphate particles may also create health problems in densely populated areas surrounding ports.

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<sup>48</sup> In May 2006 the European Commission adopted the Recommendation on the promotion of shore-side electricity for use by ships at berth in EU ports. Shore-side electricity means providing electricity to ships at berth in ports from the national grid instead of ships producing electricity using their own engines. This eliminates local air and noise emissions from ships' engines while at berths in port. The Recommendation is not legally binding. Its objective is to promote the consideration of shore-side electricity as a means of abating ships emissions in EU ports, particularly in populated areas which suffer from poor air quality. It aims to do this by providing information on practicalities, benefits and costs; by calling for harmonized international standards; and by highlighting the possible use of electricity tax reductions as an incentive to ship operators to use shore-side electricity (DG Environment).

<sup>49</sup> Quantification of emissions from ships associated with ship movements between ports in the European Community

<sup>50</sup> See the European Commission 2006.

<sup>51</sup> Ibid.

Despite steps to reduce air pollution from ships, such as the entry into force of Annex VI to MARPOL 73/78 on 19 May 2005,<sup>52</sup> there are concerns that if no further measures are introduced, by 2020 emissions of SO<sub>x</sub> and NO<sub>x</sub> from international shipping around Europe may have surpassed the total emissions from all land-based sources in the 25 EU Member States combined. This will have an impact on environmental and health problems. There is need for reduction in these emissions in line with the recently adopted EU Thematic Strategy on Air Pollution.<sup>53</sup>

### **Discharges at Sea**

Oil and oily residue discharges from ships represent a significant threat to marine ecosystems. In general, this type of pollution results from the deliberate washing of tanks or the flushing of bilge or ballast water. Discharges may occur during normal operational activities or may be accidental or illegal. Illegal discharges of oil from ships are often limited in size and scattered, but their sum is higher than that from oil spills, and they may create a chronic impact in certain areas. The International Convention for the Prevention of Pollution from Ships, 1973 and its Protocol of 1978 (MARPOL 73/78) was established under the IMO to regulate operational discharges from ships.<sup>54</sup> From 1<sup>st</sup> August 1999, the seas around Ireland and their approaches have been designated as a Special Area with regard to oil and waste, in which stricter anti-pollution regulations apply.<sup>55</sup> As a result, the discharge limit for oily water, from any ship, is 15ppm oil. To this end, designation of certain area as Special Area as it is being practicing in Ireland and Australia will reduce pollution in Nigeria water.

### **Ship Recycling**

It is no doubt that some ships have been manufactured for more than four decades. The breaking-up and recycling of ships that have reached the end of their economic lives can have serious adverse impacts on the marine environment and on human health among workers

<sup>52</sup> Annex VI (air pollution) to the International Convention for the Prevention of Pollution from Ships, 1973 and its Protocol of 1978 (MARPOL 73/78, Annex VI) contains provisions on SO<sub>x</sub> Emission Control Areas (Baltic Sea, North Sea and English Channel) and NO<sub>x</sub> emissions standards for ships' engines.

<sup>53</sup> See European Commission 2006, id. Communication from the Commission to the Council and the European Parliament "Thematic Strategy on Air Pollution" COM (2005)446

<sup>54</sup> MARPOL 73/78 is the abbreviated name for the International Convention for the Prevention of Pollution from Ships, 1973, its Protocol of 1978, and its Annexes I (oil), II (bulk chemicals), III (packages), IV (sewage), V (garbage) and VI (air pollution).

<sup>55</sup> Other European Special Areas are the Baltic Sea and the North Sea

in shipyards where ships are recycled. In May 2006, North Sea environment ministers stated that significant progress has been made since the 2002 Bergen Declaration to address the environmental and socio-economic issues concerning ship recycling, within the International Maritime Organization, the International Labour Organization and the Basel Convention.<sup>56</sup> The ministers added that they will contribute actively to the rapid development within IMO of a legally binding instrument to be ready for adoption at the latest by 2009. Whether the claim of these ministers was not ambitious, it is crystal, having regard to the fact that little or nothing have been achieved since the effective date of 2009.

### Noise

Noise from shipping, fishing vessels, leisure craft, offshore oil and gas activities, naval activities, dredging, offshore wind farms and other sources is a major cause of disturbance to sensitive species in the marine environment. While protected offshore habitats and conservation areas may be outside shipping lanes and off-limits to fishing, navy firing exercises and seismic surveying, the fact that sound propagates over a range of biologically significant distances, from metres to thousands of kilometres depending on its frequency, means that anthropogenic marine noise is a pervasive form of pollution and needs to be regulated accordingly. Unlike terrestrial noise, however, marine environmental noise is virtually unregulated.

Shipping is the dominant contributor of noise to the marine environment. Noise emanates from the ships' propellers, machinery, the passage of the hull through the water, and the increasing use of sonar and depth sounders. Most shipping has a low frequency range, i.e. less than 1kHz (i.e. 1,000Hz), which coincides with the frequencies used, in particular, by baleen whales (e.g. minke, fin and humpback whales) for communication and other biologically important activities. In general, older vessels produce more noise than newer ones and larger vessels produce more than smaller ones. Noise from a supertanker (at 6.8Hz) has been detected 139-463km away. Such distant shipping noise adds to the constant ambient noise level in the marine environment. There has been a large increase in ambient noise in recent years, particularly in the Northern Hemisphere and this has implications for cetaceans. For example, blue whales have been observed to vary the intensity of their vocalizations in response to varying ambient noise levels.

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<sup>56</sup> See the NSMM 2006.

### **Collisions with Whales**

It is well known that ships sometimes collide with whales. But the extent of the problem is unknown as the ships are frequently unaware of a collision. With the advent of faster ships, including high speed ferries, the risk has increased, and as average vessel speeds increase, this problem is likely to get worse. Proper environmental impact assessments that take cetaceans into account should be carried out before the introduction of any new fast ferry route.

### **Oil Pollution**

Collisions between ships, loss of propulsion leading to collisions with the coast, jetties or other port structures, loss of maneuverability in stormy seas accentuated by climate change, navigational errors leading to groundings on reefs and sandbanks, fire at sea, piracy, passage through war zones and threat of terrorist attack. Shipping is a risky business and accidents don't just involve oil tankers. Apart from the potential loss of crude oil and other hazardous cargoes into the marine environment, ships contain bunkers of fuel oil, with potential for spillage during refilling (bunkering) operations, collisions or other accidents. Oil released into the ecosystem is a major environmental problem associated with the shipping industry. Large spills occur during transportation through tanker accidents and spills during loading and off-loading. Waste water from tank washing, discharge from bilges and engine maintenance are common causes of smaller spills. These are hazardous to human beings and the environment through bioaccumulation of toxins through the food chain. In addition, oil pollution degrades coastal habitats, smothering tidal pools and killing marsh grass.<sup>57</sup>

### **5.07 Solid Waste**

Solid waste generated on a ship includes glass, paper, cardboard, aluminium and steel cans, and plastics. It can be either non-hazardous or hazardous in nature. Solid waste that enters the ocean may become marine debris, and can then pose a threat to marine organisms, humans, coastal communities, and industries that utilize marine waters. Cruise ships typically manage solid waste by a combination of source reduction, waste minimisation, and recycling. However, as much as 75 percent of solid waste is incinerated on board, and the ash typically is discharged at sea, although some is landed ashore for disposal or recycling. Marine mammals, fish, sea turtles, and birds can be injured or killed from entanglement with plastics

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<sup>57</sup> Ibid.

and other solid waste that may be released or disposed off of cruise ships. On average, each cruise ship passenger generates at least two pounds of non-hazardous solid waste per day.<sup>58</sup> With large cruise ships carrying several thousand passengers, the amount of waste generated in a day can be massive. For a large cruise ship, about 8 tons of solid wastes are generated during a one-week cruise.<sup>59</sup> It has been estimated that 24 percent of the solid waste generated by vessels worldwide (by weight) comes from cruise ships.<sup>60</sup> Most cruise ship garbage is treated on board (incinerated, pulped, or ground up) for discharge overboard. When garbage must be off-loaded,<sup>61</sup> cruise ships can put a strain on port reception facilities, which are rarely adequate to the task of serving a large passenger vessel.<sup>62</sup> All ships produce solid wastes during voyages. Most of these wastes can be legally disposed at sea, as long as they are released at a distance from the shore. Plastics must be properly incinerated on land. Solid waste from shipping enters the environment when cargo is lost at sea or accidentally released during loading and unloading.

### **Environmental Impacts of Ships-Sourced Pollution**

Pollution from ocean-going ships impacts our environment and public health. The same fine particles that can be breathed deep into the lungs adversely affecting human health also cause the haze that pollutes scenic vistas in national parks and wilderness areas and creates "brown clouds" in our urban centers. The constituents of diesel exhaust also contribute to the acid rain that continues to harm sensitive ecosystems. Acid rain occurs when pollutants like SO<sub>2</sub> and NO<sub>x</sub> react with water, oxygen, and other chemicals in the atmosphere to form

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<sup>58</sup>The Center for Environmental Leadership in Business, "A Shifting Tide, Environmental Challenges and Cruise Industry Responses," p. 14.

<sup>59</sup>Blue water Network, "Cruising for Trouble: Stemming the Tide of Cruise Ship Pollution," March 2000, p. 5. A report prepared for an industry group estimated that a 3,000-person cruise ship generates 1.1 million US gallons (4,200 m<sup>3</sup>) of graywater during a seven-day cruise. Don K. Kim, "Cruise Ship Waste Dispersion Analysis Report on the Analysis of Graywater Discharge," presented to the International Council of Cruise Lines, September 14, 2000.

<sup>60</sup>National Research Council, Committee on Shipboard Wastes, Clean Ships, Clean Ports, Clean Oceans: Controlling Garbage and Plastic Wastes at Sea (National Academy Press, 1995), Table 2-3, pp. 38-39.

<sup>61</sup>For example, glass and aluminum cannot be incinerated.

<sup>62</sup>National Research Council, Committee on Shipboard Wastes, Clean Ships, Clean Ports, Clean Oceans: Controlling Garbage and Plastic Wastes at Sea (National Academy Press, 1995), p. 126.

various acidic compounds. The result is a mild solution of sulfuric acid and nitric acid.<sup>63</sup> When this acid falls back to the earth, it harms our nation's revered ecosystems—causing acidification of lakes and streams and contributing to the damage of trees, like red spruce trees, at high elevations and many sensitive forest soils.

In the same token, pollution from ocean-going vessels also contributes to global climate change. In 2006, in U.S. waters alone, these vessels emitted about 55.6 million metric tons of CO<sub>2</sub>. Additionally, ocean-going ships contribute about 1.7% of global black carbon emissions every year. Black carbon refers to the solar-absorbing component of soot, which is released during the combustion process and it is another potent global warming pollutant. Studies show that black carbon triggers snow and ice melting and contributes to Arctic warming. In some places, including the Alaska region, shipping can contribute an additional 40% to atmospheric concentrations of black carbon. Black carbon from shipping could also have disproportionate effects on air quality near port areas because of the intensity of shipping in these areas.

### **Suggested Solutions to Environmental Maritime Problems in Nigeria**

#### **Establishment of Emission Control Area**

Nigeria as nation has the opportunity to join an international emissions control program that would reduce shipping pollution along its coastlines, ports and indeed in every

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<sup>63</sup> 31 Regulating Greenhouse Gas Emissions Under the Clean Air Act; Proposed Rule ( July 30, 2008) 73 Fed. Reg. 44354 at 44466

32 Ramanathan, V. and G. Carmichael (2008) Global and Regional Climate Changes due to Black Carbon, Nature Geoscience. May be accessed online at: [http://www-ramanathan.ucsd.edu/publications/Ram\\_Carmichael-NatGeol-221.pdf](http://www-ramanathan.ucsd.edu/publications/Ram_Carmichael-NatGeol-221.pdf)

33 Lack, Daniel, et al. (2008) Light Absorbing Carbon Emissions from Commercial Shipping, Geophysical Research Letters, 35:L13815

34 Ramanathan, V. and G. Carmichael (2008) Global and Regional Climate Changes due to BlackCarbon, Nature Geoscience. May be accessed online at: [http://www-ramanathan.ucsd.edu/publications/Ram\\_Carmichael-NatGeol-221.pdf](http://www-ramanathan.ucsd.edu/publications/Ram_Carmichael-NatGeol-221.pdf) Lack, Daniel, et al. (2008) Light AbsorbingCarbon Emissions from Commercial Shipping, Geophysical Research Letters, 35:L13815Flanner, M. G., C. S. Zender, J. T. Randerson, and P. J. Rasch (2007). Present-day climateforcing and response from black carbon in snow, J. Geophys. Res., 112, D11202,doi:10.1029/2006JD008003.

35 Lack, Daniel, et al. (2008) Light Absorbing Carbon Emissions from Commercial Shipping, Geophysical Research Letters, 35:L13815

36 Lack, Daniel, et al. (2008) Light Absorbing Carbon Emissions from Commercial Shipping, Geophysical Research Letters, 35:L13815

state in the continental shelf. Participation in the Emission Control Area (ECA) program as done by the United States would result in SO<sub>x</sub> reductions of approximately 98% and NO<sub>x</sub> reductions of up to 80% from each new ship. Prompt action by the IMO can secure healthier air for millions of Nigerians. As a major oil producer, it is imperative that Nigeria ensures that appropriate surveys are conducted and that areas are mapped out for spill and pollution control.

### **Provision of Reception Facilities in Nigerian Ports**

Port Reception Facility is a kind of palliative measure provided by any international shipping ports to collect oily mixtures, residues and garbage that are generated from sea going vessels. The arrangements, where in place at a port must be such that the receiving process can be performed as quick as possible to avert undue delay of the ship and must be sufficient to receive the capacity of the dirty to be discharged.<sup>64</sup> There are also oil reception facilities to prevent reduce or control marine pollution of the ports and harbours environment which were established by the Nigerian Ports Authority at all ports, but these reception facilities are yet to meet the standards set in MARPOL73/78. The IMO has encouraged state parties to provide good reception facilities in order to achieve effective implementation of provision of the MARPOL on prohibition of discharge of oil at sea by ships. Therefore, the acceptance of the 1996 Protocol to the London Convention<sup>65</sup> in this respect will be of immense assistance to realize the benefit of contracting states and to avoid security threats likely to be the resulting effect of wanton discharge of oil in Nigerian waters.

### **Marine Pollution**

Marine environmental pollution is the major cause of militancy in the Niger Delta region. Oil exporting members of the IICCI that have expertise in marine pollution control and management can establish companies to provide cleaning services by which they can prevent attacks on ships by militants. It is suggested that Nigeria should immediately ratify

<sup>64</sup> See Marine Insight, available at <http://www.marineinsight.com/marine/marine-news/featured/what-is-port-reception-facility/> (accessed on 26/12/12).

<sup>65</sup> The 1996 Protocol represents a significant change of approach with respect to the question of how to regulate the use of the sea as a depository for waste materials. In other words, the Protocol prohibits dumping, except for materials on an approved list. However, this contrasts with the provisions of the 1972 Convention which permitted dumping of wastes at sea, except for those materials on a banned list. Note that this Convention has 42 member state parties presently, but Malaysia is yet to accede to it.

and domesticate all the international conventions relating to marine pollution especially MARPOL 73/78 and implement them in our ports and harbours. Before any new port is developed or repaired, its environmental impact assessment must be carried out and there should be waste management strategy and provision of adequate reception facilities. The NPA and terminal operators should also develop plans for responding to likely oil spillages considering all emergency incidents like collisions, groundings, fire and personnel casualties based on which priorities would be determined and response mechanisms set up. Well-trained search and rescue personnel backed by necessary equipment to execute the port plan should be established to effectively fight marine pollution at the ports and protect and preserve the Nigerian marine environment.

### **Conclusion and Recommendation**

It has been shown that marine pollution has only recently been recognized as a problem of global dimensions and extreme complexity, unfortunately international law has not yet evolved specific rules for dealing with it. This does not mean that international law ignores marine pollution, it means that the prohibition of pollution must be sought in the general rules pertaining to the use of the sea. These rules are necessarily vague and can be made workable only by interpreting them as almost totally permitting or totally forbidding pollution. The national laws on the same issue appear to be inadequate. The system must transcend the merely convenient, however, before it will significantly influence the problem of marine pollution. The common, long-term interest of humanity must first develop ingenuity and influence surpassing that of national sovereignty before vessel-source pollution can be effectively controlled. The vehicle for that ingenuity may be the IMO.

A multi-focal society of autonomous members, such as the present world order, requires a legal system that structures conflicts through an informal institutional framework and permits settlement with minimum disruption.<sup>66</sup> The objective is not the abolition of conflict, but the creation of an establishment that can handle it before it surpasses control. Even so, it is one thing to assign this broad responsibility and quite another to proceed effectively against the polluters in particular instances. Lack of appropriate substantive municipal law, coupled with constitutional bars to the direct application of international law,

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<sup>66</sup>Fisher, *Improving Compliance With International Law* 15 (1981)

may preclude suits in municipal courts.<sup>67</sup> An international forum may also be denied to the plaintiff state for lack of standing on the ground that the injury was not to its individual interests but to those of the international community-a separate, abstract entity-or to mankind as a whole.<sup>68</sup> Nevertheless, explicit recognition of the need to protect the marine environment in recent projects of international conventions indicates that the interest of individual states in the marine environment will be protected by law. While progress is being made along these lines, uncertainties remain, even when there is demonstrable injury to a state's material interests, as to the degree of responsibility with which the offender shall be burdened. The trend seems to be toward strict liability, whether on the part of the state or of private enterprise and whether the pollution derives from within the state's boundaries or originates on the high seas.

Nigerian ports thus stand great risk of facilitating pollution of the Nigerian marine environment through the toxic and noxious harmful substances or energy from oil/chemicals, oil exploration and exploitation because of the fact that Nigeria is a major oil producing country whose ports are used in the process of loading, transportation and unloading of crude and refined oil cargoes and the accidental discharges associated with tankers' collisions. Port environmental pollution can therefore be caused by maintenance dredging, maintenance of superstructure and equipment, development of ports infrastructure, maintenance repairs to ships and ports' industrialization, cargo handling and storage, discharges from ships including ballast waters, shore-based transport operations (i.e. port/city interface), and accidents involving vessels carrying dangerous substances occasioning spillages at ports. This writer is not aware of any assessment carried out by NPA or any government agency or the Federal Ministry of Environment on the types of pollution, sources and environmental effects and solutions to the pollution of any Nigerian port or harbour. There are also oil reception facilities to prevent reduce or control marine pollution of the ports and harbours environment.

<sup>67</sup> In addition, procedural obstacles may preclude bringing a suit in the courts of the polluter's state. See, e.g., Read, *The Trail Smelter Dispute*, 1 Can. Y.B. Int'l L. 213, 222 (1963), wherein the author said: "The ordinary course followed by persons damaged by fumes from a smelter was to bring a suit in the courts of justice for damages and for an injunction to prevent future damage. This, however, was not satisfactory for the claimant in the State of Washington. It was the general opinion of the lawyers concerned at the time that the British Columbian courts would be compelled to refuse to accept jurisdiction in suits based on damage to land situated outside of the province. Apart, therefore, from the practical difficulty confronting some hundreds of claimants in bringing suits in a foreign forum, there was the moral certainty that they would lose."

<sup>68</sup> See, e.g. *South West Africa Cases*, [1966] I.C.J. 4, 32.

which were established by the Nigerian Ports Authority at all ports although reception facilities are yet to meet the standards set in MARPOL73/78.<sup>69</sup>

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<sup>69</sup> Mike Igbokwe, Environmental Problems in Maritime Industry in Nigeria,  
<http://www.mikeigbokwe.com/new1/majorproblems.ss>