ENVIRONMENTAL RISK AND DECOMMISSIONING OF OFFSHORE OIL PLATFORMS IN NIGERIA

By

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Introduction

The need for a comprehensive and effective decommissioning law by oil producing states is urgent, even as oil production installations approach the end of their working life, become obsolete and oil industry contracts with multinational and indigenous oil companies reach their expiration.

Also set against this backdrop, is the vigorous global campaign for sustainable development, environmental protection and best practices in exploitation of marine based natural resources. Offshore decommissioning thus takes a significant position under international law, as well as national petroleum, environmental law and contractual arrangements.

In 1995, the transnational controversy posed by Shell and the United Kingdom's attempt to dispose the *Brent Spar* caused significant public outcry in Europe and showed that obedience to rules may be insufficient and might cause regulatory failure.[1] The wake-up call for the industry was witnessed by a global audience and brought to the forefront, the centrality of public acceptance to the offshore decommissioning and disposal process.

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1. The Brent Spar was a 65,000 metric ton floating storage and off-loading facility which was located at 140 metres of water in the Brent Field in the UK sector of the North Sea. It was a temporary arrangement put in operation in 1976 to allow initial throughput from the Brent Field before the final installation of the necessary pipeline infrastructure. But even after the installation of the pipeline, it was retained as an alternative for off-take. It became due for decommissioning in 1991 after it ceased operation owing to high maintenance cost. See Abiye C.O. Amakiri, "Developing an Offshore Installations Decommissioning Policy in Nigeria" (1997) 11 *Oil and Gas Law Taxation Review* 423.

The term 'decommissioning' (often used interchangeably with terms like 'abandonment' and 'recommissioning') is the process by which options for the physical removal and disposal of obsolete installations at the end of their working life are assessed; a plan of action is formulated by the operator; the operators plan is reviewed and approved by government; and the decommissioning plan is implemented. It is a complex process with an overall timescale lasting several years dealing with diverse issues and involving *inter alia* government agencies, oil producing companies, third party contractors, local communities, and non-government organisations. It is essentially a reclamation process.

There are two types of decommissioning, namely onshore and offshore decommissioning. Onshore decommissioning is uncontroversial and well covered by Nigerian law. It involves the operator plugging well bores with cement to protect ground water contamination; removal of storage tanks, wellheads, waste handling pits, processing equipment and pump jacks and making safe any exhausted or non-producing wells.

By contrast, offshore decommissioning involves four distinct stages: a detailed planning process to determine the options; cessation of oil and gas, and safe plugging of the wells; removal of all or part of the installation; and disposal or recycling of the removed parts.[2] Unlike fixed platforms, a demobilised Floating Production Storage and Offloading (FPSO) structure only requires the decommissioning of subsea equipment and pipelines; and the plugging and abandonment of wells.

At present, the Nigerian offshore oil and gas industry has not reached the maturity seen in the Gulf of Mexico and the North Sea, and as a result, its fields are still in their productive phase.[3] Therefore, no decommissioning of offshore structures has taken

2. A. Pittard, "Field Abandonment Costs Vary Widely World-Wide", *Oil Gas Forum*, March 1997.
3. The maturity of oil platforms flows from the inter-relationship among the oil reserve, market trends and the duration of the contract between the producing state and production companies.

place yet and to that extent, decommissioning is a future event. Having said that, due to the complexity of offshore decommissioning, it is essential that domestic law and regulations be established that takes cognizance of Nigeria's international law obligations (especially in the area of the environment) in order to properly plan for the end phase of offshore operations.

This paper therefore examines the environmental risks attendant to the process of decommissioning, while applying the international environmental concepts such as sustainable development and precautionary concept. The aim is to call for revision of the existing legislation towards a comprehensive, environment-friendly decommissioning framework.

In part two, the paper considers the technical options for decommissioning offshore installations. The extant legal regime for offshore decommissioning is examined in part three. Part four focuses on the environmental aspects of decommissioning, in particular, those risks inherent to removal and disposal. The study, in part five, argues the need for a sustainable decommissioning approach and provides tentative modalities for such a regulatory system. It concludes by arguing that forward planning is critical to avoiding future costs and liability problems in offshore decommissioning.

Technical Decommissioning Scenarios

Deconstructing or dismantling a disused offshore rig from a technical or engineering perspective is usually more costly and difficult than the original installation process. While it may be possible to reverse the installation procedure in respect of some structures; other installations require some amount of innovation e.g concrete gravity platforms. This is a legacy of the fact that the design and installation of platforms from the 1950s to the 1980s did not consider the need to remove such structures at the end of field life.

There are over 7,300 offshore platforms and production facilities located in 53 countries consisting of different installation

sizes, regulatory regimes, marine environment and technical expertise. At the same time, decommissioning costs estimated at $40 billion are needed to remove these structures.[4] There are over 480 installations located off the coast of Africa, and Nigeria as the most important oil and gas producer on the continent is host to over 170 structures with attendant cost implications.

Offshore structures are sited near shore, in shallow waters or deep water areas. The following equipment are utilised within the Nigerian continental shelf and surrounding waters:

- Fixed steel platforms consisting of a topside that contains the drilling processing units, accommodation facilities and the supporting substructure or jacket;
- Gravity base platforms consisting of topside facilities which are supported by substructure usually made of steel reinforced concrete, often with tanks which can be used to control its buoyancy and which seats on the sea bed anchored by its weight;
- Floating, Production Storage and Offloading (FPSO) systems. These are custom built or converted vessels that are typically ship-shaped and store crude oil in tanks located in the hull of the vessel. Crude oil is extracted from production wells on the seabed and transported to the FPSO through flexible risers. The crude oil is periodically offloaded to shuttle tankers or ocean-going barges for transport onshore. The two best known in Nigeria are FPSO Bonga in Oil Mining Lease (OML) 118 and FPSO Agbami in Oil Prospecting Lease (OPL) 216.

A. Decommissioning Options

4. D.E.D.S. Jayawardena, Unique Considerations for Decommissioning of Floating Production Units and Subsea Facilities in Asia: The Economics of Platform Commissioning (Kuala Lumpur, 13-14 November 1996) 12.

Once an oil and gas field comes to the end of its life and the reservoir is depleted, the issue of decommissioning arises. Fixed, floating and subsea installations tend to be unique in size, operational water depth and location, thus there is a need to consider the scenarios for technical removal and disposal.

Options for the removal and disposal of offshore structures are required for: jackets, topsides, drill cutting piles and pipelines.[5] At this juncture, the emphasis is on the alternative ways in which an obsolete installation can be decommissioned:

- Complete Removal – the entire structure is removed by severing the legs below the mud line and the site is restored by clearing all obstacles and debris. This procedure has been performed for many steel platforms in the US Gulf of Mexico, but the technical rules for concrete installations remain unclear.
- Partial Removal – only the upper portion of the structure is removed to provide safe navigational passage. All or part of the lower portion remains in place, and these remains require continuous monitoring.
- Toppling – the structure is removed by severing its legs above the mud line, after which it falls over onto the seabed. The installation simply remains on its side at the site. This process is suitable for steel but not concrete structures.
- Leave in situ – the structure is left in place at the end of production. The equipment and modules on the deck are

5. Author and citation unknown, document however in author's files. A 'topside' is the actual platform above the sea surface containing oil or gas processing equipment, utilities and accommodation resting on a substructure. 'Jacket' is a structure largely made of tubular steel which supports the platform. 'Footings' are the lowest and heaviest section of the jacket. It includes 'pile clusters' to aid piling of the structure into the seabed and a drilling template through oil wells are drilled. Drill cuttings on the seabed beneath the platform are drilled rock particles and drilling fluids (oil and non-oil based) arising from drilling operations. Pipelines are steel tubes through which oil and gas is transported from place to place.

completely or partially removed to leave the support structure standing.

- Platform Reuse – the structure or part of it may be refurbished and relocated to another oil and gas production site. It is possible to use the infrastructure as a logistics base for helicopters or boats if sufficiently near other oil fields.

Once a platform is actually decommissioned and removed, there is a waste management problem concerning the way in which the structure is treated. The main options for disposing offshore platforms are as follows:

(a) Deep sea disposal – the structure is removed, transported to a deep ocean disposal site and scuttled on to the sea floor.
(b) Shallow disposal – the structure is dismantled and deposited on the sea floor near the original site of operations.
(c) Recovery – the structural components are dismantled and removed to shore for salvage. It involves cutting up the structure into smaller pieces that can be transported to shore for recycling into scrap steel. Note also the possibility of disposal into a land fill site.
(d) Artificial Reef Conversion – a toppled platform can be used to create an artificial reef, or alternatively the platform may be towed from its original site to an artificial reef site. Such "rigs to reefs" activity can now be found in places like the US Gulf of Mexico, Japan and Brunei.[6]

Before any of the above outlined disposal options can be adopted, certain processes have to be undertaken. The most

6. See J.M Macdonald, "Artificial Reef Debate: Habitat Enhancement or Waste Disposal?" 25(1) *Ocean Development and International Law* (1994).

important is that all wells and well conductors have to be severed and plugged in line with applicable regulations. Tanks, pipelines and other process systems must be drained and cleaned. Operational consumables are removed to leave the bare steel or concrete structure. This process is important to ensure that decommissioned waste is not dumped indiscriminately into the marine ecosystem.

Nigerian Decommissioning Regime

International Law

The legal regime for offshore decommissioning cannot be assessed without a look at the international law position. Nigeria is party to the three global treaties with provisions on decommissioning and disposal that must be considered: the 1958 Geneva Convention on the Continental Shelf (the "Geneva Convention"), United Nations Convention on the Law of the Sea (UNCLOS) 1982 and the London Dumping Convention 1972.[7]

The 1958 Geneva Convention includes a number of provisions that target the pollution of the marine environment caused by offshore oil and gas activities: (a) it precludes offshore operations that constitute an unjustifiable interference with other maritime activities such as marine conservation; (b) requires host states to establish 500 metre safety zones around oil platforms; (c) ensures host states undertake appropriate measures for the protection of living resources from harmful chemicals and agents; and (d)

7 See Geneva Convention on the Continental Shelf, April 29, 52 *American Journal on International Law* (1958) 858; 1958 Geneva Convention on the Continental Shelf, S.H. Ley, R. Churchill and M. Nordquist, New Directions on the Law of the Sea, Vol. 1 (New York, Oceana Publications, 1973) 101-105; UN Convention on the Law of the Sea, 10 December 1982, 21 *International Legal Materials* (1982) 1261. The negotiation process took over 14 years and involved more than 150 states from all regions of the globe; and Convention on the Prevention of Marine Pollution by the Dumping of Wastes and Other Matter, 11 *International Legal Materials* 1302 (1972).

stipulates that "any installations which are abandoned or disused must be entirely removed".[8]

By contrast, the 1982 UNCLOS states that:

> … any installations or structures which are abandoned or disused shall be removed to ensure safety of navigation, taking into account any generally accepted international standards established in this regard by the competent international organization.[9]

There is thus contradiction between the complete removal approach enshrined in the Geneva Convention and the partial removal approach advocated by UNCLOS. Without addressing detailed arguments on conflicts between treaties, the writer notes that the treaty later in time usually supersedes the preexisting treaty.[10] Reviewing the legal ambiguity caused by the conflict, D.J. Harris succinctly notes that:

> When the 1982 Convention entered into force, a complicated set of treaty relations resulted, with the 1958 Conventions continuing fully in force for states parties to them and not parties to the 1982 Convention. The 1958 Conventions also continue to govern states parties to both 1958 and the 1982 Convention in their relations with states parties to the 1958 Convention only. The 1982 Convention

8. Article 5, Geneva Convention on the Continental Shelf, April 29, 52 *American Journal on International Law* (1958) 858; 1958 Geneva Convention on the Continental Shelf, S.H. Ley, R. Churchill and M. Nordquist, New Directions on the Law of the Sea, Vol. 1 (New York, Oceana Publications, 1973) 101-105.
9. Article 60(3) UN Convention on the Law of the Sea, 10 December 1982, 21 *International Legal Materials* (1982) 1261. The negotiation process took over 14 years and involved more than 150 states from all regions of the globe.
10. Article 64, Vienna Convention on the Law of Treaties, 8 *International Legal Materials* (1969) 679.

> replaces completely the 1958 Conventions for the parties to both.[11]

It is however clear that international law imposes decommissioning and disposal obligations on the state and not the oil producing entities.[12] This means in effect that the Nigerian government has residual responsibilities for any disused installation or pipeline left behind by the industry which causes future pollution or causes damage to a third party. In this way, International obligation provides impetus for national regimes to put in place appropriate decommissioning strategies to avoid prospective liability.

The International Maritime Organisation (IMO) in 1989 adopted offshore removal guidelines to clarify the obligation of coastal states with offshore structures.[13] The main principles of the IMO Guidelines are as follows: [14]

(i) the principal prerequisite is that all disused installations are to be removed;
(ii) installations in less than 75 metres water depth (mwd) and weighing less than 4,000 tons must be completely removed;

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11. Cases and Materials on International Law, London: Sweet and Maxwell 1998, 371, footnote 21.
12. At the regional level, the Abidjan Convention applies to the Atlantic ocean around Nigeria. Although the treaty does not specifically address decommissioning or offshore disposal of installations and pipelines, it imposes a general obligation on Nigeria to prevent and relieve pollution caused by sea dumping and exploitation activities, see articles 6 and 8, Abidjan Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region 1981, 20 *International Legal Materials* (1981) 746.
13 The Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone, IMO Resolution A.672 (16), adopted 19 October 1989. This voluntary regime for decommissioning shows the use of soft law in directing state practice at international level.
14 See Article 3, *ibid.*

(iii) structures sited after 1 January 1998 in less than 100 mwd and weighing less than 4,000 tons must be completely removed;
(iv) an unobstructed water column of 55 metres must be maintained in the event of partial removal. Therefore, even if footings are left behind, it should not obstruct safe navigation or fishing;
(v) all installations after 1 January 1998 must be designed for complete decommissioning. This means that floating production technology takes precedence after the date; and
(vi) host states should ensure that legal and financial provision is made for decommissioning. This refers not only to the immediate decommissioning obligation but also residual liability for disused offshore structures.

The IMO has successfully filled in the provision in Article 60(3) that refers to 'competent international organisation'. These Guidelines provide a general requirement of removal, which is subject to exception permitting non-removal or partial removal so long as it is consistent with certain guidelines and standards. For instance, there is an exemption from complete removal where such removal is not technically feasible or entails unacceptable risk to persons or the marine environment.[15] Note however, that there are no exceptions to total removal, where the oil platform no longer produces and the structure is located in navigation routes.[16]

The third treaty is the 1972 London Dumping Convention, which is a major environmental protection instrument that imposes obligations on the Nigerian Federal Government (FG) in all marine

15. Ernest E. Smith *et al*: International Petroleum Transactions, (Rocky Mountain Mineral Law Foundation, Denver Colorado 1993) 553.
16. *Ibid*, 554.

areas other than internal waters.[17] The London Convention defines "dumping" to include any deliberate sea disposal of platforms and other man-made structures like pipelines.[18]

The 1972 treaty regulates and controls offshore dumping through a licensing system that separates potential dumping material into those prohibited (e.g. highly toxic crude oil and radioactive wastes), those requiring a special licence (e.g. scrap metal, arsenic, zinc and copper), and those that need a national authority permit. Nigeria can only grant permission for offshore disposal, once the waste has been assessed, the dumping site investigated, and the proposed disposal technique evaluated.

National Law and Regulation

At the national level, the Petroleum Act (PA), 1969 is the primary petroleum legislation, and it does not have any specific provisions on the removal or dumping of disused offshore installations.[19] However, the Petroleum Minister is vested with wide powers to make regulations on the prevention of water and atmospheric pollution, including the "construction, maintenance and operation of installations." [20]

The Petroleum (Drilling and Production) Regulations, 1969 provides some general provisions on abandonment.[21] Regulation 35 states that (i) no borehole or well can be plugged or abandoned without the written consent of the Director of Petroleum Resources (DPR); (ii) any borehole or well that the licensee or lessee intends to abandon must be securely plugged to prevent ingress and egress

17. Convention on Prevention of Marine Pollution by the Dumping of Wastes and Other Matter, 1972, in R. Churchill and M. Nordquist, (ed.), *New Directions in the Law of the Sea*, Volume IV, (New York; Oceanea Publications, 1975) 305-322.
18. Article III(1)(a)(ii) London Convention 1972, *ibid.*
19. Chapter P10, Laws of the Federation of Nigeria 2004. Note that the Petroleum Industry Bill 2009 contains some provisions on decommissioning which will not be discussed due to the large number of versions of the bill.
20. S9 (1) *ibid.*
21. By virtue of Regulation 1 the provisions of the Regulation are applicable to all petroleum licenses and leases.

of water in accordance with an abandonment programme approved by the DPR.

This means that the oil company must obtain a prior permit for both drilling, and abandonment of wells. An abandonment programme would have to be delivered to the Director of Petroleum Resources (DPR), before any well is plugged or abandoned. The contents of such abandonment plans are however, not stated in the Regulation. Within two months or other agreed period, the company must take reasonable steps to restore the project site, as far as possible, to its original condition. On termination of the lease or licence, the company is obliged to remove all buildings, installations, and facilities used in petroleum development operations.

The dumping of decommissioned material is governed by the Harmful Waste (Special Criminal Provisions, etc.) Act 1988.[22] Section 1(3) makes it a criminal offence to dump solid, semi-solid or liquid harmful waste into Nigerian territorial waters including the Exclusive Economic Zone. Although, oil and gas structures are not actually mentioned, of "harmful waste" is defined to include toxic or noxious substances e.g. radioactive substances, such substances are to be found in deactivated installations.

It is worthy to note the provisions of the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act (NESREA) 2007.[23] The NESREA Act is generally aimed at protecting and development of the environment, biodiversity conservation and sustainable development of Nigeria's natural resources in general, including coordination and

22. Chapter H1 Laws of the Federation of Nigeria 2004.
23. NESREA Act nonetheless saved the subsidiary regulations made pursuant to the FEPA Act. It is however important to state a relevant achievement of the Federal Environmental Protection Agency (FEPA) in accordance with the Environmental Impact Assessment Act, 1992 issued Environmental Impact Assessment Guidelines for E&P Projects, making it compulsory that EIA reports developed during the licensing stage also contain site rehabilitation proposals. This decommissioning plan must advertise the procedure by which the site is to be restored, as far as possible, to its original condition.

liaison with relevant stakeholders within and outside Nigeria on matters of enforcement of environmental standards, regulations, rules, laws, policies and guidelines.[24] However, the Act in sections 7 (k) and 8 (s) exclude the oil industry from its activities.[25]

In 2002, an amendment to the Environmental Guidelines and Standards for the Petroleum Industry of Nigeria (EGASPIN) introduced new provisions for the decommissioning of offshore installations based on the IMO Guidelines. [26] It states that:[27]

- Oil platforms sited in less than 100 metres water depth and weighing less than 4,000 tons (excluding the deck and super structure) must be completely removed.
- The removal process should avoid significant adverse effects upon navigation or the marine environment.
- After January 1 2003, no installation can be placed on the Nigerian continental shelf or exclusive economic zone unless it is designed for complete removal. In other words, Nigerian producing companies have five extra years after the January 1, 1998 deadline provided in the IMO Standards and Guidelines.

24. See section 2 of NESREA Act.
25. This is because the DPR through its guidelines oversee matters of environmental protection through impact assessment studies for oil companies. See Part VIII, Environmental Guidelines and Standards for the Petroleum Industry of Nigeria (EGASPIN). See also, Olanrewaju Fagbohun, The Law of Oil Pollution and Environmental Restoration: A Comparative Review (Odade Publishers, Abuja, Lagos, Port-Harcourt, 2010) 328-333.
26. Legal authority for the guideline is provided for by the Petroleum Act and the Petroleum (Drilling and Production) Regulations 1996.
27. Environmental Guidelines and Standards for the Petroleum Industry of Nigeria (EGASPIN), 327.

EGASPIN provides that communities where decommissioning is to take place are to be consulted where possible.[28] Therefore offshore operators are allowed in effect to choose whether or not to consult the local community. Furthermore, if an EIA/ Baseline / Sea – Bed Survey Report has not been prepared prior to project implementation, the licensee is required to provide an Environmental Evaluation (Post-Impact) Report and specific Decommissioning Plan. If the EIA etc had been prepared, the operator should only submit a Decommissioning Plan Report.[29]

EGASPIN provides that a Decommissioning Plan Report should contain as a minimum:[30]

(a) Peculiarity of the project.
(b) The degree of abandonment (partial/wholly)
(c) Methods to be used for the removal of the structure (explosives, mechanical cutting, torches, high pressure jetting, etc)
(d) Disposal of removed structure, debris and associated wastes (also check for LSA/NORM)
(e) Environmental protection/ monitoring (EIA and / or, EER, Restoration and Remediation plans)

The Director, DPR issues a Decommissioning Certificate when the decommissioning operation is certified as satisfactory. It is not clear whether DPR will oversee every aspect of the decommissioning programme or just ensure that the operator has carried out the Decommissioning Plan. Note that the rather scanty provisions recognize both total and partial decommissioning options. However, the document does not mention offshore

28. *Ibid*, 326.
29. *Ibid.*
30. *Ibid.*

pipelines, though regulations exist for pipelines or flowlines in Inland and Near shore areas.[31]

Another important legislation to consider is the National Oil Spill Detection and Response Agency (Establishment) Act, 2006; enacted for the establishment of National Oil Spill Detection and Response Agency (NOSDRA). The agency is responsible *inter alia* for the surveillance and ensuring compliance with all existing environmental legislations and detection of oil spills in the petroleum sector.[32] The provisions of the Act is therefore relevant to decommissioning to the extent that there exists the possibility of oil spillage (residues and effluents) during the process of removing oil platforms and pipelines.[33]

Overall, the evident policy objective of the Nigerian government is to protect the environment from the after-effects of oil exploration and production developments. There would, on the face of it, seem to be a complete removal and onshore disposal obligation. The problem here is that much of the extant regulations were designed for onshore based activity.[34] Simply applying these regulations to the offshore sector militates against the development of a proper decommissioning policy. An appropriate decommissioning policy must contemplate the environmental risks associated with the process. For example potential release of PCB's, residual oil, heavy metals and other toxic substances with long lasting negative effects on the environment.

The concept of sustainability or sustainable development, for instance, is hardly a key concept within contemporary petroleum

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31. The operator is required to "(i) Decontaminate, plug and leave on-site, if adequate, otherwise excavate; (ii) All surface components/ancilliary facilities shall be removed; and (iii) minimise conflict with land use", *ibid*, 327.
32. See section 6(1)(a) of the NOSDRA Act 2006.
33. A Technical Review of the Possible Methods of Decommissioning and Disposing of Offshore Oil and Gas Installations: Contract No. B4-3040/96/000259/MAR/DI. [Prepared by the European Commission DG XI and DG XVII].
34. In technical terms, onshore decommissioning is considered easier to carry out, unlike offshore decommissioning which occurs in an uncontrolled environment (water). Decommissioning policies must take these differences into consideration.

and environmental protection legislation. The onus is now on Nigerian government to commission legislative and regulatory guidelines that would integrate sustainable development into decommissioning policy for both onshore and offshore petroleum operations.

Contractual Arrangements

Similarly, sustainability is not addressed in the contractual arrangements that define the relationship between the Nigerian state and offshore oil and gas operators. Three contractual regimes: Joint Venture (JV) agreements between NNPC and IOCs, Production Sharing Contracts (PSCs) between NNPC and IOCs, and Risk Service Contracts between NNPC and IOCs are potentially relevant.

Risk Service and Joint Venture contracts, as presently constituted, do not have any provisions for the decommissioning of offshore structures. This, to some extent, may be understandable as these contracts are concentrated on onshore, transition zones (swamps) and shallow water arenas. Only the NNPC/Shell Joint Venture (JV) for the EA field is located in deep waters (200 meter water depth).[35]

With regard to PSCs, recourse should be had to three models from 1993, 2000 and 2005. The 1993 PSC does not contain any provision for offshore decommissioning. However, Field Development Plans approved by the Department of Petroleum Resources provide for decommissioning.

Offshore decommissioning is better treated in the 2000 and 2005 Model PSCs. These contracts provide for the establishment of a decommissioning fund to ensure that there is money available at the end of field life to pay for site restoration and rehabilitation. The only difference between the two contracts is that the latter

35. D.O. Oyalami, Offshore Decommissioning in Nigeria: the Search for a Regulatory Framework, LL.B Research Project, Faculty of Law, University of Lagos, September 2008, 53.

agreement goes further and specifically states that the IOC contractor is responsible for decommissioning.[36]

This provision is extremely important because under international law, the Nigerian state is responsible for the decommissioning and disposal of disused offshore installations. Naturally, the provision does not affect other contracts and the Nigerian government continues to be responsible for most offshore infrastructure.

Environmental Aspects of Decommissioning

A. *Environmental Risks*

The concept of environmental risk refers to both hazardous outcome and a probability of its occurrence as a consequence of man's activities in the environment. It is noteworthy that the natural environment is not totally benign and scientific understanding is far from comprehensive.[37]

Usually, before decommissioning operation takes place, the installation's process systems have to be depressurized, drained and cleaned. Parts of the operational discharges and system effluent will be taken ashore for disposal, and other waste will be re-injected down hole or discharged into the sea under licence.[38] Nigerian offshore platforms will have accumulated tons of radioactive scale in the course of their operation, some of which may escape into the onshore or marine environment. Deactivated

36. Clause 12.7, Model Production Sharing Contract 2005.
37. T. O'Riordan, Scope of Environmental Risk Management: Royal Swedish Academic Sciences (1979). *http://www.jstor.org/pss/4312498* (accessed on 24 March 2010). Environmental risks arise from hazards and some uncertainty about their effect. M.D. Mehta, Risk Assessment and Sustainable Development: Towards a Concept of Sustainable Risk. *http://www.piercelaw.edu/risk/vol8/spring/mehta.htm* (accessed on 24 March 2010).
38. G.M. Tilling, The Maureen Alpha Platform Decommissioning: early Stages of Decommissioning Planning", IBC Asia: The Economics of Platform Decommissioning, (Kuala Lumpur, 13-14 November, 1996) 9.

structures even when drained will not be completely free from toxins.

Clean decommissioned platforms, contain at least, a residual amount of low specific activity (LSA) scale, heavy metals, PCBs and hydrocarbons. Any structures left over in the marine environment will ultimately corrode and leach contaminants into the marine environment and accumulate within fish and other marine organisms consumed within the human food chain.

Removal of structures through explosive cutting activity impact on the immediate marine environment. Shock waves, for instance, are likely to kill or harm sea life. Research reports from Scottish, Norwegian and US Gulf of Mexico Fishermen Associations have expressed concern about explosive detonations killing substantial numbers of whales, fishes, turtles, and plankton.[39] It is considered that as far as possible cold cutting (mechanical shears, abrasive water jets, cryogenics and diamond wire cutting) as well as thermal technology (e.g. themic lance, laser touch and plasma beam) be utilized in Nigerian waters.

Note that the external impact of explosives can be reduced through the use of shaped charges and limiting the amount of explosives. 530 of the 758 decommissioning operations carried out in the GOM between 1985-1994 utilised explosives. Greater use can be made of other subsea cutting techniques like cold cutting (mechanical shears, abrasive water jets, cryogenics, and diamond wire cutting) and thermal cutting (plasma, torch, laser beam and themic lance).[40] Unfortunately, non-explosive techniques are not

39. A. Pulsipher (ed.), An International Workshop on Offshore lease Abandonment and Platform Disposal: Technology Regulations and Environmental Effects (New Orleans, Louisiana, April 1996) 82. See also B.G. Twoney and S.T.S. Al-Hassan, The Use of Explosive Technology for the Decommissioning of Offshore Installations, IBC Asia: The Economics of Platform decommissioning (Kualar Lumpur, 13-14 November 1996) 3. Further note that Nigeria has international commitments under the Biodiversity Convention to protect specie, habitat, fauna and flora.
40. See B.G. Twoney and S.T.S. Al-Hassan, *supra* note 39.

particularly effective in the decommissioning of large offshore installations.

Significant contamination can also result from drill cuttings. Drilling oil and gas wells results in contaminated cuttings that are dumped around the platform on the seabed. Removal of structures or pipelines may disturb such drill cuttings and thus pollute the environment. These drill cuttings sometimes contain oil, drilling mud, and toxic chemicals with the potential to adversely affect any fish or organism on the sea bed.

Once the installation is dismantled, the issue of disposal becomes pertinent. If an onshore disposal option is chosen, then there is the need to transport the structure to land. Such an act raises the risk of collision or grounding near shore causing significant environmental damage.

When the decommissioned structure reaches shore, it contains many toxic chemicals and materials that must be carefully treated. Any waste material that is treated and disposed off in a land fill may in future years result in contamination of drinking or ground water in that area. Also storing such material over many years runs the risk of the hazardous chemicals escaping into the local environment.

Even recycling that seems beneficial to the environment may cause problems. Removing the marine growths that have attached to the platform in decades of immersion in sea water will cause visual, smell, noise and atmospheric disturbance for the local community. The recycling advantage, however, are that such processes will generate jobs and contracts for Nigerian ship yards.

Where sea disposal of the decommissioned equipment is the preferred option, there are also repercussions of this action. Large steel structures and facilities such as the jacket, topsides, pipelines and footings consist mainly of steel materials. A typical large steel installation weighing around 40,000 tonnes is composed of 90%

steel, 2% aluminium and 0.3% copper. [41] When the structure eventually deteriorates, the surrounding area will be exposed to materials ranging from iron to ecotoxicologically critical metals like lead, cadmium and mercury.[42] This is likely to impact on marine organisms as well as human populations through consumption of sea food.[43]

B. *Marine Impact of Dumping*

The problem with decommissioning from an environmental perspective is the obvious short term effects connected with the removal process. Additionally, there are more problematic issues connected with permanent dumping or disposal within a marine ecosystem. It is likely that that decommissioning and disposal will not only impact on the immediate environment but also possibly the global marine environment.

While the short term effects of decommissioning operations can be obvious, its long term consequences are hidden and largely unknown. There is a likelihood that decommissioning and offshore disposal will have significant and widespread impact on the immediate and perhaps the global marine environment.

Component materials of platforms and pipelines as noted above will leach into the marine ecosystem. Steel, aluminium, zinc, cadmium and residual process oil over decades are likely to have a deleterious impact. For concrete installations, these are potentially less polluting than their steel counterparts due to their longer life span and the fact that they are less susceptible to leaching. The Nigerian offshore oil and gas industry does not however use concrete platforms.

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41. K. Haker, M. Sattler, J. Scheelhaase and T. Tschudin, Socio-economic Impact of Varying Decommissioning Options (Prognosis AG, Basel, August 1997) 41.
42. *Ibid.*
43. See A. Finney, Oil Tanker Source Pollution, Prevention and Liability under International Conventions and Other Accords, Diploma thesis, University of Dundee, May 1982, 4. See also J. Burger, Oil Spills (New Jersey: Rutgers University Press, 1997) 79.

Some offshore pipelines are likely to be cleaned and then buried in situ or allowed to self bury over time, through sea currents movement. Even these relatively safe equipment pose a risk through the steel components of the structure and residual toxins. Heavy metals cannot be absorbed into the ecosystem and thus constitute residual risk. It is not unlikely that there will be negative impact on marine flora and fauna due to heavy metals like lead, zinc, mercury and cadmium which cannot be absorbed into the ecosystem.

Drill cuttings also pose a significant challenge. The main option is to either leave them alone or try to remove them. Removal involves a potential release into the marine ecosystem of metals, chemicals and hydrocarbons. This potential risk has to be balanced against the almost certain environmental consequences of oil based drilling muds which have a high concentration of contaminants and might remain forever on the sea bed continuously releasing contaminants.[44]

Leaving structures on the seabed is integral to the rigs to reef option which claims to have positive impacts on the environment.[45] Clean steel structures like jackets and decks provide hard substrates upon which marine ecosystems develop. This encourages fish stocks and benefits marine biota. While the option has been highly successful in the Gulf of Mexico, the conversion of decommissioned installations into artificial reefs has not been scientifically tested in Nigerian waters.

It should also be remembered that although 'there are no reports of contamination from artificial reef projects, this situation can change in future since the structures will be in existence for hundreds or even thousands of years. There is also the accumulated impact on the ecosystem of a large number of artificial reefs'.[46]

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44. See M.A. Ayoade, Disused Offshore Installations and Pipelines – Towards "Sustainable Decommissioning", (The Hague-London-New York: Kluwer Law International, 2002), 35.
45. See J.M. Macdonald *supra* note 6, 87-118.
46. M.A. Ayoade, supra, 35.

Finally, the capacity of the marine environment to deal with long term offshore disposals is unknown. The ocean environment is quite complex and there is the need for caution in the way and manner this ecosystem is utilized. While individual disposal might seem to have moderate effects, unrestrained dumping by offshore oil and gas producing countries will potentially have devastating consequences for marine fauna, life and even humanity.[47]

Sustainable Decommissioning Approach

A. *Operators Environmental Responsibility*

Nigerian law provides certain guidance to offshore oil operators in relation to environmental risk and decommissioning considerations. Environmental Impact Assessments (EIAs) are the principal method by which the potential environmental effects of a proposed project can be measured in order to decide on approval, rejection or changes to the proposed plan.[48]

The Environmental Impact Assessment Act, 1992 generally prohibits the establishment of public or private projects without prior consideration of environmental impact prior to establishment.[49] In other words, the Act is aimed at ensuring that the possible negative impacts of development projects are predicted and addressed prior to take-off.[50]

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47. See C. Curtis, "International Trends and Issues", in A. Pulsipher (ed.) supra note 39, 31.

48 This is pursuant to the activities of the DPR vide EGASPIN. The guidelines provide for a standardized environmental abatement procedures under Part VIII. FEPA also (before the repeal of the FEPA Act) popularized the assessment process in the industry. See generally, W.M. Tabb, Environmental Impact Assessment in the European Community: Shaping International Norms, Tulane Law Review, February 1999.

49 Chapter E 12, Laws of the Federation of Nigeria, 2004. Section 2 provides that, 'the public or private sector shall not undertake or embark on or authorize projects or activities without prior consideration, at an early stage, of their environmental effects.

50 M.F. Ivbijara, "Environmental Impact Assessment/Environmental Audit Report in Nigeria" *Nigerian Institute of Advanced Legal Studies Conference Series* edited by M.A. Ajomo and Omobolaji Adewale (1994) 149. NB: The EIA Act does not expressly mention the term 'decommissioning' in the petroleum industry (section

The function of an EIA is to provide information to DPR (regulators) on adverse environmental impacts. A decision is then made on the basis of the information collected under the EIA. The EIA procedure outlines the steps to be taken before the implementation of projects: (a) submit project proposal (b) initial environmental examination (IEE) or screening (c) scoping (d) EIA study (e) public participation (f) review (g) decision making (h) monitoring and (i) auditing.[51]

Public participation aspect in EIAs is a useful tool that should allow the general public and Non Governmental Organisations (NGOs) to express their views on decommissioning plans submitted by offshore operators. In theory, using this consultative mechanism ensures that public values and concerns are integral to the DPR decision making process.[52]

Environmental Audit (EA) on the other hand, relates to periodic independent evaluation of the offshore operator's environmental procedures, management systems and equipment performance.[53] The EA should use an accredited auditor and include: (a) description of the activity at the site; (b) assessment of its environmental significance; (c) significant environmental impacts (e.g. emissions, waste generation, and water and energy

12 and the Schedule to the Act). Its provisions extend to decommissioning under oil and gas fields development.

51 G.O. Amokaye, Environmental Law and Practice in Nigeria (Akoka, Lagos: University of Lagos Press 2004) 553.

52. See W.A. Tilleman "Public Participation in the Environmental Impact Assessment Process: A Comparative Study of Impact Assessment in Canada, the US and the European Community" *Columbia Journal of Transnational Law* 1999.

53. *Ibid*, 580. J. Glasson, et al, Introduction to Environmental Impact Assessment: Concepts and procedures, Process, practice and prospects (London University College London Press Ltd, 1996) 141, defines an EA as "[a] management tool comprising a systematic, documented, periodic and objective evaluation of how well organization, management and equipment are performing with the aim of contributing to safeguard the environment by facilitating management control of environmental practices and assessing compliance with company policies, which would include meeting regulatory requirements and standards applicable",

consumption); (d) operators environmental policy and management system; and (e) set out a deadline for the next EA.[54]

In 1994, the then Federal Environmental Protection Agency (FEPA) in accordance with the Environmental Impact Assessment Act 1992 issued Environmental Impact Assessment Guidelines for E&P Projects which makes it compulsory for EIA reports developed at the licensing stage to also contain site rehabilitation measures. The decommissioning plan should aim to restore the site as far as possible to its original condition.[55] Unfortunately the provision is designed for onshore oil and gas activities, and does not seem directed at offshore decommissioning.

This lacunae was addressed in 2002 by the DPR in its Environmental Guidelines and Standards for the Petroleum Industry (EGASPIN). Part VIII G. Decommissioning of Oil and Gas Facilities is the most comprehensive attempt by the Nigerian government to tackle offshore decommissioning problems. It states that decommissioning operations shall be a planned event from the project initiation and design phase, and shall incorporate remediation or restoration measures.[56] The language adopted, to this author's mind, seems to be almost voluntary and not obligatory. The use of the word "shall", instead of must is unfortunate and should be addressed in future EGASPIN reviews.

EGASPIN however makes it clear that licensees should decontaminate, dismantle and remove deactivated installations. Decommissioning activities for abandoned (shut down) facilities shall commence at least one year after abandonment and be

54. M. A. Ayoade *op. cit* note 44, 169. Operators should adopt concepts like Best Available Technology (BAT) and Best Available Technology not Entailing Excessive Cost (BATNEC). They should also continuously review their operating procedures and legal compliance systems. See G.O. Amokaye, op cit note 51, 581-582.
55. Although the Federal Environmental Protection Act and its Agency, FEPA has been repealed, the Guidelines issued by the defunct agency continues to remain in operation.
56. The Environmental Guidelines and Standards for the Petroleum Industry (EGASPIN), 326.

completed within the next six months. While timescales are laudable, there does not seem to be flexibility for platforms than cannot be removed within six months. Also, it is not clear whether onshore recycling of parts of the structure must be completed within the time period.

B. *Key Elements in Sustainable Decommissioning*

Sustainable development as a concept is certainly not new at the global level.[57] It is trite that the concept has widespread recognition in international law, as exemplified by the 1992 Rio Conference on Environment and Development, and Agenda 21.[58] In common parlance, the word 'sustainable' has been also used in other contexts such as 'sustainable economic growth' and 'sustainable agriculture'.

The Brundtland Report of the World Commission on Environment and Development (WCED) provides the classic definition of sustainable development as: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[59] Underlining this statement, are the notion of societal 'needs' and the limitations imposed by extant technology and organization on the ability of the environment to meet today and tomorrow needs. This can basically be expressed as intergenerational equity and the precautionary principle.

The notion of intergenerational equity merely recognizes the fact that the ecosystem, whether land or marine environment are inheritable resources that must be used not only for present

57. See O. Shogbamimu, International Environmental Law: At Par With Contemporary Principles? LL.M Thesis, University of Dundee, September 1996, 25.
58. Although the Rio Declaration does not contain an explicit definition of sustainable development, aspects of the concept can be found in over half the twenty seven principles of the Declaration. Rio Declaration on the Environment and Development, 31 *International Legal Materials* (1992) 876.
59. Report of the World Commission on Environment and Development, Our Common Future, (Oxford: Oxford University Press, 1987) 43.

requirements but also future needs. The present generation is required to act for their own benefit as well as the benefit of unborn generations. This concept of intergenerational trusteeship is recognized by international law.[60]

If the offshore oil and gas industry had adopted this principle at the infancy of the sector in the 1960s and 1970s, there would have been an emphasis on reusable and floating production technology. Unfortunately, the impetus for the industry was the exploitation of new oil fields in marine acreage. Today however, decommissioning is an important issue due to the presence of rigid fixed offshore installations.

Applying intergenerational equity to offshore decommissioning regulations means that the option of toppling platforms and other partial removal techniques including sea bed disposal cannot be a viable proposition. Leaving structures, footings and other debris for future generations to remove will not be acceptable. Simply put, this perspective encourages complete removal and onshore disposal in Nigerian government policy.

Allied to intergenerational equity is the precautionary principle which is recognized by international environmental law.[61] The precautionary principle is explicitly mentioned in the London Convention 1972 and its 1996 Protocol. According to the Rio Declaration, where there are threats of serious or irreversible damage, lack of full scientific certainty cannot be used as a

60. The inter-generational equity concept is recognized in concept 4 of the Rio Declaration, Article 3(1) Climate Change Convention and the preamble to the Biodiversity Convention. The concept has been implicitly recognized as far back as the International Whaling Convention 161 *United Nations Treaty Series* 72 (1946) and the African Nature Convention 1001 *United Nations Treaty Series* 4 (1968). The latter's preamble recognizes that the natural resource base should be conserved, utilized and developed 'by establishing and maintaining their rational utilization for the present and future welfare of mankind. See also, V.P. Nanda, *International Environmental Law and Policy*, (New York: Transnational Publishers Inc. 1995) 21; and Kemal Baslar, The Concept of the Common Heritage of Mankind in International Law, (London: Martinus Nijhoff Publishers, 1998) 205.

61. M. A. Ayoade, *supra* note 44, 182.

rationale for stopping or postponing cost-effective measures to prevent environmental degradation.[62]

This means in effect that gaps or uncertainty in scientific knowledge should not delay governmental action on decommissioning. It is already clear that removal and disposal of decommissioned remains, onshore and in the marine environment, has both direct and indirect impact from the components as well as substances in disused installations. There is the possibility of ecological damage to the near shore and disposal site through the contamination of ground water supplies. Such an action endangers human health and might be impossible to rectify.

Disposal within the marine environment can be particularly harzardous when the impact on human populations through the food chain is considered. While there is no conclusive scientific evidence on the long term effects of oil toxins and other residual products on the marine ecology, the precautionary principle encourages a decommissioning law and policy that safeguards against harm. In order words, there should be a complete removal to shore for disposal of disused structures, and the site has to be restored as far as possible to its original condition.[63]

C. *Sustainable Decommissioning Strategy*

At present, there is no focal pressure point on the Nigerian government to adopt a sustainable decommissioning strategy. The fact that decommissioning is in some ways a future event means that the economic, regulatory, social and political forces that underpin the adoption of the strategy is largely absent. Yet, this denies the undoubted opportunity to put in place a formidable system to guide future decommissioning and disposal options.

In theory, there are three options to the manner in which a sustainable decommissioning strategy might operate: (a) it can be

62. Principle 15, Rio Declaration supra note 58.
63. Where complete removal and onshore disposal constitutes a threat to offshore workers that carry out decommissioning operations, it is arguable that human safety may be a possible exception to the rule.

applied on a case by case basis, (b) as a strict principle that advocates complete removal to shore for disposal without any exceptions, and (c) retain the total removal and onshore disposal principle but allow variation in exceptional cases. The last option is regarded as the most convincing position.

For the writer, sustainable decommissioning starts from the proposition that complete decommissioning of disused structures and onshore recycling of the remains is the basis of decommissioning law and practice. It imposes a reverse burden of proof on operators to provide compelling evidence to justify adoption of a lesser standard for the benefit of the environment and human life.[64] One example might be the total removal of the monolith concrete structures in the North Sea in which decommissioning operations would be dangerous and damaging to the marine environment.

The argument is that Nigerian government policy must carefully balance short term impact of explosives use on the marine ecosystem as well as long term consequences of residual toxic materials and heavy metals on marine fauna, life and ecology. Similarly, the inherent risks in using land fill sites must be an important policy consideration. Global warming must be similarly managed due to the energy balance implications in the emission of CO2 when recycling onshore or disposal of disused remains.[65]

In short, biological, chemical and physical impacts are integrated into the decommissioning strategy. Sustainable decommissioning can thus be defined as an agenda in which efficient use is made of energy and materials in order to ensure the capacity of the environment to absorb contaminants is not exceeded.[66] To achieve this, there is a holistic approach that integrates cradle to grave thinking. Project planning to post

64. M. A. Ayoade, supra note 44, 185.
65. See House of Lords, Decommissioning of Offshore Oil and Gas Installations Evidence (London: Her Majesty's Stationary Office, HL Paper 46-I, 1995-1996.
66. M. A. Ayoade, *supra* note 44, 184.

decommissioning care are part and parcel of the sustainable decommissioning strategy.

To ensure the success and widespread acceptance of this proposed strategy, the decommissioning decision process should not be unilateral imposition by the state. It is important that there is close interaction and collaboration between the DPR, oil producing companies, host communities and other stakeholders in deciding on a chosen decommissioning option. Therefore, the proposed plan should be considered by a Decommissioning Committee in which all stakeholders are represented.

Furthermore, it is important that decommissioning plans are produced well in advance of the event. The author proposes that oil companies should be obliged to produce decommissioning plans at least 10 years before the estimated end of field life. For new offshore developments, the plan should be available on conversion of OPL to OML.

Conclusion

The paper started by noting the need for a comprehensive decommissioning strategy to take care of the extant lacunae in Nigerian oil and gas law. It further observed that decommissioning is a future event that has not become a significant policy problem unlike the United Kingdom which endured the Brent Spar saga. The absence of state practice might unfortunately breed complacency. Nevertheless, decommissioning is a complex issue that needs to be resolved before offshore oil and gas fields reach the end of their productive span.

Under international law, the obligation to decommission and dispose obsolete offshore platforms is imposed on host countries and not oil producing companies. There is thus an obligation on the part of the Nigerian government to put in place appropriate and comprehensive decommissioning guidelines and rules that address the complex interaction of environment, health and safety, cost, legal, engineering or technical, and political considerations.

To be fair, the Nigerian government has addressed some of the issues raised by offshore decommissioning in the 2000 and 2005 Model PSCs, Petroleum (Drilling & Production) Regulations 1969, and Environmental Guidelines and Standards for the Petroleum Industry (EGASPIN). Evidently, piecemeal regulations are insufficient and there is the need for a comprehensive regulatory framework that is sufficiently flexible to resolve unforeseen contingencies within a transparent decommissioning approval process that involve the different stakeholders.

Under most Nigerian petroleum contracts, ownership of equipment is vested in NNPC and thus the government. This means that at the end of field life, the legal responsibilities for decommissioning obsolete equipment are imposed on the NNPC. In view of the fact that NNPC is not the operator in all these contracts, there is the need to adopt the position of the 2005 Model PSC which deliberately transfers decommissioning obligations to the IOC contractors. There is also an urgent need to review and amend such provisions to ensure that contractors that install infrastructure are also liable for its decommissioning and disposal.

The challenge for the FG is to develop a forward planning regime that provides *inter alia:* operational procedures based on sustainable development outcomes; minimal impact on environmental media; efficient use of energy resources; and rigorous cost/benefit analysis that integrates financial exposure, jobs, intergenerational equity and biodiversity. In this writer's opinion, environmental risk will bedevil decommissioning regulations, until a sustainable decommissioning strategy is enshrined in Nigerian government policy.

COPENHAGEN SUMMIT: EXPECTATIONS, OUTCOMES AND IMPERATIVES

By

Ohurogu, C.C. * & Okwezuzu, G. E. *

Introduction

The Copenhagen Conference[1] brought together 193 countries, parties to the United Nations Climate Convention and the Kyoto Protocol. While countless other meetings took place in bodies such as the G8, G20 and Major Economies Forum[2], to mention only the most important, the Copenhagen conference, which held under the auspices of the United Nations[3], remains the privileged locus, or even the only one with authority to define a new international framework to fight climate change on the basis of these two fundamental texts.

The seed of hope which the summit was supposed to have actualized was planted in Japan in 1997.[4] However, despite the promises shown by Kyoto Protocol, the biggest polluter as at the time of signing the agreement, the United States of America did not sign the deal which meant that it was not bound by it. This was the scenario that led nations to continue to seek ways of having a unanimous resolution that will commit nations to fighting the apocalyptic problem climate change represent.[5] Pachauri[6] has

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1. Hereinafter, the conference or the summit
2. Hereinafter, the MEF
3. Hereinafter, the UN
4. See "Nigeria; the Story of a Failed Summit - From Hopenhagen to Hopelesshagen." *Africa News*. December 28, 2009.
5. *Ibid.*
6. Dr. R.K. Pachauri is Director-General, The Energy & Resources Institute: Chairman, Intergovernmental Panel on Climate Change: and Director, Yale Climate and Energy Institute.

observed that "in the absence of the U.S. being an important component of a global accord, any agreement would remain inadequate and ineffective."[7]

According to Europolitics,

Twelve years have passed between December 1997, when the Kyoto Protocol on the reduction of greenhouse gases was adopted, and December 2009, when the international community is called on to determine the next steps. Twelve years, during which time the question of climate change, then a low priority, has become the most pressing question of our time: a question that now preoccupies scientists, politicians and civil society. The time has come to act. The first period of commitment specified in the protocol will end in December 2012 and scientific analyses, which in 1997 were speculation, have now come true. Global warming is a reality and human activity is responsible for 90% of it, as concluded by the IPCC (Intergovernmental Panel on Climate Change), in November 1997. Conclusions that are still relevant today, as are the IPCC's recommendations for reducing greenhouse gas emissions, particularly if the aim is to keep the average increase in temperature below 2°C.[8]

Garner expressed the view that the Copenhagen summit was "the most important gathering of world expertise on Climate Change to date...."[9] The conference opened with video clips of children from

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7. "Challenge of climate change, post-Copenhagen." *The Hindu.* February 1, 2010. Accessed on February 1, 2010. Retrieved from *http://beta.thehindu.com/opinion/lead/article98100.ece?homepage=true.*
8. "Copenhagen Conference: Mini Ambitions For Mega Global Challenge." *Europolitics* (daily in English). December 7, 2009. Accessed on February 2, 2010.*http://www.lexisnexis.com/us/lnacademic/results/docview/docview.do?docLinkInd=true&risb=21_T8453742404&format=GNBFI&sort=RELEVANCE&startDocNo=1&resultsUrlKey=29_T8453742413&cisb=22_T8453742412&treeMax=true&treeWidth=0&selRCNodeID=2&nodeStateId=411en_US,1&docsInCategory=12&csi=167748&docNo=11*.
9. Garner, Renee. *Climate change insights from Copenhagen*. December 2, 2009. Accessed on February 1, 2010. Retrieved from *http://www.freehills.com/blog/5574.aspx.*

around the globe urging delegates to help them grow up in a world without catastrophic warming.[10]

The United States tried to short-circuit this UN framework, particularly through the MEF, but it was quickly forced to row back under pressure from the other parties.[11] The Conference, according to Groves, was slated to produce a successor Agreement to the Kyoto Protocol.[12] He argued that an Agreement on the lines of the current 181-page negotiating text and in the form of a complex, comprehensive, legally binding multilateral Convention would potentially harm U.S. economic and energy interests and also pose a threat to American sovereignty.[13]

The paper x-rays the Copenhagen Summit, highlighting the various expectations from various stakeholders, assessing its outcomes and discussing the imperatives there from. The paper consists of five parts: part 1 is the introduction, part 2 deals with the various expectations expressed by different individuals (global warming activists, experts, and world leaders) about the Summit; part 3 explores the various outcomes of the Summit and the reasons for the not-so satisfactory outcomes of the Summit; part 4

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10. "World's 'Best, Last Chance' for Climate Deal Opens." *Business Day* (South Africa). December 8, 2009. Accessed on January 19, 2010. Retrieved from *http://www.lexisnexis.com/us/lnacademic/results/docview/docview.do?docLinkInd=true&risb=21_T8343118183&format=GNBFI&sort=RELEVANCE&startDocNo=1&resultsUrlKey=29_T8343118191&cisb=22_T8343118187&treeMax=true&treeWidth=0&csi=163765&docNo=16*.
11. "Copenhagen Conference: International Legal Framework." *Europolitics*. December 7, 2009. Accessed on February 2, 2010. Retrieved from *http://www.lexisnexis.com/us/lnacademic/results/docview/docview.do?docLinkInd=true&risb=21_T8453742404&format=GNBFI&sort=RELEVANCE&startDocNo=1&resultsUrlKey=29_T8453742413&cisb=22_T8453742412&treeMax=true&treeWidth=0&selRCNodeID=2&nodeStateId=411en_US,1&docsInCategory=12&csi=167748&docNo=9*.
12. Groves, Steven. "Copenhagen and Beyond: Is There a Successor to the Kyoto Protocol?" www.heritage.org. November 12, 2009. Testimony before the Committee on Foreign Affairs of the United States House of Representatives November 4, 2009. Accessed on February 1, 2010. Retrieved from *http://www.heritage.org/Research/EnergyandEnvironment/tst111209a.cfm?renderforprint=1*.
13. *Ibid*.

examines the imperatives called forth by the outcomes of the Copenhagen Summit while part 5 concludes the paper.

Copenhagen Summit: Expressed Expectations

Before and during the summit, a number of people bared their minds about their expectations from the conference. The former United Nations Secretary-General Kofi Annan,[14] had expressed the view that the climate change conference in Copenhagen, with or without a groundbreaking deal, will be a success despite media reports that an agreement is unlikely. According to him, "Climate change does not stop in the Copenhagen conference in December.... It is another beginning, whatever the outcome of the conference would be - whether there is an agreement or not." He called on countries to achieve the goal of a 25-percent to 40-percent reduction by 2020 and a 50-percent reduction by 2050. He further enjoined China and the US, two significant greenhouse gas emitters, to join efforts with other nations to achieve a global target.[15]

Timothy Wirth, President of the UN Foundation, agreed with Annan and said that among the 191 countries to be involved in Copenhagen, the most important relationship is the one between China and the US. China is the largest developing country and the US is the largest developed country. He added that "We are very hopeful the US will take on strong binding commitments ... We are also very hopeful that China will also take on binding commitments."[16]

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14. In October 2009 at a media briefing in Beijing on the occasion of the 30th anniversary of the UN's presence in China.
15. "Annan Upbeat About Copenhagen Summit." Chinadaily.com.cn. October 29, 2009. Accessed on January 19, 2010. *http://www.lexisnexis.com/us/lnacademic/results/docview/docview.do?docLinkInd=true&risb=21_T8343118183&format=GNBFI&sort=RELEVANCE&startDocNo=1&resultsUrlKey=29_T8343118191&cisb=22_T8343118187&treeMax=true&treeWidth=0&csi=227171&docNo=12.*
16. *Ibid.*

The summit was expected to reach a deal that would drastically reduce emission by the developed countries, provide sufficient deep fund for the growing of the economies of the climate change vulnerable nations as well as guarantee a cleaner, disaster-free future for humanity. A strong Copenhagen deal was essential to the global transition into green economic growth, away from the fossil-fuel induced growth obtainable today, and to help the world, especially the most vulnerable, adapt to impacts that are now inevitable.[17] Thus according to Ojo Maduekwe,[18]

Copenhagen represents an opportunity for collective atonement. This is the only approach that can prevent what is a crisis from becoming a catastrophe.... Greenhouse Gas emissions may be the ultimate weapons of mass destruction if we go home from Copenhagen without a deal that everyone can identify with." What is at stake is of such historic proportion that COP15 cannot afford to fall apart into camps since all of humanity share a common future.[19]

Expectations of the conference were quite high; several developing nations indicated they have limits on what will be acceptable. Most wanted the rich nations to make more substantive cuts in their green - house gas emissions before an agreement can be reached on a draft text. The increased volume of migration and refugees compelled by natural disasters and climate change drives several developing countries towards even more disasters. Following this, the African delegation to Copenhagen, which would be led by Ethiopian Prime Minister *Meles Zenawi*, took the position that if the Copenhagen did not respond to the expectation of African nations to adapt to climate change, and if it failed to

17. "Nigeria; the Story of a Failed Summit - From Hopenhagen to Hopelesshagen." *Africa News. Loc. Cit.*
18. The then Nigeria Minister of Foreign Affairs who represented Nigeria at Copenhagen.
19. "Nigeria; The Story of a Failed Summit - From Hopenhagen to Hopelesshagen." *Africa News. Loc. Cit.*

provide the necessary finance, technology and capacity building, then Africa would consider not signing in Copenhagen.[20]

The AU common position was that the Copenhagen deal should provide special help and treatment for Africa and other highly vulnerable countries. Specifically, they identified a number of key points with regards to institutional mechanism and amount of the compensation money involved. Many calculations were made, including a 100 billion dollars per annum mark by 2020. They agreed that they would be flexible with the figures, but would set a minimum beyond which they would not go. Developing countries had stated that in Copenhagen, they would be looking toward a solution providing mechanism that will help reduce their spiralling foreign oil import costs, mitigate pollution and global warming.[21]

Accordingly Europolitics posed the question: "So what is to be expected from the Copenhagen conference?" It then went on to reveal that the highly ambitious goals set out at the launch of the revision of the Kyoto Protocol in Bali in December 2007 did not last long and for the sake of realism, have been lowered significantly. Yet *Yvo de Boer*, in Brussels on 23 November, announced confidently he had no doubt that Copenhagen would "result in success."[22] He then went on to explain that agreement has to be reached "on a number of decisions that will have to be implemented in legal form". These are expected to cover several important points such as: clear and precise emission reduction commitments in industrialised countries; clear reduction targets per country by 2020; commitments per developing country in terms of the measures they intend to take to reduce the increase in emissions; and clarification of the financial commitments that industrialised countries intend to make, in the short and long term,

20. "Nigeria; UN Climate Conference - What Developing Nations Expect." *Africa News*. December 4, 2009.
21. *Ibid*.
22. "Copenhagen Conference: Mini Ambitions for Mega Global Challenge." *Europolitics. Loc Cit.*

to helping developing countries. He concluded by saying that, "we need a clear and guaranteed financial commitment with a starting budget of US$10 billion per year for immediate action for the 2010-2012 periods". This needs to be defined in terms of aid for adaptation, mobilisation of the necessary technologies and capacity building.[23]

The Copenhagen package was also expected to contain a chapter devoted to forests', with details relating to international cooperation in the fight against deforestation. Finally, governments will have to agree on a tight schedule to transform the text into a legal document. It should be possible to convert these decisions into a legally binding treaty within three to six months. Obviously, the clearer the Copenhagen agreement, the easier and quicker this process will be.[24] The Kyoto Protocol set targets for industrialised countries to reduce emissions and introduced a series of instruments to help achieve this. Ten years later, in Bali (December 2007), countries party to the Kyoto Protocol embarked on a revision of the text based on a road map intending to update the main elements. This process should be completed at Copenhagen, resulting in an international treaty involving all the countries that committed to the process in Bali, including the United States. The latest developments indicate that a framework agreement' is not impossible but it will have neither the form nor the range of a real treaty. Copenhagen will just be a step, albeit a vital one, in the long process, which will oblige the international community, united, to face its biggest challenge ever: climate change.[25]

Moreover, *Yvo de Boer*, the Executive Secretary of the UN Framework Convention on Climate Change, gave a curtain-raising call to action to delegates from 192 nations before the opening ceremony. ``Never in 17 years of climate negotiations have so

23. *Ibid.*
24. *Ibid.*
25. *Ibid.*

many different nations made so many firm pledges together,"[26] he told reporters at the conference centre on Sunday afternoon. ``So whilst there will be more steps on the road to a safe climate future, Copenhagen is already a turning point in the international response to climate change," Boer declared.[27] In his speech when he arrived a day to the end of the Conference to provide needed leadership at Copenhagen on December 18th, 2009, Barack Obama stated as follows:

Today we've made meaningful and unprecedented breakthrough here in Copenhagen. For the first time in history all major economies have come together to accept their responsibility to take action to confront the threat of climate change.[28]

The Prime Minister of Denmark, Mr Lars Lokke Rasmussen, also expressed strong hopes in his welcome address as he declared as follows:

> ... it is not often that we as leaders get a chance to chart out a new course for our planet. One of these rare moments is right here and right now. Whatever choices we make, whatever the outcome, rest assured that future generations will judge our future ability to translate the current political momentum and commitment and make this conference a

26. Mr de Boer was referring to the promises made by all the world's biggest polluters to rein in their greenhouse gas emissions.
27. "Copenhagen comes alive." Northern Territory News (Australia). December 8, 2009. Accessed on January 19, 2010. Retrieved from *http://www.lexisnexis.com/us/lnacademic/results/docview/ docview.do?docLinkInd =true&risb=21_T8343118183&format=GNBFI&sort=RELEVANCE&startDocNo=1&resultsUrlKey=29_T8343118191&cisb=22_T8343118187&treeMax=true&treeWidth=0&csi=244803&docNo=18.*
28. "Climate; Outcome of the Copenhagen Climate Talks." *Africa News.* January 13, 2010.

> decisive moment of change. Not a stepping stone but a real turning point.[29]

Outcomes of the Copenhagen Summit

According to Richard Black, "About 45,000 travelled to the U.N. climate summit in Copenhagen -- the vast majority convinced of the need for a new global agreement on climate change."[30] But was their conviction realized? The outcomes of the Copenhagen Climate Summit fell short of expectations to the disappointment of all. The hopes which the Prime Minister of Denmark expressed "in his welcome address were virtually and almost totally dashed."[31] Not only that, the final outcome of the Copenhagen Conference reflected nothing of the confidence Barack Obama exuded in his speech.[32]

What indeed came out of the Summit was an agreement dubbed the Copenhagen Accord drawn up on Friday night by a limited group of countries - leaders from the US, China, India, Brazil and South Africa - which was formally accepted by the Conference of the Parties to the UN Framework Convention on Climate Change (COP15) during a closing session on Saturday morning, Reuters reports.[33] In a final decision "The Conference of the parties takes note of the Copenhagen Accord."[34] The text is still strongly debated, and it remains to be seen how many countries will sign on to the Copenhagen Accord. According to Danish daily *Berlingske*, the COP15 President, Danish Prime Minister Lars Løkke Rasmussen, expresses satisfaction:

29, "Nigeria; The Story of a Failed Summit - From Hopenhagen to Hopelesshagen." *Africa News*. *Loc. Cit.*

30. "Why Did Copenhagen Fail to Deliver a Climate Deal?" *The Hindu.* December 23, 2009. Accessed on January 1, 2010. Retrieved from *http://beta.thehindu.com/opinion/lead/article98100.ece?homepage=true.*

31. *Ibid.*

32. "Climate; Outcome of the Copenhagen Climate Talks." Africa News. *Loc. Cit.*

33. "A Copenhagen Accord It Is." Accessed on January 19, 2010. Retrieved from *http://www.denmark.dk/en/menu/Climate-Energy/COP15-Copenhagen-2009/Selected-COP15-news/A+Copenhagen-Accord-it-is.htm.*

34. *Ibid.*

> I am satisfied. We have achieved a result. Now nations will need to sign on, and if they do so, they will support what has been agreed (in the Copenhagen Accord). This will have effect immediately.[35]

It has been observed that when the session ended, the Parties agreed they would "take note" of the accord rather than formally adopt it, a situation that left out Sudan and its allies. As such, the accord became a *minute* representation of the modest of expectations before the talks began. It was a shadow of even the barest of Obama's aims, one of which was to make major emitters among the developing nations - China, India, and Brazil - agree to a process that would make them adopt concrete commitments; get funds to flow from developed countries to developing ones in aid of their efforts towards combating climate change.[36]

While blaming China for the failure of the Summit, an account has it that since the United States did not sign the Kyoto Protocol and remained all the while antagonistic to major emission cuts and various other provisions of the Protocol, it was therefore a heart-warming thing for the world when on assumption of office, President Barak Obama signed on the side of conducive climate campaigners. However just as the world was warming up to the idea that US was finally going to team with the rest of the world to avert an imminent disaster, China, which has now acquired the position of major polluter of the world played a deft, dubious game and sabotaged what would have been a resounding deal for humanity.[37] Relishing on the annual rise in its Gross Domestic Product, China, stood vehemently against any provision that would make it commit to emission cut. It even stood against fixing a date for all nations to begin to make such cuts. It was glaring that China considered its economy over and above the health of billions of

35. *Ibid.*
36. "Climate; Outcome of the Copenhagen Climate Talks." Africa News. January 13, 2010.
37. "Nigeria; The story of a Failed Summit - From Hopenhagen to Hopelesshagen." *Africa News. Loc.Cit.*

people in the developing and least developed nations of the world. The country cleverly hid under the umbrella of the Group of 77 to truncate the most important international legal agreement that would have been a major success for right to decent and safe livelihood.[38] Now that the deal has been delayed, it follows that people of the developing and least developed nations who are most vulnerable to the impacts of climate change and with no capacity to adapt have been made sacrificial lambs of the economic gains of the developed and emerging economies of the world.[39]

On the other hand, looking on the bright side of the Summit, according to Renee Garner, the Copenhagen Accord contains many elements that represent a significant milestone by providing for:

- a recognition of the need to limit global temperatures rising no more than 2C (3.6F) above pre-industrial levels (although it does not identify what year carbon emissions should peak)
- a commitment by developed countries to contribute funding up to US$30 billion over the next three years to support mitigation and adaptation activities in developing nations
- Annex I (developed) countries are to spell out by 31 January next year their pledges for curbing carbon emissions by 2020.
- non –Annex I (developing) countries are to identify by 31 January next year nationally appropriate mitigation actions (NAMAs), and the mobilisation of US$100 million per year by 2020 from developing nations for mitigation action which is to be conditional upon the transparency of implementing such action.[40]

38. *Ibid.*
39. *Ibid*.
40. Garner, Renee. *Monty Python and the Copenhagen Accord*. December 21, 2009. Accessed on February 1, 2010. Retrieved from *http://www.freehills.com/blog/5574.aspx*.

Moreover, according to *Yvo de Boer* the Copenhagen Summit has produced three key things. First, it raised climate change to the highest level of government. Second, the Copenhagen Accord reflects a political consensus on the long-term, global response to climate change. Third, the negotiations brought an almost full set of decisions to implement rapid climate action near to completion.[41]

Though the Copenhagen Accord is legally not binding and falls short of what the world required to meet the current global challenge of climate change, "it was widely held to be better than nothing—though, in the final moments, nothing nearly triumphed."[42]

Reasons for the Dismal Outcomes of the Summit

Many observers, climate change activists, experts, participants and indeed world leaders expressed great expectations about the Copenhagen Climate Conference. But the Summit ended in dismal failure. No binding agreement was reached. So why did the summit end without one? In answer to this question, Richard Black has proffered eight reasons as follows.

First, key governments do not want a global deal: Until the end of this summit, it appeared that all governments wanted to keep the keys to combating climate change within the U.N. Climate Convention. Implicit in the Convention, though, is the idea that governments take account of each others' positions and actually negotiate. That happened at the Kyoto summit. Developed

41. "UNFCCC Press Briefing on the Outcome of Copenhagen and the Way Forward in 2010." Accessed on January 25, 2010. Retrieved from *http://unfccc.int/2860.php*.
42. "China's Thing About Numbers; Climate Change After Copenhagen." The *Economist*. U.S. Edition January 2, 2010. Accessed on February 2, 2010. Retrieved from *http://www.lexisnexis.com/us/lnacademic/results/docview/docview.do?docLinkInd=true&risb=21_T8453742404&format=GNBFI&sort=RELEVANCE&startDocNo=1&resultsUrlKey=29_T8453742413&cisb=22_T8453742412&treeMax=true&treeWidth=0&selRCNodeID=14&nodeStateId=411en_US,1,2&docsInCategory=12&csi=7955&docNo=7*.

nations arrived arguing for a wide range of desired outcomes; during negotiations, positions converged, and a negotiated deal was done. In Copenhagen, everyone talked; but no-one really listened. The end of the meeting saw leaders of the U.S. and the BASIC group of countries (Brazil, South Africa, India and China) hammering out a last-minute deal in a back room as though the nine months of talks leading up to this summit, and the Bali Action Plan to which they had all committed two years previously, did not exist. Over the last few years, statements on climate change have been made in other bodies such as the G8, Major Economies Forum (MEF) and Asia-Pacific Economic Co-operation forum (APEC), which do not have formal negotiations, and where outcomes are not legally binding. It appears now that this is the arrangement preferred by the big countries (meaning the U.S. and the BASIC group). Language in the "Copenhagen Accord" could have been taken from -- indeed, some passages were reportedly taken from, via the mechanism of copying and pasting -- G8 and MEF declarations. The logical conclusion is that this is the arrangement that the big players now prefer -- an informal setting, where each country says what it is prepared to do -- where nothing is negotiated and nothing is legally binding.[43]

Second, the U.S. political system: Just about every other country involved in the U.N. talks has a single chain of command; when the President or Prime Minister speaks, he or she is able to make commitments for the entire government. Not so the U.S. It effectively has two governments, each with power of veto over the other. It makes the U.S. a nation apart in these processes, often unable to state what its position is.

Third, bad timing: Although the Bali Action Plan was drawn up two years ago, it is only one year since Barack Obama entered the White House and initiated attempts to curb U.S. carbon emissions. He is also attempting major healthcare reforms; and both measures are proving highly difficult. If the Copenhagen

43. "Why Did Copenhagen Fail to Deliver a Climate Deal?" *The Hindu*. *Loc. Cit.*

summit had come a year later, perhaps Mr Obama would have been able to speak from firmer ground, and perhaps offer some indication of further action down the line.

Fourth, the host government: In many ways, Denmark was an excellent summit host. Copenhagen was a friendly and capable city, transport links worked; Bella Centre food outlets remained open through the long negotiating nights. But the government of Lars Lokke Rasmussen got things badly, badly wrong. Even before the summit began, his office put forward a draft political declaration to a select group of "important countries" -- thereby annoying every country not on the list, including most of the ones that feel seriously threatened by climate impacts. Moreover, the chief Danish negotiator Thomas Becker was sacked just weeks before the summit amid tales of a huge rift between Mr. Rasmussen's office and the climate department of Minister *Connie Hedegaard*. This destroyed the atmosphere of trust that developing country negotiators had established with Mr Becker. Furthermore, procedurally, the summit was a farce, with the Danes trying to hurry things along so that a conclusion could be reached, bringing protest after protest from some of the developing countries that had presumed everything on the table would be properly negotiated. Suspensions of sessions became routine. Also, despite the roasting they had received over the first "Danish text," repeatedly the hosts said they were preparing new documents -- which should have been the job of the independent chairs of the various negotiating strands. In addition, China's chief negotiator was barred by security for the first three days of the meeting -- a serious issue that should have been sorted out after day one.

Fifth, the weather: Although "climate sceptical" issues made hardly a stir in the plenary sessions, any delegate wavering as to the scientific credibility of the ``climate threat" would hardly have been convinced by the freezing weather and -- on the last few days -- the snow that blanketed routes from city centre to Bella Centre. Reporting that the "noughties" had been the warmest decade since instrumental records began, the World Meteorological

Organization (WMO) noted "except in parts of North America." If the U.S. public had experienced the searing heat and prolonged droughts and seriously perturbed rainfall patterns seen in other corners of the globe, would they have pressed their senators harder on climate action over the past few years?

Sixth, 24-hour news culture: The way this deal was concocted and announced was perhaps the logical conclusion of a news culture wherein it is more important to beam a speaking president live into peoples' homes from the other side of the world than it is to evaluate what has happened and give a balanced account. The Obama White House mounted a surgical strike of astounding effectiveness (and astounding cynicism) that saw the president announcing a deal live on TV before anyone -- even most of the governments involved in the talks -- knew a deal had been done. The news went first to the White House lobby journalists travelling with the president. With due respect, they are not as well equipped to ask critical questions as the environment specialists who had spent the previous two weeks at the Bella Centre. After the event, of course, journalists pored over the details. But the agenda had already been set; by the time those articles emerged, anyone who was not particularly interested in the issue would have come to believe that a deal on climate change had been done, with the U.S. providing leadership to the global community. It must be stated that the 24-hour live news culture did not make the Copenhagen Accord. But its existence offered the White House a way to keep the accord's chief architect away from all meaningful scrutiny while telling the world of his triumph.

Seventh, EU politics: For about two hours on Friday night, the EU held the fate of the Obama-BASIC "accord" in its hands, as leaders who had been sideswiped by the afternoon's diplomatic *coup d'etat* struggled to make sense of what had happened and decide the appropriate response. If the EU had declined to endorse the deal at that point, a substantial number of developing countries would have followed suit, and the accord would now be simply an informal agreement between a handful of countries -- symbolising

the failure of the summit to agree on anything close to the EU's minimum requirements, and putting some beef behind Europe's insistence that something significant must be achieved next time around. So why did the EU endorse such an emasculated document, given that several leaders beforehand had declared that no deal would be better than a weak deal? The answer probably lies in a mixture -- in proportions that can only be guessed at -- of three factors: one, politics as usual never go against the U.S., particularly the Obama U.S., and always emerge with something to claim as a success. Two, EU expansion, which has increased the proportion of governments in the bloc that are unconvinced of the arguments for constraining emissions. Three, the fact that important EU nations, in particular France and the U.K., had invested significant political capital in preparing the ground for a deal -- tying up a pact on finance with Ethiopia's President Meles Zenawi, and mounting a major diplomatic push on Thursday when it appeared things might unravel. However, having prepared the bed for U.S. and Chinese leaders and having hoped to share it with them as equal partners, acquiescing to an outcome that it did not want announced in a manner that gave it no respect arguably leaves the EU cast in a role rather less dignified that it might have imagined.

Finally, campaigners got their strategies wrong: An incredible amount of messaging and consultation went on behind the scenes in the run-up to this meeting, as vast numbers of campaign groups from all over the planet strived to coordinate their "messaging" in order to maximise the chances of achieving their desired outcome. The messaging had been, in its broadest terms, to praise China, India, Brazil and the other major developing countries that pledged to constrain the growth in their emissions; to go easy on Barack Obama; and to lambast the countries (Canada, Russia, the EU) that campaigners felt could and should do more. Now, post-mortems are being held, and all those positions are up for review. U.S. groups are still giving Mr. Obama more brickbats than bouquets, for fear of wrecking Congressional legislation -- but a change of

stance is possible. Having seen the deal emerge that the real leaders of China, India and the other large developing countries evidently wanted, how will those countries now be treated? How do you campaign in China -- or in Saudi Arabia, another influential country that emerged with a favourable outcome? The situation is especially demanding for those organisations that have traditionally supported the developing world on a range of issues against what they see as the west's damaging dominance. After Copenhagen, there is no "developing world" -- there are several. Responding to this new world order is a challenge for campaign groups, as it will be for politicians in the old centres of world power.[44]

Imperatives of the Copenhagen Summit

The deal which surfaced at the end of the Summit, known as the Copenhagen Accord[45], was neither legally binding nor did it contain new emissions reduction targets. Indeed, it was not even formally adopted or "agreed" by the 192 states represented at the meeting. It was merely "noted". *Yvo de Boer*, called the accord "a letter of intent". He argued that: "The challenge now is to turn what we have agreed politically into something real, measurable and verifiable."[46]

The Accord, brokered initially between the US, China, India, Brazil and South Africa was eventually agreed by a group representing 49 developed and developing countries that together account for more than 80 per cent of global greenhouse gas emissions. It endorses the limit of 2oC warming as the benchmark

44. *Ibid.*
45. It contains just twelve articles.
46. "Unfinished Business." *Utility Week*. January 25, 2010. Accessed on February 2, 2010. Retrieved from *http://www.lexisnexis.com/us/lnacademic/results/docview/docview.do?docLinkInd=true&risb=21_T8453742404&format=GNBFI&sort=RELEVANCE&startDocNo=1&resultsUrlKey=29_T8453742413&cisb=22_T8453742412&treeMax=true&treeWidth=0&selRCNodeID=14&nodeStateId=411en_US,1,2&docsInCategory=12&csi=164729&docNo=4*.

for global progress on climate change. It called on nations to work towards "peaking" their emissions "as soon as possible". Unlike previous agreements, not just developed, but also all leading developing countries have agreed to make specific commitments to tackle emissions, to be spelled out by the end of January, 2010. Those countries have also signed up to comprehensive measurement, reporting and verification of progress (though exactly what this will entail is not yet clear). Industrialised countries have agreed to provide funding totalling £30 billion during the period 2010-12 to developing countries to boost action on mitigation and adaptation - a Copenhagen Green Fund will be established. The accord specifically calls for measures to reduce greenhouse gas emissions from deforestation and forest degradation. And the text expressly recognises that "markets" can "enhance the cost-effectiveness of mitigation actions". The implementation of the accord will be assessed by 2015.[47]

However**,** Ben Lieberman has answered the question "what does the final Copenhagen Agreement contain?" in the following way portraying it as an empty document:

> Practically nothing. Copenhagen had long been hyped as the conference where a new set of stringent, binding, verifiable, and internationally enforceable greenhouse gas emissions targets were to be agreed upon for the decades ahead. The targets in the existing 1997 Kyoto Protocol--generally a 5 percent reduction below 1990 emissions levels for developed countries--are scheduled to expire in 2012. And in any event, global warming activists considered the Kyoto Protocol too weak to save the planet.

47. *Ibid.*

All that was left after two weeks of meetings was some vague language to the effect that it would be nice if each country decided on its own to reduce emissions. Even this face-saving language had to be pared back at the behest of China and other developing nations who did not want the final agreement to even hint that they might be obligated to do something.

Equally non-binding promises from developed nations to provide finance to poor countries and move forward with international monitoring of emissions are similarly meaningless. Also dropped was a provision requiring the parties to agree to binding targets in 2010. And as meaningless as the final accord is, the United Nations could not even agree to it; it merely stated that it "takes note" of the final accord.[48]

Addressing the media for the first time since last month's Climate Change Conference in Copenhagen, *Yvo de Boer* said the fact that Copenhagen did not deliver the full agreement the world needs to address climate change "just makes the task more urgent." He said further that we are now in a cooling off period that gives countries useful and needed time to resume their discussions with each other. "If countries follow up the outcomes of Copenhagen calmly, with eyes firmly on the advantage of collective action, they have every chance of completing the job," he said. This implies that Copenhagen Summit was an uncompleted job; it is therefore imperative for the UN to organise another forum to complete the job.[49]

In this regard, the UN Secretary-General Ban Ki-moon has exhorted world leaders to act in concert to ensure that a legally binding treaty is reached next year. "While I am satisfied that we sealed a deal, I am aware that the outcome of the Copenhagen

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48. Lieberman, Ben. "The Copenhagen Conference: A Setback for Bad Climate Policy in 2010." The Heritage Foundation. January 19, 2010. Accessed on January 2, 2010. Retrieved from *http://www.heritage.org/ Research/EnergyandEnvironment/ sr0075.cfm.*
49. "UNFCCC Press Briefing on the Outcome of Copenhagen and the Way Forward in 2010." *Loc. Cit.*

conference, including the Copenhagen Accord, did not go as far as many have hoped," Ban told reporters after the Summit in New York. "The leaders were united in purpose, but they were not united in action," Mr. Ban pointed out in a UN Statement. Nonetheless, he said that the talks "represent a beginning - an essential beginning," because without nations hammering out a deal in Copenhagen, the financial and technical support for poorer nations agreed upon would not take immediate effect. The coming challenge for the UN will be to harness political will and translate it into action, said the Secretary-General, who will set up a high-level panel on development and climate change. Due to the complexity of the negotiations and the entrenched positions held by many countries, "everybody knew that it would not be an easy task," he told reporters, emphasising the importance of taking proactive action to clinch a legally binding pact in December 2010 instead of dwelling on the Copenhagen talks.[50]

However, according to the *International Herald Tribune*, the UN has raised an alarm about the weak, non-binding Copenhagen Accord as follows:

> Just a month after world leaders fashioned a tentative and nonbinding agreement at the climate change summit meeting in Copenhagen, the deal already appears at risk of coming undone, the top climate official at the United Nations has warned. Facing a Jan. 31[51] deadline, major countries have yet to submit their plans for reducing emissions of climate-altering gases, one of the major provisions

50. "Nigeria; Climate Change - UN Advocates United Action on New Pact." *Africa News.* December 23, 2009.Accessed on February 2, 2010. Retrieved from *http://www.lexisnexis.com/us/lnacademic/results/docview/docview.do?docLinkInd=true&risb=21_T8453742404&format=GNBFI&sort=RELEVANCE&startDocNo=1&resultsUrlKey=29_T8453742413&cisb=22_T8453742412&treeMax=true&treeWidth=0&csi=8320&docNo=24.*
51. 2010.

> of the agreement, Yvo de Boer, said Wednesday. Fewer than two dozen countries have even submitted letters saying they agree to the terms of the three-page accord. And there has been virtually no progress on spelling out the terms of nearly $30 billion in short-term financial assistance promised to those countries expected to be hardest hit by climate change. Still unresolved are such basic questions as who will donate how much, where the money will go and who will oversee the spending.[52]

On two issues in particular the Copenhagen Conference may yet mark the beginning of a new way forward. First, the UN's climate process has for more than a decade been bedevilled by a binary split between developed and developing countries. Under the Kyoto protocol, only developed countries committed themselves to cutting emissions; developing countries made no such promises. It is submitted that that was the main reason why Kyoto failed since America would not accept a treaty that required nothing of countries such as China, and China insisted that the rich world should bear most of the necessary costs of constraining emissions. At Copenhagen developed countries were determined to move beyond this structure. The Copenhagen Accord makes some progress towards closing this split. Developing, as well as developed, countries signed up to it, and have agreed to an

52 "The Climate Agreement That Wasn't; U.N. Says Pact Reached in Copenhagen Is Already at Risk of Falling Apart." *The International Herald Tribune.* January 22, 2010. Accessed on February 2, 2010. Retrieved from *http://www.lexisnexis.com/us/lnacademic/results/docview/docview.do?docLinkInd=true&risb=21_T8453742404&format=GNBFI&sort=RELEVANCE&startDocNo=1&resultsUrlKey=29_T8453742413&cisb=22_T8453742412&treeMax=true&treeWidth=0&csi=8357&docNo=15* .

international role in monitoring any cuts they commit themselves to. That is a crucial concession.[53]

The second reason for hope is that Copenhagen's failure may have encouraged the development of political structures better suited to the challenge. Climate change is not just an unusually grand problem. It is also an unusually complex one, which crosses and confounds the boundaries that normally define our world; from farming to forestry, shipping to sovereignty, all sorts of interests are brought together in new ways that demand new actions. Trying to deal with all the sources of the many gases involved in a single set of negotiations, in a forum of 193 countries, was always a tall order. The Copenhagen Accord edges towards allowing negotiations to take place in new forums. Some of its provisions, notably on mechanisms for funding mitigation efforts in developing countries, can take effect outside the UN process. That could mark a new pluralism in climate politics, allowing coalitions of the willing to form for specific purposes such as slowing deforestation, or stemming emissions from shipping. There are risks to slicing up the problem into smaller pieces. Bundling everything together so that all parties need to offer some give in order to get their take is a time-honoured Procedure for negotiations; and stepping back from doing everything in one forum may mean doing less overall. But the world has twice, at Kyoto and at Copenhagen, tried to deal with the problem in one go, and failed. Smaller groups such as the G20 or the Major Economies Forum offer a better prospect for haggling over difficult issues. The UN process is still useful in ensuring a workable and trusted system of accounting for carbon and in

53. "Planet B; Climate change." *The Economist*. U.S. Edition. January 2, 2010. Accessed on February 2, 2010. *http://www.lexisnexis.com/us/lnacademic/results/docview/docview.do?docLinkInd=true&risb=21_T8453742404&format=GNBFI&sort=RELEVANCE&startDocNo=1&resultsUrlKey=29_T8453742413&cisb=22_T8453742412&treeMax=true&treeWidth=0&selRCNodeID=14&nodeStateId=411en_US,1,2&docsInCategory=12&csi=7955&docNo=1*.

debating and approving or rejecting agreements whose details will largely be worked out elsewhere. But global negotiations will need to continue and the participants need to learn one useful lesson from Copenhagen: climate change is too big a problem to be swallowed in a single bite. Smaller groups, dealing with more manageable-sized chunks, have a better chance.[54]

However, Mike Lakewood has expresses the view that a non-binding agreement on emissions may yet prove surprisingly productive. According to him, If climate temperatures continue to rise, nations will see for themselves that more must be done, and may compete with one another to reduce emissions, going beyond what would have been mutually acceptable in 2009. The know nothings will evaporate. Genuine cooperation will grow from grim necessity.[55]

The assertion has been made that though the definitive deal many wanted did not materialise, it is equally plain that the concern which fuelled Copenhagen's expectations has not evaporated and may yet propel a better deal back on track. It must be stated that an opportunity for this comes up in one year after Copenhagen Summit. There will be another UN Climate Change Conference in December 2010 in Mexico City, preceded by a major two-week negotiating session in Bonn, Germany.

These may make more progress on a legally binding treaty than the Copenhagen summit managed, and get agreement on a second commitment period for the Kyoto Protocol.[56]

Conclusion

The paper has examined the Copenhagen Summit, different expectations from the Copenhagen Summit and its real outcomes. The outcomes of the Summit, and the eventual outcomes which fell far short of expectations. It has also addressed some of the

54. "Planet B; Climate Change." *The Economist*. U.S. Edition. *Loc. Cit.*
55. "Assessing the Outcome of the Climate Talks." *The New York Times.* December 22, 2009.
56. "Unfinished business." *Utility Week. Loc. Cit.*

reasons for the outcomes and the imperatives of those outcomes for the continuing need to address climate change issues. It is observed that the Copenhagen Summit was impressively attended bringing together 193 countries which are parties to the UN *Framework Convention on Climate Change (1992) and the Kyoto Protocol* (1997). However, it is submitted that the Summit was a dismal failure as it fell terribly short of the great expectations of observers, climate change activists, experts, participants and indeed world leaders in not producing a binding agreement required to tackle the threatening global warming challenge. It is therefore recommended that another UN Climate Change Conference be organised where developing and developed nations would make realistic commitments to cutting emissions of greenhouse gases.

Moreover, it is also observed that both developing and developed countries signed up to the Copenhagen Accord and have agreed to an international role in monitoring any cuts they commit themselves to. That was contrary to what obtained under the Kyoto protocol where only developed countries committed themselves to cutting emissions and developing countries made no such promises which was the main reason why Kyoto failed since the US would not accept a treaty that required nothing of developing countries such as China.[57] It is therefore recommended that this Copenhagen approach which involved both developing and developed countries in making commitments in cutting emissions should be applied in future climate change agreements.

It has been observed that one cause of the failure of the Copenhagen Summit was an attempt for an extremely large forum of 193 nations to deal with the climate change problem in one go. It is submitted that climate change being "an unusually grand problem" and "an unusually complex one," trying to deal with it in a single set of negotiations in a forum of 193 countries was virtually an attempt to do the impossible. It is observed that the

57. "Planet B; Climate change." *The Economist.* U.S. Edition. *Loc. Cit.*

Copenhagen Accord edges towards allowing negotiations to take place in new forums. Some of its provisions, notably on mechanisms for funding mitigation efforts in developing countries can take effect outside the UN process. It is therefore recommended that a new pluralism in climate politics which allows coalitions of smaller groups consisting of the willing should form for specific purposes such as slowing deforestation, or stemming emissions from shipping. Smaller groups such as the G20 or the Major Economies Forum offer a better prospect for haggling over difficult issues of climate change. The UN process still has a role in ensuring a workable and trusted system of accounting for carbon and in debating and approving or rejecting agreements whose details will largely be worked out elsewhere.[58]

58 "Planet B; Climate change." *The Economist.* U.S. Edition. *Loc. Cit.*

ADAPTING TO CLIMATE CHANGE: SUSTAINABLE MITIGATION OPTIONS FOR DEVELOPING COUNTRIES IN SUB-SAHARAN AFRICA

By

Dr. Yemi Oke *LL.M, LLB, B.L, PhD**

Abstract:
This paper points out that climate change constitutes a major threat to sustainable growth and development in Sub-Saharan Africa. It argues that the challenges of climate change have exposed the levels of institutional and social decadence in the polity. For the region to successfully and effectively adapt to climate change; the paper contends that new strategies (as discussed in the paper) would need to be identified and implemented.

Introduction

Climate change constitutes a major threat to sustainable management of the environment and socio-economic development of most countries in Sub-Saharan Africa. This adds to other challenges in the region such as epidemic disease, corruption, abuse of human rights, mismanagement of natural resources as well as political irredentism and religious/ethnic unrest. The wealth of African countries in terms of natural resources depicts what some writers generally refer to as "resource curse"[1] for which

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1. The argument of "resource-curse" theory is based on the empirical evidence that developing countries with abundant resources wealth perform less than their resources poor counterparts, and examples of such countries abound in Africa. See Auty Richard, "Sustaining Development in Mineral Economies: The Resource Curse Thesis", (London: Routledge, 1993). See also Gelb A.H. and Associates, Windfall Gains: Blessing or Curse, (New York: Oxford Press, 1988); Michael L. Ross, "The Political Economy of The Resource Curse" (1999) 51, *World Politics*, at 297-8. These scholars generally illustrate the resource-curse theory from diverse perspectives.

scholars suggested building upon the African indigenous resource and environmental practices as solution.[2] Other scholars, however, contend that application of indigenous environmental management techniques would be practically impossible in the extractive industry of oil, gas and mining[3] which generate the most greenhouse gases, making indigenous practices irrelevant when it comes to solving modern environmental problems like climate change or global warming and related atmospheric pollution from oil, gas or mining exploration.[4]

Africa is least responsible for climate change, but ironically is also the most vulnerable to the climate change effects of reduced agricultural production, worsening food security, increased incidence of flooding, desertification and drought among others.[5] The real threat to the environment in Sub-Saharan Africa is poverty and corruption. The challenges of climate change only go to expose the level of institutional and social decadence in the polity. Mitigation of climate change comes at a cost, which are relatively higher in the developing countries of Africa. The option of cash-for-the-environment would be grossly misplaced due to

2. See Shelton, D., "Fair Play, Fair Pay: Preserving Traditional Knowledge and Biological Resources" (1995) 5 *Yearbook of International Environmental Law*, at 77; Posey, D.A. *Traditional Resource Rights: International Instruments for Protection and Compensation for Indigenous Peoples and Local Communities* (Switzerland: IUCN, 1996); Dei, G.J., "African Development: The Relevance and Implications of 'Indigenousness' in Indigenous Knowledge" in *Global Context: Multiple Readings of Our World* (Toronto: University of Toronto Press, 2000) at 80. But see and compare Date-Bah, S.K., "Rights of Indigenous People in Relations to Natural Resources Development: An African's Perspectives" (1998) 16 *Journal of Energy and Natural Resources Law*, at 391.
3. Richardson, B.J., "Environmental Management in Uganda: The Importance of Property Law and Local Government in Wetlands Conservation" (1993) 37:2 *Journal of African Law*, at 123.
4. According to Richardson, "[E]ven where particular communities can rationally deal with environmental issues at the local level, they may have little control over externally generated, complex problems like pollution, climate change and global warming. *Ibid* at 123.
5. Climate Change and Africa 8th Meeting of the Africa Partnership Forum Berlin, Germany 22-23 May 2007, at 3.

social and institutional decadence that makes most governmental institutions vulnerable to abuse and corruption. New strategies for adapting to climate change and for generally improving the environment would need to be identified and implemented by the developing countries in Sub-Saharan Africa. This paper identifies the challenges of climate change mitigation in the region and proffers modern strategies that meet the peculiarities of the African region for the purpose of addressing the issue of sustainable management of the numerous environmental impacts of climate change by the developing countries in Africa.

Sustainability and Climate Change

Sustainable development emerged as a twentieth century concept for answering all environmental and resource management problems including climate change and issues bordering on mitigation by the developing countries in Africa and other regions.[6] The need to exploit natural resources in a manner that is sustainable, prudent, rational', 'wise' or 'appropriate' forms the basis of the principle of sustainable use which also emphasizes the need to integrate environmental consideration into economic development plans, strategies, programmes, or projects.[7] Sustainable development has had a variegated history. In some quarters, the evolution of sustainability is said to be traceable to events at the international arena. This perception has been contradicted by those who contend that the concept has its origin in "eco-development" which was first used at the Founex Seminar.[8]

6. See World Commission on Environment and Development, *Our Common Future* (London: Oxford University press, 1987) at 30. The report defines sustainable development to mean "The development that meets the need of the present without compromising the ability of future generations to meet their own needs".
7. Sands, P., *Principles of International Environmental Law* (2nd ed.) (Cambridge: University Press, 2003), at 253.
8. J. Ntambirweki, "The Developing Countries in the Evolution of an International Environmental Law" (1991), 14 *Hasting International and Comparative Law Review* at 905. See also "Development and Environment: Report and Working Papers of a Panel of Expert Convened by the Secretary General of the United

Another group argues that it was first used by the *World Commission for Environment and Development* (WCED) in its central theme and borrowed by the *World Conservation Union* (IUCN) in its 1980 conservation strategy.[9]

Irrespective of divergent views, it appears incontestable that emergence of the modern principle of sustainability is traceable to the *Stockholm Conference* of 1972[10] where the need to balance human economic development and protection of the environment for the present and future generations was first proclaimed.[11] The Stockholm declaration does not provide for sustainable development in specific terms. However, its provisions clearly depict environmental concerns around which subsequent regimes were based at the international, regional, sub-regional and national levels. The outcome of the conference led to the *Brundtland Commission on the Environment* which eventually popularized the sustainability concept in its report.[12]

The follow up conference at Rio 1992[13] specifically reaffirms the declarations of Stockholm and its principles. Unlike its predecessor, it provides explicitly for principles of environmental

Nations Conference on the Human Environment" (Founex Report) (Paris, Mouton, 1972).

9. For example see V. Koster, "From Stockholm to Brundtland" (1990) 1 *Environmental Policy and Law* at 14. See also N. Robinson, "Caring for the Earth-A Legal Blueprint for Sustainable Development" (1992), 2 *Environmental Policy and Law* at 22. But see C. Pointing, "Historical Perspectives on Sustainable Development" (1990) 32/9 Environment, at 4.
10. *UN Conference on Environment and Development* 1972 (Stockholm) UN Doc. A/Conf.48/14/Rev. 1(UN pub. E.73, II.A.14).
11. *Ibid*. principle 1.
12. See World Commission on Environment and Development, *Our Common Future* (London: Oxford University press, 1987) at 30. The report defines sustainable development to mean "The development that meets the need of the present without compromising the ability of future generations to meet their own needs".
13. See the UN Conference on Environment and Development 1992 (Rio) A/CONF.151/26 Vol. I), 8:31 I.L.M 874 (1992).

sustainability.[14] Agenda 21,[15] a forty-chapter document on achieving the objectives of the conference also restates *the Rio* sustainability principles in all its chapters.[16] The *Johannesburg Summit* was an attempt at evaluating the implementation of the principle of sustainable development by party states, and to devise effective means of implementing the agenda by national governments. This culminated in the *Plan of Implementation* [hereinafter JPOI] - a document agreed to at the summit.[17] The *JPOI* specifically draws attention to the need to curtail the current trends of unsustainable patterns of natural resource exploitation to mitigate climate change impacts.[18]

The sustainability principle readily becomes handy for addressing issues of modern environmental challenges like climate change. The impact of climate change could be devastating, as it inevitably affects quality of life of future generations who took no

14. *Ibid.* Principle 1. See also principles 4, 5, 6, 7, 8, 9, 12, 20, 21, 22, 24, and 27, all which are replete with specific provisions on sustainable development.
15. See *Agenda 21*, A/CONF.151/26 [vols. I, II, III (1992)].
16. Agenda 21 is the policy statement of the Rio Convention. It contains detailed guidelines on the implementation and integration of the Declarations at the international and national levels.
17. See the WSSD Plan of Implementation, online: United Nations <*http://www.un.org/eas/sustdev/documents/WSSD*>, accessed September 13, 2005. The JPOI strongly re-emphasized its commitment to the Rio declarations and Agenda 21, stating in paragraph I (1) that:

    > The United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992, provided the fundamental principles and the programme of action for achieving sustainable development. We strongly reaffirm our commitment to the Rio principles, the full implementation of Agenda 21 and the Programme for the Further Implementation of Agenda 21. We also commit ourselves to achieving the internationally agreed development goals, including those contained in the United Nations Millennium Declaration and in the outcomes of the major United Nations conferences and international agreements since 1992."

18. *Ibid.* at paragraph III (13).

part in such degradations or emission of greenhouse gases.[19] This makes climate change the singular most perilous environmental challenge of our time. Africa is anticipated to be worst hit by the negative effects of climate change due to it relatively poor environmental consciousness as a result of apathy for efficient environmental governance owing to various factors. The risks of climate change are already here. Mitigation by taking appropriate steps in terms of policy formulation and sustainable strategy options is crucial to navigating the trouble waters of climate change. In a report titled "The Economic of Climate Change" Sir Nicholas Stern warns:

> The conclusion of the Review is essentially optimistic. There is still time to avoid the worst of impacts of climate change, if we act now and act internationally. Governments, businesses and individuals all need to work together to respond to the challenge. Strong, deliberate policy choices by governments are essential to motivate change. But the task is urgent. Delaying action, even by a decade or two, will take us into dangerous territory. We must not let this window of opportunity close.[20]

Environmental Governance in Africa

The windows of opportunity for mitigation of climate change should not be allowed to close to countries in Sub-Saharan Africa. Though environment management also constitutes a major concern in the regional environmental instruments agreed to by countries in

19. R. Macdonald, "Future Generations: Searching for a System of Protection" in *Future Generations and International Law* (London: Earthscan, 1998) at 149.
20. Sir Nicholas Stern, "Economics of Climate Change" October 30, 2006. See also S. Tromans, "Climate Change, Energy and Planning" (2007) *Journal of Planning and Environmental Law*, at 357.

Africa;[21] these countries have suffered excessive exploitation of natural resources and the environment dating back to the colonial period. The law promulgated by the former colonial powers to reduce environmental and natural resources degradation only addressed specific needs of the colonial overlords. For example, while it could be argued that the *African Convention on Conservation of Nature and Natural Resources* (1968)[22] marks the beginning of modern environmental conservation by the African people, preservation of natural resources is also said to have received the attention of the colonial overlords under the *Convention for the Preservation of Wild Animal, Birds and Fish in Africa* of 1900.[23] This pre-dates the *African convention* as the first major instrument on natural resource management in Africa. It has been argued that the *1900 convention* merely intended to serve the conservation interest of the colonialist, as it aimed at preservation of species that attracted the needs of colonial overlords in Europe like Germany, France, Italy, Portugal and United Kingdom.[24]

Since the 1970s significant evolutionary trends have been noticeable in the regime of environmental regulation in Africa beginning with the Algiers Convention.[25] Following the environmentally-historic conference at Stockholm in 1972, the Africa Heads of State and Government in 1973 adopted the *African Declaration on Co-operation, Development and Economic Independence*,[26] which makes far-reaching declarations on

21. See "An Introduction to the African Convention on the Conservation of Nature and Natural Resources", IUCN Environmental Law Programme, IUCN Environmental Policy and Law Paper No. 56, 2004 at 1.
22. African Convention on the Conservation of Nature and Natural Resources (Algiers) 68 INT'L ENVRL. L. 968 (1969).
23. See the Convention for the Preservation of Wild Animal, Birds and Fish in Africa, 94 B.F.S.P. 715.
24. See Kiss & Shelton, *International Environmental Law*, 2nd (New York: Transpublishers, 2000) at 314.
25. African Convention, Algiers, *supra* note 22.
26. Declaration of African Co-operation, and Economic Independence, May 28, 1973, 12 ILM 996.

environmental management in Africa.[27] The second major initiative of the African leaders was the adoption of the *Lagos Plan of Action* and the *First Act of Lagos* in 1980.[28] These documents also contain a chapter on environmental management.[29] The above documents gave rise to *NEPAD* and subsequent revision of the old *African Convention* ratified in Maputo, Mozambique in July 11, 2003.

The revised *African Convention on Conservation of Nature and Natural Resources* represents a landmark improvement in the old convention for its detailed provisions on the principles of environmental management and generational concerns.[30] The

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27. On the environment and natural resources, the declaration provides that African Heads of State and Government undertook:
    i) to take all necessary measures for the protection of nature and the environment which constitute one of Africa's irreplaceable resources and to counteract the effects of natural disasters of which some countries were constant victims;
    ii) to adopt a common front to combat drought which constituted threat to the entire environment;
    iii) to take all steps to ensure that tourism policies did not result in destruction of the environment and nature of Africa, since any damage done was irreplaceable;
    iv) to ensure that the problems of environmental protection were seen within the context of economic and social development of the African countries whose development policies should accordingly pay greater attention to questions of natural resource conservation and management, the improvement of physical and human conditions in urban and rural areas, and in many parts of the world, and;
    v) to ensure that African countries were always guided by the principles adopted by the Stockholm Conference on the Human Environment.

    See Declaration on Africa, *Ibid*. at paras. A40-44.
28. Organization of African Unity, the Lagos Plan of Action for the Economic Development of Africa, 1980-2000 (1981).
29. See Chap. IX, para. 266 (a), *ibid*.
30. (Revised) African Convention on Conservation of Nature and Natural Resources, Doc. EX/CL/50 (III), adopted on 11 July 2003 in Maputo, Mozambique. Online at: African Union < *http://www.africa-*

preamble to the convention attempts to reflect Africanized approach to environmental management. The continent's richly endowed resources are contextualized in terms of "irreplaceable African heritage".[31] It also reflects indigenous consciousness of Africans as to resource management which perceives resources from social, cultural, spiritual and environmental praxes.[32] Similarly, the contemporary paradigm of ownership of resources under the international law has been redefined under the convention to particularize Africa's interest in resource exploitation. The word "common concern of all humankind" has been re-construed as "primary concern of all Africans."[33]

The *New Partnership for Africa's Development* [hereinafter NEPAD] is another African regional instrument better appreciated not as a core instrument of environmental management. The emergence of NEPAD was driven by socio-political and economic

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union.org/Official_documents/Treaties_%20Conventions_%20Protocols/nature%20and%20natural%20recesource.pdf > accessed November 1, 2005.

Article IV-Fundamental Obligation provides:

> The Parties shall adopt and implement all measures necessary to achieve the objectives of this Convention, in particular through preventive measures and the application of the precautionary principle, and with due regard to ethical and traditional values as well as scientific knowledge in the interest of present and future generations.

Annex 2-Conservation Areas (Objective of management) to the Convention also provides for future generation clause:

> "…to ensure that future generations have the opportunity to experience understanding and enjoyment of areas that have been largely undisturbed by human action over a long period of time…" "to provide for public access at levels and of a type which will serve the physical and spiritual well-being of visitors and maintain the wilderness qualities of the area for present and future generations…"

31. See the Preamble, *African Convention*. *Ibid*.
32. *Ibid.*
33. The preamble provides that: "*Affirming* that the conservation of the global environment is a "common concern" of humankind as a whole and the conservation of the African environment a "primary concern" of all Africans". *Ibid.* Emphasis added.

challenges within the African diplomatic circles.[34] NEPAD is a development-oriented initiative sponsored by interests similar to the revised African Convention. It aims to alleviate poverty, reduce economic mismanagement and harness the resources of the region more prudently and equitably to bring about sustainable development.[35] To this extent, it is remarkable that *NEPAD* is also strategically devoted to sustainability and efficient environmental management in Africa.[36] While the *NEPAD* instrument provides a reasonably long list of "environmental initiatives"[37] targeted at prioritizing desirable interventions, it singles out the relevance and importance indigenous practices and traditional knowledge.[38]

Though not an African regional environmental instrument, the *United Nations Convention to Combat Desertification in Those Countries Experiencing Drought and/or Desertification,*

34. The origin of NEPAD is traceable to Presidents Abdelaziz Bouteflika, Thabo Mbeki, and Olusegun Obasanjo, who were authorized by the OAU Heads of State in 1999 at the Heads of State's 35th Ordinary Session and 3rd Ordinary Session on the African Economic Community in Algiers "to develop the plan" that culminated in NEPAD. See "NEPAD: Origin and Evolution" *South African Regional Property Network* (SARPN), online at: SARPN *http://www.sarpn.org.za/documents/d0000326/page3.php* > accessed December 28 2006.
35. The Preamble to the *New Partnership for Africa's Development* (NEPAD) October 2001 recognizes the fact that the continent is impoverished by slavery, corruption and economic mismanagement and that only judicious use of enormous natural and human resources of the region could lead to equitable and sustainable growth. For text of the document see NEPAD Nigeria < *http://www.nepad.org.ng/about_nepad.htm* > accessed 20 September 2005.
36. See generally paras 10, 19, 21, 31, 52. See especially paras. 141-42 on environmental initiatives and 143-44 on culture, NEPAD, *Ibid*.
37. The environmental initiatives provided under NEPAD aims at combating numerous environmental problems of the region such as desertification, wetland conservation, coastal management, global warming, environmental governance among others, *Ibid*. The Environment Initiative of NEPAD targets eight sub-themes for priority interventions to include, Combating Desertification; Wetland Conservation; Invasive Alien Species; Coastal Management; Global Warming; Cross-border Conservation Areas; Environmental Governance; and Financing. *Ibid*.
38. *Ibid*. at paras. 143-144.

Particularly in Africa [hereinafter UNCCD] [39] specifically accedes to peculiar challenges and environmental needs of the African region. Desertification is not a new phenomenon as old empires reportedly collapsed several centuries ago due largely to severe drought that occasioned desert-like impacts.[40] Adoption of the UNCCD is directly liked to the crisis of drought in the African Sahel in the 1970s. The UN General Assembly convened a desertification conference in 1977, which adopted a plan of action to combat desertification. The conference called for national and regional efforts through an integrated approach to program of land management assessments, implementation of corrective measures and strengthening of scientific and technological infrastructures in dryland nations.[41] Its central aim is:

> To combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international co-operation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the

39. *United Nations Convention to Combat Desertification in Those Countries Experiencing Drought and/or Desertification, Particularly in Africa* (Paris), 33 ILM 1328 (1994). See the convention document online at: UNCCD: < *http://www.unccd.int/convention/text/convention.php*> accessed November 5 2005.
40. See Burns, W.C. "The International Convention to Combat Desertification: Drawing a Line in the Sand? (1995) 16 *Michigan Journal of International Law*, at 831.
41. Report of the UN Conference on Desertification, U.N. Doc. A/CONF.74/36 (1977). See also Danish K.W., "International Environmental Law and the "Bottom-up" Approach: A Review of the Desertification Convention (1995) 3 *Indiana Journal of Global Legal Studies*, 133 at 141; Kiss, A. & Shelton, D., *International Environmental Law* (3rd ed.) (Ardsley, New York: Transnational Publishers, 2004) at 446.

> achievement of sustainable development in affected areas.[42]

The UNCCD is not only Africa-focused; it also captures the dynamism of poverty,[43] community involvement[44] among others. It represents a major step in creating awareness by fostering global cooperation towards remediation of drought and desertification, being one of the direct, resultant effects of climate change with particular bearing on the developing countries of Africa. The annexes to the UNCCD also provide additional mechanisms for the regions towards effectively discharging their obligations and duties in these regards. The African Annex contains significantly detailed measures and commitment for strengthening the objective of the convention, especially combating drought and desertification in Africa.[45]

Despite its ambitious regime, the picture of environmental governance in Sub-Saharan Africa is a dismal one. High level of

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42. See Article 2, UNCCD, *supra* note 37. Under Article 1(a), 'Desertification' is defined in the UNCCD as degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climate variations and human activities. Article 1(c) defines 'Drought' as the naturally occurring phenomenon that exists when precipitation has been significantly below normal recorded levels, causing serious hydrological imbalances that adversely affect land resource production systems. See also Sands, P., *Principles of International Environmental Law* (2nd ed.) (Cambridge: University Press, 2003) at 557.
43. Article 4 (2) provides that: "[I]n pursuing the objective of this Convention, the Parties shall: (c) integrate strategies for poverty eradication into efforts to combat desertification and mitigate the effects of drought". *Ibid*.
44. Article 16 on Information collection, analysis and exchange states that Parties shall: (b) ensure that the collection, analysis and exchange of information address the needs of local communities and those of decision makers, with a view to resolving specific problems, and that local communities are involved in these activities. *Ibid.*
45. See generally Annex I, UNCCD: *Regional Implementation Annex for Africa*. See for example Article 9 which provides that: "Each affected African country Party shall designate an appropriate national coordinating body to function as a catalyst in the preparation, implementation and evaluation of its national action programme.

poverty, near acceptable level of institutional corruption, explosive population and other ills have manifested in the stifling of environmental planning and management. No viable alternatives appear in sight for the current unsustainable levels of environmental degradation in the region. Vital biological diversities are lost daily while resource exploitations have remained inseparable from gas flaring and other forms of atmospheric pollution. Sustainable management of natural resources and the environment is crucial to stability, peace and posterity of countries in Sub-Saharan Africa.[46]

Climate Change Law and Africa

The *Kyoto Protocol to the United Nations Framework Convention on Climate Change* [hereinafter Kyoto Protocol][47] deals essentially with environmental management challenges due to emissions of greenhouse gases by countries.[48] The instrument is further to the *Framework Convention* which articulates principles for protecting the climate systems.[49] The provisions of the Kyoto Protocol specifically aim at curtailing environmental challenges of climate change, global warming, and atmospheric poisons from the

46. J. E. Gibson and R.K. Curtis, "A Debt-for-Nature Blueprint" (1990) 28 *Columbia journal of Transnational Law*, 331 at 332.
47. *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 31 ILM 849 (1992).
48. See Article 3. *Ibid.*
49. See *United Nations Framework Convention on Climate Change* (U. N. Doc. A/AC.237/18 (Part II) (Add. 1), Misc 6 (1993), Cm 2137; 31 I.L.M. 848. Article 3: Principle 1 states:

> In their actions to achieve the objective of the Convention and to implement its provisions, the Parties shall be guided, *inter alia*, by the following:
>
> 1. The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.

emission of greenhouse gases by providing binding emission reduction targets.[50]

The potential adverse impacts of emission of greenhouse gases on countries in Africa appear threatening.[51] The above justifies the ratification of the *Kyoto Protocol* by some countries in Africa to seize the benefits of the Clean Development Mechanism (CDM) and other frameworks in the instrument. The CDM provides opportunities for increased international investment in renewable and efficient energy while it allows countries contribute to reducing global levels of greenhouse gas emissions. The *Kyoto Protocol* seeks to curtail the level emission of gases associated with energy production and consumption- greenhouse gases (GHGs).[52] Its precursor, the *United Nations Framework Convention on Climate Change (UNFCCC)* on the other hand merely provides advisory regulatory framework for curtailing greenhouse emission.[53] The Kyoto protocol was negotiated in furtherance of the objectives of the *UNFCCC* to stabilize the atmospheric concentration of the GHGs by imposing binding obligations to reduce emissions. It provides three flexible global mechanisms- Emission Trading (ET), Joint Implementation (JI) and Clean Development Mechanism (CDM).

ET allows the developed countries to trade their surplus emission rights with another to meet their emission reduction commitments. JI encourages Annex -1 countries to generate and amass emission reductions units through cross-border investments

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50. See Articles 2-4 and Annex I, Kyoto Protocol *supra* note 47.
51. See "Securing Development in the Face of Climate Change" *Insights*, Issue No. 53, online at: ID21 <*www.id21.org/insights/insights53/insights-iss53-art00.html* > accessed 11 January 2005. It has been pointed out that many tropical regions and developing countries are expected to experience lower yields, due to reduced water availability, smaller fertilization effects from carbon dioxide and interactions with non-climate factors, such as reduced capacity to adapt to climate change. *Ibid*. at 3.
52. See Article 3. *Id.*
53. See *United Nations Framework Convention on Climate Change* (U. N. Doc. A/AC.237/18 (Part II) (Add. 1), Misc 6 (1993), Cm 2137; 31 I.L.M. 848.

in projects that reduce emission. CDM on the other hand enables countries to earn Certified Emission Reductions (CERs) by embarking on projects which contribute to sustainable development in a developing country. Regional collaboration towards emissions reduction targets is also on the increase. A case in view is the Western Climate Initiative (WCI), a regional partnership between the US States and Canadian provinces for the common objective of achieving a 15-per-cent reduction of the 2005 level of six main greenhouse gases by 2020, beginning from 2012.[54]

The above laudable objectives of climate change law notwithstanding, scholars have reacted to the gaps in the Kyoto Protocol, pointing out that African countries who signed unto the Kyoto Protocol, though disadvantaged at the negotiation stages of the instrument, might be continually imperiled when the instrument becomes fully operational.[55] For instance, Gray and Gupta examined the implementation of the Kyoto Protocol in Africa and concluded that the region stands to disproportionately suffer the greatest effects of greenhouse emissions.[56]

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54. See J. Sorensen, "WCI Design Recommendations Captures Corporate Interest" *Canadian Lawyer*, November/December 2008, at 7.
55. See Mumma, A., "The Poverty of Africa's Position at the Climate Change Convention Negotiations (2000) 19 *UCLA Journal of Environmental Law and Policy*, 181 at 190. See also Coghlan, M., "Prospects and Pitfalls of the Protocol to the United Nations Framework Convention on Climate Change" (2002) 3 *Melbourne Journal of International Law*" at 165; See generally French, D., "Developing Countries and International Environmental Law: The Importance of Differentiated Responsibilities" (2000) 49 *International and Comparative Law Quarterly*, at 35.
56. Gray, K.R. & Gupta, J., "United Nations Climate Change Regime and Africa" in Chaytor, B. & Gray, K.R. *International Environmental Law and Policy in Africa* (Dordrecht, Boston, London: Kluwer Academic Publishers, 2003) at 66. These scholars argued that African countries were severally unrepresented in the climate change regime as their voices and concerns/interests were overwhelmed by industrialized countries that command the negotiations agenda. This is due to the fact that Africa has been unable to effectively mount a common position in relation with other like-minded G77 countries, which negates its position in relation with the rest of the G77 countries. *Ibid*. at 67.

The adverse impacts of emission of greenhouse gases on developing African countries are absolutely phenomenal.[57] Nigeria and other African countries have ratified the Kyoto Protocol though they lack the technical details and other requirements for its implementation. Worse still, greenhouse emissions represent one of the few instances where African customary approaches to environmental management have not been tested. Climate change issues are modern challenges unknown to age-old traditional wisdom of environmental management. Due to the peculiar nature of greenhouse gases, highly technical and scientific capabilities as against indigenous, traditional knowledge or practices are needed in combating increasing emissions of atmospheric poisons and greenhouse gases.[58]

Strong commitments to reducing carbon emissions will be essential in the successor to the Kyoto Protocol when it expires in 2012. Parties to the UNFCCC met in Copenhagen, Denmark in the summer of 2009 to begin discussions about the successor to the Kyoto Protocol when it expires. It is important that Africa should speak with a strong, unified voice in subsequent negotiation of climate change and other international environmental instrument, and that this voice should be heard unlike the insignificant role

57. See "Securing Development in the Face of Climate Change" *Insights*, Issue No. 53, online at: ID21 <*www.id21.org/insights/insights53/insights-iss53-art00.html* > accessed 11 January 2005. It has been pointed out that many tropical regions and developing countries are expected to experience lower yields, due to reduced water availability, smaller fertilization effects from carbon dioxide and interactions with non-climate factors, such as reduced capacity to adapt to climate change. *Ibid*. at 3.
58. The impact of science and technology on the natural environment and resource exploitation and management is undeniable. One of the arguments put forward for apparent apathy to traditional knowledge in environmental and natural resource management is practical impossibility of applying traditional knowledge in the extractive industry of oil, gas, mining as well as in solving modern environmental problems like emissions of greenhouse gases, global warming, atmospheric pollution or poison from oil, gas or mining explorations.

played by the region at the negotiation and implementation stages of the Kyoto accord.[59]

The Kyoto protocol might be defective to the extent pointed out above; it cannot be denied that it assign to all Parties "common but differentiated responsibilities" taking into consideration the respective contributions of countries to global environmental challenges, particularly in the areas of emission of greenhouse gases and climate change mitigation.[60] A common trend in the climate law instruments is the realization that the developing countries, particularly in Africa, would need to be specifically encouraged by creating flexible mitigation mechanisms, strategies and other necessary incentives to stimulate appropriate environmental consciousness by law making, policy reformations and repositioning of institutions. Simply put, by creating mitigation incentives is the best way to getting countries in Sub-Saharan Africa to effectively adapt to climate change.

Incentivised Climate Change Mitigation:

Strong commitments to emission reductions by developed countries and creating incentives for the developing countries to lower emissions is central to minimizing the impact of climate change on Africa.[61] This becomes necessary as Africa faces massive challenges in adapting to climate change. The issue of mitigation of the climate change effects by the developing countries is largely viewed as a matter purely of providing financing mechanisms like the *Global Environmental Facility* [hereinafter the *GEF*].[62] The GEF provides new and additional grant and funding concessions to meet the incremental costs of

59. See Mumma, *supra* note 55 at 190.
60. See article 3(1) Kyoto protocol, *supra* note 47.
61. Climate Change and Africa" *supra* note 5.
62. The GEF was established by the World Bank in 1990 in collaboration with the *UNEP* and *UNDP*. See the *Instrument for the Establishment of the Restructured Global Environmental Facility*, (1994), 33 ILM 1273 (1994). See also "Global Environmental Facility: The Pilot Phase and Beyond", Working Paper Series No. 1, May 1992 (World Bank, UNDP, UNEP).

measures to achieve agreed global environmental benefits in climate change, biodiversity, international waters, and ozone layer depletion especially by the developing countries in Africa.[63] The position of Africa had been undermined right at the time of agreeing the climate change instrument.[64] Efforts to reconcile the region with menace of climate change through mechanism such carbon finance appear to have yielded little in terms of results. Put differently, the Clean Development Mechanism (CDM), or purchasing emission reductions from projects in developing countries has not benefited Africa contrary to expectation. To ameliorate the funding challenges as far as mitigation by African countries is concerned, the CDM mechanisms and GEF procedures would need to be liberalized to make them more easily accessible to Africa. In addition to this, carbon finance mechanisms need to be rethought and repositioned for easy accessibility to Africa for the purpose of climate change mitigation.

The viability of the climate change instruments had been hinged on active participation of the developing countries.[65] However, comparatively lower emphasis is placed on adapting the flexible mechanisms under the instruments to suit the peculiar challenges of these countries. The issue of marginalization of Africa at the negotiation of the Kyoto Protocol had been amplified by Mumma who contended that to successfully negotiate the instrument would require deploying logistical resources in order to help develop, popularize and constantly articulate a position for Africa not only during negotiations but also before and after the coming into effect of the negotiated instruments.[66]

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63. See GEF Instrument, *ibid*. paras. 2-3.
64. See A. Mumma, "The Poverty of Africa's Position at the Climate Change Convention Negotiations" (2000) 19 *UCLA Journal of Environmental Law and Policy*, at 181.
65. See M. Coghlan, "Prospects and Pitfalls of the Kyoto Protocol to the United Nations Framework Convention on Climate Change" (2002) 3 *Melbourne Journal of International Law*, 165 at 180.
66. Mumma, *supra* note 64 at 202.

The "Polluter" Pays for Mitigation?

It might be counterproductive to use Africa's marginalization at the negotiation of the Kyoto Protocol as justification for apathy to climate change issues given the fact that the impacts of climate change is borne by all regardless of the level of culpability in the emission of greenhouse gases. The contention that the cost of mitigation be borne by the developed countries is also plausible. The "Polluter-Pays' Principle" is handy here, as it provides justification for the argument on externalizing the cost of mitigation by African countries to the developed countries. The polluter pays principle is a normative doctrine of environmental law.[67] The central thesis of this principle stems from the fundamental, logical and fair proposition that those who generate pollution should bear the cost of cleaning it up.[68] This normative principle is one of the considerations for the emission-trading venture which aimed at encouraging investment in projects to reduce greenhouse gases in developing nations.[69] The polluter pays principle first appeared in a legal text in a document prepared by the OECD[70] but receives widest expression as an international environmental law principle in the Rio Declarations, which provides:

> National authorities should endeavor to promote the internationalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in

67. See Principle 16 Rio Declaration *supra* note 13.
68. See J.R. Nash, "Too Much Market? Conflict Between Tradable Pollution Allowances and the "Polluter Pays" Principle" (2000) 24 *Harvard Environmental Law Review*, 465 at 466.
69. *Ibid*. See also J.J. Fialka, "World Bank Emissions-Trading Venture May Expand to Accommodate Interest" *Wall Street Journal*, April 24, 2000 at A18.
70. OECD, Environment and Economics: Guiding Principles Concerning International Economic Aspects of Environmental Policies, May 26, 1972, annex para. 1 Doc. No C (72) 128, 1972 WL 24710 (hereinafter OECD Recommendation).

> principle, bear the cost of pollution, with dues regard to the public interest and without distorting international trade and investment.[71]

The above principle would appear to cast the burden of remediating the environmental impacts of climate change and its mitigation on the Annex 1 Parties, that is, developed countries. But, assuming global carbon emissions are reduced the fact remains that Africa would still be faced with the big challenge of adapting to climate change. This is because on the flip side of the argument is that environmental consciousness might not be a luxury good to be ventured by the developing countries of Africa until a given level of socio-economic development is attained. The doctrine of *sustainability competitiveness* by Stewart is an indication of the fact that environmental protection or sustainability may not be a luxury good to be indulged in unless a country has achieved a given level of economic development.[72] This is because developing nations may be tempted to pay a heavy price in environmental degradation in order to compete for economic gain.[73]

Weiss seems to be in passive agreement with Stewarts' position. According to Weiss, a country should be able to develop in ways that may not be most environmentally sound provided enough wealth is generated to repair later.[74] This assertion is hinged on the "*U-Shaped"* theory of Lucas. Lucas' theory says that countries tend to pollute the environment up to the point at which they have become sufficiently industrialized that they can indulge

71. Principle 16, Rio Declarations, *supra* note 13.
72. Richard Stewart, "Environmental Regulation and International Competitiveness" 102 YALE L.J. 2039, at 2052-3.
73. *Id*.
74. Edith Brown Weiss, "Environmentally Sustainable Competitiveness: A Comment" 102, YALE, 2123 at 2127.

their concern for protecting the environment.[75] Though without conceptual unanimity, it would appear that these scholars are *ad idem* that economic development is antonymous with environmental sustainability.

Putting it sharply, Carvalho opines that sustainable development would be impossible within the current international political economy.[76] The scholar's contention is based on the reluctance of some developed countries in the area of global climate change, by refusal to sign some international instruments meant to reduce greenhouse on the ground that doing so retards economic growth and development. The potency of arguments of tolerable pollution pending economic growth or development appears unrealistic[77] as there can never be an end to *development.* An already industrialized and almost overdeveloped country may hinge refusal to ratify emission-controlling treaty on the quest for further development. While developing countries in Africa are battling to achieve sustainable development, some countries have moved up the ladder to third level development called "*Sustainable Re-development*".[78] Thus, it may be concluded that for true environmentally sustainable development to become a reality nothing short of a paradigm shift would be necessary in the structure of the international political economy for an equitable and stable international economic order.[79] The reason for this is that, realistically, the term "*sustainable development*" denotes attainment of certain degree of development. It might certainly not

75. Se Robert Lucas, et al, *Economic Development Regulation and the International Migration of Toxic Industrial Pollutio*n, 1960-88, 159 WORLD BANK PAPERS: INTERNATIONAL TRADE AND THE ENVIRONMNT 67, at 72.
76. Georgia Carvalho, "Sustainable Development: Is It Achievable Within The Existing International Political Economy Context?" (2001) 9 Sustainable Development, 61-73, at 61.
77. See Stewart, *supra* note 72, Weiss, *supra* note 74 and Lucas, *supra* note 75.
78. See Alker and McDonald, "Incorporating Sustainable Development Into Redevelopment" (2003) 11 Sustainable Development, 171-182, at 173-4.
79. *Id.*

be a suitable luxury for undeveloped countries of Africa with "*no development to sustain.*"

In the midst of all these controversies is the question should Africa adapt to climate change and why? The next segments of the article are devoted to answering these questions by pro-offering legal and policy options for mitigating the effects of climate change by countries in sub-Saharan Africa. This is because although Africa is the continent least responsible for climate change, the region is particularly vulnerable to the climate change effects in the forms of reduced agricultural production, worsening food security, increased incidence of both flooding and drought, desertification, disease spread and increase in the level of civil conflict or unrest over resources and many more.

Options for Climate Change Mitigation

Globally, though the resource sector of Africa is perceived as attractive and cheap; it is also largely viewed as environmentally reckless, socially perilous and community-unfriendly. One of the greatest problems facing countries in Sub-Saharan Africa is lack of energy supply. This problem is not for the lack viable alternatives of hydropower, wind, solar and other renewable energy sources that could be adopted as veritable means of tapping into the benefits of climate change which encourages renewable green energy sources; but largely due to lack of political will to rise up to the challenges of modern environmental demands. The agricultural sector which offers the most employment coverage to the teaming population of the region is also not immune from the risk of climate change. This is because emission of greenhouse gases that leads to climate change will impact on agricultural production in both arid and rainforest areas of the region. This necessarily makes it imperative to adapt the agriculture and other sectors of the region to climate change to mitigate potential risks of poverty of the already vulnerable populace. One veritable option of achieving

this is to develop sustainable alternative sources of energy (otherwise referred to as "Green Energy").

Climate Change Mitigation and Alternative Energy

Africa faces difficulties of accessing modern techniques to aid energy efficiency needed for development such as researching into and development of important biofuel sources. Assisting Africa in the development of its largely unexploited hydropower potential would help to meet its objective of increasing energy access while limiting the GHG emissions.[80] This is because only about 5% of Africa's hydropower potential is currently being utilized. Countries in the region would also need to redefine their electricity regulatory frameworks.[81] Changes in regulatory frameworks would facilitate the connection of small local electricity grids to larger national grids for the development of small-scale hydro-schemes. This will also go a long way to boosting Africa's hydropower potentials for achieving the objective of improving energy access. To this extent, developing viable alternate energy sources is also crucial to mitigation of climate change effects in sub-Saharan Africa. Appropriate institutions would need to be strengthened to promote biofuels as viable alternatives to limit GHG emissions.

The economies countries in the African region are still enmeshed in the nightmare of "darkness" occasioned by epileptic electricity generation and distribution. Low performance of the electric power sectors of countries created the inevitable need for collaboration under the West African Power Pool Project (WAPPP).[82] However, like typical initiative of developing countries, the WAPPP is faced with a number of logistical

80. See "Climate Change and Africa" *supra* note 5 at 11.
81. Y. Oke "Beyond Power Sector Reforms: The Need for Decentralised Energy Options ('DEOPs') for Electricity Governance in Nigeria" (Up-coming article) in the *Nigerian Current Law Review* of the Nigerian Institute of Advanced Legal studies.
82. See E. Gnansonuou, "Boosting the Electricity Sector in West Africa: An Integrative Vision" (2008) *International Association of Energy Economies, Third Quarter*, at 23.

challenges. The technical requirement of the electricity industry has led to the wave of new regulatory regimes across the globe. Good number of developed countries have unbundled their electricity industries by separating generation from transmission. The private sector now dominates generation as in the case of England and Wales.[83] These models have also been implemented in a number of countries across the globe like Chile, Argentina, Bolivia, Ecuador, Thailand, China and lately Senegal, Uganda and Nigeria.

One major problem with the regulatory and governance frameworks of electricity regulation in Africa is over-centralization of management responsibilities and administrative structures, as most of these regimes reflect unrealistic regulatory paradigm of top-down as against bottom-up, decentralized models that have helped in repositioning the energy and natural resources sectors of several countries world over.[84] Renewable energy system brings with it decentralized energy governance. If vigorously embarked upon, it would help create the much-desired national energy sufficiency, decentralized resource management and as well promote environmental conservation thus serving a veritable means of reducing global warming and emission of greenhouse gases.[85]

Renewable and decentralized energy options are not without challenges, but their benefits far outweigh attendant difficulties. For example, Kenya's effort in renewable and decentralized energy options have been very mixed; a story of a few successes amidst many failures. It had focused on urban electrification by relegating rural electrification to secondary importance due to the notion that the rural people consume less electricity compared to urban

83. *Ibid.*
84. R. H. Acker, "The Quiet (Energy) Revolution: Analysing the Dissemination of Photovoltaic Power Systems in Kenya (1996) 24:1 *Energy Policy*, pp. 81-111 at 81.
85. *Ibid*.

dwellers making rural electrification even less profitable to investors.[86] It also has its initial set-backs typical of developing countries as electrification was frequently used as reward for constituent support at electioneering. In some cases, projects often reflect haphazard and inefficient patterns that bear no relationship to local needs or ability to profit from grid connection.[87] The licensing processes were also made cumbersome by hurdles of bureaucracy and politics.[88]

Institutional corruption is the greatest potential threat to climate change mitigation by alternative energy. Despite reforms in the Nigerian electricity sector, the country's alternative energy policy has been rubbished by endemic corruption. The on-going trial of the Chairman and other commissioners of the NERC[89] and that of the officials of the REF and some of the members of the National Assembly[90] have shown that beyond reforming the laws

86. *Ibid*. at 81.
87. See D. Walubengo, and A. Onyango, A *Energy Systems in Kenya: Focus on Rural Electrification* (Kengo, Nairobi, 1992) at 43.
88. *Ibid.*
89. See Yusuf Alli, "EFCC Uncovers Fresh N2b Contracts Scam at NERC" The Nation, March 4, 2009 on-line at: *http://www.nigeriannewsservice.com/news/147/ARTICLE/6409/2009-03-04.html*>. The operatives of the Economic and Financial Crimes Commission (EFCC) raided the office of the Nigerian Electricity Regulatory Commission (NERC) and uncovered fresh contracts scam of N2billion, mainly for contracts that were awarded without due process in January 2009 and backdated to June 2008 and most of which contracts were for consultancy.
90. The recent arrest of some principal officers of the National Assembly over the Rural Electricity Project by the Economic and Financial Crimes Commission (EFCC) has further reinforced the argument or assumption that the current structure of the governance systems in the electricity and other energy sectors of Nigeria make for the perpetration of corruption. See the "The Raging Scandal over Government's Rural Power Projects" Guardian online at: *http://www.ngrguardiannews.com/weekend/article01//indexn2_html?pdate=150509&ptitle=The%20raging%20scandal%20over%20govt's%20rural%20power%20projects* accessed June 17, 2009.

and rules in the sector, there is need for institutional reform.[91] The lack of distributional sustainability in the management of proceeds from energy and natural resources have also resulted in unending communities' agitations over the distribution of benefits from energy resources.[92] Both the regional[93] and national instruments[94] also acknowledge the difficulties of not only effective distribution but also of the utilization of benefits from energy resources in a sustainable way. It has also been empirically established that resources and civil conflicts are inseparable in developing countries.[95] Curtailing climate change in Africa though greener energy options is as problematic unless corrupt tendencies are eliminated or minimized. Like the sub-sectors of oil and gas, the energy sector also stands in closer proximity for corruption.[96] According to a commentator:

91. Roderick G. Eggert, "Mining and Economic Sustainability: National Economies and Local Communities" (Report of the Mining, Minerals and Sustainable Development Project, Vol. 19, October 2001) at 60.
92. See for example Ayesha K. Dias, "International Standard-Setting on The Rights of Indigenous Peoples: Implications For Mineral Development In Africa" (1999) 6 *South African Journal of Environmental Law and Policy*, 67 at 94.
93. For example the preamble to the *New Partnership for Africa's Development* (NEPAD) October 2001, recognizes the fact that the continent is impoverished by slavery, corruption and economic mismanagement and that only judicious use of enormous natural and human resources of the region could lead to equitable and sustainable growth.
94. See for example the *Corrupt Practices and Other Related Offences Act of Nigeria*, 2000. This Act intends to put an end to corruption and related offences in Nigeria, which vices, according to the Act, are already threatening the basis of the country's unity and development. See the long title of the Act and the address of the Nigerian President, Olusegun Obasanjo at the signing into law where he said: "With corruption, there can be no sustainable development, nor political stability".
95. See Michael L. Ross, "Oil Drugs, and Diamonds: How Do Natural Resources Vary in Their Impact on Civil War" (Los Angeles: UCLA University Press, 2002) Working Paper, at 1-5.. See also Noah Novogrodsky "Redressing Human Rights Violations in Sierra Leone" *Nexus, University of Toronto*, Spring/Summer 2003, at 27.
96. Mohinder Gulati and M.Y. Rao, "Corruption in the Electricity Sector: A Pervasive Scourge" in J. Edgardo Campos and Sanjay Pradhan Eds., *The Many Faces of*

The infrastructure sectors are seen as being particularly vulnerable to corrupt practices given *inter alia* the large and lumpy expenditures involved (therefore easier to hide bribes), the reality that there are often relatively few qualified contractors (which can, in turn, lead to collusion) the presence of natural monopolies and the limits to competition (even with reform), the prevalence of 'regulatory capture,' and the numerous opportunities for discretionary decisions and 'rent taking' by public and private officials. The problem is compounded by the long tradition of corrupt practices in infrastructure in many countries and its embodiment in the political and social infrastructure.[97]

Community Participation and Public Environmental Inquiries (PEI)

Effective community participation in environmental governance is central to sustainable climate change mitigation strategies in Sub-Saharan Africa.[98] Community participation in decision-making processes is one of the prerequisites for achieving sustainable environmental management.[99] Increased level of genuine participation of the community tends to increase accountability of the decision-maker and processes vis-à-vis policy formulation in the areas of climate change. It likewise goes a long way in reducing restiveness and violence especially in the resource-producing communities due to complaints of alienation.[100] An

Corruption- Tracking Vulnerabilities at the Sector Level, (The World Bank, Washington, D.C., 2007) at 115.

97. Quoted extensively by Mohinder Gulati and M.Y. Rao, *ibid.*
98. Davis, M., "Law, Anthropology and the Recognition of Indigenous Cultural Systems" in Kuppe, R., & Potz., R., (eds.) *Law & Anthropology* (International Yearbook for Legal Anthropology, Vol. 11) (The Hague, The Netherlands: Martinus Nijhoff Publishers, 2001) at 298.
99. See the Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, Volume 1 A/CONF.151/26/Rev.1 (Vol. I), (United Nations: New York, 1993), at 373.
100. Pring. G., & Noe, S., "The Emerging International Law of Public Participation Affecting Global Mining, Energy, and Resources Development" in Zillman, D.N., Lucas, A.R., & Pring. G., (eds.) *Human Rights in Natural Resources*

empirical research conducted by the World Bank underscores the need for mainstreaming community as part of decentralized approach to environmental management.[101]

In Africa, the best way to achieving effective community involvement is through system integration by creating level playing field for the harmonization of hierarchies and levels of decision-making on issues bordering on the environment, particularly climate change.[102] In appropriate cases, public environmental inquiries and hearings may be conducted as part of the strategies for institutionalizing environmentally sustainable management of emission of greenhouse gases that manifest mostly by way of climate change in the African region.

In countries where it has been introduced, *Public Environmental Inquiries* (PEI) enables the public express societal goals, which may lead to better and more informed environmental management planning. According to Richardson, public environmental inquiries provide a mechanism for evaluating complex ecological, societal, economic and social issues in an integrated way. It also provides forum for conflict resolution as well as for testing scientific and socio-economic data and as sources of information and insights necessary for independent, objective advisory guides to government at various levels.[103]

Contractual-based Environmental Management

Development: Public Participation in the Sustainable Development of Mining and Energy Resources (New York: Oxford University Press, 2002) at 68-70. See also Cameron, P.D., & Correa. E., "Towards the Contractual Managing of Public-Participation Issues: A review of Corporate Initiatives", *Ibid*. at 215.

101. World Bank, "Nigeria: Poverty-Environmental Linkages in the Natural Resources Sector, Empirical-Evidence from Nigerian Case Studies with Policy Implementations and Recommendations" *African Environmental and Social Development Unit, World Bank Institute*, Report No. 25972-UNI, June 2003.
102. Robert Bartlett, "Ecological Rationality: Reason and Environmental Policy" (1986) 8 *Environmental Ethics*, at 230-31.
103. Richardson, B. J., "Public Environmental Inquiries: Lesson for New Zealand" (1996) 1 *Resources Management Bulletin*, Butterworths, at 252.

The need to ensure strict compliance and effective management of the environment often entails entering into contractual agreements with local communities.[104] Canada represents a good example of contractual-based regime of resource management, and is often perceived as a global model for its "*Comprehensive Land Claims Process [CLCP]*" instituted as part of the institutional mechanisms for peaceful resolution and integration of indigenous peoples into environmental management and governance. The CLCP makes it expedient to explore negotiations as tools for arriving at generally agreed terms for collaboration in environmental management.[105] The central aim of Canada's *CLCP* is to make local communities full partners in environmental management. The resource-dependent countries in Africa stand to benefit from the *CLCP* models of Canada by according higher stakes to their hitherto estranged local communities in the areas of environmental management particularly in devising workable policy models for climate change mitigation in the region.

The essence of contractual-based environmental management lies in the fact that it creates incentives at the level of the communities for eliciting support and collaboration in terms of environmental issues. It serves useful purpose for articulating, disseminating and soliciting support for government policies aimed at dealing with the climate change effects of emission of greenhouse gases among other environmental hazards.

Decentralized Environmental Management Systems

Countries have devolved resource management responsibilities in other tiers of government such as Local Governments, as parts of strategies for entrenching a regime of decentralized management

104. B. Richardson & D. Craig "Indigenous Peoples, Law and the Environment" in Richardson & Wood (eds.) *Environmental Law for Sustainability* (Oxford, UK: Hart Publishing, 2006) at 220.

105. See for example the Nsiga Agreement of 2003; The Inuvialuit Agreement of 1984; The Quebec's James Bay Agreement of 1975, The Nunavut Agreement of 1993. See also B. Richardson & D. Craig, *ibid*, at 218-19.

of natural resources. In Papua New Guinea for example, a combination of socio-political and economic factors have encouraged one of the most dramatic transformations leading to devolution of powers/duties to the local people to manage marine environment.[106] The *Talasea Local Government Marine Environment Law* is one of the series of legal initiatives in this direction. The law builds on the constitutional framework of Papua New Guinea, which creates three governance structures: national, provincial and local.[107] Aside from Talasea, the 1995 constitution of Uganda also creates legal frameworks for local government-based environmental management. It provides that State, including local governments, shall create and develop parks, reserves, and recreation areas and ensure conservation of natural resources.[108]

Decentralized approach to environmental management is suggested being a practical and functional approach to climate change mitigation. One interesting observation is that the Ugandan and Talasea models are possible in other countries in Africa given their three-tier governance structure (federal, states and local governments). It involves devolution (not abdication) of responsibility for environmental planning and management from the central government and its agencies to units and agencies at the state or local government levels.[109] Decentralized functional approach to resource management responsibilities also helps in

106. See Eric Kwa, "Traditional and Modern Law: A Marriage in Progress-The Draft Talasea Local Government Marine Environment Law (Papua New Guinea)" in *SPC Traditional Marine Resource Management and Traditional Knowledge Information Bulletin*, # 17-December 2004, at 27.
107. See Part VI, section 187c (5-6) Constitution of Papua New Guinea 1979. See also the provisions of the Preamble of the Papua New Guinea Constitution on natural resource and environment.
108. See *Article XXVII (iii)*, the 1995 Constitution of Uganda.
109. See Carley, M., & Christie, I., *Managing Sustainable Development* (London: Earthscan Publications, 2000) at 126. See also Rondinelli, D. A., & Nelli, J.R., "Assessing Decentralization Policies in Developing Countries" (1986) 4 *Development Policy Review*, at 3-23, cited by Carley and Christie.

mitigating the remoteness of the central government from local communities.[110]

Future Generation Funds (FGF)

The roles of economic considerations and market forces have been synchronized into the debates of environmental management.[111] The views expressed by some economists, who conceptualized resource sustainability as substitute for human capital, appear unrealistic in developing countries of Africa. This is because intergenerational fairness in economists' term involves "assigning benefits and costs according to some representative set of individual preferences, and discounting costs and benefits accruing to future generations as future receipts and burdens experienced by members of the current generation are discounted."[112] The logic of economists' perceptions compels developing countries to focus exclusively on industries in which they have comparative advantage. Typically, these industries are labor intensive and focus on the harvest of natural resources with attendant environmental effects by way of emission of greenhouse gases and climate change for which these countries have neither the capital nor technology to cope with. Resource-oriented economic development is suggested due to cost-benefit and discounting indicia for the (over)exploitation or consumption of the portion of natural resources meant for future generations as the funds

110. Olojede, A.A., "Nigeria: Country Paper on National Sustainable Development Planning" Paper Presented at the International Forum on National Sustainable Development Strategies, Accra, Ghana, 7-9 November, 2001, at 20.
111. Barbier however contends further that the principle of sustainable development has very little to do with economic growth at the national level. According to the scholar, the primary objective for introducing sustainability is to reduce poverty by minimizing resource depletion, environmental degradation, and socio-cultural disruption. See Barbier, E., "The Concept of Sustainable Economic Development" (1987) 14 *Environmental Conservation* 101, 103 at 889-90.
112. Toman, M.A. "The Difficulty in Defining Sustainability" (1992) 106 *Resources*, 3-6, at 4.

generated are presumed to be applied equitably.[113] But rather than inherit wealth, environmental distortions, resource draught and depleted ozone, carbon-monoxide infested environment and loss of other vital cultural and natural endowments are guaranteed.[114] This is the reason why 'Future Generations Funds' [hereinafter FGF] is often suggested for the developing countries in the Africa region.

Devising effective strategies for managing the revenues realized from multinational corporations and other corporate interests in the resource sectors will enhance availability of the much needed funds to bankroll mitigation strategies and implementation of sound environmental management policies. FGF is being suggested for conserving the gains of resource exploitation to make meaningful impacts on coming generations by investing rents from exhaustible resources in bankrolling across-the-generation environmentally sustainable initiatives in the forms of climate change mitigation and others. This is also crucial

113. *Ibid.* It has been argued that intensive use of resources or resource-intensive development strategies tends to create typical scenario of "tragedy of the commons" which might not only make majority of the present generation live in abject poverty, but also likely to culminate in pauperizing their unborn generations. See Hardin Garrett "The Tragedy of the Commons" (1968) 162 *Science;* 1243-1248. In the article, the scholar takes a look at attendant problems of livestock farming in Medieval England in which everyone in a village had limited grazing rights. Though it initially resulted in each person's advantage in the short run to maximize the grazing of his or her own sheep, this eventually led to the depletion and consequent destruction of the pasture within a short time through over-grazing. It thus turns out that what is optimal to an individual is collectively sub-optimal.

114. Cheng, L. P., "The Legislation and Implementation of International Environmental Law and the Third World: The Example of China" in Weiss, E.B., (ed.) *Environmental Change and International Law: New Challenges and Dimensions* (Tokyo: United Nations University Press, 1992) at 184. Cheng reiterates the "globalizing" effects of environmental and resource crisis pointing out that for effective resolution of environmental issues, the drafting of legislation, and the implementation of international environmental law must take into account the contributions and needs of third-world countries. Cheng's assertion sums it up succinctly: "It can be asserted that nowadays no country can effectively protect its environment and solve its various environmental problems on its own."

to solving perceived moral and equity problems of the current generation who are being deprecated for undermining future generations by over-consumption.[115]

Different models of FGF exist. For example, the Republic of Chad has a FGF specifically designated for purposes of investing a portion of its oil revenue to prepare for any post oil-boom future and other eventualities. The same is also recommended for Equatorial Guinea.[116] In Kuwait, this is called "Funds for the Future", and was strategically instituted for purposes of liquidating the financial burdens of the Gulf War.[117] In Papua New Guinea this is called "Future Generations Trust Fund,"[118] but in Alaska this model of revenue management is called "The Alaska Permanent Fund".[119]

Multifarious Impact Assessment Systems

Impact assessment of environmental or natural resource projects now takes various forms such as "social impact assessment", "socio-cultural due diligence"[120] and others. Further to the various forms of impact assessment already in existence, extension of impact assessments is suggested to include both "Sustainability Impact Assessment" and "Intergenerational Impact Assessment". The various forms of impact assessment may however be

115. Hartwick, J.M, *Intergenerational Equity and the Investing of Rents from Exhaustible Resources* (Discussion Paper # 220: Queen's University, 1975) at 1.
116. Gary Ian, and Karl, Terry Lynn, "Bottom of the Barrel: Africa's Oil Boom and the Poor" *Catholic Relief Services June* 2003) at 38.
117. Goodland, R. "Sourcebook: Policy Options for the World Bank Group in Extractive Industries; How to Achieve Poverty Reduction and Sustainable Development", *Independent Extractive Review for International Finance Corporation and the World Bank Group*, 26 July 2004, at 77.
118. Rivers, J., "The Economic of the Good Life, Landowners and the Future Generations Problems in Papua New Guinea" at 10.
119. *Ibid*. at 79.
120. Jennifer Cook Clark, "Socio-Cultural Due Diligence in the Mining Industry" in Bastiba, E.; Walde, T., and Warden-Fernandez, J., (eds.) *International and Comparative Mineral Law and Policy: Trends and Prospects* (The Hague: Kluwer Law International, 2005) at 332-33.

contained in a single impact assessment report while specific issues are dealt with in sections. Sustainability Impact Assessment (SIA) and Intergenerational Impact Assessment (IIA) are particularly suitable to resource-producing countries in Africa as, in most cases, geological surveys only indicate the availability of natural resources which could be exploited for few years. Specific study or survey of the intergenerational impacts of such might form the basis of adopting suitable funds conservation strategies like the "Future Generations Fund" (FGF) earlier suggested which becomes handy in funding attendant environmental challenges like climate change.

Environmental Liability Insurance (ELI)

Resource-dependent countries in Africa tend to relax environmental regulation in the quest for foreign investment, leading to the "race-to-the-bottom" conundrum.[121] *Environmental Liability Insurance* (ELI) is being advocated as remedial measures.[122] ELI would, however, require putting appropriate structures in place such as effective environmental damage pricing, efficient monitoring of policyholders, and others. The technicalities of the structures required in ELI explain why the scheme is presently common only in the developed countries of Europe and America.

ELI is suitable to multinational companies in the resource sectors, as it already exits in their respective countries of origin. This may be adopted to complement any inadequacies in environmental governance and/or insurance regime in Africa.

121. See Todd Johnston, "The Role of Intergenerational Equity in a Sustainable Future: The Continuing Problem of Third World Debt and Development" (1998) 6 *Buffalo Environmental Law Journal*, at 58. See also Madeline Cohen, "A Menu for the Hard-Rock Café: International Mining Ventures and Environmental Cooperation in Developing Countries" (1996) 15 *Stanford Environmental Law Journal*, 130 at 154.

122. See Benjamin Richardson, "Mandating Environmental Liability Insurance" (2001-2002) 12 *Duke Environmental Law & Policy Forum*, 293-329.

Aside from its potency and suitability in mitigating potential "environmental lawlessness" as pointed out by Johnston,[123] ELI equally serves as a way of discouraging environmentally irresponsible behavior by corporate actors in the resource sectors and by implication discourage emission of greenhouse gases. [124]

ELI may be complemented with other economic options like "performance bonds"[125] and other economic approaches like "Environmental Trust Funds", "Environmental Lien" and "Environmental Taxation" as summarized below.[126] The effect of a performance bond lies in ability to impose (environmental) performance based on pre-agreed, enforceable terms. Where well drafted, circumventing the clause may be impossible as the court lends its full legal weight to it as parties' enforceable agreement especially where it is created by way of "bond to restore (oil or mine) sites". Parties may also assign attendant environmental liability to a multinational corporation by creating an "escrow

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123. Johnston, *supra* note 121, at 58-59.

124. For example, it is also the view of Prof Richardson that ELI should be made mandatory being "a more politically feasible and economically efficient means of addressing corporate environmental externalities". Richardson, *supra* note 35, at 310.

125. *Performance bond*: oil companies are required to make a deposit of a specified amount of money for environmental control purposes. If no oil pollution or environmental incident occurs in the course of petroleum operations, the bond is eventually cancelled and returned to the investing (oil) company.

126. Other economic approach includes: *Environmental Trust Funds*: Use for conservation and mitigation purposes. It requires an oil company put money into the fund before commencing exploration and production. If no oil pollution or environmental damage occurs during the course of oil and gas production, the fund will remain as an endowment and the interest generated can be used for conservation and preventive measures. If environmental pollution occurs, the funds will be applied for mitigation and clean-up measures. The oil company may be required to top-up the sum deposited with the amount expended on any such clean up or mitigation measures.

Environmental Lien: This empowers government agencies, like in the US, to affect lien on all the operation's assets towards environmental mitigation and clean-up costs.

Environmental Taxation: This is used as a public policy measure for pollution control by levying general or specific environmental-related taxes.

account". This involves setting-aside a portion of the negotiated transaction or purchase price corresponding to the estimated clean up costs in an account designated for environmental costs.[127] These institutional arrangements would elicit voluntary compliance with environmental regulations based on pre-agreed, mutual consent or agreement. This will go a long way in ensuring effective climate change mitigation in Africa with a history of poor enforcement of environmental law and regulations.

Similarly, "Gold-for-Nature" swaps may also be considered, and if appropriate, adopted as a mitigating device for environmental harm.[128] The swap schemes generally provide useful alternatives for social responsibility in the resource sectors by getting credits for environmental-related activities or performances. Another form of swap mechanism is "Debt-for-Nature" swaps which schemes provide options for resolution of debt crises of African countries by crediting the environment.[129]

Integrated Environmental Management Systems

Devising a suitable framework for planning the development and management of natural and physical resources on all-inclusive, integrated bases like other countries have proved elusive in most parts of Africa.[130] An integrative pattern of environmental

127. Madaline Cohen, *supra* note 121 at 165-66.

128. "Gold-for-Nature" is one of the swap mechanisms for sustaining environmental consciousness in resource exploitation. Cohen, *Ibid.* at 175.

129. For good survey of literature on Debt-for-Nature swaps see Wee, L.C., "Debt-For-Nature Swaps, a Reassessment of their Significance in International Environmental Law" (1994) 6 *Journal of Environmental Law*, at 60. See also W.K. Reilly, "Debt-for-Nature Swaps: The Time Has Come (1990) 2 *International Affairs*, 134; Cody, "Debt for Nature in Developing Countries: An Overview of Recent Conservation Efforts" *ENR Cong. Res. Service* (26 September 1989) cited in R. Model, "Debt-for-Nature Swaps: Environmental Investments Using Tax-Payers Fund without Adequate Remedies for Expropriation" (1991) *University of Miami Law Review*, at 1197.

130. The New Zealand "Integrated Resource Management" (IRM) is one of the several hybrid natural resource governance systems that suit the peculiarities of Nigeria's heterogeneities. See Ulrich Klein, "Integrated Resource Management in New

management, which seeks to harmonize the various forms of traditional and modern systems for managing the environment on hybrid basis, would also appear to suit climate change mitigation in Sub-Saharan Africa. The nature of administrative structures in some countries in Africa often leads to regulatory overlap. Fragmentation is a major impediment to efficient and effective management of environment. The multitude of rules, procedures as well as bodies, institutions or agencies charged with duties often make the whole process needlessly complex, time-consuming, rigid and unproductive. Integrated environmental management model has been articulated as a way out regulatory overlap.[131] The model was introduced and applied in New Zealand by virtue of the *Resource Management Act* of 1991 (RMA).[132] The model is being suggested in the African region as it entrenches a system of effective coordination of management responsibilities and duties of the various agencies and bodies charged with environmental management responsibilities.

Hybrid Environmental Governance Systems

Hybrid resource governance system is a generic name for integrating indigenous and modern environmental management strategies. This includes customary-based systems; indigenous ownership and joint management and other models of sustainable environmental governance. For instance, Ghana and few other countries adopted hybrid forms by integrating customary institutions into the Constitution for application in the mineral resources and environmental governance.[133] Hybrid environmental management paradigms have also occurred in other countries like

Zealand-Juridical Analysis of Policy, Plan, and Rule Making Under the RMA" (2001) 5 *New Zealand Journal of Environmental Law*, at 2.

131. Ulrich Klein, "Integrated Resource Management in New Zealand-Juridical Analysis of Policy, Plan, and Rule Making Under the RMA" (2001) 5 *New Zealand Journal of Environmental Law*, at 8.

132. See *Resource Management Act* 1991.

133. See Article 36 (8) *Constitutional of the Republic of Ghana* 1992.

Mexico, where the model was formalized by way of vesting *Corporate Legal Organizations* with environmental rights and duties. This is by trust in Botswana, and by means of *Conservancies* in Namibia. In South Africa and others, *Common Property Associations* are integrated as vehicles of policy implementation. Another model is by *Village Committees* as in Malawi and India. Some countries implemented the *Contractual Patterns* where agreements are entered into between governments and households or individuals on natural resources and environmental management. In Zimbabwe, *Local Organizations* such as "rural district councils" are integrated in environmental management while *Multi-stakeholder District Structures* are adopted in other locations like in Thailand and Zambia.[134]

The various forms of existing informal, hybrid mechanisms of environmental management in the African region may need to be formalized and mainstream into their respective legal and regulatory frameworks of environmental governance. This helps to widen the scope sustainable climate change mitigation strategies and for eliciting collaboration of stakeholders in achieving across-the-board reduction of emission of greenhouse gases and other environmental hazards in the region.

Basis of Integrated Climate Mitigation Strategy

Climate change manifests in various ways and manners in different countries, regions and continents. The array of options discussed above would enable the respective countries in Sub-Saharan Africa exercise best judgment in opting for strategy or strategies be suited. For Nigeria, Angola, Liberia, Sierra Leone, Gabon, and most resource-producing countries in the region; an integrated climate mitigation strategy to combine as many as the options

134. For overview of hybrid resource management and environmental governance systems, see Edmunds, D. *et al*, "Introduction" in David Edmunds & Eva Wollenberg (eds.) *Local Forest Management: The Impacts of Devolution Policies* (London: Earthscan, 2003) at 2.

discussed in this paper would be most suitable to curtailing the myriad of the climate change challenges.

For example, the essence of contractual-based environmental management helps create incentives at the level of the communities for eliciting support and collaboration in terms of environmental issues like climate change. In Africa, the best way to achieving effective community involvement is through system integration by creating level playing field for harmonization of views in decision-making on issues bordering on the environment, particularly climate change. This is particularly so as effective community participation in environmental governance is central to sustainable climate change mitigation strategies in Sub-Saharan Africa. It is for this reason that countries have devolved resource management responsibilities in other tiers of government such as Local Governments, as parts of strategies for entrenching a regime of decentralized environmental governance to curtail climate change and other effects.

In countries like Nigeria where corruption tends to undermine effective mitigation or adaptation plans; devising effective strategies for managing the revenues realized from multinational corporations and other corporate interests in the resource sectors will enhance availability of the much needed funds to bankroll mitigation strategies and implementation of sound environmental management policies. This is the basis of the "Future Generations Fund" (FGF) suggested above. Devising a suitable framework for planning, coping and mitigating climate change effects in Sub-Saharan Africa would generally require all-inclusive, integrated climate mitigation strategies. The best is for countries to pick and choose by applying a combination of the above strategies for mitigating climate change within their territories.

Conclusion

Mitigation of the effects of climate change continues to pose peculiar challenges to countries in Africa given their low institutional and technological capacities as well as the lack of

appropriate technical data and climate information. It needs to be borne in mind that mitigation of climate change is a continuous process. Climate change, like other environmental challenges, constitutes a major threat to sustainable growth and development in the region.[135] The challenges of climate change have exposed the level of institutional and social decadence in the polity. This paper concludes that mitigation of climate change will definitely come at a cost, which are relatively higher and above the reach of developing countries in Sub-Saharan Africa. For the region to successfully and effectively adapt to climate change; new strategies would need to be identified and implemented. The strategies discussed above would meet the peculiarities of the region for the purpose of ensuring reduction in emission of greenhouse gases, creating viable alternatives and ensuring mitigation to climate change. Appropriate steps should therefore be taken by the stakeholders, including developed countries and development agencies or institutions to partners with countries in the region to draw-up appropriate law and policy frameworks in reflection of the options suggested above towards effective mitigation of the devastating effect of climate change in the region.

135. Kent Nnadozie, "Access to Genetic Resources in Nigeria" in Nnadozie, K., Lettington, R. Bruch, C. Bass, S., & King, S. (eds.) *African Perspectives on Genetic Resources: A Handbook of Laws, Policies, and Institutions* (Washington: Environmental Law Institute, 2003) at 181.

ENVIRONMENTAL POLLUTION: WOMEN'S REPRODUCTIVE HEALTH CONCERN

By

Dr. F.A.R. Adeleke *

Abstract

Reproduction is essential for the continuation of the species and for life itself. In biological terms, living and reproducing are essentially one and the same. There is therefore, no sharp division between identifying factors harmful to reproduction and identifying factors harmful to life or *vice versa*.[1] Various environmental factors affect the life and health of the people. These include inadequate environmental health services, such as water supply, sanitation, solid and hazardous waste management and shelter; environment degradation, such as pollution of air, water, soil, and food contamination *etc*.[2] However, this study focuses on the impacts of the environmental pollution on the health of the people with particular reference to women's reproductive health.

Pollution remains a potent factor that renders the environment unsafe and which consequently impacts negatively on the health of the people.[3] Epidemiological literatures have established that

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1. Vanita D, *et al*, (2006) "Psychosocial and Environmental Pregnancy Risks" e-medicine available at htt://emedicine.medscape.com/article/259346-overview, accessed 20 September, 2010.
2. Al Salem SS, and Abouzaid H, "Wastewater Re-use for Agriculture: Regional Health Perspective" (2006) 12 (3 & 4) *Eastern Mediterranean Health Journal* 446-58.
3. The magnitude of environmental problem confronting the present generation is well captured in the following Environmental Report 2004 in Egypt provided by Ministry of State for Environmental Affairs (MSEA) Egypt thus:

   "Our present society is suffering from serious environmental problems arising from air, water, soil, noise, and visual pollution, harmful wastes disposal, desertification, land degradation, erosion of coastal zones and coral reefs, a change in the climate threatening agriculture, population explosion, and resulting several diseases such as vector borne diseases, physiological disorders, skin cancer, eye cataracts, deaths and injuries, respiratory ailments, heat strokes, and heat related illnesses, as well as a

reproductive toxicants may contribute to a spectrum of adverse effects on women's reproductive health. These include menstrual irregularities, early or delayed puberty, infertility, early pregnancy loss, foetal death, impaired foetal growth, low birth weight, premature birth, and structural (*e.g*. cardiac defect) or functional (*e.g*. learning disability) birth defeats.[4] These invariably are antithetical to women's reproductive health rights as guaranteed in many international treaties. The paper therefore calls on state parties to those treaties bothering on environmental protection to ensure adequate domestic legislative measures and enforcement of necessary guidelines and policies to prevent pollution and its attendant health hazards.

Introduction - Definition of Terms

This introductory section attempts to set the scene by defining the concepts of reproductive rights, environment, and pollution in order to show the link and interrelationship of all the concepts.

Environment

Environment is being defined as the sum total of influences which modify and determine the development of life or characters. These invariably include water, land, air, and all plants and human beings or animals living therein and the interrelationship which exist among them.[5] The Black law Dictionary also defines environment as:

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weakening of the public health infrastructure." See also, Tantawi P, "Green Consciousness of Consumers in a Developing Country: A Study of Egyptian Consumers" (2005) 5 (1) *Contemporary Management Research* 31.

4. See U.S President's Science Advisory Committee, *Environmental Pollution Panel on Restoring the Quality of Our Environment*, U.S. Govt. Printing Office, Washington 1965.
5. See section 38 of Federal Environmental Protection Agency Act, (FEPA) Cap 131 Laws of the Federation of Nigeria, 1990.

> The totality of physical, economic, cultural, aesthetic and social circumstances and factors which surround and affect the desirability of value of property and which also affect the quality of life of people's life.[6]

Pollution[7]

On the other hand, environmental pollution is being defined as the unfavourable alteration of our surroundings, wholly or largely as a by-product of man's actions, through direct or indirect effects of changes in energy patterns, radiation levels, chemical and physical constitution and abundances of organisms.[8] The Nigerian Federal Environmental Protection Agency defined pollution as manmade or man aided alteration of chemical, physical or biological quality of the environment to the extent that is detrimental to that environment beyond acceptable limits.[9] Article 1 of 1979

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6. The Black Law Dictionary, West Publishing Co. 1979.
7. It is observed that the ever-increasing complexity of socio-economic activities and development in the modern Africa have brought about various factors that are responsible for pollution of the environment. According to ……., these factors, including the accompanying pollution if left unchecked will predictably lead to the degradation and eventual diminution or exhaustion of the world water resources, culminating in desertification famine, and diseases and decimation of both man and animals. See Atsegbua L. *et al*, *Environmental Law in Nigeria: Theory and Practice*, Ababa Press.Lagos. 2004. 78.
   Pollution exists in various forms. These include water, air, noise, land *etc*, and each of these exerts great influence on the life of man in his daily biological and socio-economic activities. Water pollution for instance occurs in oceans, lakes, rivers and streams and affects life directly through toxicity, killing most water plants and animals, and causing reproductive failure in others.
   Air pollution on the other hand, is the upsetting of the natural arrangement of different gases in air. It involves the accumulation of substances in the air, insufficient concentrations to produce measurable effects on man, plants and animals. It also involves the emission of harmful substances into the atmosphere which cause danger to any living thing. Its sources are factories, motor vehicles, electric cables, incinerators *etc*. see generally, Pollution control and management, chapter 5 of the book *Environmental law in Nigeria: theory and Practice supra*.
8. International Workshop on the Impact of the Environment on Reproductive Health (1991) 20 *Copenhagen Progress in Human Reproduction Research*, 1-11.
9. FEPA Act, note 6 above.

Convention on long Range Trans-boundary Air Pollution defined air pollution as:

> The introduction by man, directly or indirectly of substance of energy into the air, resulting in deleterious effect of such a nature as to endanger human health, farming, living resources and ecosystems and materials property, and to cause an impairment or to interfere with amenities and other legitimate use of the environment.

No doubt, human health is intimately tied to environmental conditions, and a substantial body of evidence has identified the threats environmental toxicants, specifically pose to women's reproductive health, few of which are highlighted in this work.

Meaning of Reproductive Health

In most cases, the concept of women's reproductive health is erroneously being confined to a narrow interpretation within the realm of safe and legal abortion. This erroneous impression might have arisen due to the fact that reproductive health policy has always been mired in debates over abortion and sexuality leaving unresolved a cluster of reproductive health problems.[10] However, reproductive health of women is a rather encompassing concept relating to various health issues that have tendency to affect women's health in the course of their biological role of reproduction. This fact is alluded to in the Cairo Conference, United Nations International Conference on Population and Development (ICPD) which defined reproductive health as '"a state of complete physical, mental and social wellbeing and not merely the absence of infirmity, in all matters relating to the

10. Chavkin W, and Rosenbaum S, "Women's Health and Health Care Reform: The Key Role of Comprehensive Reproductive Health Care" *Mailman School of Public Health, Columbia University,* New York, 2008.

reproductive system and to its functions and processes."[11] The Conference conceived reproductive health of women in its broadest sense and this invariably covers all issues concerning unintended pregnancies, pregnancy-associated deaths, infant deaths, low-birth-weight newborns and preterm births, adolescent pregnancies, sexually transmitted infections *etc*.

The Beijing Conference consolidated the ground gained by the Cairo Conference by pronouncing unambiguously that the human rights of women include the rights to have control over and decide freely and responsibly on matters related to their sexuality, including sexual and reproductive health, free of coercion, discrimination and violence.[12] Thus, the environment must be risk free or possesses minimal risk that can interfere with the women's health and general well being so as to enable them to carry out their reproductive functions inclusive of preconception, during pregnancy, post conception and raising of infants. Of significant and great concern to the international and regional governments is the effect or impact of the environmental pollution on women's reproductive health. These have been established in various epidemiological studies; few of which are discussed below.

The Impact of Environmental Pollution on Reproductive Health

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11. ICPD defines reproductive health broadly thus:

    > Reproductive health is a state of complete physical. Mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with best chance of having a healthy infant." Para 7.2 of The United Nations International Conference on Population and Development held in Cairo between September 5 and 13 1994. A/CONF.171/13/Add.1 1994.

12. Beijing Declaration and Platform for Action, A/CONF.177/20/Add.1(1995) para 96.

Environmental pollution may be in form of Air Pollution,[13] water pollution[14] and soil pollution.[15] Air pollution comes from both natural and manmade sources. Manmade pollutants resulting from combustion, construction; mining, agriculture and warfare are increasingly significant in the air pollution equation.[16] It is said that pure air consists of several gases, most important of which are nitrogen and oxygen, composing, successively, 78% and 21% of air weight, in addition to few quantities of other gases such as Carbon Dioxide, Helium, Neon and Argon. [17] Life on earth depends on this natural composition of air. The air is considered to be polluted if its composition is changed and when it contains

13. Examples of air pollution include the release of chemicals and particulates into the atmosphere. Common gaseous air pollutants include carbon monoxide (CO), sulfur dioxide (SO2), Chlorofluorocarbons (CFCs) and Nitrogen oxides (NOx) produced by industry and motor vehicles. See, Prusstun A, and Corval C, *Preventing Disease Through Healthy Environments: Towards An Estimate Of The Environmental Burden Of Disease*. Geneva, World Health Organisation, 2006.
14. Water is undoubtedly the most precious natural resource that exists on our planet. It comprises over 70% of the Earth's surface. It is essential for everything on our planet to grow and prosper. Water pollution occurs when a body of water is adversely affected due to the addition of large amounts of materials to the water. When it is unfit for its intended use, water is considered polluted.
15. The concern over soil contamination stems primarily from health risks, from direct contact with the contaminated soil, vapors from the contaminants, and from secondary contamination of water supplies within and underlying the soil. Contaminated or polluted soil directly affects human health through direct contact with soil or *via* inhalation of soil contaminants which have vapourised; potentially greater threats are posed by the infiltration of soil contamination into groundwater used for human consumption. See *Risk Assessment Guidance for Superfund, Human Health Evaluation*, Manual Office of Emergency and Remedial Response, United States Environmental Protection Agency Washington D.C. 20450.
16. Other sources of air pollution include chemical plants, motor vehicle emissions coal-fired power plants, oil refineries, petrochemical plants, nuclear waste disposal activity, incinerators, large livestock farms, (dairy cows, pigs, poultry, etc), metals production factories, plastics factories. Also, agricultural air pollution comes from contemporary practices which include clear feeling and burning of natural vegetation as well as spraying of pesticides and herbicides. See Beychok, M.R. "A database for Dioxin and Furan Emissions from Refuse Incinerators" (1987) 21 (1) *Atmospheric Environmental* 29-36.
17. *Ibid.*

impurities or other gases by quantities which have tendency to harm living organisms inhaling this air.

In the same vein, pollution from water and soil contamination has significant impact on the life and general well being of every human being. Women are particularly more vulnerable due to their natural agricultural and domestic household roles especially in a subsistent economy which is prevalent in Africa. Substances with potentially harmful effects on reproductive health are present in water, air, soil, dust, food, and consumable products. Individuals may encounter those toxicants in the home, community, school, or workplace. Toxicants enter the body in one or more of three ways: inhalation, ingestion, or absorption through the skin. Upon entering the body, toxicants do find their ways to various organs, such as the thyroid, lung, ovaries *etc* where they exert biological effects.[18]

According to 2006 Guttmacher report, environmental toxicants either from soil, water or air pollution do affect reproduction and development through other mechanisms. For example, a chemical can enter the blood through the skin or lungs and can be directly toxic to human cells. In addition, an exposure to contaminants such as pesticides can cause spontaneous abortions and birth defects in offspring.[19] Further scientific studies have also established that the impact of exposure to a reproductive toxicant may not be immediately evident. And as such the effects may emerge at key life transitions; for example, when attempting conception, during pregnancy, during development of the embryo or foetus, in the

18. There is a systematic effect on the human body, which occurs when a toxic substance has been absorbed into the bloodstream and distributed throughout the body. Disturbances may be caused in several parts of the body such as the blood, nervous system, kidney, liver *etc*, See further information on *The Health Effect of Air Pollution, The Human Body Under Attack* at *http://www.arizonaenergy.org/AirEnergy/health_effects_ of_air_pollution.htmaccessed* 30 September 2010.
19. (2006) 9(1) *Guttmacher Policy Review*.1.

newborn, and during the offspring's childhood, puberty, and eventual fertility as an adult.[20]

Thus, it is abundantly clear that pollution leads to environmental hazards which in turn have serious negative impacts on the reproductive health profile of women and their infants. Therefore, both pre-conception and post-conception risks exist for both mother and child where the environment is hazardous.

Effect of Air Pollution on Pregnancy and Childhood Mortality

There is extensive evidence that ambient air pollution affects human health and the occurrence of anemia in pregnancy is significantly higher in pregnant women exposed to higher concentration of air pollutants.[21] Pregnant women are especially vulnerable when they come into contact with pollutant or toxic materials, because foetuses they carry are considered to be highly susceptible to a variety of toxicants because of their physiologic immaturity.[22] Their developing organ systems can be more vulnerable to environmental toxicants during critical windows (sensitive periods of development) because of higher rates of cell proliferation or changing metabolic capabilities.[23]

Regarding children mortality, scientific studies have established that up to 90% of diarrhea infections are caused by

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20. International Workshop on the Impact of the Environment on Reproductive Health (1991) (20) *Copenhagen Progress in Human Reproduction Research*, 1-11.
21. Adriaanse HP, Knottnerus JA, *et al* "Smoking in Dutch Women and Birth Weight" (1996) 28 *Patient Educ Couns*: 25-30. See also, Alderman BW and Baron AE, "Maternal Exposure to Neighborhood Carbon Monoxide and Risk of Low Infant Birth Weight" (1987) 102 *Public Health Rep*: 410-414.
22. Perera FP. *et al*, "Molecular Epidemiologic Research on the Effect of Environmental Pollutants on the Foetus" (1999) 107, *Environ Health Perspect*, 451-460.
23. See the following works: Calabrese EJ, *Age and Susceptibility to Toxic Substances* Wiley & Sons, New York, Misra DP and Nguyen RH. "Environmental Tobacco Smoke and Low Birth Weight: A Hazard in the workplace?" (1999) 6 (107) *Environ Health Perspect* 897-904, Salihu HM *et al*,. "Stillbirths and Infant Deaths Associated with Material Smoking Among Mothers 40 years: A Population Study" (2004) *21 Am J. Perinatol*: 121-129.

environmental factors, like contaminated water and inadequate sanitation. Studies have further suggested that acute respiratory infections, 60% of which can be linked to environmental factors, kill an estimated two million children below the age of five every year.[24] Studies on childhood health risks such as respiratory symptoms or hospital admission for asthma, suggest that the opposite end of the age spectrum is also more vulnerable to air pollution than is the general population.[25]

Wang *et al* (1997)[26] examined the effects of SO2 and TSP on birth weight and concluded that there exist a relationship between maternal exposure to SO2 and TSP during the third trimester and infant birth weight. They postulated that the impact of air pollution on children's health may lead to early child mortality.[27]

According to research conducted by Beate Ritz and Michele Wilhelm,[28] early childhood is a critical period for the continued development and maturation of several biological systems such as the brain, lung, and immune system and air toxics can impair lung

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24. *Children's Environmental Health Programmes and Projects*. World Health Organisation publication. Available at *http://www.who.int/ceh/en/AccessedSeptember30,2010*.
25. Heinrich J, *et al*, "Respiratory Diseases and Allergies in Two Polluted Areas in East Germany" (1999) 107 *Environ Health Perspect:* 53 – 62. See also Schewartz J, *et al*, "Acute Effects of Summer Air Pollution on Respiratory Symptom Reporting in Children" (1994) 150. *Am J Respir Crit Care Med*: 1234 – 1242.
26. Wang X, and Ding H, "Association Between Air Pollution and Low Birth Weight: a Community – Based Study" (1997) 105 *Environ Health Perspects*: 514-520.
27. Collins JJ, and Kasap HS, "Environmental Factors in Child Mortality in England and Wales" (1971) 93: *Am J Epidemiol* 10-22. See also, Sprague HA and Hagstrom R. "The Nashville Air Pollution Study: Mortality Multiple Regression" (1968) 18 *Arch Environ Health* 503-507.
28. There are several biological reasons why young children may be more susceptible to air pollution's effects. Children's lungs, immune system, and brain are immature at birth and continue to rapidly develop until approximately age 6, and the cell layer lining the inside of the respiratory tract is particularly permeable during this age period. The process of early growth and development is important for the health of the child in general and therefore may also be a critical time when air pollution exposures can have lasting effects on future health. See Beate R. and Michele W, *Air Pollution Impacts on Infants and Children*, Southern California Environmental Report Card – Fall 2008.

function and neurodevelopment, or exacerbate existing conditions, such as asthma. They concluded that infants who were born premature or growth-retarded may be particularly vulnerable to additional environmental insults, for example, due to immaturity of the lungs at birth.[29] It is therefore of crucial importance to maintain the health of pregnant women and to ensure optimal health of the foetuses they carry, including the provision of all necessary health measures that can guarantee the health of their infants.

The Concern of International Human Rights Law on Environmental Pollution and Women's Reproductive Health

There is strong factual relationship between environmental degradation and the impairment of human rights and health. As a result, in the last couple of years, the world of human rights has witnessed the emergence of third generation human rights and their interrelationship with the protection of the environment. The focus of international law has been directed towards the protection of human environment.[30]

States parties to international treaties and customs have an obligation not to cause transboundary environmental harm. This principle is clearly stated in Principle 21 of the Stockholm Declaration (1972) and Principle 2 of the Rio Declaration that emerged out of the 1992 Earth Summit.[31]

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29. *Ibid,*
30. For instance, the International Workshop On Air Pollution And Human Reproduction was convened between 9 and 11 May 2007 to discuss the current body of evidence for effects of atmospheric pollution on human reproduction, to identify the strengths and weaknesses of published epidemiologic studies, to suggest future directions for research, to foster collaboration, and to promote dialogue among epidemiologists, toxicologists, Clinicians, and biostatisticians. See Christ V.A. *et al*, "Particulate Air Pollution and Fetal Health: A Systematic Review of the Epidemiologic Evidence" (2004) 15(1) *Epidemiolog*y 36-45.
31. The Rio Declaration affirms that countries have "the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or

In 1969, the international convention relating to intervention on the High Seas in cases of oil pollution causalities provides that the parties to the convention may take such measures as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil, following upon a maritime casualty or acts related to such a casualty, which may reasonably be expected to result in major harmful consequences.

Article 211(2) of the convention on the law of the sea 1982 also provides that states are to legislate for the prevention, reduction and control of pollution of the marine environment from vessels flying their flag or of their registry.

While environmental health and safety has been a subject of international concern, in the same vein, the importance of reproductive health of women cannot be over emphasised. It has been given prominence in many international conferences, conventions, and various international human rights instruments. For instance, article 12(1) of the International Covenant on Economic and Socio-Cultural Rights (ICESCR) states:

> The state parties to the present covenant recognize the right of everyone to the enjoyment of the highest standard of physical and mental health.

It explains further that "steps should be taken by the state parties to achieve the full realisation of this right which shall include the provision or reduction of the stillbirth rate and of infant mortality and for the healthy development of the child."[32] It is submitted that prevention of environmental hazards and protection

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control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."

32. Art 12(2) (a) of International Covenant in Economic, Social and Cultural, Rights, of 16 December 1966, 993 UNTS 3, Reprinted in 6 ILM 360, 1967 (Entered into force 3 January 1976).

of environment from any threat to health form part of the accomplishment of this right.

The above provisions could also be used as critical important tools to negotiate and argue that in order for women to attain the envisaged highest standard of health, apart from the provision of basic health facilities, states must take all necessary steps to prevent anything that could affect women in performing their natural reproductive and biological role, and this invariably extends to provision of a healthy and hazardous free environment.

In addition, the Cairo Programme of Action[33] requires governments to promote women's health research to ensure that women enjoy the benefits of scientific progress.[34] The objectives and goals of the Programme of Action include among others sustained economic growth, education, especially for girls; gender equity, infant, child and maternal mortality reduction; and the provision of universal access to reproductive health services, family planning and sexual health.[35] All these are relevant in the discussion relating to environment.

Similarly, the 1995 Beijing Declaration and Platform for Action in para 97 calls on governments to prohibit any harmful aspect of certain traditional, customary, or modern practices that have tendency to violate the rights of women.[36] It is a fact that the increase in environmental pollution and related hazardous effect on human lives are harbinger of the present modern technological and commercial advancement. Therefore, in living up to the expectations of the provisions in *para* 97 above, positive actions on the part of the government are required to checkmate the effect of any modern advancement that leads to increase in environmental pollution or hazard. It is worthy of note that, while there exist many international treaties in respect of the protection of the environment as a right bearing model, there are equally

33. ICPD, see note 12 above.
34. See generally *para* 12 and 26 of the Cairo Programme of Action *supra*.
35. See the Preamble in Ch.1 of the Cairo Programme of Action.
36. *Ibid, para* 224. (Emphasis supplied).

myriads of international instruments on the protection of reproductive health rights. These treaties and instruments place the primary responsibility on states parties to implement necessary actions for protection of these rights both in respect of environmental safety and adequate reproductive health.[37]

Linking a Safe and Healthy Environment to Protection of Present and Future Generation

It is pertinent to observe that legal documents, both international and domestic, endorse principles for protecting the needs and welfare of future generation, especially as related to the environment. Principle 1 of the Stockholm Declaration, adopted during the 1972 United Nations Conferences on the Human Environment, states:

> Humanity bears a solemn responsibility to protect and improve the environment for present and future generations." Several years later, the Rio Declaration reinforced this concept of owing a duty to all people, both today and in the future by stating that "the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.[38]

37. Furthermore, states have a duty to ensure that all the actors of the society respect human rights and they must create the legal and institutional framework to enforce these obligations. When state actors commit acts that are harmful to human rights, states are obliged under international law to take action to prevent and stop such violations and to provide victims with appropriate remedies and relief. See R. Keohane, "Compliance with International Commitments Politics Within a Framework of Law" (1992) 86 *American Society of International Law* 176.
38. Science and Environmental Health Network and The International Human Rights Clinic at Harvard Law School, *Models for Protecting the Environment for Future Generations* (Oct. 2008), available at *http://www.law.harvard.edu/programs/hrp/documnts/models_future_ generations.pdf*. accessed 29 September 2010.

It is submitted that where pollution is effectively controlled thereby resulting in a safe environment, the reproductive health rights of women would be better guaranteed and this will in turn ensure the protection of the future generation. This will also be in line with the United Nations framework on sustainable development. In 1992, the UN Convention on Climate Change similarly articulated how states parties must work for the "benefit" and protection of future generations by enjoining the state parties to protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.[39]

In the words of Edwin Brown Weiss:

> Future generations really do have the right to be assured that we will not pollute ground water, load lake bottoms with toxic wastes, extinguish habitats and species or change the world's climate dramatically - - all long-term effects that are difficult or impossible to reverse unless there are extremely compelling reasons to do so, reasons that go beyond mere profitability.[40]

Thus, it is the duty of the present generations to ensure that future generations are not exposed to pollution which may endanger their health or their existence. It is therefore imperative that we do everything possible to ensure that our environment contains cleaner and safer water, pollution free air and uncontaminated soil in terms of women's reproductive and children's health as these are the basis for the growth and sustenance of the future generations.

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39. UN Framework Convention on Climate Change, art. 3(1), opened for signature May 9, 1992, UN.Doc. A/AC.237/18(Part II) (Add.1), 31 I.L.M.848.
40. Edith B W, "Our Rights and Obligations to Future Generations for the Environment" (1990) 84 *AM. J. Int'l L.* 206.

Enforceability of the Right to a Safe Environment

While many jurisdictions have recognised the right to a safe, healthy and ecologically balanced environment as an independent human right, very few of such states have grouped environmental right among first or second generation rights in order to make its enforceability readily available.[41] The so-called first-generation (human) rights refers to traditional civil and political rights such as right to dignity of human person, right to life, right to liberty, freedom of speech, religion, and the press, *etc*. These rights presuppose a duty of non-interference and protection on the part of government towards individuals. Most of these rights are codified in the International Covenant on Civil and Political Rights 1966.[42]

Second-generation rights have generally been considered as rights which require affirmative government action for their realisation.[43] Rights in this category include the right to education, work, social security, food, self-determination, and an adequate standard of living. These rights are codified in the international Covenant on Economic, Social and Cultural Rights (1966)[44] and also in Articles 23-29 of the Universal Declaration of Human Rights (1948). [45]

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41. The Terminology was introduced by The history of division of human rights into separate categories could be traced back to 1977, when the Czech jurist and first Secretary General of the International Institute for Human Rights, Karel Vasak categorised rights into three generations; See Vasak K, "Human Rights: A thirty Year struggle: The Sustained Efforts to Give Force of Law to the Universal Declaration of Human Rights." 30 *UNESCO Courier*,11.
42. International Covenant on Civil and Political Rights (ICCPR) General Assembly resolution 2200 A (XXI) of 16 December 1966.
43. They pertain to the wellbeing of the whole societies. In contrast with first-generation rights, which have been perceived as individual entitlements, particularly the prerogatives of individuals, second-generation rights are held and exercised by all the people collectively or by specific subsets of people.
44. International Covenant on Economic, Social and Cultural Rights (ICESCR) General Assembly resolution 2200 A (XXI) of 16 December 1966.
45. Critics have argued that these rights are not readily enforceable like the civil and political rights on the assumption that courts are unable to enforce affirmative duties on states and such rights are, therefore, mere aspirational statements.

Third-generation rights are distinguishable from the other two categories of human rights in that its realisation is predicated not only upon both the affirmative and negative duties of the state, but also upon the behaviour of each individual. As a result, they are not readily enforceable as independent rights. Unfortunately, right to healthy environment falls within this category of rights therefore, making it not readily enforceable.

Irrespective of the categorisation, it is submitted that the right to a safe and healthy environment should be made enforceable both horizontally and vertically *i.e* imposing obligations on both the government and individual persons to respect and not to derogate from. Against this background and in order to accomplish the task of keeping a hazardous free environment, it is imperative on the government of each country to ensure that adequate legal framework and policy guidelines are put in place for the protection of the environment. It is also important that all organs of governments are equally responsible for the implementation of such legal framework and policy guidelines. A South African court when commenting on the obligation of the state to provide socio-economic rights for the citizens rightly pointed out in the popular Grootboom case[46] thus:

> The state is required to take reasonable legislative and other measures… mere legislation is not enough. The state is obliged to act to achieve the intended result, and the legislative measures will invariably have to be supported by appropriate, well-directed policies and programs implemented by the Executive. These policies and programs must be reasonable both in their conception and

Secondly, they also argued that regardless of the political system or level of economic development, all states are able to comply with civil and political rights, but not all states have the ability to provide the financial and technical resources for the realisation of affirmative obligations such as education and an adequate standard of living.

46 *Government of the Republic of South Africa and Others v Grootboom and Others* 2001 (1) SA 46 (CC) 2000 (11) BCLR 1169) at 69B-D.

> their implementation. The formulation of a program is only the first stage in meeting the State's obligations. The program must also be reasonably implemented. An otherwise reasonable program that is not implemented reasonably will not constitute compliance with the state's obligation.

A good legislation, a responsible executive and a vibrant judiciary would therefore be required in order to achieve the desired result of maintaining a safe environment, free from pollution and its concomitant negative effects. The complimentary nature of all organs of the government in ensuring a pollution free environment is exemplified in the following South African case.

BP Southern African (Pty) Ltd v. Mec for Agriculture, Conservation, Environment and Land Affairs.[47]

The applicant in this case approached the court to review and to set aside the decision of the Gauteng Provincial Department of Agriculture, Conservation, Environment and Land Affairs which refused the application for authorisation to develop a filling station.[48] The application was refused in terms of section 21(1) and 22(1) of the Environment Conservation Act 73 of 1989 (The ECA) which provides:

21 (1): the Minister may by notice in the Gazette identify those activities which in his opinion may have a substantial detrimental effect on the environment, whether in general or in respect of certain areas.

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47. *Bp Southern Africa (Pty) Ltd v. Mec for Agriculture, Conservation, Environment and Land Affairs* 2004 (5) SA 124 (W).
48. The applicant contended not only that the decision had constituted unreasonable administrative action but also that the decision itself had been unreasonable because, despite the non-compliance of its applicant with the distance-stipulation, it had nonetheless had merit and had been deserving of approval. Secondly, the applicant sought the review and setting aside of the department's decision to apply that guideline in considering its applicant. Thirdly, it applied for an order remitting its application to the department for reconsideration.

Section 22(1): No person shall undertake an activity identified in terms of S 21(1) or cause such as activity to be undertaken except by virtue of a written authorization issued by the Minister or by a competent authority or a local authority or an officer, which competent authority, local authority or officer shall be designated by the Minister by notice in the Gazette.

This authorisation was therefore necessary due to the fact that operating a filling station is identified as an activity which may have a substantial detrimental effect on the environment. In line with the above cited legal framework, the department applied certain departmental guidelines which provided, *inter alia*, that new filling stations would not generally be approved if they were situated within a three kilometer radius of an existing filling station. As a result, the application for opening of a new filling station was rejected.

Against the background that the constitution is the highest law of the land, the applicant contended before the court that it (applicant) was entitled to rights to freedom of trade, occupation, professional and property as embodied in section 22 and 25 of the bill of rights in the South African Constitution.[49] In response to this claim, the court noted that the same bill of Rights equally guarantees a right to healthy environment as articulated in section 24, which provides:

> Everyone has the right:
> a) To an environment that is not harmful to their health or well-being; and
> b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:
> i) Prevent pollution and ecological degradation;
> ii) Promote conservation; and

49. Constitution of the Republic of South Africa (No. 108 of 1996).

iii) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

The court therefore held that the constitutional right to environment in section 24 of the constitution, was on a par with the rights to freedom of trade, occupation, profession and property, embodied in sections 22 and 25 of the constitution, and these rights had to be balanced against one another in any situation in which all of them come into play. None of the rights in the constitution enjoys priority over any other.[50]

The applicant further contended that whilst clothing its refusal in the language of environmental concerns, the real reasons for the department's refusal of its application had been its desire to regulate the economy so as to protect the commercial interests of existing filling stations. Such commercial interests, it contended further, were socio-economic consideration which were unrelated to and had no significant relationship to the environment and which the department had therefore not been entitled to take into account in reaching its decision.

The issue confronting the court was to further consider whether the department acted *ultra vires* by resorting to socio-economic consideration among other reasons for the refusal of the approval. The presiding judge, Classen J construed broadly the meaning of the environment as stipulated in the National Environmental Management Act 107 of 1998 (NEMA) section 1 (1) of which defines environment as the surroundings within which humans exist and that are made up of:

i) The land, water and atmosphere of the earth;
ii) Micro-organisms, plant and animal life;
iii) Any part or combination of (i) and (ii) and the interrelationships among and between them; and

50 At 143B-C/D.

iv) The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.[51]

Classen J further held, "The broad definition of 'environment', in my view, would include all conditions and influences affecting the life and habits of man. This surely would include socio-economic conditions and influences." The court therefore held that the refusal was in order.

The points to note here is that the definition of environment should be broadly construed to include even socio-economic activities and the possible effects such activities pose to have on the life of the people. Secondly, making right to a safe and healthy environment a constitutional right in South Africa bill of rights illustrates the high prominence placed on the need to rid the environment of pollutants. It is regrettable that the Nigerian Constitution does not contain right to a healthy environment as part of the fundamental human rights.[52] It is suggested that our

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51. It should be noted that section 24(1) of NEMA provides that in order to give effect to the general objective of integrated environment management laid down in this chapter, the potential impact on:
    a) The environment
    b) Socio-economic condition; and
    c) The cultural heritage, of activities that require authorization or permission by law and which may significantly affect the environment, must be considered, investigated and assessed prior to their implementation and reported to the organ of State charged by law with authorising, permitting, or otherwise allowing the implementation of an activity.
52. The only provision that is directly relevant to the environmental management in the 1999 Constitution of the Federal Republic of Nigeria is section 20. The section provides that:
    "The state shall protect and improve the environment and safeguard the water, air, and land, forest and wild life of Nigeria."
    The justiciability of this section is however debatable in view of section 6 (6) (c) of the constitution which renders all provisions in chapter 2 of the constitution non-justiciable. See the case of *AG. Ondo State v AGF & 35 Others* (2002) 7 M.J.S.C. 1. However the Supreme Court clarified the issue of non-justiability by pronouncing that where the National Assembly enacts a law for the enforcement of the provision of chapter 2, such enactment becomes justicable. And that it

constitution should embody such an important right which should be made to rank *parri passu* with other enforceable rights.

Conclusion

The right to a healthy environment requires a healthy human habitat, including clean water, air, and soil that are free from toxins or hazards that threaten human health. Government has the obligations to:

> Refrain from interfering directly or indirectly with the enjoyment of the right to a healthy environment.
> Prevent third parties such as corporations from interfering in any way with the enjoyment of the right to a healthy environment, and Adopt the necessary measures to achieve the full realisation of the right.[53]

As right to a safe and healthy environment is guaranteed in some jurisdictions, so also is the right to reproductive health has been placed on the same pedestal with other enforceable human rights. South African bill of rights contains such advancement in the recognition of reproductive rights. Specifically, section 27(1) of the constitution provides as follows:

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would be seen as a failure of duty and responsibility of state organs if they acted in clear disregard of those provisions even though they are not readily justiciable. *paras* F-G of the report.

It is equally important to mention that the scope and extent of the power of the National Assembly in making laws pursuant to the said section 20 is not judicially settled in view of the conflicting pronouncement by the Supreme Court in another case touching on the power of the National Assembly in making laws on matters where the component states have interest. See the case of *AG Lagos State v AGF & 35 Others* (2003) 7 M.J.S.C. 1. The position of the Court in this case conflicts with its position in the case of *AG Ondo v AGF & Others supra* with respect to the determination of the jurisdiction of either state or federal government to enact laws on environmental matters pursuant to section 20.

53. Rupel O.C.: "Third-Generation Human Rights and the Protection of Environment in Namibia" in N.H.A.A. Bosl (ed) *Human Rights and the Rule of Law in Namibia* Macmillan,Windhoek, 2008.

Everyone has the right to have access to

a. health care services, including reproductive health care;
b. Sufficient food and water; and social security, including,
c. if they are unable to support themselves and their dependants, appropriate social assistance.

Obligations imposed on government by this section are subject to the qualifications expressed in section 27(2) which provides that state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of each of these rights.

We submit that where the environment is safe and healthy, reproductive health would not be threatened, rather, it is better guaranteed. Consequently, the present people on the surface of the earth will enjoy better living while the future generation becomes more secured. Since both the present and future generations have the right to an ecologically healthy environment, therefore the need to protect women's reproductive health is of paramount importance. These include but not limited to the enjoyment of clean air, pure water, and scenic lands; freedom from unwanted exposure to toxic chemicals and other contaminants and a secure climate which is pollution free.

PROGRESSIVE REALIZATION OF THE RIGHT TO SAFE WATER AND ADEQUATE SANITATION*

By

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> Access to safe water is a fundamental human need and, therefore, a basic human right. Contaminated water jeopardizes both the physical and social health of all people. It is an affront to human dignity.[1]

Abstract
This article considers the justification of the right of access to safe water and sanitation as well as its relationship to the full enjoyment of life and all other human rights. It examines the essence of water and emerging international consensus on the rights to safe water and sanitation.

The recognition that the realization of human rights is dependent upon resources is embodied in the principle of progressive realization. This principle mandates the realization of human rights within the constraints of available resources.[2]

With more communities than ever before facing both human and environmental water crisis, the challenge is how can the protection of right to safe water and adequate sanitation help to galvanize action to tackle water problems? The crucial issue is to make safe drinking water accessible to all.

Introduction

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1. Kofi Annan, United Nations Secretary-General.
2. Right to water. World Health Organization for Human Rights. Health and human rights publication series. No. 3. World Health Organization 2003. p. 9.

The availability of clean, fresh water is one of the most important issues facing humanity today – and will be increasingly critical for the future, as growing demands outstrip supplies and pollution continues to contaminate rivers, lakes and streams."[3]

The combination of safe drinking water and hygienic sanitation facilities is a precondition for health and success in the fight against poverty, hunger, child deaths and gender inequality. It is also central to the human rights and personal dignity of every woman, man and child on earth. Water is a limited natural resource and a public good fundamental for life and health. The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights. [4] Over one billion persons lack access to a basic water supply, while several billions do not have access to adequate sanitation, which is the primary cause of water contamination and diseases linked to water.[5]

The legal recognition of the right to water

Water right in water law refers to the right of a user to use water from a water source, e.g., a river, stream, pond or source of groundwater.[6] The right to water clearly falls within the category of guarantees essential for securing an adequate standard of living,

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3. United Nations Press Release, WaterYear2003: International Year Aims to Galvanize Action on Critical Water Problems. Published by the United Nations Department of Public Information. DPI/2293A. December 2002.
4. United Nations. Economic and Social Council Distr. General E/C.12/2002/11. January 20, 2003.Committee on Economic, Social And Cultural Rights. Twenty-ninth session Geneva, November 11-29, 2002. Agenda item 3. Substantive issues arising in the implementation of the International Covenant on Economic, Social and Cultural Rights. General Comment No. 15 (2002).
5. In 2000, the World Health Organization estimated that 1.1 billion persons did not have access to an improved water supply; 2.4 billion persons were estimated to be without sanitation. (See WHO, The Global Water Supply and Sanitation Assessment 2000, Geneva, 2000, p.1.). Further, 2.3 billion persons each year suffer from diseases linked to water: See United Nations, Commission on Sustainable Development, Comprehensive Assessment of the Freshwater Resources of the World, New York, 1997, p. 39.
6. *http://en.wikipedia.org/wiki/Water_right.* accessed on September 10, 2010.

particularly since it is one of the most fundamental conditions for survival. The right of access to drinking water and sanitation (hereafter "right to water") is a fundamental human right. It aims to ensure that every person has access without discrimination to drinking water and sanitation, at an affordable cost, in an accessible location and in full safety. An adequate amount of safe water is necessary to prevent death from dehydration, to reduce the risk of water-related diseases and to provide for consumption, cooking, personal and domestic hygienic requirements.[7]

'Water' is looked upon as a social and environmental resource. The term 'right to water' does not only refer to the rights of people but also to the needs of the environment with regard to river basins, lakes, acquifers, oceans and ecosystems surrounding watercourses.[8]

The right of access to drinking water and sanitation expresses itself in two ways:

- public authorities have an obligation to create essential public services, and/or
- everyone has the right to drinking water and sanitation.[9]

Clean water and sanitation are not only about hygiene and disease, they're about dignity, too…Everyone, and that means all the people in the world, has the right to a healthy life and a life with dignity. In other words: everyone has the right to

7. John Scanlon, Angela Cassar and Noémi Nemes. Water as a Human Right?. Paper presented at the IUCN/UNEP Western European Judges Symposium, Rome, Italy and the IUCN/UNEP Eastern and Central European Judges Symposium, Lviv Ukraine (May 2003). p. 105.
8. *Ibid.*
9. Henri Smets. The Right to Water in National Legislations. European Council on Environmental Law and the Académie de l'eau Agence Française de Développement. 2006. p.42 .

sanitation."[10] "By means of water, we give life to everything."[11] "Water is above all a human right which no one can renounce... it is our moral and political obligation to ensure that nobody is denied his right to this vital liquid.[12]

Dimensions of the human right to water

Water is essential to ensuring the continuance of life, and is intrinsically linked to other fundamental human rights. The following demonstrates that many fundamental human rights cannot be fully realized without water:

- Right to life: explicitly enshrined in our understanding of human rights since 1948 and the promulgation of the Universal Declaration of Human Rights [13].
- Right to food: although not explicitly mentioned, the right to water is very strongly implied, since it is vital in preserving the right to food. Water is essential for farming: almost 70% of all available freshwater is used for agriculture[14]
- Right to adequate standard of living: cannot be realized without a right to water.[15]
- Right to housing: water is also a fundamental precondition of this right. As the Committee on Economic, Social and

10. Prince Willem of Orange, Chair of the UN Secretary General Advisory Board on Water and Sanitation.
11. Koran, 21:30.
12. President Vicente Fox of Mexico at the 4th World Water Forum held in Mexico City from March 16 to 22, 2006. In a Message to the Bishops of Brazil in 2004, Pope John Paul II wrote, "as a gift from God, water is a vital element essential to survival, thus everyone has a right to it".
13. Universal Declaration of Human Rights, (1948). Art. 25 (1).
14. 'International Year of Freshwater 2003', at http://www.un.org/events/water/factsheet.pdf.
15. United Nations Economic and Social Council, Committee on Economic Social and Cultural Rights, General Comment No.15 (2002). *The right to water (Arts. 11 and 12 of the International Covenant on Economic, Social and Cultural Rights).* Twenty-ninth session, Geneva, November 11-29, 2002. E/C.12/2002/11.

Cultural Rights stated "the right to adequate housing should have sustainable access to natural and common resources, safe drinking water, … sanitation and washing facilities…"[16]

- Right to education: water also plays a crucial role in the implementation of such a right. The lack of proper supply of water forces children to walk long distances, often several times a day – thus missing school – to provide their families with water.[17]
- Right to health: it is beyond any doubt that this right cannot be realized without securing a right to access to adequate and sufficient water.

World Health Organization estimates that in developing countries 80% of illnesses and more than third of deaths are the result of drinking contaminated water.[18] More startling is that approximately 60% of all infant mortality worldwide is linked to water-related infectious and parasitic diseases.[19]

- Right to suitable working conditions: fresh water is also a key element for this right as it is particularly important for food production and agriculture, the main income source of the majority of populations in developing countries.[20]

Water and sanitation as prominent Millennium Development Goals

16. The right to adequate housing. (Art.11 (1)), 13/12/91. CESCR General Comment No. 4. Para 8.
17. The UNDP Human Development Report (1996) said that school enrolment of girls at the primary level compared with boys amounts to 50% in the least developed countries, whereas it is 96% in the developed countries.
18. WHO and UNICEF. "Global Water Supply and Sanitation Assessment 2000 Report" at: http://www.who.int/water_sanitation_health/Globalassessment/GlobalTOC.htm.
19. Diseases such as malaria, cholera, dysentery, *schistosomiasis*, typhoid, infectious hepatitis and diarrhea are included as water related.
20. *Supra* note 7. p.18.

Water is globally an issue of development. Water and sanitation are prominent Millennium Development Goals (MDGs). [21] The year 2003 was identified by the United Nations as the International Year of Freshwater with one of its aims to reassert the United Nation's Millennium Declaration Goal: "to halve, by the year 2015, the proportion of the world's people unable to reach, or to afford, safe drinking water"[22] and "to stop the unsustainable exploitation of water resources."[23] The Goal recognized the key role of water in agriculture, energy, health, biodiversity and ecosystems as well as in combating poverty.

Essence of Water

Access to sufficient, safe and affordable water is vital for human development. Within the past century, the world's population tripled while global demand for water has increased sixfold.[24]

Today, more than a billion people lack safe drinking water and almost two and a half billion live without access to sanitation

21. The Millennium Development Goals (MDGs) are the world's time-bound and quantified targets for addressing extreme poverty in its many dimensions-income poverty, hunger, disease, lack of adequate shelter, and exclusion-while promoting gender equality, education, and environmental sustainability. They provide a framework for the entire international community to work together towards a common end – making sure that human development reaches everyone, everywhere. See http://www.un.org/millenniumgoals/environ.shtml. accessed September 12, 2010. The MDG guide and focus development priorities for governments, donors and practitioner agencies worldwide. The United Nations system is responsible for reviewing progress, identifying gaps and looking for ways to accelerate progress on the MDGs. The United Nations General Assembly adopted the United Nations Millennium Declaration in 2000 which set out the Millennium Development Goals (MDGs). The Millennium Development Goal 7, Target 10 aims to ensure environmental sustainability through halving, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.
22. Para. 19 of the Millennium Declaration (2000) Resolution referred by the General Assembly at its fifty-forth session (A/55/2) Adoption by fifty-fifth session.
23. *Ibid.* Para 23.
24. UNFPA, Population Issues (1999) "Population and Sustainable Development", at *www.unfpa.org/modules/6billion/populationissues/ development.htm.*

systems.[25] Close to half of all ill-health suffered by people in developing countries is caused by lack of access to clean water and sanitation.[26]

The availability of adequate water supply is critical to every aspect of human life; a water crisis would have adverse impacts on health and welfare, the environment and economics world-wide.[27] "Without water, we can never fight hunger; without toilets in schools, girls will continue to drop out before finalising their education; and without adequate sanitation and hygiene, diseases will continue to spread, resulting in increasing child mortality and bad maternal health."[28]

Water is a vital public health need. Without water, human beings cannot live for more than a few days. It plays a vital role in nearly every function of the body, protecting the immune system – the body's natural defences – and helping to remove waste matter. But to do this effectively, water must be accessible and safe.[29] Contaminated water, whether drunk or used to cook food, harms people's health. Environmental legislation must ensure that water is not polluted by economic activities, such as chemical factories, and must include provisions to redress and imposing penalties in case of violations.[30]

Water is also essential for hygiene, growing food, keeping animals, rest, exercise and relaxation and for a variety of social and cultural reasons.[31] Lack of access to safe water has a major effect on people's health. Poor health constrains development and

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25. UNDP, Millennium Development Goals, at http://www.undp.org/mdg.
26. UNDP Human Development Report, 2006; Beyond Scarcity: Power, Poverty and the Global Water Crisis JMP2004 (WHO / UNICEF); Report of the UN Integrated Task Force on Gender and Water at the 12th Session of the Commission on Sustainable Development, April, 2004.
27. *Supra* note 7.
28. Anders Berntell, Executive Director of the Stockholm International Water Institute (SIWI).
29 *Supra* note 2, p. 6.
30. *http://www.who.int/water_sanitation_health/humanrights/en/index3.html. accessed on October 31*, 2010.
31. *Ibid.*

poverty alleviation. Water is essential for farming and for manufacturing services. Water sources have been put under great pressure by population increases in developed and developing countries, through pollution by agricultural, domestic and industrial waste, and by environmental change.[32]

Almost one-tenth of the global disease burden could be prevented by improving water supply, sanitation, hygiene and management of water resources. Such improvements reduce child mortality and improve health and nutritional status in a sustainable way. [33]

Normative content of the Right to Water

The content of the right to water may be generally defined as a right to access to water of sufficient cleanliness and in sufficient quantities to meet individual needs. As a minimum, the quantity must suffice to meet basic human needs in terms of drinking, bathing, cleaning, cooking and sanitation. [34] Part II of General Comment 15 outlines the normative content of the human right to water – i.e. the individual elements of the right - stressing that these elements must be adequate for human dignity, life and health in accordance with Article 11, paragraph 1, and Article 12.[35] It states that the right to water comprises both:

> 'Freedoms'- such as the right to be free from interference through, for example, arbitrary

32. Right to water. World Health Organization for Human Rights. Health and human rights publication series No. 3. World Health Organization 2003. p. 7.
33. 3rd United Nations World Water Development Report, 2009.
34. See *http://www.who.int/water_sanitation_health/humanrights/en/index2.html.accessed on October 31*, 2010.
35. General Comment No. 15 on the Right to Water was adopted by the UN Committee on Economic, Social and Cultural Rights at its twenty-ninth session in November 2002 (UN Doc. E/C.12/2002/11). The Comment provides guidelines for States Parties on the interpretation of the right to water under two articles of the International Covenant on Economic, Social and Cultural Rights - Article 11 (the right to an adequate standard of living) and Article 12 (the right to health).

disconnections or the contamination of water supplies, and;
'Entitlements' - including the right to a system of water supply and management that provides equality of opportunity for people to enjoy the right to water.

The Comment also stresses that water should be treated as a social and cultural good, and not primarily as an economic good, and that the manner of the realization of the right to water must be sustainable. General Comment 15 acknowledges that while the adequacy of water may vary according to different conditions, these factors apply in all circumstances:

(a) Availability

Each person has the right to a water supply that is sufficient and continuous for personal and domestic uses, such as drinking, personal sanitation, washing of clothes, food preparation, personal and household hygiene. The Comment states that the quantity of water available for each person should correspond to World Health Organization (WHO) guidelines[36], and that it should be taken into account that some individuals and groups may also require additional water due to health, climate, and work conditions.

(b) Quality

The right to water means that not only are people entitled to a sufficient and continuous supply of water, but they are also entitled to water of adequate quality. This means that the water required for each personal or domestic use must be safe and therefore free from micro-organisms, chemical substances and radiological hazards that constitute a threat to a person's health. Furthermore, water should be of an

36. World Health Organization (WHO) guidelines provides that in order to ensure our basic needs, we all need 20 to 50 litres of water free from harmful contaminants every day.

acceptable colour, odour and taste for each personal or domestic use.

Right to Water under International Human Rights Law and consensus documents

Access to safe and sufficient water is a human right under international law and under some national constitutions[37]. The right to water is enshrined in three of the six core human rights treaties: the Convention on the Elimination of Discrimination against Women, Convention on the Rights of the Child and the International Covenant on Economic, Social and Cultural Rights:

(1) The Convention on the Elimination of All Forms of Discrimination against Women for example, obliges States parties in article 14 (2) (h) on the specific needs of rural women to ensure "the right to enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity and water supply …

Article 14 (2h) provides that State parties shall take all appropriate measures to eliminate discrimination against women in rural areas in order to ensure, on a basis of equality of men and women, that they participate in and benefit from rural development and, in particular, shall ensure to women the right to enjoy adequate living

37. See South African Constitution (1996), Chapter 2, Bill of Rights. Section 27 1(b) which provides that everyone has the right to have access to sufficient food and water; and that the State must take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of each of these rights. Similar provisions are contained in Article 216 (4), Constitution of Gambia (1996); Article 90 (1), Constitution of Ethiopia (1998); Article 112, Constitution of Zambia (1996); Article 14, Constitution of Uganda (1995), Article 24, Constitution of Switzerland (1991); Article 65of the Constitution of Kenya (2005); Article 21 of Constitution of India and Articles 47 and 65, Constitution of Uruguay (2004). In the United States of America, the State Constitutions of Illinois, Pennsylvania, Massachusetts and Texas recognize the right of people to pure water.

conditions, particularly in relation to housing, sanitation, electricity and water supply, transport and communication.

(2) The Convention on the Rights of the Child , 1989, in Article 24, obliges States Parties to pursue full implementation of the right to the highest standard of attainable health and, in particular, to take appropriate measures to provide adequate nutritious foods and clean drinking water, taking into consideration the dangers and risks of environmental pollution. Furthermore, Article 27 (1) recognizing the right of every child to an adequate standard of living has consistently been interpreted by the Committee on the Rights of the Child, the treaty body in charge of monitoring and interpreting the CRC, to include access to clean drinking water and latrines.[38]

(3) International Covenant on Economic, Social and Cultural Rights in Article 12 recognises the right of everyone to "the enjoyment of the highest attainable standard of physical and mental health."[39]. States must protect this right by ensuring that everyone within their jurisdiction has access to the underlying determinants of health, such as clean water, sanitation, food, nutrition and housing, and through a comprehensive system of healthcare, which is available to everyone without discrimination, and economically accessible to all.[40]

Article 2 of the Covenant imposes a duty on all parties to take steps... to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of

38. See for example, Concluding Observations of the Committee on the Rights of the Child: Ethiopia. United Nations. Doc.CRC/C/ETH/CO/3 (2006), at para 61.
39. Article 12.1.
40. General Comment 14 on Economic, Social and Cultural Rights, paragraphs 11-12.

legislative measures.[41] This is known as the principle of "progressive realisation".

(4) The right to water has also been implicitly confirmed in the Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes. By Article 5 (l), the Protocol provides that equitable access to water, adequate in terms both of quantity and of quality, should be provided for all members of the population, especially those who suffer a disadvantage or social exclusion.

(5) The Programme of Action of the 1994 Cairo Conference on Population and Development, endorsed by 177 States participating in the conference recognises in Principle 2 that:

> Countries should ensure that all individuals are given the opportunity to make the most of their potential. They have the right to an adequate standard of living for or themselves and their families, including adequate food, clothing, housing, water and sanitation.[42]

(6) The United Nations Conference on Human Environment organised by the United Nations Environmental Programme in Stockholm, Sweden, in 1972, was the first attempt to move from a sectoral to a comprehensive approach to water, including all aspects of environmental protection. The conference emphasized the mutual relationship between man and the environment, expressing concern about man-made harm to the environment such as

41. Article 2.1.
42. Available at: http://www.unfpa.org/icpd/icpd_poa.htm. accessed on September 10, 2010. For a list of participating countries, see the Report of the International Conference on Population and Development, A/CONF.171/13, 18 October 1994, available at: http://www.un.org/popin/icpd/conference/offeng/poa.html. accessed on September 10, 2010.

dangerous levels of pollution in water and calling for assistance to developing counties in promoting, *inter alia*, sanitation and water supply.

(7) The United Nations General Assembly made a resolution that "Safe and clean drinking water and sanitation is a human right essential to the full enjoyment of life and all other human rights.[43] The 192-member Assembly also called on United Nations Member States and international organizations to offer funding, technology and other resources to help poorer countries scale up their efforts to provide clean, accessible and affordable drinking water and sanitation for everyone.

(8) The Non-Aligned Movement acknowledged the right to water in September 2006. "The Heads of State or Government recalled what was agreed by the UN Committee on Economic, Social and Cultural Rights in November 2002 and consequently recognised the importance of water as a vital and finite natural resource, which has an economic, social and environmental function, and acknowledged the right to water for all".[44]

(9) General Comment No. 15 on the Right to Water adopted by the United Nations Committee on Economic, Social and Cultural Rights [45] provides guidelines for States Parties on the interpretation of the right to water under two articles of the International Covenant on Economic, Social and Cultural Rights - Article 11 (the right to an adequate standard of living) and Article 12 (the right to health). General Comment 15 affirms that:

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43. United Nations General Assembly resolution of July 28, 2010. See also the Human Rights Council Resolution 60/251 0f 16 March 2006 entitled 'Human Rights and Access to Water' and Human Rights Council Resolution 7/22 of March 28, 2008 entitled 'Human rights and access to safe drinking water and sanitation'.
44. 14th Summit Conference of Heads of State or Government of the Non-Aligned Movement, Final Document, 16 September 2006, NAM 2006/doc.1/rev.3,
45. (UN Doc. E/C.12/2002/11) at its twenty-ninth session in November 2002.

> 'the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses'.

It notes that the right to water has been recognised in a wide range of international documents and reaffirms the fundamental importance of the right stating that:

> the human right to water is indispensable for leading a life in human dignity. t is a prerequisite for the realization of other human rights.

Global environmental instruments on the right to water

The right to water is more often expressed within non-legally binding resolutions and declarations. These instruments, both international and regional in scope, accept that fundamental human rights such as life, health, and well being are dependent upon the premise that people are guaranteed access to sufficient quality and quantity of water. [46]

The following global environmental instruments recognize a right to water to varying degrees:

(1) Stockholm Declaration

The Declaration is one of the earliest environmental instruments that recognizes the fundamental right to "an environment of a quality that permits a life of dignity and well being"[47] and also that "the natural resources of the

46 *Supra* note 7.

47. Principle 1: "Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment..."

earth including … water … must be safeguarded for the benefit of present and future generations…"[48]

(2) *Mar del Plata Action Plan*

Specific water instruments, such as the Action Plan from the United Nations Water Conference held in Mar del Plata in 1977 recognized water as a "right", declaring that all people have the right to drinking water in quantities and of a quality equal to their basic needs. [49] The primary outcome of this conference was the launching of the International Drinking Water Supply and Sanitation Decade (1980-1990) with the slogan 'Water and Sanitation for All'.

(3) *Dublin Statement*

Principle 4 of the Dublin Conference on Water and Sustainable Development explicitly reaffirmed the human right to water: "… it is vital to recognize first the basic right of all human beings to have access to clean water and sanitation at an affordable price."

(4) *Agenda 21*

Agenda 21, the blueprint for sustainable development, is possibly a primary non-binding international environmental legal instrument. Chapter 18 on freshwater notes that a right to water entails three elements: access, quality and quantity, including not only a "general objective …to make certain that adequate supplies of water of good quality are maintained for the entire population of this planet"[50], but also to provide that "all peoples, whatever their stage of development and their social and economic conditions, have the right to have access to

48. Principle 2: "The natural resources of the earth including the air, water, land, flora and fauna and especially representative samples of natural ecosystems must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate. "
49. Preamble, United Nations. (1977). Report of the United Nations Water Conference, Mar Del Plata. March 14-25, 1997.
50. Agenda 21, Para 18.2.

drinking water in quantities and of a quality equal to their basic human needs."[51]

Regional Human Rights Treaties

The following regional legal instruments explicitly or implicitly recognize a right to water:

(1) Recognition of the right to water is reflected in other regional legislation concerning water. For instance, in 2001, the Committee of Ministers of the Council of Europe adopted the European Charter on Water Resources (2001). Article 5 provides that:

Everyone has the right to a sufficient quantity of water for his or her basic needs" and provides: "International human rights instruments recognise the fundamental right of all human beings to be free from hunger and to an adequate standard of living for themselves and their families. It is quite clear that these two requirements include the right to a minimum quantity of water of satisfactory quality from the point of view of health and hygiene.

(2) **European Council of Environmental Law Resolution (2000)**

The European Council of Environmental Law (ECEL) Resolution on the right to water,[52] forms yet another definitive link between human rights and water. It "considers that access to water is part of a sustainable development policy and cannot be regulated by market forces alone.", and "that the right to water cannot be dissociated from the right to food and the right to housing

51. *Ibid.* Para 18.47.
52. ECEL Resolution, adopted 28 April 2000, published in Environmental Policy and Law, 30/5 (2000).

which are recognized as human rights and that the right to water is also closely linked to the right to health."[53] Article 1 of the Resolution states that "each person has the right to water in sufficient quantity and quality for his life and health."

(3) European Commission of the United Nations for Europe (ECE) Protocol on Water and Health, (2000)

The European Commission of the United Nations for Europe (ECE) Protocol on Water and Health to the 1992 Convention on the Use of Transboundary Watercourses and International Lakes specifically states that "parties shall, in particular, take all appropriate measures for the purpose of ensuring:

(a) adequate supplies of wholesome drinking water … ; (b) adequate sanitation …"[54]. It mentions the three central aspects of a human right to water, stating that "…equitable access to water, adequate in terms of both quantity and of quality, should be provided for all members of the population, especially those who suffer a disadvantage or social exclusion."[55] Access to water and sanitation services are reinforced in Article 6 (1), which provides that "the Parties shall pursue the aims of:

(a) access to drinking water for everyone;

(b) provision of sanitation for everyone.

(4) African Charter on Human and People's Rights, (1981)

53. ECEL Resolution, adopted 28 April 2000, published in Environmental Policy and Law, 30/5 (2000).
54. Art. 4(1) of the ECE Protocol, adopted on 17 June 1999 at the Third Ministerial Conference on Environment and Health.
55. *Ibid*. Art. 5(1).

This regional charter notes broadly that "all peoples shall have the right to a general satisfactory environment favorable to their development".[56]

(5) African Charter on the Rights and Welfare of the Child, (1990)
Article 14 (2)(c) State Parties to the present Charter shall undertake to pursue the full implementation of this right and in particular shall take measures to ensure the provision of adequate nutrition and safe drinking water.

(6) Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa, (2003)
Article 15 of Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa stipulates that 'States Parties shall take appropriate measures to provide women with access to clean drinking water'.

(7) The African Convention on the Conservation of Nature and Natural Resources (Maputo, July 2003) stipulates that "The contracting States shall endeavour to guarantee for their populations a sufficient and continuous supply of suitable water" (Article 5.1).

An overview of the above mentioned instruments indicates that this right has not been clearly defined in international law and has not been expressly recognized as a fundamental human right. Rather, a right to water is interpreted as being an implicit component of either existing fundamental human rights, or is expressly included in non-binding instruments that are designed to achieve specific ends.[57]

The right to water has been growing in importance; thanks to more and more frequent acknowledgement of the right to a healthy and balanced environment and the right to sustainable

56. Article 24 of the African Charter on Human and Peoples' Rights, adopted June 27, 1981, OAU Doc. CAB/LEG/67/3.
57. *Supra* note 7. p.11.

development. Yet much remains to be done to make access to water and sanitation an enforceable right that can be invoked by those who lack drinking water or appropriate sanitation.[58] If the right to water were to be recognized within a legally binding human rights instrument, not only would the obligations arising from such a right become more clear-cut, but the violations of this right would also be evident. Injurious deprivation or pollution of an individual's water supply, or denial of his/her access to sufficient and safe water would enable him/her to seek redress through the court system of the state concerned.[59]

Obligations of States Parties on the Right to Water

General Comment 15 identifies a number of core obligations which are of immediate effect in relation to the right to water.[60] States Parties are obliged to:

(a) To ensure access to the minimum essential amount of water, that is sufficient and safe for personal and domestic uses to prevent disease;

(b) To ensure the right of access to water and water facilities and services on a non-discriminatory basis, especially for disadvantaged or marginalized groups;

(c) To ensure physical access to water facilities or services that provide sufficient, safe and regular water; that have a sufficient number of water outlets to avoid prohibitive waiting times; and that are at a reasonable distance from the household;

(d) To ensure personal security is not threatened when having to physically access to water;

(e) To ensure equitable distribution of all available water facilities and services;

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58. Henri Smets. The Right to Water in National Legislations. *Académie de l'eau Agence Française de Développement, 2006.* p.30.
59. *Supra* note 7. p 19.
60, *Supra* note 35.

(g) To monitor the extent of the realization, or the non-realization, of the right to water;

(i) To take measures to prevent, treat and control diseases linked to water, in particular ensuring access to adequate sanitation.

Judicial decisions on the Right to Water in selected jurisdictions

Citizens can normally turn to the courts if their right to water as consumers, users, or citizens is violated. This is the case, for example, when the water distributed is polluted (nitrates, pesticides), when wastewater is not collected (bacteriologic pollution), when street fountains or latrines are lacking (near shantytowns), when the municipality has not extended or repaired the network, when excessive pumping of groundwater deprives users of water, when the distributor disconnects a user for non-payment, and when the town hall has not authorised service to certain users.[61]

Law is the starting point that provides the necessary foundation for the protection of the rights of individuals. Individuals, communities and NGOs worldwide have used numerous methods of obtaining legal redress on issues affecting the right to water, including public interest litigation, public nuisance actions and provisions in criminal law relating to water issues, such as pollution.

The following judicial decisions in selected jurisdictions show that the recognition of a human right to water is an emerging trend.

South Africa

In *Mazibuko v. City of Johannesburg,*[62] the first applicant, *Lindiwe Mazibuko,* explains how, living in a household of 20 unemployed,

61. *Supra* note 7, p. 77.

62. *Lindiwe Mazibuko et al v The City of Johannesburg*, Johannesburg Water (Pty) Ltd and The Minister of Water Affairs And Forestry Case, High Court of South Africa, No 06/13865. ttp://www.righttowater.info/code/legal_6.asp. accessed on September 12, 2010. According to a district court in Heerlen, access to water is a

elderly and young people (and relying largely on her mother's pension of R820 per month), she suffers from the inadequacies of the free basic water supply and the worsening of her daily life of grinding poverty caused by the prepayment water meter installed in her *Phiri* house in October 2004. As she attests in her affidavit, the free basic water supply usually lasts the household only until around the 12th day of each month (with 20 people, the 6 kilolitres amount is only enough for each member of the household to flush the toilet less than once every two days or to have a body wash once every four days, leaving no water for drinking, cooking, cleaning etc.) With a prepayment meter, once this free basic amount is exhausted, the water supply is automatically disconnected, leaving the household without water until they can buy water tokens. But, as no-one in the *Mazibuko* household is employed, there is frequently no money to purchase water tokens and the household must borrow money or go without water until the next pension grant is available.

Grace Munyai, the second applicant, is a care-giver to her niece, who is living with AIDS. The additional water required to take care of *Ms Munyai's* niece necessitates a 3km walk to fetch water (from an area of *Soweto* that still has an unlimited water supply), as the free basic water amount is insufficient to ensure dignified and hygienic conditions and the household has no income to buy water tokens after the exhaustion of the free basic supply.

The Court ruled that the City of Johannesburg's practice of forced installation of pre-paid water meters in *Phiri, Soweto,* is unconstitutional. The City was directed to provide residents of Phiri with the option of a normal metered water supply. The judgment held that Johannesburg's water policy was discriminatory. The Court also ordered the City to provide

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human right. Its supply can therefore not be halted to a defaulting consumer. The ruling followed a dispute between a water company from Limburg (WML) and a defaulting customer from Heerlen. See http://www.nisnews.nl/public/090708_3.htm.

residents of Phiri with 50 litres of free water per person per day. This is an increase from the current allocation whereby each household (on average containing 16 persons) is only provided with 200 litres per day. The court noted that 25 litres per person is insufficient, especially for people suffering from HIV/AIDS. The Supreme Court of Appeal of South Africa ruled that Section 27 of the country's constitution provides that - "sufficient water is the quantity of water required for dignified human existence " and therefore the local authority in Phiri should supply water to residents who could not afford to pay for the substance.

The case of *Residents of Bon Vista Mansions v. Southern Metropolitan Local Council* demonstrated how the right to water can be used as a legal tool to make a difference to the lives of those living in poverty.[63] This case was brought by a resident of the Bon Vista Mansions block of flats, Mr *Ngobeni*, on behalf of himself and his fellow residents, following the disconnection by the local Council of the water supply to the flats, due to non-payment of water charges.

The court used, as a basis for its decision, Section 27(1)(a) of the South African Constitution, which provides that everyone has the right of access to water. The Court found that the applicants had existing access to water before the Council disconnected the supply, and that the conditions and procedures for disconnection had not been 'fair and equitable' in accordance with Section 4 (3) of the South African Water Services Act 108 (1997), since reasonable notice of termination and the opportunity to make representations had not been provided.

The Court consequently found that the Council's disconnection of an existing water supply to consumers constituted prima facie a breach of its constitutional duty to respect the right of (existing) access to water and that the applicants had satisfied the

63. *Residents of Bon Vista Mansions v. Southern Metropolitan Local Council* at the High Court of South Africa (Witwatersrand Local Division), Case No: 01/12312.

requirements for the granting of an interim interdict. The water supply to the flats was subsequently reinstated.

India

In India, where the right to water is not enshrined as a fundamental right in the national Constitution, courts at both state and federal level have interpreted Article 21 of the Constitution, the right to life, as encompassing the right to safe and sufficient water and sanitation.

In *M. C. Mehta versus Union of India* [64], the case concerned the problem of pollution of the Ganga by the Kanpur Municipal Council and the duty of the government, under Article 21, to ensure a better quality of environment. The Supreme Court of India held that citizens have the right to the use of air, water and earth as protected under Article 21 of the Constitution (the protection of life and personal liberty);

The court emphasized that due to the "grave consequences of the pollution of water and air", the "need for protecting and improving the natural environment…is considered to be one of the fundamental duties under the Constitution (vide clause (g) Article 51A of the Constitution)…"

Sweden

The *Zander v. Sweden* [65] *case* concerned potential pollution of a drinking water well from a nearby dump. The applicants' claim was directly concerned with their ability to use the water in their well for drinking purposes.[66] The European Court held in this case that there had been a violation of Article 6(1) of the European Convention on Human Rights.

Belgium

64. (12) SCC118, 2004.
65. ECHR (1993), Series A, No. 279B.
66. See more details at *http://sim.law.uu.nl/SIM/CaseLaw/hof.nsf.*

In *A.s.b.l. Syndicat national des propriétaires et autres* case,[67] the regional ordinance of the Brussels-Capital region ruled that water distribution companies do not have the right to disconnect tenants who do not pay their water bill.[68] However, they are entitled to account the water bill to the landlord.[69] As a consequence of this ordinance, an association of owners filed a petition to the Court of Arbitration of Belgium asking for nullification of the norm in question. They argued that owners should not be forced to pay for water that has been exploited by tenants. They based their claim on an alleged breach of Articles 10 and 11 of the Belgian Constitution. In fact, they argued that everyone has to bear the costs of their own consumption, and not to pay for someone else's use of water services. They asserted therefore a violation of the principles of equality and non-discrimination.

In its judgment, the Court did not agree with this request of nullification. Judges established that each owner had the right to connect their property to the water distribution system and even to rent the property or not. Of course, the primary obligation to pay water bills falls on the tenant. Nevertheless, the Court considered that access to a minimum of drinking water and sanitation is a fundamental right. The Court specified that, on the basis of Article 2 of the regional ordinance, every resident of a house connected to the distribution network had the right to receive water for domestic consumption. This provision matches two objectives. The first one is 'to guarantee the best conditions for implementing the public task of water distribution, and the second one is to consecrate the absolute right to drinking water supply'. This judgment aims, therefore, to seek 'a balance between the economic interests of the

67. *A.s.b.l. Syndicat national des propriétaires et autres, Cour d'Arbitrage de Belgique, Arrêt N°9/1996, February 8, 1996, Moniteur belge, 1996(02)00035 [hereafter Syndicat national des propriétaires]*.
68. See Article 5.2, Ordinance 1994.
69. *Ibid*. Article 3.2.

distribution company and the full realisation of the right to water for everyone'.[70]

Conclusion

The progressive realization of the right to safe water and adequate sanitation in international human rights law would safeguard already accepted human rights and environmental principles.

The rights to food and sanitation are important human rights and their promotion constitutes a moral imperative both for national Governments and for the international community. Hence, the right to water should be translated into a specific, binding legislation at the national and convention at the international levels. Such a convention should:

- re-affirm the human right to water;
- strengthen and ensure the implementation of the human right to water;
- make the right to water fully enforceable under national and international law.

This would provide a strong basis for individuals and groups to hold states and other public actors accountable at the national and international levels. Unless the international community takes positive actions to promote the rights to safe water and sanitation as well as improve fresh water supplies for drinking, sanitation and hygiene purposes, millions of preventable deaths would occur. Regardless of their available resources, all States Parties have an immediate obligation to ensure that the minimum essential level of a right is realized. In the case of water, this minimal level includes ensuring people's access to enough water to prevent dehydration and disease.[71]

Failure to directly recognize a right to water may weaken the enforcement capability and authority of existing provisions as they

70. *http://www.ielrc.org/content/f0802.pdf*. accessed on September 13, 2010.
71. Health and human rights publication series; No. 3.World Health Organization. 2003.

relate to water. The recognition of a right to water could make its implementation more effective and allow for a more speedy and effective development of jurisprudence.[72]

Water promises to be a burning issue of global politics in the foreseeable future hence recognising water as a human right is critical. Consequently, governments are obliged to take steps to ensure that everyone, without discrimination, has access to affordable clean water whatever their income.

72. *Supra* Note 7. p. 19.

LIFE IN NIGERIA: NEED FOR A NEW PARADIGM ON ENVIRONMENTAL QUALITY?

By

Nwudego Nkemakonam Chinwuba *LL.B; LL.M; B.L.**

Abstract
The paper advocates an improved quality of life in Nigeria motivated by a planned orderly, aesthetic environment. For the purposes of the article a broad definition of environment is preferred which covers the totality of the physical developments and observations of man with the potential to ennoble the mind of man. Analyses of the problems include, the environment, neighbourhood character, forestry, absence of philosophy, apathy to vision 20:2020 and disconnect between planning and environment.

Introduction

Is there a connection between environmental protection, enhanced and invigorated surroundings and emancipation of the individual? There certainly is an interconnection between the development and emancipation of the human being with the quality of his surroundings. Is there a further link between sustainable development, quality of life and philosophically policy-based programmes? Again, the answer is in the positive.

It is thus not surprising that section 20 of the Nigerian Constitution provides for the protection of the environment by the State and that in interpreting this section in *Att. Gen. Lagos State v. Att. Gen of the Federation*[1], the Supreme Court thought that planning and environment overlapped. In a similar vein, the African Charter on Human and Peoples' Rights by Article 24 makes it the duty of the State to provide for all peoples a

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1. [2003] Pt. 833 N.W.L.R. 1.

satisfactory environment favourable to their development.[2] Furthermore, the preamble to the Stockholm Declaration adopted by the United Nations Conference on Human Environment (UNCHE) states that '...both aspects of man's environment, the natural and the man-made, are essential to his well-being and to the enjoyment of basic human rights – even the right to life itself'. Principle 1 of the Declaration states that 'man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well–being[3].

In this paper, environment is not seen in its restrictively, biological or scientific definition of atmospheric constitution and substances, but in a broad sense that encompasses, every sense of observable phenomena on earth, such as the neighbourhood of an ascertainable land dimension, the character of immediate vicinities, the environmentally necessary infrastructures that define neighbourhood and its character. Furthermore, the right to environment that is not harmful to human health and well-being is closely interrelated with the determination to keep the environment in aesthetic condition favourable to the overall well being and quality of life of the individual.

Thus, a working definition preferred in this article is in line with the broad definition of New York's State Environmental Quality Review Act. By the Act, environment encompasses not only, "the physical conditions which will be affected by a proposed action, including land, air, water, minerals, flora, fauna, noise, [and] objects of historic or aesthetic significance but also "existing patterns of population concentration, distribution, or

2. African Charter on Human and Peoples' Rights (Ratification and Enforcement) Act.
3. Amechi, E.P *The Millennium Development Goals and Policy Reform: Realising the Right to a Healthy Environment in Africa* (Verlag DM Saarbrcken, Germany, 2010) 11; Runnalls, D. 'Our Common Inaction – Meeting the Call for Institutional Change' (2008) 50, 6, www. Environmental Magazine. Org. 19; see now Lagos State Urban and Regional Planning Law 2010; this Law sets out to deal with blight in Lagos.

growth, and existing community or neighbourhood character".[4] Similarly appealing, is the definition from Black's Law Dictionary, "...the totality of physical, economic, cultural, aesthetic, and social circumstances and factors which surround and affect the desirability and value of property which also affects the quality of people's lives"[5] As Bunk`se notes:

> *in the final analysis, humanism is about the quality of civilization, its habitats, and the human condition.* It is not about materialistic, anthropocentric, or egocentric greed – at least not

4. Rabin, H. J. 'Neighbourhood Character and SEQRA: Courts Struggle with Homeless Shelters, Prisons, and the Environment' [1989] 14 Columbia Journal of Environmental Law 231; for a detailed account of the approach of New York City to conservative application of the doctrines on easements and covenants see, Reichman, U. 'Toward a Unified Concept of Servitudes' (1981-2) 55 S. Cal. L. Rev. 1177, 1192.
5. Taken from Bowen, O.A. 'The Role of Private Citizens in the Environmental Laws' in Omotola, J.A. (ed.), *Environmental Laws, Including Compensation* (1990 - University of Lagos Press) 150. This definition captures the views of this writer on environment but for some reason, the 7th edition of Black's Law dictionary does not proffer a definition, possibly because environmental protection has now taken a new leap in world history and is largely governed by legislations each giving its own definition. See Black's Law Dictionary 7th ed., by Garner, B.A. (West Group St Paul, Minn. 1999) On this see also several views and perspectives on definition in Amokaye, G.O. Environmental Law and Practice in Nigeria (University of Lagos Press 2004) 3 – 5; Adigun noting the report of the research into various aspects of life in Nigeria by Environmental Study / Action Team (NEST) wrote "the section on human habitat reveals that most of our housing stock lack basic infrastructural facilities, like pipe borne water, water closet and electricity. Worse still, rural and urban housing conditions fall below minimum international standards in many respects. At least 45% of housing in rural southern Nigeria need major repairs or, are completely dilapidated. The same is true of the Northern States". Adigun, O. 'The Problem of Housing in Nigeria' in O.A. Obilade (ed.), *A Blue Print for Nigerian Law* (Faculty of Law, University of Lagos, 1995)153,177; see also Otubu, T. 'Land Use Act and Housing in Nigeria: Problems and Prospects' in Smith I. O. (ed.), *The Land Use Act – Twenty Five Years after* (Department of Private and Property Law, Faculty of Law, University of Lagos 2003) 351, 365; see also Akpata, T.V.I. (2002) Inaugural Lecture - *Aquatic Microbes: Impact on Man and Environment* (*9a* University of Lagos Press).

> as an ideal. To be sure, like any species, humans are self-serving from the standpoint of survival, but that self –serving characteristic can be guided by what Glacken calls "enlightened anthropocentrism" that is by the desire to make the world a more humane place. It is unlikely that intellectual constructs, such as idealism, materialism, hermeneutics, deconstructivism, and similar post – modern efforts to mediate between man and the world will reveal them. For geographers it is the human sense of place and the quality of airs, waters, and places that matter – of buildings and cities, farms and natural landscapes.[6]

Nigeria is a country with vast rich human and natural resources but unfortunately the country continues on a down turn journey since independence.[7] Daily, citizens move in

6. *Bunk`se, E. v. 'Saint – Exupery's Geography Lesson: Art and Science in the Creation and Cultivation of Landscape Values*' [1990] 80 Annals of the Association of American Geographers 96, 106; (emphasis mine). See also, S. 22 of The English Commons Registration Act 1965 amended by S. 98 Countryside and Rights of Way Act 2000; Meager, Rowena 'New Town and Village Greens: back from the brink' (case comment – *Oxfordshire CC v Oxford City Council*) [2006] Conv. & Property Lawyer 584; This Act makes places of natural beauty and historic interest a trust for the nation. C. George 'Commons Act 2006 – new Life for new greens' [2007] Journal of Planning & Environment Law 1283; Fragment from a Changing Legal Landscape – Planning Law Update' [2005] Journal of Planning & Environmental Law 91; J. Holder 'Overriding Public Interest in Planning and Conservation Law' [2004] Journal of Environmental Law 377. The English Commons Registration Act 1965, established a map of all commons and village and town greens and required them to be registered. New village and towns green could also be created by 20 years user. A village or town green is "land on which either by specific statutory provision or customary right, or by continuous use for not less than 20 years, the inhabitants of the locality were entitled to pursue lawful sports and pastimes. Sara Colin *Boundaries and Easements* 10-09 See also, *R* v. *Suffolk CC, ex p. Steed* (1999) 59 P. & C.R. 102.
7. For a fuller picture, see Fagbohun, O. *The Law of Oil Pollution and Environmental Restoration – A Comparative Review* (Odade Publishers Abuja Lagos Port Harcourt 2010) 1- 3.

uncoordinated manner without inspiration, a sense of satisfaction or fulfilment and needless to add, patriotism is a jingle without a soul. In June 2008, in an interview with CNN the governor of Lagos State noted that while his mission is not to turn Lagos State to a Western city, which he considered impossible, his hope is to develop and provide an environment that would impact on the lives of Lagosians to help people live in a functional rather than dysfunctional manner.

The dysfunctional life in Nigeria is perhaps the strongest motivation for the large exodus of Nigerian citizens to better organised and more environmentally favourable countries. Most people find that they function better in these environments not because they have stopped being Nigerians or necessarily have better access to financial or other resources, but simply because they have improved quality of life evinced, in day-to-day orderliness in their affairs and the serene, scenic beauty of the planned environment of these societies.[8] Thus when on the 2nd of August 2010, the CNN news showed Africans being thrown out of council flats in France, it was not surprising to view with deep sadness, the extent and scope of resistance displayed by those concerned at being sent back to their native lands. The majority of the victims were women and children and by the mode of dressing and carriage of the women, one can opine that most of them were Nigerians, being clad in Nigerian style female attire and most of them strapping their children to their backs in a typical Nigerian style. The shame of the treatment by the all white French Police men and the struggle of the women not to be evicted was a slap on the face of not only, the Human Rights Organisations which were protesting the treatment, all Africans, and humanity, but

8. Thus in many of these countries, Nigerians maintain homogeneity, staying close with one another, surviving barely on N10,000 a month per individual and living largely very Nigerian life style. They do not in many respects imbibe the culture of the people eating Nigerian foods and showing every sense of nostalgia for the home land. It is thus not love for these nations that keep them there but the failure of the system in their home land.

particularly so on the nation, Nigeria. The French police was unapologetic claiming that evicting African immigrants was not always an easy affair. In some sense, one empathises with the French. Why would women and children of other nations strongly resist returning to their homelands if their continued sojourn is no longer acceptable by the host country?

The argument sometimes canvassed in closed circles that perhaps the fortune of the country might have been better had the white man tarried a little longer, while a farce, is an indication of the quagmire, which the vast majority of the nation's population finds itself. It is the view of this writer that things need not continue in this fashion and that the present generation can go a long way in turning the abysmal destination of the country. In a country with a vast number of academics, the lot appears cast on the body of educated and literate men and women to bell the cat - to resolve the puzzle as to what is wrong with Nigeria and recommend solutions. For on this, must both the present and future generations as well as the comity of human nations resoundingly adjudge the work and role of the academia.[9]

Against this background, this paper takes a look at Nigeria, the human problem, the role of the environment in the development of a people a fortiori, the psyche of the people, which reflects on quality of life. It further examines some legal tools, which may aid in ensuring obliteration of blighted physical environment and surrounding while checking the problem of the dysfunctional living conditions faced by the majority of the Nigerian people. It takes the position that there is a need for a philosophically based planning and environmental protection targeted at the general consciousness of the people. The paper is accordingly divided into four parts. Part I discusses the problems, part II, the role of the State and the individuals in ensuring a meaningful environment in

9. See for instance the principle 6 of the Declaration adopted by the United Nations General Assembly at the millennium Summit cited in Fagbohun, O. *The Law of Oil Pollution and Environmental Restoration – A Comparative Review* (above note 1)1.

Nigeria, part III, some legal tools that may be useful in creating an enabling human environment that accentuates quality of life invariably resulting in quantity of life. The paper concludes with a recommendation that an independent body be set up to consider the overall character of Nigeria with a view not only to realising its Vision 20:2020 agenda but also guiding the country to the destination of a beautiful nation with character among the comity of civilised nations.

Part 1
The Problems

The problems addressed in this paper are specifically, the state of the environment, the character of neighbourhoods, the character of the forests and countryside, infrastructural developments, absence of philosophy and guiding ideology, apathy to governmental structures and initiatives such as the Visions 20:20/20 and the disconnect between planning and the environment.

The Environment:

When speaking of environment from an overall perspective, it must be within the parameters of the immediate habitable vicinity of human occupation and movement. A green beautiful environment ennobles the human spirit and hence it has been severally noted that there is a spiritual aspect of property. It is of interest to note that the Western world actually imported extensive aspect of landscape and greens culture from Asia where they observed their effect on the behaviour, and reasoning on the human person.[10]

10. Livingstone, D.N. 'Natural Theology and Neo – Lamarckism: The Changing Context of Nineteenth – Century Geography in the United States and Great Britain' 74 Annals of the Association of American Geographers 9 [1984]; Morrill, R. L. 'The Responsibility of Geography' 74 Annals of the Association of American Geographers 9 [1984]; E.V. Bunk`se, 'Saint – Exupery's Geography Lesson: Art and Science in the Creation and Cultivation of Landscape Values' 80 Annals of the Association of American Geographers 96, 106 (1990).

Living is not just about existence but also about decent living, orderliness and beauty. It is therefore the norm to see in most advanced nations the majority of the neighbourhoods built up in small decent houses or skyscrapers surrounded by extensive buffers of greenery, parks within each suburb, clean beautiful surroundings. Indeed when people are rich, the measurement of wealth is often not by the sizes of their houses but in the surrounding. For instance, when one moves into the bourgeoisie part of Aberdeen in Scotland, the immediate effect is the change of weather which is as a result of the extensive greenery and medium but exquisitely designed houses set in expansive land mass. It is therefore inconceivable that a man can claim to be wealthy as is the case in Nigeria, and live in a big mansion or estate bereft of greens and surrounded by ugly bashers and filthy environment. The rich man in Nigeria quite unlike his counterpart in other parts of the world flaunts his wealth in the midst of poverty and blight and invariably he is poor. Writing of Denmark in 1939, Vinding Kruse noted:

> ...the same chaotic mass production has also in modern times set its stamp on the building industry, particularly the houses in the great cities. The enormous development of these cities in…. has given us a number of great quarters….. with a monotonous, grey and disconsolate aspect, rows of dead wall-surfaces, sometimes broken by miserable artificial attempts at ornamentation or confused variations of style, dark backyards which, owing to the height of the buildings, often resemble deep caverns with insufficient light and air….Moreover, **and this is the most important, hygiene and spiritually satisfactory or aesthetically attractive conditions are in reality inseparable. That which is refreshing and enlivening to the mind, bright colours and a certain harmonious variation of**

> **impressions, also stimulates health**.[11] The effect of pure air cannot be separated from the effect of the refreshing sight of green trees or lawns, or from the ever-changing and cheering impressions of bird life, of fauna and flora generally, quite apart from the fact that the kinds of impressions are usually physically and locally one.[12]

Today all cities in Denmark rank amongst the most beautiful even in Europe. Kruse wrote that property had two sides, the extrinsic, consisting of the planning, structure and architecture and the intrinsic consisting of the spiritual that in turn projects aesthetics, tranquillity and beauty into the environment. Regrettably, the architect in Nigeria is not put to use or he has not made himself relevant. The work of the architect, planner and environmentalist goes hand in hand and the architect is to orientate himself to giving character and beauty to structures while the other two professions compliment his efforts. Some of the scenarios narrated below typify the blight, which the Nigerian environment and surrounding reflect.

In Lagos State, there are many areas with ugly sites of buildings of differing heights; some very high, some medium

11. Emphasis mine; It is in fact surprising that some individuals can be so rich and yet live in very unsightly surroundings. Thus when one lives in an organised estate such as Goshen, Victoria Garden City one's psyche is assailed by driving through Jakande, Maroko and even the unplanned scenery that many parts of Lekki Phase 1 and environs have become. The contrast between these areas and the planned areas of Government reserved Areas of Ikoyi, Apapa, Ikeja are so strikingly different. Again, when one takes a look at the dichotomy that existed with colonial arrangements in terms of aesthetics between these areas and Surulere, Yaba planned for natives, one wonders why Nigerians in self rule will choose to remain where they were put as subjects. For instance, in any neighbourhood inhabited by Nigerians, trees are absent, so are open spaces, play fields and even planned ones are sold off by the government itself. Someone or group of people thought that Ikoyi Park was useless and mapped them out as plots!
12. Fr. Vinding Kruse, *The Right of Property* (tr. From Danish, Oxford University Press, 1939) 86 at 89.

sizes, some bungalows and some simply bashers even in new town development areas. No one cares about architecture, uniformity or indeed greenery except in some planned private residential estates. There are cases of private persons exceeding the boundaries of lands allocated to them and veering their plots into the roads. There are cases of whole roads converted into private properties, and open spaces for recreational activities and conservation converted into plots, non-compliance with regulatory setbacks and the differing structural heights making neighbourhoods unsightly and definitely, some persons unhappy, with air and light sometimes blocked off from the low structures. This is despite the specific provision by section 27 of the Lagos State Physical Planning and Development Regulations, 2005 and 40 of Urban and Regional Planning and Development Law, 2010. The setbacks for landscaping, planting of flowers and maintenance of greens as provided for different residential areas of Lagos are also not maintained but are flagrantly disregarded.[13] Indeed so many of the residents interviewed by this writer enquired what they were doing with flowers and gardens the space for structure was inadequate for that purpose.

It is for these category of persons that a philosophically and policy based approach must be adopted in which the consciousness of the people in the words of Von Savigny is targeted. Thus, the State must encourage non profit organisations to pursue such goals of sensitising and motivating the people.

Neighbourhood Character:

It is not an idle talk to speak of characterising the country's neighbourhood and cities. These are indices of civilisation and

13. Section 18 of the Lagos State Urban and Regional Planning and Development Law 2005, (1) provides for a minimum of (20) percent of any plot on Victoria island, Ikoyi and all other Government residential schemes will be reserved for landscaping (2) for all other residential, commercial, industrial, institutional and other uses a minimum of (10) percent of the plot shall be reserved for landscaping.

ennoblement of the mind of man. One should not look around and see ugly scattered and dysfunctional architecture. There are no visions or ideals in the type of buildings seen in Nigerian neighbourhoods and cities. While buildings may provide for personal idiosyncrasies they should in most cases provide and reflect some ideals of the people or a vision where the people are working not just with structures but also in colours and heights. This ought to be an aspect of planning, land use and management. In this respect, the government must take one effective step to provide laws to guide condominiums and private estates for maintenance of standards as transfers and devices are made, for it is with second generation transfers that blight, confusion and disputes arise with such properties. An aspect of good governance is to foresee and project to avoid rancours amongst citizenry.

Forests and Countryside

The spate of robberies and nefarious activities on the broad stretch of the Nigerian express roads and countrysides can hardly surprise anyone. It has never ceased being a thing of utter surprise and disappointment that no attention is being given or effort made at bringing back positive values from overseas to the Nigerian shores. Some of the cities most Nigerians visit include Cape Town, Copenhagen, Los Angeles, Aberdeen Edinburgh, Beijing etc. Why would no one want a transfer of what they see in these, (one must add), cold cities to make God given beautiful Nigeria into a tourist attraction and a city where immigrants would want to run to as Nigerians have run to so many other countries. This is even more painful when it is realised that most Nigerians would prefer to live in Nigeria if a few things were just in place.

In the United Kingdom for instance, efforts have been made to keep the countryside beautiful. One enjoys train and bus journeys for 7 – 12 hours without a moment's boredom looking out at the beautifully drawn out landscaping all through the route on both sides. In Cape Town, a city which would ordinarily have been a hot city is a cool one because each road is lined up with trees

forming umbrellas on all roads.[14] This can be done with a plan for Nigeria as a whole, all that is required is vision and political will. There is no reason why the Nigerian expressways should be a haven for hiders rather than serene moments of travel, particularly when no one goes to extra costs to provide heating.

Infrastructural Amenities

No one can actually imagine that the provision of infrastructure can be left in the hands of government alone as the country stands today. It is not that if things were properly done, the country would not have been able to afford this through astute planning and delivery, but what profit has there ever been in point crying over spilt milk. There are currently wrong location of sewage tanks and water boreholes causing the underground hazardous percolation of water and sewage. Increasingly available reports are indicative of cholera fast replacing malaria as the most deadly disease in Nigeria.

There are expansive whole areas even in cities without gutters and drainages. Driving through Ikorodu town of Lagos for instance is a nightmare Absence of electricity is now no longer news about Nigeria but what remains baffling is why there is no regulation for specifications of importation of generators, fuel and usage in the country. No country with a sense of purpose will tolerate the unregulated importation, sale and use of power generating sets as is presently the case in Nigeria not only for its nuisance effects but also for its impact on the environment in terms of degradation and climate change.

With the use of simple legal tools such as easements, all the houses need not have these things individually, a rich man or capable person could be granted allocation as first occupier who constructs both the sewage and borehole and the subsequent occupiers take easements of the facilities. The same thing could

14. Credit is to be eternally given to the current governor of Lagos State in this direction.

apply to generators, use and discharge of smoke. As D. Johnston noted, of the role of servitudes "... most striking of all is that in many cases adequate protection will have depended on reaching agreement with the neighbour in advance, either as to terms of a servitude or by means of the promise on *damnum infectum*".[15]

The Place of Philosophy

A major problem with the overall property jurisprudence and practice in Nigeria is that adequate philosophical foundation is absent.[16] This malady regrettably, runs through the fabrics of the nation. Pricing of goods, services and products for instance, has never received a logical attention, hence it does not occur to the trader, the consumer and government alike, that control of pricing, is not necessarily an economic question but more importantly a philosophical one which is a core equation in overall societal advancement that impacts on the individual as well as the economy and ought to be regulated not for its sake, but the long term good

15. Johnston, D. 'Roman Law in Context' (Cambridge University Press) 53.
16. See generally, Fagbohun, O. 'The Law of Oil Pollution and Environmental Restoration: A Comparative Review' 2010 (Odade Publishers, Abuja Lagos Port Harcourt) Ch. 3.Writing for instance of Mathematics, Hegel wrote, "the evident certainty of this defective knowledge, of which mathematics is proud and of which it also boasts as against philosophy, rests solely on the poverty of its purpose and the defectiveness of its material and is therefore of a kind that philosophy must spurn – its purpose or Concept is magnitude. This movement of knowledge therefore proceeds on the surface, does not touch the matter itself, not essence or the concept and therefore not comprehension" .Taken from Cohen, G.A. *If You are an Egalitarian, How Come You're So Rich* 2000 (Harvard University Press, Cambridge, Massachuseets London, England) 58-59; Adigun, O. 'Legal Theories of Property – The Land Use Act in Perspective' in Adigun, O. (ed.)*The Land Use Act, Administration & Policy Implementation* (Faculty of Law University of Lagos, Publications, 1990), 10; Adigun, O. 'The Problem of Housing in Nigeria' in O.A. Obilade ed., *A Blue Print for Nigerian Law* (Faculty of Law, University of Lagos, 1995)153; Adeoye, F.O. 'The Environmental Quality of Tenanted Accommodation in Nigeria: Need for Reform' in Omotola, J.A. (ed.), *Environmental Laws, Including Compensation* (1990 - University of Lagos Press) 35.

of the society.[17] By this, what is meant is that remedying such issues necessitates an underlying philosophical background that the generality of the people can relate to.[18] In the province of environment and property relations, this malady requires the remedial efforts of philosophers, property lawyers, government and the citizenry, particularly as Nigeria aspires to one of the world's leading nations in 2020 on the basis of the Millennium Development Goals.[19]

As Jeffrey Sachs has written, "the notion that corruption remains the bane of underdevelopment therefore does not entirely hold true. There is no doubt that Africa needs solutions not only for disease control, but also for chronic hunger, rural isolation, and growing environmental degradations, often the result of still booming populations".[20]

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17. It is therefore no wonder that in an economy of spiralling inflation against a background of endless pursuit of importation, the people are in a circular state of chasing after basic necessities and no one pulses to think, rather in an effort to make ends meet, adulteration, imitation and sundry efforts at get some fast buck is the norm.
18. As Von Savigny thought, property as all laws must inhere in the general consciousness of the people and which is why it is called, *volksgeist*. *Vom Beruf unserer zeitfurGesetgeburg und Rechtswissenchaft* (1814); The articulation and finer qualities would depend on resolution given by historians, philosophers and lawyers. "Law grows with the growth and strengthens with the strength of the people" An organising tool of the soul of a nation. See also, Ogunbanjo, C. 'Law as an Instrument for National Economic Revival' in (eds.,) Bello, G.E. & Ajibola, B.A. Essays in Honour of Judge Taslim Olawale Elias Vol. II (Martinus Nühoff, Publishers Netherlands) 589; Zimmerman, R. 'Savigny's legacy: Legal History, Comparative law and the emergence of a European 'Legal Science' (1996) L.Q.R. 576,577; Rahmatian, A. R. (2007) 28 J. Leg. Hist.1.
19. Utuama, A.A. 'The Land Use Act And The Millennium Development Goal' Ist Memorial Lecture in Honour of Professor Jelili Adebisi Omotola (Jernie Publishers, 2008) 35; Ogunbanjo, C. 'Law as an Instrument for National Economic Revival' above n. 5 589; See also Obilade, A.O. 'The Transformation of Law: The Developing Country's Dilemma' (1984) Nigerian Current Law Review (Lagos University Press) 141; Obilade, A.O. 'The Golden Age Normative Legal Philosophy' in Omotola, J.A. and Adeogun, A.A. (ed.,) *Law and Development* (University of Lagos Press 1987) 100.
20. *The End to Poverty: How can we make it happen in our life time* (Penguin Books, 2005) 191; see also A.A Utuama *The Land Use Act and The*

An aspect of the fundamental problem of circular poverty in Nigeria and Africa as a whole is disregard for the dignity of the human life and in particular the effect or impact of lack of basic provisions for the enhancement of the psyche of the human being, namely, appropriate shelter, decent and aesthetic environment in house and outdoors etc. It is pertinent that a more proactive approach to housing and environmental aesthetics must become a cardinal programme of the governments at all level. Article 25 of the Universal Declaration on Human Rights, 1948 declares "every man has the right to a standard of living adequate for the health and well being of himself and his family, including food, clothing, and housing and medical care and necessary social services".[21]

The starting point of nation building is empowering the individual in his mind building potentials and capacity. This, in turn can best be done through his living conditions which are reflected in physical planning and enhanced environmental conditions.[22] When one visits the Western nations, it appears that the planned architectural environment sprang up over night. The history of these places show a tortuous deliberate effort over centuries borrowed from place to place. In these nations, one sees individualised sentiments on environmental protection, such as people planting trees and keeping buffers of greenery, picking up

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Millennium Goals – First Memorial Lecture in Honour of J.A. Omotola ibid 35; see also J. McLean, 'Property as Power and Resistance' in ed. J. McClean, *Property and the Constitution* (Hart Publishing, Oxford-Portland Oregon, 1999), 3; See also Jeremy Waldron, 'Homelessness and the Issue of Freedom' (1991-2) 39 UCLA L. Rev. 295.

21. See generally, Amokaye, O. 'The Role of the Judiciary in the Administration of Rent Control and Recovery of Residential Premises Edict No. 6. Of 1997' in Uzodike E.N.U. (ed.) *in Rent Control and Recovery of Residential Premises Edict No. 6. Of 1997 - Report of a Workshop* (Faculty of Law Publications, Ado Press Ltd. Lagos 1999) 84.
22. Adigun, O. 'The Problem of Housing in Nigeria' in O.A. Obilade ed., *A Blue Print for Nigerian Law* (Faculty of Law, University of Lagos, 1995)153; Utuama, A.A. 'An Evaluation of Tenurial Issues in the National Urban development Policy' in O.A. Obilade (ed.), *A Blue Print for Nigerian Law* (Faculty of Law, University of Lagos, 1995) 205.

garbage off the streets, re using polythene bags, ensuring proper disposal of chemically based materials such as batteries etc., essentially because they have an interest in the environment. People are sensitised on the use of polythene bags, disposal and similar substances. Consequently most shops would encourage the use of carrier bags for shopping as opposed to disposable polythene bags, or purchase of the polythene shopping bags which discourages indiscriminate use.

Nigerians should not allow other manufacturing countries to treat the people with contempt, thus one wonders why materials such as batteries and lap tops of manufactured for the advanced nations contain specific literature for safe disposal of batteries, cartridges etc but no one bothers with how these things are disposed of in Nigeria.

Vision 20:2020

There is a lot of apathy and disdain for the vision 20:2020 agenda, which is dismissed as empty government jingles, but one must understand that a plan is the starting point of any success story. While it is true that earlier developmental plans in Nigeria has never worked it does not follow that the current vision 20:2020 based on the United Nations Millennium Development Goals is or bound to be a failure. Nigeria is not an Island of woes of its own, surely many people in the corridors of power are becoming ashamed of the status of Nigeria in World economic Order and reckoning. There is nothing that cannot be done, the history of modern day Beijing is telling and if Lagos could see a beckon of light as has been witnessed in the last 8years, more can still be done.

It is in line with such aspirations that the United Nations set out the Millennium Development Goals (MDGS) to be achieved by the year 2000 and now extended to 2015. The resolution was adopted by 183 countries of which Nigeria is one. They include eradication of poverty and hunger, universal primary education, sustainable environment etc. Nigeria has adopted the MDGs vide

the National Economic Empowerment and Development Strategy (NEEDS) whose principal objectives are to create wealth, provide jobs, restructure the economy and position the nation for economic growth and poverty reduction with a view to meeting the ideals of the United Nations Millennium development goals.[23] The Vision 20:2020 an economic Blue Print of the National Economic Commission encapsulates the ideals of NEEDS. According to the blue print, Vision 20:2020 is aimed at transforming Nigeria into a path of sustained and rapid and socio economic growth to one of the World's first twenty economies by the year 2020 with a per capita income of not less than $4,000 per annum.[24] This is to be achieved from four major dimensions, social, economic, institutional and environmental frameworks. Relevant to this work are the following particular objectives of the Vision:

- optimising her human and natural resources potential to achieve rapid and sustained economic growth;
- translate economic growth into equitable socio development that guarantees a dignified and meaningful existence to all her citizens;
- A peaceful, equitable harmonious and just society where every citizen has a strong sense of national identity and belonging, is truly valued by the state, and is adequately empowered and motivated to contribute to the task of nation building;
- Improve the availability, affordability, and transferability of housing units in the country through developing a new land administration and land transfer system.
- A level of environmental consciousness that enable and supports sustainable management of the nation's God–given

23. See also Trinidad and Tobago Vision 2020 on the website Vision 2020 last accessed 25th June 2010.
24. NIGERIA Vision 20:2020 *Economic Transformation Blue Print* 2009 (National Planning Commission) 14.

natural endowments to ensure their preservation for the benefit of present and future generations.

- Develop an effective primary housing finance system, and facilitate linkage of that market to the capital market to provide long – term mortgage finance;
- Provide sustainable access to portable water and basic sanitation;
- Foster a culture of recreation and entertainment for enhanced productivity.[25]

Some countries such as Trinidad and Tobago have made a milestone towards realisation of the millennium development goals. A plan is better than no plan and it is for all Nigerians to place their hands on deck as is enjoined by section 34 of the Nigerian Constitution. Article 29 (2) of the African Charter on Human Peoples' Rights also enjoins the individual to serve his national community by placing his physical and intellectual abilities at its service.

Planning and the Environment

In *Attorney-General of Lagos State v. Attorney-Gen of the Federation*[26] the Supreme Court decided that the question of planning was an exclusive preserve of the States.[27] This decision however requires a reappraisal of the status of planning in the Constitution as planning requires concerted efforts of all arms of

25. *Ibid* at pages 4, 8, 11, 14 and 28.
26. [2003] Pt. 833 N.W.L.R. 1.
27. Professor Utuama, has proffered strong argument as to why this judgement is erroneous and unhelpful in the Country's millennium stride to a planned and environmental friendly environment. A. A. Utuama, in Niki Tobi (ed.) *Essays in Honour of Hon. Justice Karibi – Whyte* (CON) (Florence & Lambard (Nig.) Ltd, 2006) 123, 135; also in A.A. Utuama, 'The Land Use Act And The Millennium Development Goal' Ist Memorial Lecture in Honour of Professor Jelili Adebisi Omotola (Jernie Publishers, 2008) 35; In support of this position, see Megarry and Wade, *The Law of Real Property* Charles Harpum (ed.) (6th ed. 2000) 1338, para. 22-010.

government for efficacy. For instance, without suggesting that Nigeria expands its appetite of copycat, the key characteristics of the British approach to town and country planning are:

- Highly centralised: planning and the control of development are functions for local authorities, but they are within a tight framework of supervision by national government.
- Comprehensive in its controls: as a general rule, no development of any land may lawfully be carried out without planning permission.
- Broad in its coverage: it is a system not just of town planning, but of town and country planning; and its objectives today extend as much to urban regeneration and historic conservation, as to environmental protection, the containment of urban sprawl and sustainable development.[28]

In Nigeria, Section 18(1) of the Town Planners (Registration….ETC)[29] Act defines town planning as, the theory and practice of town planning by the ordering and control of the citing and erecting of buildings and other structures and the provision of open spaces and similar use of land, as the case may be, for the improvement of the human environment.

Thus, planning regulates the development and use of land in the public interest; it facilitates the growth and rational management of the physical environment and thereby enhances the life not only of man but all other creation.[30] Planning is an integral aspect of a successful environmental programme. Such planning must encompass giving character to cities and neighbourhoods, adequate provision of leisure and open spaces as well as parks, gardens, and such developments that enhance the mind of man

28. Meggary and Wade *The Law of Real Property* Charles Harpum (ed.) (6th ed. Sweet & Maxwell, London, 2000), 1338, para 22-010.
29. Cap 17 Laws of the Federation 1988.
30. *Ibid.*

through his environment making man and nature partners in the sustenance of the earth.

The individual arms of government must take a look again at planning in a broad manner with a view to creating a beautiful planned environment. Taking Lagos as a case study, government must engage the organised private sector to rebuild and construct decent modest living houses for the least endowed. Going on the Ikorodu expressway onto Ikorodu town to the right is a massive expanse of rough structure in zincs, how human beings live in such places day to day, without being threats to the rest of the people remains a deep mystery. The whole inlet into Ikorodu town is a blighted area which it is hoped the new Lagos State law on urban renewal would capture, there are no gutters and one can only imagine the horrific look and content of the filthy drains from individual houses that flow onto the streets and roads. There are other areas such as the *Jakande* estate in the Lekki-Epe express way axis, *Mokoko* and several areas in *Ajengunle* . There is the need to take a proper record of such places and take a concerted action to resolve these issues.

Part II

Role of the State and the individuals in ensuring a meaningful environment in Nigeria

The present attitude of many people in Nigeria is to leave everything to the government, essentially because of the historical intrigues which the vast riches of oil has brought on the people encompassing the civil war, military regimes all heralding corruption, nonchalance and irresponsibility in their wake. There must however come a time when this story and attitude should be jettisoned for a new one. A paradigm shift is necessary and this must be worked at starting from the government, the originator of all the woes. Lagos State has proved an invaluable example with the little but giant strides the State has made in the last few years. However, no government can achieve a sustainable development or environment without the participation of private initiatives.

Private initiatives must be encouraged. The history of America illustrates the role of private organisations in aiding governmental efforts, thus far only Zenith Bank in Nigeria has shown such commitment whereas there are several multinationals in the country making a whole lot of wealth out of the country. The State should not only tax these companies, a list should be made of them and they ought to be made to understand that a better Nigeria is part of their heritage and profit.

Thus, while at the moment planning is in the legislative list of the States, it behoves the State Governments to take a look again at the master plans of all locations within their domain in an articulated manner to restore decency and master plans. This may be difficult in the present resentful attitude of many Nigerians but if done purposefully with a humane spirit it would yield positive results. One way this could be done is to take an intelligent position and civilised approach by establishing a distinguished body comprising of distinguished professionals, lawyers in practice and the academia, architects, civil engineers, planners and environmentalists in conjunction with articulated input of the citizenry. Their term of reference should be broad based and encompass organisation and reorganisation of physical developments with a view to giving the neighbourhoods a spirit and character that ennobles the human spirit.[31] Some other things

31. Britain's Countryside and Rights of Way Act 2000 opened up over two million acres of private land to public access for roaming. The Act covers all property classified as, 'mountain, moor, heath, or 'download'. One of the incidences of designation of land under this Act is that, the character of the land cannot be altered without authority's approval. J. Anderson's article discusses the distinction in approach to, and consequently tension in, private and public property rights between America and Britain. While America limits public access to recreation and nature to public and governmental controlled areas, (emphasising thereby the exclusivity strand of private property bundle of rights) Britain extends recreation and interaction with nature by the public to privately owned properties. The paper highlights the case of the public inquiry concerning Access Land on Ashcombe House Estate owned by the singer, Madonna and her husband Guy Ritchie, and the public's access to the foot path that runs within 100 yards of the estate and eventually roaming rights over the land. The paper

of course require attention in the process such as the review of the Land Use Act 1978, but this would be a natural outcome of resolve. In addition, such a committee must have a web site where individuals can make useful suggestions and contribution.

On the part of the citizenry, the spiritual, scenic and beautiful part of neighbourhood must rest with the private people while sensitisation starts from the resolve of the States.[32] Another phase of sensitisation is through a change and emphasis in curriculum encompassing environmental aspects to studies in planning and philosophy from the primary schools to tertiary levels of education.

Part III
Enabling Tools

The tools to enhance the environment are clearly not exhaustive. Four of such tools will be discussed here, an appropriate Land Regulating framework, Taxation, easements and covenants.

Appropriate Regulating Framework

It has been noted above that a part of the problem with achieving a sensible and civilised planned environment is the Land Use Act, 1978. Some of the flaws with that Act are its tenured system which is a disincentive to optimal utilisation of land, inadequate

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essentially concludes that while the need to interact with nature is commendable, it must be balanced with the need to protect the environment, vegetation, forestation, wildlife etc. For Scotland, see the Right to Roam Land Reform Act 2003; See also See (CRWA 2000) ibid. n. 11 and also J. Anderson, 'Countryside Access and Environmental Protection: An American View of Britain's Right to Roam' *ibid*. n. 11, 241; See also *R (on the application of Beresford) v. Sunderland City Council* [2004] 1 All ER 160; *R v. Oxfordshire County Council and another, ex parte Sunningwell Parish Council* [1993] 3 All ER 385 where the House of Lords took time to review the ancient threads of the doctrine alongside statutory provisions. See further, above n. 8.

32. Thompson, M. P. 'Communal Gardens' [2002] Conveyancer and Property Lawyer 57; Wilkinson, H.W. 'Indulging in Lawful Sports' [1995] The Conveyancer 286.

appreciation of some physical planning tools such as easements and covenants, its lack of homogeneity with other conveyancing laws in the country creating gaps and an absence of purposefulness.[33] The overall effect of the Land Use Act as it stands is inefficient use of land, difficulty in transfers and absence of commitment to personal preferences for the scenic preservation of immediate properties and impact on environment. A review or repeal of the Act has been a persistent call. Even the newly published blue print on the vision 20:2020 agenda has made one of its cardinal points an appropriate regulatory framework for land transfer and management.[34]

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33. The land use Act 1978, is in some very vital respects at variance with the Conveyancing Act 1881, (a statute of general application mostly in the states comprising the former Eastern State of Nigeria) and the property and Conveyancing Law 1959 applicable in the States comprising the former Western Region of Nigeria). See for a comparative perspective, a different and more workable perspective of the tenurial approach of the Land use Act typified by the Torrens system the Torrens system is a land holding system devised by Sir Robert Torren in Tasmania and is based on registration. The Torrens system is meant " to convey such qualities as certainty, stability, and security to the transfer of land...the theoretical framework of Torrens title involves the surrender of land to the Crown upon the conveyance of the land, with the crown then re-issuing the title to the purchaser. Because of this surrender, the purchaser is not then obligated to examine retrospectively what has occurred in the past. See Tasmania Issue Paper 13, 2009; see also Smith, I. O. 'The Certificate of Occupancy: Nature and Value' in Smith I. O. (ed.), The Land Use Act – Twenty Five Years After (Department of Private and Property Law, Faculty of Law, University of Lagos 2003) 169, 197.
34. Omotola, J.A. 'The Supreme Court and the Land Use Act' (1988/89) 10 & 11 J.P.P.L. 1; Smith, I. O. 'The Certificate of Occupancy: Nature and Value' in Smith I. O. (ed.), *The Land Use Act – Twenty Five Years After* (Department of Private and Property Law, Faculty of Law, University of Lagos 2003) 169; see also on the expropriatory perspectives of the Act, Umezuruike, I. A. 'Does the Land Use Act Expropriate? (1986) JPPL 61; Fekumo, J. F. 'Does the Land Use Act Expropriate? – A Rejoinder' (1987 & 88) JPPL 1; Shogunle, B.A. 'The Enactment of the Land Use Act on the 29th March, 1978: Nationalisation or Expropriation?' in Smith I. O. (ed.), *The Land Use Act – Twenty Five Years After* ***ibid*** 49; Adekoya, C.O. 'Land Use Act and Constitutional Matters Arising' ***ibid*** 19; Bello, A.O. 'Constitutional Entrenchment of the Land Use Act – An Argument for Excision' ***ibid*** 1; see also Banire, M. A. Evolving Alternative Legal

Easements and Covenants:

The other legal tools are Easements and Covenants. The effect of these tools on physical development and the environment are unfortunately grossly underestimated in Nigeria. With respect to easement, its cursory treatment by the Land Use Act has contributed in many respects to its present status.[35] However their role cannot be ignored.

Easements provide a benefit from one land (known as the *servient* tenement) to another land (known as the dominant tenement).[36] The benefiting property is known as the dominant tenement and the property conferring the advantage, the *servient* tenement.[37]

The concept originates from Roman *Praedial servitudes.*[38] Thus under Roman Law and countries applying the Roman variant

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Framework for Effective Land Management in Nigeria (2005) 9T KP 105. B36 University of Lagos Ghandi Library (Ph.D. Thesis) 352 – 355.

35. Umezulike, A. 'Easements and The Problems of Some Startling Presumptions' 25 JPPL (2004) 1; Chinwuba, N.N. 'Easements and The Problems of Some Startling Presumptions - A Response' (2009) vol. 27 JPPL 35; see also Obaseki JSC in Savannah Bank Ltd. v. Ajilo [1989] 1 NWLR. (Pt. 97) 305,308; Chinwuba, N.N. 'Lagos Mega City: and Quality of Life' in (eds.) O. Fatula, T. Ibraheem *Law, Politics & Development – The Challenge of an Emerging Mega - City' Essays in Honour of B.R. Fashola* (NBA, Ikeja Branch Publications 2010) 399.
36. Their usefulness is illustrated by the fact that interference with the right in itself is the justification for an action. It is treated as interference with a right of property and damages presumed. See *Nicholls* v. *Ely Beet Sugar Factory* [1936] 1 Ch. 343, 349-50.
37. Megarry and Wade defines it as "either a right to do something or a right to prevent something. Meggary and Wade, *The Law of Real Property* ed. Charles Harpum (Sweet and Maxwell 6th ed. 2000), 1078; Roman Law and the Civilian systems perceived the terms in relation to the working of the properties, thus the dorminant tenement is so described because it is the one burdening the other property that is seen as the serving tenement. In English law, however the perception is different and the topic is viewed in a more theoretical perspective and more generally termed, easements to reflect the fact the more congenial nature of the development of the concept as easing the usage of property.
38. See Reid, Kenneth 'Property Law: Sources and Doctrine' *A History of Private law in* Scotland: Introduction and Property ed. Reid, Kenneth and Zimmermann,

it is known as *Servitudes* which is used sometimes interchangeably with easements under common law.[39]

Easements and covenants are significant tools in efficient land use and management, physical planning and enhanced environmental culture.[40] While easements are particularly, relevant to neighbourly and socio property relations within an underlining notion that no property can exist in isolation, covenants, provide useful ancillary function to institutional physical planning measures by providing for individual preferences.[41]

The use of these tools of property law invariably, translates into character and enhanced scenic beauty for cities and suburbs

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Reinhard (OUP 2000), 193 and also McLeod, Grant 'The Romanisation of Property Law' ibid 234 -5.

39. In *Ellenborough Park Re* Evershed M.R said, 'The passage which we have read from Sir William Holsdworth sufficiently serves to explain the appearance and the prominence of Roman dicta in the English law of easements, commonly called, indeed, by the Latin name of "servitudes"…. . [1956] Ch. 131 at 163; (1955) 3 W.L.R 892; (1955) 3 All. E. R. 667; As Sara also notes the use of the word in the English Coal Act 1938, now repealed where the term was defined as meaning any liberty, privilege, easements, right or advantage annexed to any land and adversely affecting other land. *Boundaries and Easements* (2008) 4th ed., (Sweet & Maxwell, London) 11.12; 1.33; For a similar view as to interchangeable uses of the names, see, Cusine and Paisley, *Servitudes and Rights of Way* (W. Green & Son Ltd 1998) 32 para 1.03; See also, Goymour, A. 'Easements, Servitudes and the Right to park' (2008) 67 C.L.J. 20.
40. Environment for this purpose is as defined by Black's Law Dictionary, " ...the totality of physical, economic, cultural, aesthetic, and social circumstances and factors which surround and affect the desirability and value of property which also affects the quality of people's lives" taken from Bowen, O.A. 'The Role of Private Citizens in the Environmental Laws' in Omotola, J.A. (ed.), *Environmental Laws, Including Compensation* (1990 - University of Lagos Press) 150. This definition captures the views of this writer on environment but for some reason, the 7th edition of Black's Law dictionary does not proffer a definition, possibly because environmental protection has now taken a new leap in world history and is largely governed by legislations each giving its own definition, see page **7** below for instance for New York State definition.
41. While easements and covenants create less problems with original parties to relevant transaction, they fecund serious disputes in developmental plans since the original parties may sell to third parties or pass on necessitating an astute legal framework for their role in development. See for instance, Epstein, A. R. 73 Cornell L. Rev. 906,908 [1987-1988].

which in turn, impacts on the human psyche, emancipating the individual and contributing in unquantifiable measures to development. They supplement and cannot, be displaced by institutional measures. A typical example of an easement is a right to channel drainage through another man's property.[42] A typical example of covenant is a restrictive one, not to use property in a particular manner, for instance, not to build up but leave as open or recreational space or not to build beyond a specific height. The archetype is the Leicester square conveyed in 1848 along with other property with a covenant that the square should remain an open space.[43]

The role of the tools can be accentuated through regulatory frameworks and university curricula encouraging their study not only in law, but also in associated disciplines such as planning,

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42. Easements could also be used to benefit a land in its mode of enjoyment, as for instance a business being carried on in the land; *Copeland* v. *Greenhalf* [1952] Ch. 488,497-8; *Att. –Gen. of Southern Nigeria* v. *John Holt Ltd.* [1915] A.C. 599,617; an inn or a butcher's shop may have an easement to fix a signboard to an adjacent house; *Moddy v. Steggles* (1879) 12 Ch. D. 262; *Re Webb's Lease* [1951] Ch. 808; see also Hayton, D.J. 'Restrictive Covenants as Property Interests' [1971] LQR 539, 545

43. *Tulk v. Moxhay* 41 ER 1143; (1848) 18 L.J. Ch. 83; (1848) 2 Ph. 774; restrictive covenants are sometimes referred to as equitable easements or equitable servitudes. See In *Miles* v. *Easter* (*In re Union of London and Smith's Bank Limited's Conveyance*) [1933] 1 Ch. 611, 621; Bennett J. said ...the annexation to one parcel of land of the benefit of a covenant restricting the user of another parcel creates a relationship between the two parcels analogous to that of dominant and *servient* tenement,...." Analysing this concept and its development Hayton noted "a restrictive covenant, meeting with the appropriate requirements, is an interest in property as it is enforceable against persons with whom there is neither privity of contract nor privity of estate....However, since it was the courts of equity that took the step of converting a restrictive covenant from a personal interest into a property interest a restrictive covenant is an equitable interest in land". Hayton, D.J. 'Restrictive Covenants as Property Interests' ibid at 540-541; As shall be seen below, the role of the courts in moulding this tool as a relevant socio property, planning and developmental tool is well illustrated by the House of Lord's decision in *Rhone* v. *Stevens* [1994] 2 W.L.R. 429; [1994] 2 A.C. 310, 317 where in a unanimous decision delivered by Lord Templeman, it turns out that this unique property interest is in the nature of a reservation, the assignment is said to have been done exclusive of the restrictive covenant.

environment, civil engineering and architecture. In addition lawyers must be proactive in including their role in conveyances.
For instance, covenants can be used to adequately cater for the fears of some residents in private estates or schemes of development of some persons eroding the scheme design such as raising structures, trading and other commercial ventures, etc.

Taxation

Individuals and corporate bodies could be encouraged to participate in building, preserving and developing ways to beautify and conserve the environment through tax incentives as is currently the case in many parts of America. Through conservation easements many organisations in participation with governments are achieving this feat.[44] There are however criticisms of this method such as the dead hand syndrome.[45] But incentives in taxation could go a long way in encouraging people to keep buffers of greenery, plant trees etc.

Recycling

Another helpful aid in environmental enhancements and aesthetics are waste management and charity. In many houses of the rich one sees waste carelessly strewn outside the premises. There is no doubt that there are many worthwhile items in the same houses which though no longer useful to the rich, may be useful to others. It is thus necessary that people are provided with adequate and

44. Cheever, F. 'Public Good and Private Magic in the Law of Land Trusts and Conservation Easements: A Happy Present and a Troubled Future' 73 Denv. U. L. Rev. 1077 [1995-1996]; Boyd, J., Caballero, K. & Simpson, D.R., 'The Law and Economics of Habitat Conservation: Lessons from an Analysis of Easement Acquisition' 19 Stan. Envtl. L.J. 209 [2000]; Holder, J. 'Case Law Analysis – Overriding Public Interest in Planning and Conservation Law' 16 Journal of Environmental Law 377 (2004); Korngold, G. 'Privately Held Conservation Servitudes: A Policy Analysis in the Context of in Gross Real Covenants and Easements' 63 Tex. L. Rev. 433 [1984-85]; Thompson, M.P. 'Communal Gardens' 2002 Conv. 571.
45. Mahoney D.J. 'Restrictions on Land and the Problem of the Future' (2002) 88 Virginia Law Rev. 739.

conducive opportunities to dispose of things in a meaningful way that makes the work of waste mangers less tedious.

The best way to do this is through investment in, and provision of disposal containers. Thus, five is usually the number in some countries; one for actual waste, two for bottles, colourless and coloured, one for plastic containers, another for cardboards and papers. There is usually a container for clothes no longer needed which is recycled for the less privileged. This of course entails that the government can engage in a recycling business or invites the private sector to do so.

People could also be sensitised to keep what they no longer need free from dirt in open places for those who have need for them to pick up in dignity on named dates, such as a workday.

Conclusion

Nation building is a collective effort. Science, technology and advancement in the humanities and Arts are only possible within a planned, orderly and aesthetic environment. To strive for advancement in these fields without a foundation in sustaining an enabling environment as detailed above will be an exercise in futility, after all it is a settled and ennobled mind that can bring about any paradigm shift in development and technological advancement.

It is imperative that a national ad-hoc committee for the rejuvenation, renewal and characterisation of cities, suburbs, and countryside ways is set up with a view to harmonising physical and environmental programmes and outlook in the country.

ADDRESSING ENVIRONMENTAL CONCERNS IN THE EXPLOITATION OF SOLID MINERALS IN NIGERIA: ISSUES, PROBLEMS AND PROSPECTS

By

Peter Terkaa Akper *

Introduction

The mining industry's potential for degrading the environment is recognised worldwide. But, despite this obvious disadvantage, man's quest for development and improvement of his living conditions has led to the continuous exploitation of the world's mineral resources with attendant negative consequences for the environment. [1] In the early 1960s when the level of environmental awareness was relatively low, very little was done to mitigate the adverse impacts of mining activity. But, with increased environmental awareness, a lot has been achieved in varying degrees across different jurisdictions to address the negative impacts associated with the exploitation of minerals. While developed countries have on account of superior technological know-how and availability of resources been able to fashion out ways of addressing the problem, developing countries have lagged behind with adverse consequences on their environment and the health of the people. This is worrisome because even where some measure of awareness exists, the absence of the requisite technical know-how in designing appropriate technologies, remedial programmes, environmental policies and laws have militated against efforts to address environmental concerns associated with the exploitation of minerals. Furthermore, in many developing

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1. It is well known that mineral resources are non-renewable assets and mining activities impact negatively on the environment. The challenge of generational equity posed by mining shall be addressed and the damage to the environment shall be limited to the barest minimum. See National Minerals and Metals Policy, Launched by the Ministry of Mines and Steel Development, January, 2008.

countries where artisanal mining is practised as a poverty reduction activity, the absence of the requisite wherewithal to address or prioritise environmental concerns has led to its complete neglect.

However, in the past two decades, environmental consciousness and awareness has increased dramatically across the globe as concerns for the environment have taken the pride of place in policies of government, international institutions and corporate governance structures. This has translated into appropriate policies and legislation aimed at ensuring orderly mining activities and remediation programmes with salutary effect on the environment.

The Federal Government of Nigeria and some State Governments have recently turned their attention to the exploitation of the solid minerals as a way diversifying the foreign exchange and revenue base or the country.[2] This means that there will be increased exploitation of the solid mineral endowments of the country in order to generate the needed income. There is therefore the need to ensure that environmental concerns associated with mineral exploitation are effectively addressed to prevent possible degradation of the environment.

This paper therefore seeks to examine the impacts of the mining industry on the environment, how the environmental concerns associated with mineral exploitation have been addressed in the extant Mining Policy and legislation and make appropriate recommendations for review and reform.

The Mining Industry and the Environment in Nigeria

Historically, the exploitation of natural resources in Nigeria has been carried out without due regard to the environment. Although, the legal regime provided for certain minimum standards to be

2. In 1995, the administration General Sani Abacha created for the first time in the nation's history, a dedicated Ministry known as the "Ministry of Solid Minerals Development" to superintend over the development of solid minerals in Nigeria. Although the entire mineral resources in the Federation are vested in the Federal Government, some States have created Ministries of Solid Minerals to promote the exploitation of the mineral endowments in their States.

observed by industry practitioners, evidence abound from obvious degradation of the environment that the rate of compliance was low leading to the devastating consequences on the environment. [3]

Environmental impacts from mining operations in Nigeria consist mainly of surface disturbance, from small operations engaged in the production of crushed stones and clays used in the manufacture of bricks. While larger surface disturbance has occurred for tin, coal and iron ore production. In addition, limited disturbance has resulted from the recovery of gold from streamed deposits. Underground mining has taken place for the extraction of gypsum by local miners.

Consequently, the likely environmental impacts that are expected from mining operations in Nigeria are as follows:

Land related Impacts

This will include surface disturbance for open pits, shafts, declines, head frames, mill building; tailing impoundments, waste rock and gob piles; Loss of land use for agriculture and timber production; the destruction of habitat for animal species; displacement or impacts on endangered animal species; and creation of refuse piles.

Water related Impacts

The most important of which are surface erosion of disturbed areas and waste piles; sedimentation of streams and lakes; creation of acid mine drainage; release of toxic contaminants to surface and groundwater; Depletion of water needed for agriculture and aquatic species; potential for failure of impoundments causing flooding, property damage and loss of life; and mortality to water flow landing in contaminated tailing impoundments.

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3. Many communities in Nigeria have continued to show signs of the adverse effect of impacts which began with the activities of early miners during the colonial era, but still remain un- mitigated. See Presidential Committee on the Accelerated & Sustainable Development of Nigeria's Solid Minerals Potentials. Final Report Vol. 1, presented to the President Federal Republic of Nigeria. April, 2003.

Air Related Impacts

These create dust emissions from mining, milling and hauling activities; release of volatile organic compounds and toxic air pollutants from milling processes, retorts and coking ovens; release of toxic heavy metals from smelting and refining operations; and increased emission of sulphur dioxide, oxides of nitrogen and carbon monoxide from electric power and steam generation.

Strategies to Address Environmental Concerns in Nigeria

Government's response to the problems of the mining industry in the last decade has generally followed global trends. The National Policy on Solid Minerals Development of 1971 was reviewed and a new policy on Solid Minerals development of 1999 was launched. The 1999 Policy had in line with global trends emphasised environment friendly mining operations and generally prioritised environmental concerns to a level that was not done before.

The Minerals and Mining Act of 1999 proceeded to encapsulate these environmental concerns in its provisions.[4] Apart from the strict provisions on the environment, it required operators to comply with all other legislation that seek to protect the environment such as the Environmental Impact Assessment Act[5] which provides for mandatory environmental impact assessment reports for mining projects before they are commenced.

However, the most revolutionary mining policy with regard to the protection of the environment from the harmful effects of mining operations is the National Minerals and Mining Policy of 2008.[6] The Policy clearly identified the root cause of the problem

4. See generally, the provisions relating to environmental protection, reclamation and restoration of Act no 34 of 1999.
5. No 86 of 1992.
6. Launched by the Ministry of Mines and Steel Development in January, 2008.

by acknowledging that the neglect of the minerals industry led to disorder of illegal miners whose activities are characterised by inefficient mining, illegal trading of highly priced minerals, severe ecological degradation and high loss of revenue to the government through smuggling among others.[7] It proceeded to prioritise environmental concerns by acknowledging that:

> Mineral resources are non-renewable assets and mining activities impact negatively on the environment. The challenge of generational equity posed by mining shall be addressed and the damage to the environment shall be limited to the barest minimum. The knowledge and technology input for sound environmental management needs to be encouraged.[8]

To ensure that the concerns clearly articulated and prioritised in the mining policy are implemented, the relevant technical departments were created. The technical department relevant to our discourse is the Mines Environmental Compliance (MEC) charged with the responsibility of enforcing global environmental best practices in mining. The department was created with the realisation that the solid minerals industry must strive to maintain an acceptable environment standard within the sector. The MEC is thus charged with the responsibility to ensure that the mining industry operates in concert with the environment by adopting, operating and maintaining procedures that are environmentally friendly.[9] Table 1 below sets out the broad mandate of the MEC.[10]

Table 1, Mandate of the Mines Environmental Compliance Department (MEC)

7. See National Minerals and Metals Policy, 2008.
8. *Ibid*. p 8.
9. *Ibid*. p 13.
10. *Ibid.*

- establish environmental procedures and requirements applicable to mining operations;
- review plans, studies and reports required to be prepared by holders of mineral titles in respect of their environmental obligations under the Minerals and Mining Act;
- monitor and enforce compliance by holders of mineral titles with all environmental requirements and obligations as required by law;
- periodically audit the environmental requirements and obligations established by law, its regulations and by any other law in force;
- collaborate with relevant agencies of Government with respect to social and environmental issues involved in mining operations, mine closure and reclamation of land;
- stipulate procedures for the reclamation and restoration of mines land; and
- maintain regular environmental audits to ensure the adoption of environmentally sound practices in all mining operations.

The Mining Policy also contains government's specific objectives with respect to the protection of the environment. Table 2 below clearly sets out the objectives to:

Table 2. Governments Specific Objectives in relation to the Environment.

- enforce compliance with environmental standards in the Minerals and Mining Act and its Regulations;
- develop realistic, transparent and stable environmental monitoring schemes of mine sites;
- establish State Mineral Resources and Environmental

Management Committees (SMREMC);

- develop the content of environmental protection and rehabilitation programme;
- establish an Environmental Protection and Rehabilitation Fund to guarantee environmental obligation of operations;
- ensure compliance with social standards in the development of mining activities;
- ensure the adoption of environmentally sound mining technologies and practices in all phases of mining activities, especially appropriate technologies to mitigate environmental impacts, including those from the small-scale mining activities;
- stipulate and monitor compliance with approved procedures for the reclamation and restoration of mined out sites and monitor the recovery from such areas;
- strengthen the SMREMC through the provision of adequate tools to facilitate its functions;
- monitor compliance with Community Development Agreements by industry operators; and
- work with States and Local Governments to facilitate the production of statutory reports.

It is obvious from the above mandate of MEC and the specific objectives of government in the mining sector that attempt have been made for make generous provisions for the protection of the environment. Given our past historic these provisions are revolutionary in the overall objective of protecting the environment from the harmful effects associated with mineral exploitation and development. As is the case with other sectors of the economy, Nigeria's problem has never been the inadequacy of legislation, but its faithful implementation.

The foregoing notwithstanding, the fact that these environmental concerns have been clearly articulated in the extant Policy is an indication that government is committed to addressing

past failures in order to safeguard the environment. What remains is the political will and commitment required to implement the policy for the benefit of the populace.

The Minerals and Mining Act of 2007(hereinafter called 'the 2007 Act')[11]is Nigeria's extant legislation that regulates the mining industry. The 2007 has expectedly legislated many of the environmental objectives of government into law. The aim is to give legal backing to the environmental objectives encapsulated in the Mining Policy and compel the observance and enforcement of the various environmental obligations imposed on holders of mining titles.

The 2007 Act accordingly provides that every holder of a mining title under the Act shall as far as reasonably practicable:

(a) minimise, manage and mitigate any environmental impacts resulting from activities carried out under this Act; and

(a) rehabilitate and reclaim, where applicable, the land disturbed, excavated, explored, mined, covered with tailings arising from mining operations to its natural or predetermined state or to such state as may be specified in this Act, its regulations and other pertinent laws in force, and in accordance with established best practices.[12]

The Act also seeks to prevent the pollution of the environment by providing that a holder of Mining title shall, in the exercise of his rights under the Mineral title, have regard to the effect of the mining operations on the environment and take such steps as may be necessary to prevent pollution of the environment resulting mining operation.[13] The restoration and reclamation of mine land is another important environmental concern that has been addressed by the provisions of the 2007 Act. In this regard, the

11. See Act No. 20 of 2007, which repealed that Minerals and Mining Act, Cap M12. LFN 2004.
12. See section 118 of the 2007 Act.
13. See section 111 of the 2007 Act.

Minister in charge of Mines and Steel Development is empowered by way of an order require the grantee of a mining lease to restore any area in respect of which mining operation has been, is being, or is to be carried out, on or after the date on which the Act came into operation.[14]

On reclamation, the Act provides that where land which is subject to mining lease has been exploited, the reclaimed mined out area shall be restored by the applicant under the condition of its grant otherwise, the relevant provision of section 10 of the Act relating to the fees payable in the Mining Cadastre Office, shall apply.[15]

It is instructive to note that apart from the broad obligations outlined above, the Act sets out specific obligations on the holders of various mining titles with to the protection of the environment. Thus, at the Mineral Exploration Stage, one of the essential conditions for the grant of a Reconnaissance Permit is the undertaking to *"conduct reconnaissance activities in an environmentally and socially responsible manner"* as may be prescribed by relevant departments in the Ministry of Mines and Steel Development. [16] Holders Exploration Licence are similarly enjoined to *"conduct exploration activities in an environmentally and socially responsible manner"*.[17]

At the Mining Stage, every holder of a mining lease is required to comply with all requirements for Environmental Impact Assessment Studies and protection plans required under the Act.[18] In addition, such holders must as a pre-condition to commencement of development submit approval by the Mines Environmental Compliance Department of all Environmental

14. See section 114 of the 2007 Act.
15. Section 115 of the 2007 Act.
16. See section 56 (1) (d) of the 2007 Act.
17. See section 61 (1) (b) of the 2007 Act.
18. See section 70 (1) (g) of the 2007 Act.

Impact Assessment Studies and mitigation plans required under applicable environmental laws and regulations. [19]

Small-Scale Miners who have been responsible for disorderly mining activities leading to the degradation of the environment have also been effectively regulated by the 2007 Act. It provides that holders of small scale mining lease shall carryout effective rehabilitation of the mined out areas to the satisfaction of the Mines Environmental Compliance Department and also pay prescribed rehabilitation fee, proportionate to their profits as a way to defray further cost of rehabilitation and reclamation.[20] The Act further provides that extension services should be provided to Small scale and artisanal miners by way of provision of environmental impact assessment report and detailed guidelines on waste and tailings disposal.[21]

A cursory view of all the environmental protection provisions in the 2007 Act would reveal the determination of the government to provide the requisite regulatory regime to ensure protection of the environment from the deleterious effect of mining activity. The provisions also show the adoption of international best practices in the operation of mining operations far beyond what was contemplated under the Minerals Ordinance of 1946.[22]It can therefore contend that a lot has been achieved by way of environmental awareness which has in turn translated into appropriate legislative provisions.

As already alluded to above, while discussing the environmental provisions encapsulated in the National Minerals and Metals Policy, these legal provisions appear adequate to

19. Section 71 (1) (a) of the 2007 Act.
20. See section 90 (2) of the 2007 Act.
21. See section 91 (h) of the 2007 Act.
22. This was essentially the first colonial legislation that regulated mining operations in pre-independence Nigeria. It was later replaced by the Minerals Act Cap 226 LFN 1990 which regulated the sector until the enactment of the Minerals and Mining Act, Cap M12 LFN 2004 which was repealed by the Nigerian Minerals and mining Act No. 20 of 2007.

protect the environment from the harmful impacts of mining operations only if the laws are faithfully implemented and enforced. Given the fact that most of our institutions are weak, effective enforcement of our laws has ot been one of our strengths as a nation. Consequently, there is the risk that despite the existence of these statutory provisions, disorderly mining activity is still taking place adverse consequences for the environment.

Beyond the issue of enforcement is the uncertainty of some of the provisions which contain nebulous terms such "as far as reasonably practicable " in settling standards that holders of mining titles are expected to comply with in their operations.[23] It believed that if the goal is to set standards for industry practitioners, greater attention should be given to the need to ensure clarity in legislation that will aid law enforcement officers in the enforcement of the Act.

The way some of these provisions are couched does not meet this objective. As a holder of a mining title may for instance argue that he has done what is reasonably practicable to comply with the provisions of the Act and that effort may still fall below acceptable standards. It is thus better to set strict and stiff conditions to be complied with and provide incentives for voluntary compliance especially as environmental costs of mining are now being viewed as an additional tax.

Protecting the Environment from Harmful Impacts of Mining Activity: A Shared Responsibility

The foregoing part of the paper has briefly attempted to highlight some environmental impacts of mining, relevant provisions in the National Minerals and Metals Policy, 2008 and the Nigerian Minerals and Mining Act, 2007 which seek to protect the environment from the impacts of mining operations. It obvious from the provisions examined that the responsibility for the

23. See for instance, section 118 of the 2007 Act which sets out the environmental obligations of mineral title holders under the Act.

environment cannot be placed at the shoulders of the mineral title holder alone.

To achieve success in this endeavour, the protection of the environment must be a shared responsibility between Government, Mining Operators, Professional Bodies, Civil Society and the Citizenry.

Government

It is the responsibility of government to provide a conducive mining atmosphere by providing and enforcing the laws that will ensure orderliness in mining operations. While the colonial administration provided orderliness in the sector, equal attention was not given to the environment, probably because of the relatively low level of environmental awareness at the time. Although, Minefield Reclamation Agencies were created by the administration their impact was less than satisfactory to the extent that the restoration provisions contained in the 1946 Minerals Act was not enforced. At independence, this position did not materially change hence the degradation evidenced throughout the country.

The emphasis of government should now be to ensure that field practices conform to international best practices in the mining industry. This could be achieved through effective monitoring and enforcement of the environmental regulations. This calls for the strengthening of the Mines Inspectorate Department (MID) which has overall responsibility for the supervision of industry operations including detailed Exploration, Evaluation, Mine development and production and the Mines Environmental Compliance Department to ensure that they effectively discharge their statutory mandate. Over the years these departments have been plagued by a myriad of problems ranging from inadequate funding, poor logistical support, training to inadequate manpower with attendant negative consequences on staff morale and efficiency.

The Mines Field Police who are charged with the responsibility of patrolling mine sites, and apprehending those involved in illegal mining activities or whose operations contravene the Mining Act and applicable regulations has been largely comatose. To rid the sector of disorderly mining operations and protect the environment, there is the need to re-invigorate the Mines Field Police to work in concert with the Mines Inspectorate Department to supervise the minefields and ensure that mining is being carried out in accordance with the dictates of the law. Although, voluntary compliance measures such as tax rebates on environmental protection measures adopted by industry operators is been advocated, provision must be made for those who fail, refuse or neglect to voluntarily comply with the requirements of the law.

Furthermore, education plays a very pivotal role in the quest to protect the environment. It is only the educated or informed individual that can appreciate the negative impacts of mining and therefore advocate for its preservation and protection. Government must continue to promote environmental awareness/education among the citizenry.

Mining Operators

Mining operators also have a great role in ensuring sustainable operations. The colonial miners had profit as their priority. This greatly influenced their operations as they were more concerned with maximising profit even at the expense of the environment. Today, there is a dichotomy between the artisanal/small scale operators and major players in relation to their responsibilities to the environment. While the major player is able because of the financial capability to make provisions for restoration and reclamation of mined out sites, artisanal miners are unable to do so.

Thus, a remarkable divergence exists in the compliance level of the various operators with the environmental protection requirements contained in the law. The resolve to protect the

environment from harmful effects of mining must be shared by all categories of operators (large or Small). This is more so as the environmental impacts of mining can be quite phenomenal whether carried out by large or small operators.

Professional Bodies

The mining industry is technologically driven hence the large pool of professionals such as Mining Engineers, Geologists, etc, that abound the industry. It is therefore incumbent on professional bodies such as the Nigerian Mining and Geosciences Society, the Nigerian Society of Mining Engineers, Energy and Natural Resource Lawyers, Energy Correspondents etc, to be familiar with environmental issues associated with mining and bring to the attention of their member; Guidelines, Legislation, Policies, Regulations issued by the Ministry of Solid Minerals or any other agency of government for purposes of protecting the environment and to ensure that their members not only comply with such regulations but serve as vanguards for change and enforcement of these standards.

Non Governmental Associations (NGOs)/Community Based Associations(CBOs)

The task of policing the environment should not be left to government alone. Often times, the Government itself is accused of complexity in the various impacts created by disorderly mining activities. The oil industry where the government is a major player is a good example. Consequently, NGOs and CBOs must be seen to be active in protecting the environment especially within mining communities where mining activities are carried out to ensure that best field practices are employed in the process and the appropriate reclamations and restoration measures provided under the law are complied with by miners.

The higher standards of environmental protection, high level of compliance and enforcement witnessed in developed countries is largely attributable to the work and advocacy of NGOs and

Special Interest Groups in those countries. In this respect, environmental protection should rank high on hierarchy of Corporate Social Responsibility which should be emphasised upon. Consequently, Communities where mining operations take place should not only demand for schools, employment and social amenities to be provided for them by mining companies, but must always make the demand for a cleaner environment a top priority on their list of demands.

Conclusion

This paper has examined the effect of mining operations on the environment. It has observed that mining and mineral processing have considerable negative impact on the environment in Nigeria. The paper also stressed the importance of remedial measures towards ensuring that the impacts of mining are drastically reduced if not eliminated. The position taken in the paper is that the degree of success achieved in any jurisdiction is dependent on the level of environmental awareness and the forward looking agenda put in place to combat environmental degradation.

We have noted that the Mining Policy and Mining Code are generally adequate for the purposes of protecting the environment. It must however be emphasised that appropriate policy and statutory provisions are by themselves, only sterile instruments which are incapable of transforming or bringing about the realisation of the goals of that they are designed to achieve. We must therefore place premium on faithful implementation of the environmental protection ideas embedded in the Mining Policy as well as the Mining Code by all relevant stakeholders.

Finally, the point must be made that combating environmental degradation is a venture that is technology driven. This means that we must periodically re- appraise or review our Action Plans and Strategies in the light of technological developments so as to determine their effectiveness or otherwise in combating the impacts of mining operations on the environment. In this regard, government must be ready to assist in the acquisition of new

technologies by granting appropriate incentives where necessary to cushion the financial cost of such acquisition.

COMBATING ENVIRONMENTAL CRIMES IN NIGERIA: A DAUNTING UNCERTAINTY

By

Dr. Violet Aigbokhaevbo •

Expanding population, the quest for economic growth and higher standard of living has increased the propensity for environmental damage by man. The environment which has been defined as:

> Combination of elements whose complex interrelationship make up the settings, the surrounding and the conditions of life of the individual and the society as they are felt[1]

Is under constant threat of extinction. Many environmental problems are rooted in increased demand for natural resources, increased pollution and waste associated with current pattern of economic development[2] as well as the transboundary effect of such activities. This is inspite of the international environmental law principle established in the *Trail Smelter* case[3] that:

> … no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein when the case is of serious consequence and the injury is established by clear and convincing evidence.

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1. EC council regulation 1872/84.
2. Justine Thorton and Silas Beckwith , Environmental Law 2nd Edn. (London: Sweet and Maxwell Ltd, 2004) p.1.
3. (1941) 3 R.I.A.A. 1905.

In Nigeria, for over 50 years, oil exploration has dehumanized the people of the Niger Delta[4] while decimating their environment.[5] This coupled with the constant threat of environmental waste dumping has rendered Nigeria an environmental hell hole.

Globalisation and its attendant doctrine of free trade and deregulation has encouraged the growth of transnational corporations and rendered transboundary enforcement of regulatory laws more problematic.[6] This has made it easy to export hazardous waste to vulnerable communities mostly located in developing countries. Between 20 to 30 billion dollars is estimated to be generated annually from hazardous waste dumping, smuggling hazardous waste, exploiting and trafficking in protected natural resources[7]. Illegal trade in "environmentally sensitive" commodities such as ozone depleting substances (ODS) toxic chemicals, endangered species and living modifies organism is a thriving global trade.[8]

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4. Ayodeji Adeyemi, "Black Gold as a Curse" *Tell Magazine*, August 2010, p.16 described Ibeno a fishing Community in Akwa Ibom State with over 5, 000 fishermen rendered destitute due to regular oil spills. Exxon Mobil rig has since 2010 experienced 10 oil spills in the course of exploration.
5. Amnesty International 2009 "Nigeria: Petroleum Pollution and annual oil spills in Nigeria as being at par with the Exxon Valdez oil spill. Between 9 – 13 million oil spillage has occurred in the decade of oil exploration in Nigeria.
6. Duncan Brack "International Environmental Crime: The Nature and Control of Environmental Black Markets" paper presented at the Royal Institute of International Affairs Workshop 27 – 28 May 2002.
7. Bennett Oghifo "West Afrrican Custom Alert on Environmental Crime" This Day September 15, 2009.
8. There have been growing concern over the consumption of genetically modified foods. The Cartagena Protocol on Biosafety to the convention on Biological Diversity was adopted by Nigeria in May 2000. the Protocol aims at providing an international agreement on procedures for international trade in living modified organisms that influence biological diversity. The Nigeria Biosafety Billl expressly provides for the regulation of GMOs imported for direct use as food, feed and industrial processing. The National Biosafety Management Agency is required to pass secondary legislations to enforce these provisions. In view of the lapses in Nigeria's regulation enforcement regime, it remains to be seen when the

This has necessitated the criminalizing of environmental challenging activities which have become high profile and controversial especially when it damages the environment or results in loss of lives[9]. It is a preemptive harm reduction mechanism which aspires to utilize the threat of punishment as a deterrent to corporations desirous of engaging in environmentally hazardous activities.

Inspite of the plaetoral of environmental crime regulatory laws in Nigeria, administrative and enforcement agencies, it remains a prevalent phenomenon. This is largely traceable to the fact that decades of unbridled corruption has reduced Nigeria to a beggar nation where most of its citizens live on less than two dollars a day. Inspite of the fact that it is an oil producing country, Nigeria suffers from chronic electricity outage. This has crippled many small and medium scale industries. Lack of public services and poor infrastructural development has rendered poverty an endemic challenge. For desperate Nigerians, environmental crime therefore constitutes one of the fastest developing source of income.

This paper seeks to examine environmental crime regulatory regime in Nigeria and its ability to provide a panacea for environmental ills which have pauperized the nation in the light of the failure of the civil enforcement regime to deter environmental infractions which are prevalent in the country.

What is Environmental Crime?

Environmental Crimes is a relatively new concept that is being explored to obtain an apt definition. Its precise boundaries are problematic and controversial as it covers a broad range of activities which are not inherently criminal. Most environmental legislations provide for criminal sanctions for willful and negligent

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Bill is passed in to law, the level of implementation of the Biosafety protocol relating to illegal and unintentional transboundary movement of GMOs. See Mariam Mayet "Comments on Nigeria's Draft Biosafety Bill", African Centre for Biosafety July 2009.

9. Clarkson E.M. V, Keating H.M Cunningham S.R, Clarkson and Keaton Criminal Law (London: Thomas Reuters (Legal) Limited 2010) 237.

violations of enactments to protect the environment or regulate the generation and disposal of waste. From these regulations, environmental crime can be distilled to be the willful or negligent violation of any law or rule enacted to protect the environment.

Environmental Crime could be further defined as an act committed with intent to harm or with a potential to cause harm to ecological and / or biological systems and for the purpose of securing business or personal advantage.[10]

The International Criminal Police Organization (Interpol)[11] considers environmental crime as not limited to criminals who pollute the air water, land and fishing commercially valuable wildlife closer to extinction it also includes crimes which speed up climate change, destroy fish stocks, annihilate forests and exhaust essential natural resources.

The criminalization of environmental infraction is to identify offenders, prosecute, convict and ultimately send them to jail as a deterrent. There has however been calls that a distinction should be drawn between environmental harm which results from general activities and willful environmental crimes committed for personal gains or competitive edge. Criminal sanctions should be reserved for the worst type of offence[12]. This is moreso as some activities which are significantly beneficial could be inherently harmful to the environment.

The criminalization of environmental offences has been criticized on the basis that it ought not to be applied to corporate environmental infractors. Individualistic notion of responsibility should not be extended to artificial persons. Moreso as criminal liability is essentially about conviction and imprisonment. It

10. Clifford M, Environmental Crime: Enforcement Policy and Social responsibility (Gaithersburg: Aspen, 1998) p 26.
11. www.interpol.int/Public/Environmentalcrime/Defalt.asp (accessed on November 2, 2010).
12. Woods M, and Macrory, Environmental Civil Penalties – A more proportionate response to regulatory breach (London: UCL, 2003).

constitutes a misnomer for an artificial person that cannot be imprisoned to be the subject of criminal responsibility[13].

Since corporations are notorious for environmental deleterious activities. It ought to be criminally accountable for its environmental wrongs because although it is an abstraction which has no mind of its own any more than it has a body of its own, its active and directing mind is usually sought in the person who is the actual directing mind and will of the corporation, the very ego and centre of the personality of the corporation[14]. The corporations must therefore be held accountable for the omission of such persons.

In *Okatta v. the Registered Trustees*, O.S.C[15] the court held that an artificial person vested with legal or juristic personality lacks the natural or physical capacity to function as a human being. Consequently, those who work in it do al things for and on behalf of it. Where an act is done by a person or persons in authority, an incorporated association is liable or deemed to be liable for the act or acts of the person or persons.

Inspite of this barrage of criticism, in recognition of the overriding exigency to protect mankind from the adverse environmental consequences of his activities, many nations at the national and international level have enacted environmental regulatory laws aimed at ensuring sustainable environmental development. In Nigeria, the 1988 incident of dumping toxic waste in Koko by an Italian firm awakened the necessity to formulate a national environmental policy. National policy goals and strategies for implementation relating to human factors, land use and soil conservation, water resource management, forestry, wild life and reserve, marine and coastal resources, sanitation and waste management, toxic and hazardous substances, mining, agrochemicals, air and noise pollution, occupational health safety

13. Clarkson E.M. V, Keating H.M Cunningham S.R, *supra*. note 9 at page 2.
14. See Aniagolu JSC. In *Trenco (Nig) v African Real Estate Ltd (1978)* 11 NSCC 220.
15. (2008) 13 NWLR (PT 1105) p.632.

and preservation of greenbelts became easily recognized concepts in an effort to provide a regime of management regulations and laws to balance the problems they posed[16]. This culminated in the establishment of the Federal Environmental Protection Agencies (FEPA) Act to administer and enforce regulatory policies. However due to ineptitude and other complications, the Agency had to be scrapped and replaced by the National Environmental Standards and Regulations Enforcement Agency (establishment) Act.[17].

The necessity for environmental protection is enshrined in the constitution of the Federal Republic of Nigeria 1999 which provides that:

> The state shall protect and improve the environment and safeguard the water, air and land forest and wild life of Nigeria.[18]

Other Environmental crime regularatory mechanism include:

(a) **National Environmental Standards and Regulations Enforcement Agency (Establishment) Act**: The Agency was conferred with the responsibility of biodiversity conservation and sustainable development of Nigeria's natural resources in general and environmental technology including coordination and liaison with relevant stakeholders within and outside Nigeria on matters of enforcement of environmental standards, regulations, rules , laws, policies and guidelines.

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16. *Atsegbua L Akpotaire V and Dimowo F. Environmental Law in Nigeria, Theory and Practice (Benin City: Ambik Press,* 2010) p. 8.
17. It commenced on 30th July 2007 and repealed the Federal Environmental Protection Agency Act which became ineffective in tackling the pressing environmental challenges in Nigeria. It is hereinafter referred to as "the Agency".
18. Section 20 chapter 2 of "Fundamental Objectives and Directive Principles of State Policy" ,1999 constitution.

The Agency may make regulations setting specifications and standards to protect resources so as to promote the public health or welfare and the natural developments and productive capacity of the nations human, animal, marine or plant life[19].

A person who violates any specifications and standards made by the Agency commits an offence and shall on conviction be liable to a fine not exceeding N200,000 or to imprisonment for a term not exceeding one year or to both such fine and imprisonment for a term not exceeding one years or to both such fine and imprisonment and an additional fine of N20, 000 for every day the offence subsists[20].

Where the violation is by a body corporate, it shall on conviction be liable to a fine not exceeding N2,000,000 and an additional fine of N50,000 for everyday the offence subsists[21].

The Agency is empowered in consultation with appropriate authorities to:

(a) Identify major noise sources, noise criteria and noise control technology and
(b) Make regulation on noise, emission control, abatement as may be necessary to preserve and maintain public health and welfare[22].

Violators shall on conviction be liable on conviction to a fine not exceeding N50, 000 or to imprisonment for a term not exceeding one year or to both such fine and imprisonment and an additional fine of N5,000 for every day the offence subsists.[23]

19. Section 20 of NESREA Act.
20. *Ibid*, s. 20 (3).
21. *Ibid*, s. 20 (4).
22. *Ibid*, s. 22 (1).
23. *Ibid*, s. 22 (3).

Where the violator is a body corporate, it shall on conviction be liable to a fine not exceeding N500, 000 and an additional fine of N10,000 for everyday the offence subsists[24]

The protection of public health or welfare and enhancing water quality in collaboration with other relevant agencies.[25] Any violation of standards and regulation related to public health and water quality will render a person liable on conviction be liable to a fine not exceeding N50, 000 or imprisonment for a term of imprisonment not exceeding one year or both[26] such fine and imprisonment and an additional N5,000 fine for everyday the offence subsists. Corporate violators are however, expected to in addition pay the fine of N10,000 for everyday the violation subsists.[27]

The agency shall on the commencement of this Act review effluent limitation for existing point source under circumstances to be determined by the agency[28]. A person who violates such effluent regulation shall be liable on conviction to a fine not exceeding N200,000 or to imprisonment for a term not exceeding 2 years or to both such fine and imprisonment and an additional fine of N5,000 for everyday the offence subsists.[29]

Where the offence is committed by a body corporate it shall pay a fine not exceeding N1,000,000 and an additional fine of N50,000 for everyday the offence subsists.[30]

The Agency may also make regulations for the purpose of protecting public health and promotion of sound environmental sanitation.[31]

The Agency may also make regulations, guidelines and standards for the protection and enhancement of the quality of land

24. *Ibid*, s. 22 (4).
25. *Ibid*, s. 23 (1).
26. *Ibid*, s. 23 (3).
27. *Ibid*, s. 23 (4).
28. *Ibid*, s. 24 (1).
29. *Ibid*, s. 24 (4).
30. *Ibid*, s. 24 (5).
31. *Ibid*, s. 25 (1).

resources, natural watershed, coastal zone, dams and reservoir including prevention of flood and erosion.[32] A person who violate such regulations, and standards commits an offence and shall on conviction be liable to a fine not exceeding N200,000 or to imprisonment for a term not exceeding one year or to both such fine and imprisonment for a term not exceeding one year or to both such fine and imprisonment and an additional fine of N10,000 for everyday the offence subsists.[33]

Where the offence is committed by a body corporate it shall on conviction be liable to a fine not exceeding N1,000,000 and in additional fine of N50, 000 for every day the offence subsists.[34]

The Agency prohibits the discharge in such harmful quantities of any hazardous substance into the air or upon land and waters of Nigeria or at the adjoining shoreline except where such discharge is permitted or authorized under any law in forces in Nigeria.[35]

Individual violators are liable on conviction to a fine not exceeding N1,000,000 or imprisonment for a term not exceeding 5 years[36]. Where the offender is a body corporate, it shall on conviction be liable to a fine not exceeding N1,000,000 and an additional fine of N50, 000 for everyday the offence subsists[37]. Every person who at the time the offence was committed was in charge of the body corporate shall be deemed to be guilty of such offence and shall be liable to be proceeded against and punished except where the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.[38]

Any person who obstructs an officer of the Agency in the performance of his duties is liable on conviction to a fine of not less than N200,000 or imprisonment for a term not exceeding one

32. *Ibid*, s. 26 (1).
33. *Ibid*, s. 26 (3).
34. *Ibid*, s. 26 (4).
35. *Ibid*, s. 27 (1).
36. *Ibid*, s. 27 (2).
37. *Ibid*, s. 27 (3).
38. *Ibid*, s. 27 (4).

year or both such fine and imprisonment and an additional fine of N20,000 for each day the offence subsists. While a convicted body corporate shall be liable for a fine of N2,000,000 on conviction and an additional fine of N200,000 for everyday the offence subsists[39]

The minister of Environment is empowered by the NESREA Act to make regulations for the purpose of ensuring the efficacy of the Act[40]. Consequently, the following regulations were made:

(a) **National environmental sanitation and waste control regulations, 2009[41]**: The purpose of these regulations is to ensure the adoption of sustainable and environmentally friendly practices in environmental sanitation and waste management to minimize pollution.[42]

The regulation criminalizes the release of effluent and sludge into the environment in excess of permissible levels[43] well as engaging in any activity likely to generate hazardous waste[44] without the requisite permit issued by the Agency[45] or expert, transit hazardous waste without valid permit issued by the Agency[46] similarly any person who transits toxic or hazardous waste[47] destined for

39. *Ibid*, s. 31.
40. *Ibid*, s. 34.
41 Statutory 1nstrument No. 28 of 2009.
42. States and Local government are mandated to establish sanitation and integrated waste management programme and ensure the provision and maintenance of abattoirs, adequate toilets and urinals in public places, waste receptacles in the streets and premises of all kinds see regulations 64 and 65.
43. Regulation 77.
44. Hazardous waste is defined in regulation 106 as any waste or combination of wastes that exhibits ignitable, corrosive, reactive or toxic characteristics and poses a substantial danger, now in the future to human plant or animal life and which therefore cannot be handled or disposed of without special precaution.
45. Regulation 78.
46. Regulation 81.
47. Schedule xiii of the regulation classifies hazardous waste to include explosives, flammable liquids or solids, poisonous, toxic, infectious substances including wastes categorized as clinical waste, wastes oils/ water hydrocarbons/ water mixtures, emulsions, wastes which contain compounds such as copper, zinc,

another country through the territory of Nigeria without valid prior informed consent for such movement issued by the Agency is held to commit an offence.[48]

A maximum penalty of five million naira fine or a term of imprisonment of five years or both such fine and imprisonment is imposed for any violation of these regulations:[49]

(b) **National Environmental (Access to Genetic Resources and Benefit sharing) Regulations 2009**[50]: it provides for conservation monitoring and stipulates that a person shall not engage in any activity that may adversely impact on any ecosystem, lead to the extinction of any exotic species or lead to unsustainable use of natural resources without an environmental impact statement. It also aims at liasing with other relevant agencies for the purpose of imposing bans, restrictions or similar measures on the access and use of any threatened species in order to ensure its regeneration and sustainable management.[51]

Any person who contravenes the regulations shall on conviction be liable to a fine of not less than N1,000,000 but not exceeding N10, 000,000 or imprisonment for a term not exceeding one year or to both such fine and

candium, mercury lead and asbestos. It also includes radioactive wastes (material and equipment) decommissioned explosives eg. Ammunitions, fireworks etc. waste resulting from prospecting, extraction, treatment and storage of mineral resources, waste deposited or discharged into water ways under federal jurisdiction and any other waster waste so defined.

48. Regulation 83.
49. The release or causing of litter to be realeased into the environment or failure to maintain waste management facility in clean and orderly condition or failure to provide and the use of appropriate personal protective equipment while handling, treating or disposing of wastes which is a common environmental offence in Nigeria has a penal sanction of a meagre N20, 000.00 fine or imprisonment for one year or both such fine and imprisonment. See regulation 94.
50. Statutory Instrument No. 30 of 2009.
51. Regulation 1and 2.

imprisonment and an additional fine of N1,000,000 for everyday the offence subsists where the offence, is committed by a body corporate, it shall on conviction be liable to a fine not less than N10,000,000 and not exceeding N100,000,000 and an addition fine of N1,000,000 for everyday the offence subsists[52]

(c) **National Environmental (Ozone Layer Protection) Regulation 2009[53]**: it prohibits the importation, manufacture in part or in whole, install, offer for sale, sell or buy now or refurbished facilities intended to be used for the production of any ozone depleting substance (ODS)[54] unless for the recovery and recycling of any substance already in use.[55]

Any infraction of this regulation is penalized with a fine of not more than N200,000 and an additional fine of N10,000 for everyday the offence subsists or imprisonment for a term not exceeding one year or both fine and imprisonment[56], where the offence is committed by a body corporate it shall be liable to a fine not exceeding N1,000,000 and an additional fine of N50,000 for everyday the offence subsists.[57]

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52. Regulation 23, Nigeria's porous borders in conjunction with the absence of data or tracking device to determine their mating pattern. On which specie qualities as exotic species' which regulation 25 interpretes to mean any specie of plant or animal or micro-organism whose natural range does not or did not in the past exist in a specific part of the whole or the whole of Nigeria, this regulations is honoured move in breach than compliances.
53. Statutory Instrument No 32 of 2009.
54. ODS are listed in schedule 3 to include chlorofluorocarbons (OFCs) Azeotropic mixtures, hydro chlorofluorocarbons, and hydro fluorobromide.
55. Schedule 6 of the regulation lists the phase out deadline for controlled substances between January 1, 2010 and January 1 2030. Inspite of the fact that chlorofluorocarbon (CFCs) emitting substance ought to have been phased out by January 1, 2010. no reasonable progress has been made to ensure compliance
56. Regulation 22 (1).
57. Regulation 22 (2).

(d) **National Governmental (Noise standards and Control) regulation 2009**[58]: the purpose of these regulation is to ensure the maintenance of a healthy environment for all people in Nigeria, the tranquility of their surroundings and their psychological well being by regulating noise[59] levels and generally, to elevate the standard of living of the people by prescribing the maximum permissible noise levels a facility or actively to which a person may be exposed. It also provides for the control of noise and for mitigating measures for the reduction of noise[60]. The Agency, may seize, impound confiscate or prohibit the use of any property, tool machinery or other instrument which is likely to or has caused the emission of excessive noise[61]. Anyone who contravenes this regulation shall be liable to a fine of N5,000 for everyday the offence subsists and shall on conviction be liable to a fine not exceeding N50,000 or to imprisonment for a term not exceeding one year or both. Where the offender is a corporate body, on conviction, it is liable to a fine of not more than N500,000 and an additional fine of N10,000 for everyday the offence subsists.

(e) **National Environmental (Watershed, Mountainous Hilly and Catchments Areas) Regulation 2009**[62]: stipulates that every land owner or occupier while utilizing land in a watershed[63]. mountainous, hilly or catchments

58. Statutory Instrument No. 35 of 2009.
59. Noise is defined by the act as any unwanted and annoying sound that is intrinsically objectionable to human beings or which can have or is likely to have an adverse effect on human health or the environment.
60. Regulation 1.
61. Regulation 12 (1).
62. Statutory Instrument No 27 of 2009.
63. Watershed means the usual land area that drains directly or indirectly into a particular stream or river.

area[64] shall observe and respect the carrying capacity of the land, carry out soil conservation measures, carry out measures for the protection of water catchments area, use the best available environmentally friendly technologies to minimize significant risks and damages to ecological and landscape aspects and maintain adequate vegetation cover[65]. The agency shall control activities which are inconsistent with good land management practices especially in areas prone to landslides, flood, drought desertification, siltation, heavy sediment loads, failing rocks, fires and damage by wind[66]. Any person who contravenes this regulation shall on conviction be liable to imprisonment of not more than one year or a fine of not more than two hundred thousand naira or both while in the case of deforestation the violator shall be liable on conviction to a term not exceeding six months or a fine not less than fifty thousand naira or both[67] where an offence is committed by a corporate body it shall no conviction be liable to a fine not exceeding one million naira, and an additional fine of fifty thousand naira for every day the offence susbsists.[68]

(f) **National Environmental (Wetland, River Banks and Lake Shores Protection) Regulations 2009[69]**: It provides for the conservation and wise use of wetlands and their resources in Nigeria. It ensures water catchments conservation and flood control. It ensures the sustainable use of wetlands for ecological and tourism purposed for

64. It refers to the area from which rainfall flows into a river, stream, lake reservoirs or other water bodies including the tributaries and the entire basin draining into the water body.
65. Regulation 1 (1).
66. Regulation 1 (2).
67. Regulation 10 (1).
68. Regulation 10 (3).
69. Statutory Instrument No. 26, 2009.

the common good of all citizens, ensure the wetlands are protected as habitats for species of farina and flora, minimize and control pollution[70]. It mandates wetland resources to be utilized in a sustainable manner compatible with the continued presence of wetlands and their hydrological functions and services[71]. It constitutes an offence for any one to fail, neglect or refuse to protect a lake shore or river bank from environmental degradation in accordance with these regulations. Contravention of any of its provisions is punishable with a conviction of not less than three months imprisonment or a fine not exceeding N500,000 or both[72].

(g) **National Environmental (Textile Wearing Apparel, Leather and Footwear Industry) Regulations 2009[73]**: The purpose of these regulations is to present and minimize pollution from all operations and ancillary activities from the sector to the Nigerian environment. Every facility is mandated to submit to the Agency an Environmental Impact Statement (EIS) for new industries and major developmental projects before commencement of operations and an environmental Audit Report (EAR) for existing industries every 3 years. Cost effective, up to date, efficient cleaner production technologies is mandated to be applied to minimize pollution[74]. Every facility is expected to install anti pollution equipment or process for the detoxification of effluent and emissions emanating from it so as to meet the prescribed effluent and emission

70. Regulation 2.
71. Regulation 3.
72. Regulation 31.
73. Statutory Instrument 34, 2009.
74. Industries are mandated to priorise the reduction or elimination of pollution and place less emphasis on external hardware which are end of pipe mechanism. see regulation 2 (4).

standard based on the Best Available Technology (BAT) or the Best Practicable Technology (BPT).

The discharge of any effluent or oil in any form into water system, public drains or underground injection and land without permit from the agency is prohibited[75] Wastes which contain toxic organics shall be subjected to thermal treatment to effectively destroy or remove over 99.99 percent of toxic organics and the resulting residue is mandated to be disposed of as set out in schedule 11 to these regulations[76]. Any facility that causes or allows the generation of any odour from any source that unreasonably interfers or is likely to unreasonably interfer with any other persons lawful use or enjoyment of his property is also mandated to use recognized good practices and procedures to reduces such odour to a reasonable minimum including any method for reducing odour as may be specified by the agency.[77]

Any contravention of the provisions of this regulation by a person is punishable with a term of imprisonment not exceeding two years on conviction or a fine of N200,000 or both such fine and imprisonment and an additional fine of N5,000 for everyday the offence subsists. Where the offence is committed by a facility it shall on conviction be liable to a fine not exceeding N1,000,000 and an additional fine of N50,000 for everyday the offence subsists[78].

75. Regulation 11 (a).
76. Schedule 11 indicates that dry sludge generation from tannery waste water treatment parameters to range from primary treatment to primary or chemical + Aerated facultive lagoon depending or quantity of sludge generated.
77. Regulations 20 (2).
78. Regulation 51.

(f) **National Environmental (Mining and Processing of Coal, Ores and Industrial Minerals) Regulation 2009**[79]: The purpose of these regulation is to minimize pollution from the mining and processing of coal, ores and industrial minerals new development in the mining and processing techniques are mandated to apply up to date, efficient, cleaner production technologies to minimize pollution in the highest degree practicable. Where new designs are utilized mines are expected to evaluate their installations and ensure that control routine are sufficient to prevent risks of pollution or accident. Mines using old operating methods are however mandated to ensure that necessary measures are taken to limit risks by installing leachate collection tanks and such others[80].

Environmental Impact Assessment (EIA) study is also expected to be conducted for new development in the sector and approval obtained from the Federal Ministry of Environment while Comprehensive Environmental Evaluation Study (EES) is mandated to be carried out on the facilities without EIA at the commencement of operations and reports submitted to the Agency. It is further mandated that a liquid discharge from every facility shall be analysed and reported to the nearest office of the Agency every month through a Discharge Monitoring Report (DMR)[81]

Operators involved in Mining and processing of Coal, Ores and Industrial minerals who fail to ensure that their activities conform with prescribed guidelines for safe levels of air pollutants tolerable to human, aquatic organisms and vegetation on conviction, are liable to a fine not exceeding N50,000 or imprisonment for a term

79. Statutory Instrument No 31 of 2009.
80. Regulation 2.
81. Due to the dearth of the requisite human and material resources it in most NESREA establishment this provision is ambitious.

not exceeding two years or both such fine and imprisonment and an additional fine of N5,000 for every day the offence subsists[82] Where the offence is committed by a facility it shall on conviction be liable to a fine not exceeding N500,000 and an additional fine of N50,000 for every day the offence subsists[83].

(g) **National Environmental (Chemical Pharmaceutical Soap and Detergent Manufacturing Industries) Regulations 2009[84]**: The purpose of these regulations is to prevent and minimize pollution from all operations and ancillary activities from the sector in the Nigerian environment. Every facility shall submit to the Agency the environmental impact statement (EIS) for new industries and major developmental projects before commencement of operations as issued by the Federal Ministry of Environment as well as Environmental Audit Report (EAR) for existing industries[85] Industrial emphasis on environmental planning is mandated to be to prevent, reduce or eliminate pollutants at source and less emphasis shall be placed only on external hardware which are end of pipe mechanism the amount of packaging material is to be reduced while encouraging the three Rs namely Reuse, Recover and Recycles[86]. Every facility is mandated to

82. Regulation 36.
83. Inspite of these regulations illegal mining thrives in Nigeria ten persons were confirmed dead due lead poisioning in Zamfara State arising from the consumption of contaminated water due to the pollution of drinking water sources from illegal mining activities. Nigerian health officials have discovered more than 350 cases of lead poisoning in several villages. See Golu Timothy "Nigeria Fresh Lead Poisoning Kills 10 In Zamfara" Leadership Newspaper (Abuja) September 22, 2010. similarly in disused pits dug by illegal gold mines have ruined farm lands and enhanced environmental decay. See Toye Olori " Environment: Illegal Gold Mining Ruining Rural Nigeria" All Africa. Com September 24, 2010.
84. Statutory Instrument No 36 of 2009.
85. Regulation 2.
86. Regulation 2 (5).

ensure that organic solvents is minimized and ozone depleting substances is in accordance with the Montreal Protocol[87]. The use of banned or restricted chemicals must be in accordance with the provisions of relevant international conventions such a Rotterdam, Vienna, Stockholm conventions etc.[88]

It is further provided that there shall be no contamination arising from leakage of surface or underground oil or fuel or chemical storage tanks likely to cause pollution of the environment including surface water and groundwater.[89]

Any person who violates any of the provisions of these regulations commits an offence and shall on conviction be liable to a fine not exceeding N200,000 or imprisonment for a term not exceeding two years or to both such fine and imprisonment and an additional fine of N5,000 for every day the offence subsists, where however the offence is committed by a facility[90], it shall on conviction be liable to a fine not exceeding N1,000,000 and an additional fine of N50,000 for everyday the offence subsists.[91]

(h) **National Environmental (Food, Beverages and Tobacco Sector) Regulation 2009[92]**: The regulation aims

87. Montreal Protocol on substances that deplete the ozone layer is one of the international treaties designed to protect the ozone layer by phasing out the production of numerous substances which are believed to be responsible for ozone depletion. The treaty came into force on January 1, 1989 and Nigeria became a signatory state to the Amendment to the Montreal Protocol on April 10, 1996.
88. The Rotterdam convention which regulates the international transfer of certain hazardous chemicals and pesticides which are scientifically adjudged risky to human health and the environment, without the prior consent of the recipient country was segued by Nigeria on September 23, 2009.
89. Regulation 13.
90. Facility means Chemicals, Pharmaceutical Soap and Detergent Industry.
91. Regulation 51.
92. Statutory Instrument No 33 of 2009.

at preventing and minimizing pollution from all operations and ancillary activities of food, Beverages and Tobacco companies in the Nigerian environment. Companies are mandated to apply up to date, cost effective efficient cleaner technologies to minimize pollution to the highest degree practicable. Its emphasis should be on environmental planning in order to prevent, reduce or eliminate pollutants at source and less emphasis shall only be placed on external hardware which are end of pipe mechanism[93], in the event of incident resulting in an adverse impact on the environment, whether socio – economically on health wise, the company be responsible for the cost of damage assessment, control and clean up, remediation, reclamation or restoration; compensation to affected parties and cost of damage assessment and control[94] contamination arising from leakage of surface or underground oil or fuel or chemical storage tank likely to cause pollution of the environment including surface water and groundwater should be avoided[95]

Violators of these regulation are mandated on conviction, to pay a fine not exceeding N200,000 or a term of imprisonment not exceeding two years or both such fine and imprisonment and an additional fine of N5,000 for everyday the offence subsists. Where the offence is committed by a company, it shall on conviction be liable to a fine not exceeding N1,000,000 and an additional fine of N50,000 for everyday the offence persists[96]

93. Regulation 2.
94. Regulation 5 (3).
95. Regulation 12. Osho A *etal* "Preliminary evaluation of waste water effluents from two food companies in Nigeria" Journal of Microbiology Research 4, no.13 (2010): 1395 attested to the fact that inspite of the existing effluent limitation regulation of industries in Nigeria, untreated industrial effluents are still being discharged into the soil and water sources. This poses an ominous danger to the ecosystem and public health.
96. Regulation 49.

Petroleum Act[97]

It provides for the exploration of petroleum from territorial waters and the continental shelf of Nigeria it vests ownership of all on shore and off shore revenue from petroleum resources in the Federal Government as well as other incidental matters[98]. It stipulates that licensee or lessee shall adopt all practicable precautions including the provision of up to date equipments approved by the Director of Petroleum Resource to prevent the pollution of inland waters, rivers, water courses, territorial waters of Nigeria or the high seas by oil, mud or other fluids or substances might contaminate the water bank or shoreline or which might cause harm or destruction to fresh water or marine life and where any such pollution occurs or has occurred prompt steps have to be taken to control and if possible end it[99]. Drainage and disposal of refinery effluent and drainage water is mandated to confirm with good refining practices. Any person who fails or refuse to comply with these regulation is guilty of an offence and on conviction is liable to a fine of N100 or imprisonment to a term of six months.

Associated Gas Re – Injection Act 1992[100]

It compels every company producing oil and gas in Nigeria to submit preliminary programmes for gas re-injection and detailed plans for the implementation of gas re-injection. It prohibits the flaring of gas produced in association with oil by companies

97. Cap 10, Laws of the Federation of Nigeria (LFN) 2004.
98. The Federal Government of Nigeria has the Petroleum Industry Bill pending before the National Assembly, it aims at establishing a comprehensive petroleum industry regulatory mechanism instead of the existing legion of legislative and administrative regulations scattered over several legislation. Yinka Omorigbe "Petroleum Industry Bill" at a roundtable organized by the African Network for Environmental and Economic Justice (ANET), Transorp Hilton, Abuja, February 23, 2009 emphasized that the Bill is a welcome development in the light of the regulatory uncertainty plaguing the petroleum sector.
99. Regulation 25 of Petroleum (Drilling and Production) Regulation 1969.
100. Cap A25 LFN, 2004.

engaged in the production of oil without lawful authorization after January 1, 1984[101].

Nuclear Safety and Radiation Protection Act 1995[102]

It established the Nigerian Nuclear Regulatory authority whose function includes the control and regulation of the use of radioactive substances, material equipment the carrier of radioactive materials or waste or the operator of a facility who is responsible for an incident resulting in radioactive contamination of the environment shall be liable on conviction for the restoration of the environment of for the cost of such activities as are necessary for the restoration of the environment to its original state[103].

A person who contravenes the provision of the act is guilty of an offence and liable on conviction to a fine of not less than N100,000 or more than N3,000,000 or to imprisonment for a minimum of not less than two year or more than 10 years or both such fine and imprisonment in addition to the cancellation or revocation of the any registration granted to the person[104]

Nigeria Minerals and Mining Act 2007[105]

It regulates all aspects of the exploration and exploitation of solid mineral in Nigeria every holder of a mineral title under the Act is mandated as far as it is reasonably practicable, to minimize, manage and mitigate any environmental impact resulting from such activity and rehabilitate, reclaim where applicable, the land

101. World Bank Report 2004 estimates that Nigeria flares 75 percent of the gas it produces. Multilateral oil companies operating in Nigeria engages in gas flaring with impunity. The Environmental Right Action (ERA) in 2005 attributed 49 premature deaths, 4,960 incidents of respiratory ailments in children, 120,000 as mathic attacks and at least annual cases of cancer to gas flaring in Bayelsa State. Cases of skin disease disorientation and other physical and mental disorders were also recorded.
102. Cap N142 LFN, 2004,
103. Section 43 of the Act.
104. Section 45.
105. Cap N162 LFN 2004, it repeals the Mineral and Mining Act No 34 of 1999.

disturbed, excavated, explored, mined or covered with tailings arising from mining operations to its natural or predetermined state or to such a state as may be specified in the Act and according to best practices[106]. it also prohibits the pollution of water courses or interference with the bank of any water course. Exploration of mines, minerals or carrying out of quarrying operations is outlawed except in accordance with the provisions of this act[107]. Any infraction of this regulation constitutes an offence punishable by a fine of not less than N20,000,000 and a term of imprisonment of not less than 5 years[108]

Harmful Waste (Special Criminal Provisions ETC) Act 1988[109]

It prohibits depositing and dumping of harmful waste on any land and territorial waters. The sale, purchase, importation, deposit, storage of harmful wastes is prohibited and outlawed[110]. Any person found guilty of the crime is liable on conviction to life imprisonment in addition to the for future of the any carrier or land utilized for facilitating the purposed. The concept of diplomatic immunity or any other immunity is excluded for the purpose of prosecution of offences committed under this Act[111]

106. Section 118 of the Act.
107. Illegal mining constitutes a viable business in Nigeria with the acquiescence of regulatory official. Inspite of the fact that polluted water supplies, impoverishment of land by radioactive waste is a consequence of unregulated mining, the challenges of inadequate and skilled mining engineers and mineral processing engineer which has traumatized the sector is yet to be resolved by government. The abandoned mines and polluted streams in Jos which have devastated the landscape while uninformed locals utilize radioactive metals for the construction of their houses epitomizes a bleak future for environmental regulation.
108. See sections 133, of the Act; where the offence is continuing, the offender shall pay an additional N20, 000 for each day the offence continues.
109. Cap H1 LFN, 2004.
110. Section 2 expressly qualifies as a criminal anyone who commits a crime under this act, aids and abets the commission of the crime or counsels or procures anyone to commit the crime.
111. Section 6 and 9 of the Act.

Environmental Impact Assessment 1992[112]

It stipulates the general principles, procedures and methods to enable the prior consideration of environmental impact assessment on public or private project. Non compliance with the provisions of the Act constitutes an offence which is punishable in the case of individual offender, with a fine of N100,000 of five years imprisonment. Where it is a firm or corporation a fine of not less than N50,000 and not more than N1,000,000.[113]

Implementation of Environmental Crimes Regulatory Mechanism in Nigeria

The criminalization of certain categories of environmental infractions enumerated above is to enhance personal and corporate responsibility to environmental protection. Deteriorating environmental conditions in Nigeria attests to thriving unsustainable utilization of environmental resources inspite of the prevalence of these legislations[114]. This is traceable to the existing schism between the regulatory regime and enforcement mechanism. In Nigeria, implementation of criminal liability as a medium for regulating environmental pollution is a rare occurrence. Environmental infractions often receive administrative punishment instead of penal sanctions. The civil regime is also a favoured means of enforcement. The resultant fines and damages paid by erring corporations are simply added to the cost of doing business which is ultimately borne by the consumers.

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112. Cap E12 LFN 2004.

113. The penalty is liberal enough to encourage infraction moreso as compliance is some cases is more expensive than breaching the regulation. Considering, the long term impact of some projects on the environment, corporations ought to be held more accountable by imposing stiffer penalty on corporation which fail to comply with environmental impact evaluation of their projects.

114. Rajendra Ramilogan "The Environment and International Law: Rethinking the Traditional Approach" in Vermont Journal of Environmental Law 3, no.1 (2001 - 2002) : 1 opines that a cursory examination of the legal system of some developing countries lends credibility to the argument that nation states particularly those of developing countries cannot be relied upon to pursue environmental objectives beneficial to the global commons.

The paucity of prosecution for environmental crimes can be attributed to crisis in governance in Nigeria which is at the core of environmental issues confronting Nigeria. Nigeria's operation of a federal system of government, the thorny issue of equitable resource distribution among the three tiers of government in Nigeria and the attendant problem of role conflict has adversely affected the implementation of environmental policies[115].

Corruption and complicity of multinational corporations have marred successful efforts to regulate environmental crimes in Nigeria[116]. Unsuitable environmental utilization is often aided and abetted by government[117] in return for revenues accruing from oil[118]

Investigation and prosecution of environmental crimes is part of the functions of the Nigerian police. However due to the vicous circle of corruption and kickbacks that has pervaded the rank and

115. The issue of greater share of Nigeria's oil revenue by regions in the oil producing areas has led to armed conflicts which have politicized environmental concerns. Militant groups masquerading as environmentalist have resorted to bombing of oil installations, kidnapping and brigandage. The bomb explosions in Abuja by the Movement of the Emanapation of the Niger Delta (MEND) on October 1, 2010 which killed 12 people and injured many more, to press home its demand for the Niger Delta to control its resources attests to environmental issues gone awry.
116. In 2009, shell Petroleum Development Company paid out 15.5 million dollars in settlement of a legal action in which it was accused of having collaborated in the execution of ken Saro – wiwa and eight other leaders of ogoni tribe who were non violent protesters against ecosystem violations in the Niger Delta.
117. Apart from the oil revenues dereived from oil, Nigeria earns benefits from fines paid by multilateral oil companies for environmental infractions like gas flaring oil spills, and gaseous emission. Consequently, the government is impervious to environment concerns and hardly insists on clean up operations. The health and welfare of its citizens has been traded for oil wealth.
118. Godwin Uri Ojo and Jayeoba Gaskiya eds. Environmental Laws of Nigeria A Critical Review (Benin City: Environmental Rights Action, Friends of the Earth Nigeria 2003) p. 39 are of the view that apart from the incredible pauperization of many Nigerians in the midst of huge petrol-dollars incomes the discovery of oil for about five decades and its exploitation, production, distribution or transportation have engendered evident burdensome repercussion among which are pollution and destruction of water soil land and the ecosystem often aided by government functionaries.

file of the police force and lack of up to date equipment to function, wealthy individuals and multinational corporations are able to circumvent the criminal justice system with impugnity[119] of the criminal justice system and swelled the ranks of terror recruits which engage in environmental subversive activities[120]

Even when environmental crimes are prosecuted judicial in experience in dealing with environmental crimes poses a challenge. Some of he consequence of pollution which is the gravamen of the accused person's culpability are technical in capture and difficult to grasp.

Poverty which is the bane of environmental protection in developing countries poses an insurmountal hurdle. The state usually bears the cost of prosecuting environmental crimes. Due to competing interest for scant financial resources, the capacity for the prosecution of environmental crime is highly eroded in Nigeria.

Most Nigerians are not familiar with the environmental crime regime[121]. It is considered a waste of time and resources to engage

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119. In 2005, Tofa Balogun, a former inspector general of police was charged to court on a 92 count charge of corrupt enrichment, stealing and embezzlement of public funds in the sum of over 103 million dollars and he sentenced to only 6 months imprisonment which has been vilified as a rape of justice see Emmanuel Franklyn Ogbunwezeh How Selective Justice Consolidates Corruption in Nigeria: Tafa Balogun and the Mockery of Justice in Nigeria, Nigeria world Wednesday December 14, 2005 similarly, in 2008, the National coordinator of the Police Equipment Fund (PEF) Kenny Martins and his deputy Ibrahim Dumuje were arraigned for misappropriating N50 billion donations to enhance police performance by procuring equipment for the Nigerian Police forces Kenny Martins was discharged of any complicity on alledged diversion of monies belonging to the organization.

120 Adejuwon Soyinka "enemy next door " *Tell Magazine*, August 30, 2010 is of the view that with a long history of engaging in aunprofessional corrupt criminal conduct as complied with the use of excessive and often brutal force the people now see the Nigerian police more as an enemy than a friend. Consequently the much needed collaboration between the citizenry and the police for the purpose of combating environmental crime is almost non existent.

121. Charles R. Toy and Michael Leffler "Criminal Enforcement Law: Stepping up Crime Prosecutions is crucial in the fight Against Environmental Violators" Michigan Bar Journal 80 (December 2001): 1 state and federal regulatory

in environmental awareness campaign. Inadequate infrastructure to inculcate such awareness has led to poor communities ignorantly handling hazardous materials without the requisite protective devices.[122]

It is trite that environmental crimes most often harm the world's poor. Contraband waste is usually dumped in under developing countries that lack the legislative and technical control needed to protect vulnerable population.[123]

Illegal logging, fishing and wildlife trade are carried out at unsustainable levels ruining the natural capital from which the rural communities dereive their livelihood[124]

Globalisation and its attendant trade liberalization and deregulation has encouraged the growth of transnational environment crime and rendered the regulation of transboundary enforcement of regulatory laws a right mare[125]. Inspite of the fact that environmental crisis has global outreach, the fundamental

agencies are expanding efforts to combat environmental contamination by focusing on criminal enforcement. Although criminal provisions have always been a part of most environment regulatory polices, criminal prosecution for environmental crime is uncommon.

122. Cahal Milmo "Dumped in Africa: Britains Toxic Waste, Children exposed to poisonous material in defiance of UK Law" *The Independent*, Wednesday, February 18, 2009 reports that hundreds of thousands of discarded items which under British Law must be dismantled or recyscled by specialist contractors are being packaged into cargo containers where they are shipped to Nigeria and Ghana where they are stripped of their raw metals by young men and children working on poisoned waste dumps.

123. E – waste is being routinely disguised as second hand goods and sold, scrapped or illegally dumped in Nigeria in the full glare of environmental crime regulatory agents. The European Union Commission in 2008, was compelled to admat that the recycling law under the Waste Electric and Electronic Equipment (WEEE) Directive enforced since 2004 has become costly, burdensome and has failed to reduce dumping of electrical and electronic waste in landfill but has engendered widespread illegal trading in waste to non European countries mostly located in developing countries.

124. Due to Nigeria's poor wildlife conservation records, the convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES) suspended Nigeria's membership over breaches of its regulations in 2008.

125. Duncan Brack "The Growth and control" of International Environmental Crime cited in Environmental Health Perspective 112, no. 2 (February 2004): A 80.

difficulties confronted by developing countries in its enforcement regime is largely ignored by the international community[126]

Multilateral Treaties regulating environmental resources utilization transcend national boundaries but lack implementation. The lack of political will and funding to doggedly pursue their implementation poses are major challenges[127].

From the above it is apparent that although execution of interregional and international environmental treaties is laudable, the major task before Nigeria is to embark on measures however painful to develop its own economy[128] and embark on the strict enforcement of its environment crimes regulatory laws. However, attaining this objective against the backlash of infrastructural decay, dearth of technical expertise, crisis in governance, endemic poverty which has Nigeria tethering on the edge of becoming a failed state appears to be a daunting uncertainty.

126. Rajendra Ramilogan "The environment and International Law: Rethinking the Traditional Approach" cited supra in note 114 at page 23.
127. The Montreal Protocol on substances that Deplete the Ozone Layer Treaty has 168 nations as parties to the accord including Nigeria. Inspite of the implication of chlorofluorocarbon (CFCs)have been implicated in the destruction of the Ozone layer, they are still been used in car cooling systems. The rising trade in CFCs is a growing international environmental crime challenge. See Schmidt CW "Environmental Crimes: Profiting at the Earth's expense" Environmental Health Perspective 112, no.2 (February, 2004): A 96.
128. Yusuf T.M. The Nigerian Economy Growth Without Development (Benin City: Kraft Books Limited 1996) p. 20.

THE TRADE AND ENVIRONMENT NEXUS: ISSUES FOR NIGERIA AS A DEVELOPING ECONOMY

By

Helen Chuma-Okoro *

Introduction

The trade and environment nexus is a subject that has attracted wide debate. It is now well-established that trade impacts on the environment and measures protecting the environment affect trade in a complex relationship of mutual synergies and threats. The dialogue on the trade-environment linkage assumes different permutations inextricably linked with the different perspectives of free trade advocates and environmentalists, and developed and developing countries; with the concept of sustainable development connecting the different perspectives.[1] For developing countries, the nexus is particularly relevant because of the important role of trade as an engine driving economic growth and development,[2] and the vulnerability of their environment to economic activities.[3] Vulnerability in this sense is engendered by several factors including poverty, ineffective framework harmonising trade and

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1. Shawkat Alam and Rafiqul Islam, "The Trade and Environment Interface: Issues Lurking behind North-South Tensions", *MqJICEL* (2005), Vol. 2, p121 (122). See also the Draft Resolution referred to the High-level Plenary Meeting of the UN General Assembly at its sixty-fourth session, adopted by the sixty-fifth session of the General Assembly on 17 September, 2010, A/65/L.1, paragraph 42, available at: *http://www.un.org/en/mdg/summit2010/pdf/mdg%20outcome%20document.pdf;* (hereafter UN MDGs Resolution). *All websites cited were last visited on 19/12/2010.*
2. *Ibid*, p 12-124.
3. See also the World Commission on Environment and Development, *Our Common Future*, (Oxford: Oxford University Press, 1985) (hereinafter the *Brundtland Report*), Chapter 1; *Report of the United Nations Conference on Environment and Development"*, Vol. I, A/CON.151/26/Rev.1 and *Rio Declaration on Environment and Development* (1992), Vol. I, Chapter 3, A/CONF.151/26 (hereafter Agenda 21).

environmental concerns, and lack of capacity and relevant resources.[4]

The linkage between trade and the environment occurs at different levels. From the very basic level, all economic activities are based on the environment, and the environment is the source of all basic inputs (metals and minerals, soil, forests and fisheries), and the energy needed to process them.[5] The waste products of economic activities are also deposited in the environment. This inextricably links the environment with economic activities. Trade is also affected by environmental concerns in the context of international trade, since exporters are forced to respond to foreign market demands for greener goods and services.[6]

In another context, environment and trade represent two different bodies of international law, namely: trade law embodied in such structures as the World Trade Organisation (WTO) and regional and bilateral trade agreements; and environmental law embodied in various multilateral environmental agreements (MEAs), as well as national and sub-national instruments. It is inevitable that these two systems of law should meet at some point. While trade law increasingly defines how countries should design their domestic laws and policies in other to promote free trade and development, international environmental law increasingly defines how countries should prioritise their economic activities in favour of environmental sustainability.[7] As noted elsewhere, "trade liberalization is – of itself – neither necessarily good nor bad for the environment". [8] Its effect on the environment depends on the

4. See Agenda 21, *ibid*, pp 16-34.
5. United Nations Environment Programme, *Environment and Trade: A UNEP Handbook*, (2nd edn.) (International Institute for Sustainable Development, 2005) pp 2-3, (hereinafter UNEP Handbook).
6. *Ibid.*
7. For instance, parties to the *United Nations Framework Convention on Climate Change* have committed themselves to restructure their economies to cut greenhouse gas emissions. See *United Nations Framework Convention on Climate Change* (*UNFCCC)* 1771 UNTS 107; 31 ILM 849 (1992).
8. UNEP Handbook, *ibid*, pp 2.

extent to which environment and trade goals can be made complementary and mutually supportive. Achieving complementary results requires appropriate supporting economic and environmental structures and mechanisms at both the national and international levels. In other words, it requires a proper balancing of trade and environmental concerns and interests.

This paper provides a concise conceptual background to the trade-environment nexus, and highlights the importance of trade, its interface with environmental concerns and the imperative for maintaining a balance. The multilateral framework evincing the nexus and its implications on developing countries is also discussed along with a brief description of the contours of the nexus in the context of Nigeria's trade and environmental framework. Finally, the weaknesses in the Nigerian system derived from the national and international framework are also discussed and solutions proffered accordingly.

General Background

International trade as a source of wealth and welfare gains has always been considered one of the major drivers of economic growth, especially for developing countries.[9] From the economics perspective, the benefits of trade are conceptualised in terms of exchange, division of labour and specialisation; leading to more efficient use of the factors of production or resources and improved standard of living.[10] At the international level, these benefits are conceptualised in terms of "comparative costs"

9. See paragraph A (i) of the *Uruguay Round Declaration* (1986) 25 *ILM* 1624, noting that one of the objectives of the Uruguay Round negotiations was to "bring about further liberalisation and expansion of world trade to the benefit of all countries- *especially less-developed contracting parties*, including the improvement of access to markets by the reduction and elimination of tariffs, quantitative restrictions and other non-tariff measures and obstacles" (emphasis supplied). See also UN MDGs Resolution, op cit and Alam and Islam, op cit, p 123.
10. See John Taylor, *Principles of Economics*, 5th edn. (George Hoffman, 2007).

advantages, or benefits; as propounded by Adam Smith and later reinforced by David Ricardo.[11] Like trade within a nation's borders, international trade is regarded as an efficient mechanism for allocating resources and increasing national welfare and standard of living, regardless of a country's level of economic development.[12] In their theses, both Smith and Ricardo made a powerful case for liberalising trade from government restrictions, such as import tariffs and quotas, and moving towards free trade.[13] They argued that any impediment to trade would diminish the gains derivable from same and therefore harm the economy. This has become the cornerstone policy of international trade and the basic rationale for the existence of the multilateral trading system.[14]

The spotlight on the trade and environment nexus was triggered by growth in trade as a consequence of trade liberalisation at the international level, which resulted to increased productivity, and exerted great pressure on the environment.[15] This in turn generated environmental concerns that underscored the need to balance trade and environmental interests. The concerns have been expressed in the provisions of the multilateral trading system, more particularly the *WTO Treaty*;[16] as well as the

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11. Douglas A. Irwin, "A Brief History of International Trade Policy", *Library Economics and Liberty,* October 13, 2010, pp 2-3, at: *http://www.econlib.org/library/Columns/Irwintrade.html*, citing Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations",* (Edwin Cannan (ed.)), 5th edn., (London: Methuen & Co., Ltd,. 1904), Vol. I, Book 1; and David Ricardo, "Principles of Political Economy", (London: John Murray (3rd edn.), 1821), Chapter 7.
12. Irwin, *op cit*. See also Bill Bradley and Fritz Leutwiller, "Trade Policies for a Better Future: Proposals for Action", (Geneva: GATT, 1985).
13. Irwin, *ibid.*
14. Trade incentives however go beyond economic rationales. Trade is also perceived as promoting political, cultural and social benefits.
15. Jonathan M. Harris, "Trade and the Environment", *The Earth Encyclopedia,* November 7, 2008, at: *http://www.eoearth.org/article/Trade_and_the_environment*.
16. See the Preamble to the *Agreement Establishing the World Trade Organisation*, Marrakesh Agreement Establishing the WTO, the Legal Texts: The Results of the

increasing regime of MEAs reflecting the trade-environment nexus.

At the conclusion of the Uruguay Round, the nexus between trade and the environment was strongly established and environmental sustainability was made a part of the fundamental goals of the WTO, and an integral part of the rules and commitments binding the signatories of the *WTO Treaty*.[17] The "single understanding" philosophy of the *Treaty* meant that membership of the WTO implied acceptance of all the results and disciplines of the Uruguay Round.[18]

The environment and trade linkages engendered by the WTO framework affects the interests of developing countries in different ways. For one, the economic benefits of trade as a catalyst for development and poverty eradication is most relevant to their status as developing economies; but at the same time, the impact of trade on their environment can be devastating.[19] They are also bound by their commitments to the multilateral trading system and international environmental standards. The implementation of the *WTO Treaty* and the MEAs has implications for developing countries particularly regarding their export trade. Trade, in this context, has great benefits and potentials for poverty alleviation; livelihood and standard of living; the adoption and use of better technology; and more efficient use of resources.[20] These are all indices of economic growth and development. For developing

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Uruguay Round of Multilateral Trade Negotiations 320 (1999), 1869 U.N.T.S. 299, 33 I.L.M 1197 (1994) Apr. 15, 1994, (hereafter the *WTO Treaty*), available at WTO Legal Texts, *http://www.org/english/docs_e/legal_e/legal_e.htm*.

17. See Paragraph 1 of the Preamble of the *WTO Treaty, ibid.*
18. See Articles II (1) & (2), XII (1) and XIV (1) of the *WTO Treaty*. For in-depth discussion of the scope and implications of the final agreements see Raj Bhala, *Modern GATT Law: A Treatise on the General Agreement on Tariffs and Trade*, (London: Sweet and Maxwell, 2005) and Andreas Lowenfeld, *International Economic Law*, (Oxford: Oxford University Press, 2008).
19. Mefe Feridun, "Impact of Trade Liberalisation on the Environment in Developing Countries", The Case of Nigeria, MPRA Paper No. 731, 08/11/2006.
20. Feridun, *op cit*, p 40.

countries to harness these incentives, the WTO recognises that they should enjoy special and differential treatment (SDT) in the application of the commitments and obligations arising from the *Treaty*.[21] However, environmental standards and measures have the potential of undermining export trade, thus depriving them of these incentives.

The Nature of the Nexus

The nexus between trade and the environment grows from the interest of "expanding the production of, and trade in, goods and services" as volume of trade increases.[22] There are three phases to the nexus. First, trade liberalisation is perceived as being perilous to the environment and as contributing to environmental degradation by increasing the world's demand for natural resources.[23]

This draws attention to another aspect of the nexus, an intermediate position linked to the concept of sustainable development.[24] It argues that growth driven by trade must be accompanied by appropriate policies and strict environmental protection rules to halt the degradation and depletion of the earth's natural resources. The concept of sustainable development proposes that trade policies should not compromise environmental goals and vice versa; and that both policies should be mutually supportive and should contribute to the achievement of sustainable

21. See Part IV of the *General Agreement on Tariffs and Trade* (*GATT*) headed "Trade and Development", WTO Legal Texts, op cit. See also the *Differential and More Favourable Treatment, Reciprocity and Fuller Participation of Developing Countries*, Decision of 28 November, 1979 (L/4903), (*Enabling Clause)* at: *http://www.wto.org/english/docs_e/legal_e/tokyo_enabling_e.pdf*.
22. See Preamble to the *WTO Agreement.*
23. See Paula Cordero, Sergio Sepulveda and Adrian Rodriguez, *Trade and Environment Issues: Rural Development Technical Handbook No. 25*, (San Jose: *Inter-American Institute for Corporation on Agriculture (IICA), 2008,* p 7. See also UNEP Handbook**,** op cit, pp 45-50 for comprehensive discussion of the physical end economic effects of trade. They are categorised in the UNEP Handbook as products effects, scale effects, structural effects and direct effects.
24. See Agenda 21, *op cit* and *Brundtland Report*, *op cit.*

development.[25] Free trade is therefore endorsed, but with the understanding that restrictions must be incorporated in multilateral trade negotiations as a means of controlling the depletion of environmental resources and protecting consumers from the import of hazardous products. It also envisages the existence of a national framework to regulate the effects of trade on the environment and implement international standards regulating these effects. This leads to the third aspect of the trade and environment nexus; the potential effects of environmental measures on trade and the use of trade measures to achieve environmental policy aims.

The complex relationship between trade and the environment was first articulated in the *Brundtland Report*, which defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[26] Later, at the 1992 United Nations Conference on Environment and Development – popularly known as the Earth Summit – which held in Rio de Jainero, the Report became the main focus; and the need for need for realignment of the priorities of trade liberalisation and international trade, was further underscored.[27] The strength of the emerging "sustainable development" thesis compelled the WTO delegates to boldly incorporate it in the *WTO Treaty* signed a few years later not only as one of its principal objective, but also as a cornerstone philosophy of the WTO. In its Preamble, the *WTO Treaty* highlighted the core priorities of international trade by noting that international trade:

> ...should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the

25. See Agenda 21, *ibid*, p 20.
26. See the *Brundtland Report*, *op cit.*
27. See Agenda 21, *op cit.*

> production of and trade in goods and services, while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development...

The provisions manifested a change from the narrow priorities evinced in the 1947 *GATT*, which were focused simply on the "full use of the resources of the world". The Preamble to the *1947 GATT* affirmed that the parties agreed to the prom**ot**ion of free trade on the basis of non-discrimination:

> ...with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, developing the full use of the resources of the world and expanding the production and exchange of goods.[28]

Some experts have noted that the clear change in the language of the *WTO Treaty* was a reflection of the fact that while the establishment of the WTO contributed to the creation of a new world order, other aspects of that order – such as the concept of sustainable development – shaped the WTO and the world trading system.[29] This made environmental sustainability an integral part and a cornerstone objective of that order. Today, it is expressed in

28. Emphasis supplied.
29. Jan-Eirik Sorensen, "Trade, Environment and Sustainable Development", paper presented at the World Summit for Sustainable Development held at the United Nations University Centre, 3-4 Sept., 2001, p 2.

numerous international agreements, national constitutions and secondary instruments.[30]

A major aspect of the trade-environment nexus is the balancing and mutually supportive attribute or potentials of the two fields of interests; which is synonymous with the concept of intra-generational and inter-generational equity and sustainable use of natural resources.[31] It recognises that despite the potential threats from both fields, trade and the environment can be mutually supportive and beneficiary.[32] In a manner depicting the complex and intertwining nature of the trade-environment-development linkages, Agenda 21 brings the nexus into sharp focus by stating as follows:

> Environment and trade policies should be mutually supportive. An open, multilateral trading system makes possible a more efficient allocation and use of resources and thereby contributes to an increase in production and incomes and to lessening demands on the environment. It thus provides additional resources needed for economic growth and development and improved environmental protection. A sound environment,

30. See for instance Article 2(4) of the *UNFCCC*. See also the *Ministerial Decision on Trade and Environment* adopted in Marrakesh on 15th April, 1994, (hereafter *Ministerial Decision on Trade*). The concept of environmental sustainability as a core objective of *GATT* was reiterated in paragraph 6 of the *Doha Ministerial Declaration and Decision of 2001*: Ministerial Declaration WT/MIN(01)/DEC/1, adopted on 14th November, 2001 (hereafter Doha Ministerial Declaration 2001).
31. "Intra-generational equity" refers to the redistribution of resources in the current generation to address the problems of poverty and "inter-generational equity" refers to bequeathing to the nest generation the resources which it, in turn, is entitled to enjoy. See Sorensen, ibid, p 2. See also Cordero, et al., *op cit*.
32. See the *Ministerial Decision on Trade*, op cit. See also G**.** Handl, *Environmental Security and Global Change: The Challenge to International Law*, in: G. Handl (ed.), *YIEL* 1 (1990), 24 and Ulrich Beyerlin, "The Concept of Sustainable Development" in Wolfrum (ed.) *Enforcing Environmental Standards: Economic Mechanisms as Viable Means?*, (Berlin: Springer, 1996), p 102.

> on the other hand, provides the ecological and other resources needed to sustain growth and underpin a continuing expansion of trade. An open, multilateral trading system, supported by the adoption of sound environmental policies would have a positive impact on the environment and contribute to sustainable development.

The need for compatibility and complementarity was endorsed in the *Ministerial Decision on Trade and Environment*, where it was noted that:

> ...there should not be, nor need be, any policy contradiction between upholding and safeguarding an open, non-discriminatory and equitable multilateral trading system on the one hand, and acting for the protection of the environment, and the promotion of sustainable development on the other.[33]

As earlier noted, economic activities – and more specifically trade – can have negative effects on the environment if not complimented with sophisticated domestic regulations and policies to ensure that production does not threaten the environment.[34] Environmental laws and regulations in this context can be classified under two broad categories. On one arm, it covers policies that are domestically initiated and aimed at national environmental protection and conservatism. The second arm consists of environmental measures that are the outcomes of

33. See *Ministerial Decision on Trade, op cit.*
34. Sorensen, *op cit,* p 3. On how trade can harm the environment see Fahmida Khatun, "Environmental Related Trade Barriers and the WTO", *CPD Occasional Paper Series 77*, (Bangladesh: Centre for Policy Dialogue (CPD), 2009), p 6, citing Daly, Herman and John B. Cobb. *For the Common Good: Redirecting the Economy toward Community, the Environment, and a Sustainable Future*, Boston, Mass: Beacon Press, 1989.

international treaties and conventions. These policies and measures conversely affect market access of exports. The significance of the effect of trade-related environmental measures on market access was formally recognised in the *Doha Ministerial Declaration of 2001* as an area that requires the attention of the Committee on Trade. Paragraphs 32(i) and (iii) of the *Declaration* incorporates the following statement:

We instruct the Committee on Trade and Environment, in pursuing work on all items on its agenda within its current terms of reference, to give particular attention to (i)- the effect of environmental measures on market access, especially in relation to developing countries, in particular the least-developed countries among them, and those situations in which the elimination or reduction of trade restrictions and distortions would benefit trade, the environment and development; (iii)- labelling requirements for environmental purposes.[35]

An essential condition for ensuring that trade and environmental protection policies are mutually supportive is to parallel the liberalisation process with the development and strengthening of effective and non-protectionist environmental legislation at the national, regional and international levels.[36]

The various ways by which economic activities can harm the environment are not proximate concerns of this paper, especially since they differ from one economy to the other. However, poverty plays an important role in undermining the mutual supportiveness of trade and environment where developing countries are concerned.[37] The poverty question is multi-facetted, and is relevant not only with reference to the quality of the applicable regulatory framework, but also as a contributory factor to the perilous effects of trade on the environment. Poverty has been identified as the single most important contribution to environmental degradation in

35. See Paragraph 32 (i) of the *Doha Ministerial Declaration, op cit.*
36. See the *Ministerial Decision on Trade, op cit.*
37. See the *Brundtland Report*, *op cit*, Chapter 1, and Agenda 21, *op cit*, Chapter 3.

poor countries, since it encourages the overuse of scarce environmental resources to meet survival needs.[38] At the same time, the potentiality of trade to contribute to the eradication of poverty and the boosting of economic growth is well established. This underscores even more the importance of balancing the synergies and the mutually undermining implications of the trade and environment nexus where developing countries are concerned.[39]

The International Framework Articulating the Trade-Environment Nexus

The WTO Framework

The most significant and globally binding instrument regulating trade and the environment nexus is arguably the *WTO Treaty*, which Professor Bhala insists is "nothing less than the Constitution of international trade law".[40] The major objective of the WTO is to promote free trade on a non-discrimination basis. This approach is based on two fundamental principles: the national-treatment[41] and most-favoured nation principles.[42] Together, they form the critical "discipline of non-discrimination at the core of trade law".[43]

The background to the incorporation of environmental issues in the *WTO Treaty* is a vast subject which cannot be conveniently accommodated in this discourse. Nevertheless, a proximate landmark on the trail can easily be identified as the 1991 *Tuna-Dolphin Case*[44] in which a GATT panel declared as illegal, a United States' (US) embargo on tuna caught by fishing methods

38. *Ibid.*
39. See *Ministerial Decision on Trade, ibid.*
40. Bhala, *op cit*, pp xi-xii.
41. Article III *GATT*, Article XVII *General Agreement on Trade in Services (GATS*) and Article III *Agreement on Trade Related Aspects of Intellectual Property (TRIPS).*
42. See Articles I *GATT*, Article II *GATS* and Article 4 *TRIPS.*
43. UNEP Handbook, *op cit*, p 31.
44. *United States - Restrictions on Imports of Tuna, http://www.wto.org/english/tratop_e/envir_e/edis04_e.htm.*

causing high dolphin mortality.[45] Naturally, the ruling generated outcry from the international community of environmentalists who considered that trade rules were an impediment to environmental protection. It focused international attention on linkages between environmental protection and trade as subsequently articulated at Rio.[46] Coming on the heels of Rio, it is hardly surprising that the Uruguay Round placed high priority on environmental protection and sustainability.

The WTO framework comprises a mosaic of multilateral agreements, including *GATT 1947,* as reviewed by *GATT 1994.*[47] The major component agreements incorporating provisions relating to the environment are *GATT* and the *General Agreement on Trade in Services (GATS).* Others include the *Agreement on Technical Barriers to Trade (TBT),* the *Agreement on Sanitary and Phytosanitory Measures SPM), the Agreement on Subsidies and Countervailing Measures* and *TRIPS.*[48] As earlier noted, its single understanding approach implies that ratification of the *WTO Treaty* signifies acceptance of all its commitments and obligations.

GATT

The primary objective of *GATT* is to eliminate tariff and non-tariff impediments to trade in goods on a non-discrimination basis,

45. For in-depth discussion of the case and the explosion of rhetoric's it generated regarding the negative effects of trade activities on the environment see Bhala, *op cit*, pp 635-648.
46. See Agenda 21, *op cit.*
47. See Article 1 of *the GATT 1994.* For a list of all the legal documents making up the WTO framework and for the full text, see WTO Legal Text, ibid. The key agreements forming components of the WTO framework are: (a) the Multilateral Agreements on Trade in Goods Annex IA; (b) the *GATS* Annex IB*;* (c) the *TRIPS,* Annex 1C; (d) *the Understanding on Rules and Procedures Governing the Settlement of Disputes [Dispute Settlement Understanding (DSU*)]. The Multilateral Trade Agreements equally encompass other agreements on more specific subjects like textile, agriculture, subsidies, anti-dumping, and Rules of Origin.
48. See WTO Legal Texts, *op cit.*

subject to some exceptions.[49] One of the exceptions is Article XX, which stipulates exceptions to the non-discrimination principle on the basis of environmental concerns. Article XX provides as follows:

> Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures- (a) necessary to protect human, animal or plant life or health; and (b)- relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on national production and consumption.[50]

This implies that contrary to the doctrine of free trade, barriers to trade can be imposed for the purpose of protecting human, animal or plant life; or to ensure sustainable use of natural resources. To ensure that the objectives of free trade are not unduly undermined, the provisions require that the measures adopted for the purpose of protecting the environment must be "necessary" and their application must not be arbitrary, neither should they be unjustifiably discriminatory. This, no doubt, is an attempt to prevent Member States from using the measures as a disguised policy of protection to create barriers to trade. The *Shrimp-Turtle*

49. Though the non-discrimination philosophy permeates the framework, what can be considered as the main non-discrimination clause is Article 1, which states the most favoured nation (MFN) treatment principle.
50. For further notes on this see Article by Rajesh Babu, "Trade and Environment Interface: Implications for Developing Countries" *Essays on Contemporary Issues in International Law*, Chapter 5, pp 97-128, Centre for Research and Training, AALCO, 2009, *http://ssrn.com/abstract=1481012*.

Cases 1 & 2 widened the scope of Article XX to cover not only the national environment, but also the trans-boundary effects of economic activities on water, air or endangered species.[51] Another implication arising from the Panel's decision concerned the use of products processing measures (PPM)[52] to regulate imports and the extent to which countries should be allowed to distinguish between products based on the way they are produced, if their process of production leaves no trace on the product itself.[53] Article XX has increasingly become a strong area of contention for developing countries who see the provisions as providing a leeway for developed countries to embark on another form of protectionist agenda referred to as "green protectionism."[54] Similar provisions are contained in the *GATS* with reference to trade in services. Under certain circumstances, policies that affect trade in services, but are necessary to protect the life and health of people, animals and plants are exempted from normal application of the *GATS* disciplines.[55]

The TBT Agreement and the *SPM Agreement*

51. Appellate Body Report: *United States-Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R. (Adopted 6 November 1998) and *United States - Import Prohibition of Certain Shrimp and Shrimp Products, Recourse to Article 21.5*, WT/DS58/AB/RW (2001). See also Babu, *op cit.*
52. PPM has to do with the way or processes by which product is made. See UNEP Handbook**,** *op cit*, p 53.
53. See ibid, pp 53-54. See also Timothy E. Deal, "WTO Rules and Procedures and their Implication for the Kyoto Protocol", Discussion Paper Prepared for the United States Council for International Business (USCIB), January 2008, pp 7-9.
54. See Pradeep S. Mehta, "Trade and Environment: Challenges Overweighing the Opportunities" in *Regional Perspectives on the WTO Agenda: Concerns and Common Interests, Studies in Trade and Investments No. 47*, (Trade and Investment Division: 2001) 133 (138 -142), available at: *http://www.unescap.org/publications/details.asp?id=538*. See also UNEP Handbook, ibid, pp 53-64, 67.
55. See Article XIV of *GATS.*

The *TBT* and *SPM Agreements* are similar in the sense that they both relate to standardisation measures regarding trade in goods within the context of *GATT*. *TBT* refers to trade restrictive effects arising from the application of technical regulations, standards and requirements to do with testing, labelling, packaging, marketing, certification, origin marking and health and safety regulations.[56] The *TBT* acknowledges the right of each individual government to set their own environmental protection standards; but tries to ensure that technical regulation and standards do not create unnecessary obstacles to trade.[57] It is an agreement of major importance to trade and environment concerns since it includes aspects related to product characteristics and labelling. Developing countries have difficulties with the implementation of technical measures, notwithstanding that the *TBT Agreement* provides for special and differential treatment for developing countries and requires developed countries to provide necessary technical assistance to them on concessional terms.[58] As it has turned out, the provisions on special and differential treatment and technical assistance are seldom invoked in practice.[59]

The *Agreement on SPM* aims at harmonising standards necessary to protect humans, plants and animals from specific dangers- such as pests and diseases, associated with international trade; and hazards related to animal and plant health and hygiene. Measures applicable under the *Agreement* may include inspection of products, permission to use only certain additives in food, quarantine and import bans. The *Agreement* also determines when such measures may be applied and the requirements that must be met.[60] Again, like the *TBT*, the provisions evince a clear concern that regulations and standards certification procedures, which vary from one country to another, do not create undue barriers to

56. Khatun, *op cit*, p 7.
57. See the Preamble and Article 2(2.2) of the *TBT Agreement.*
58. Articles 11 and 12, *ibid.* See also Articles 9 and 10 of the *SPM Agreement.*
59. Mehta, *op cit*, p 141.
60. Articles 5, 6 and 7 of the *SPM Agreement.*

trade.[61] However, the *Agreement* provides more flexibility for countries to deviate from international standards than is permitted under the *TBT*.[62] It also permits measures to be applied on a selective basis.[63] This way, it potentially undermines free trade and the non-discrimination principle by creating barriers to trade which may apply selectively. Again, developing countries have issues with the *SPM Agreement* regarding their potential to create barriers to their exports where they are not able to meet the standards set by the importing countries. This is even more acute where the domestic standards differ from, and are more stringent than, international standards.[64]

The Agreement on Agriculture and the Agreement on Subsidies and Countervailing Measures

The *Agreement on Agriculture* sets out to eliminate barriers to international trade in agricultural goods, and price distorting trade measures like subsidies and export credit. Similarly, the *Agreement on Subsidies and Countervailing Measures* disciplines the use of subsidies and regulates the actions countries can take to counter the effects of subsidies. The provisions however exempt environmental programs from subsidies cuts.[65] This implies that the restrictions on use of subsidies would not apply to agricultural products meant for environmental programs. Also, loopholes in the *Agreement on Agriculture* are effectively exploited by developed countries to maintain farm subsidies.[66] Some of these subsidies are

61. See the Preamble and Article 2(1) (3) of the *SPM Agreement*.
62. Article 3 (1) (3), *ibid*.
63. Kahtun, *op cit*, pp 6-10.
64. See UNEP Handbook, *op cit*, pp 53-64; and Mehta, *op cit*, p 141.
65. Annex 2 paragraph 12 of *the Agreement on Agriculture* and Article 8(2) (c) of the *Agreement on Subsidies and Countervailing Measures*. It is worth noting that the exemption in Article 8(2) (c) lapsed in 1999 and has not been reviewed.
66. See *US – Subsidies on Upland Cotton*, WT/DS267/AB/R, 2004-5, where the issue of US' cotton subsidies policy was canvassed before the WTO Panel and latter the Appeal Body. Both bodies held that US policy of subsidising cotton depresses

considered harmful to the environment because they encourage over cultivation, over use of chemicals, over production and over use of environmental resources.[67]

The TRIPS Agreement

The *TRIPs Agreement* reflects a high level of standards for protecting intellectual property. It has in fact been asserted that *TRIPS* was intended to enforce the high standards that existed in developed countries but was lacking in developing countries.[68] The *Agreement* covers a number of types of Intellectual Property Rights. Of these, patents are the most important from the environmental perspective.[69] Article 27 (2) of *TRIPS* authorises Member States to refuse to grant patents on environmental and health grounds. It provides as follows:

> Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment...

TRIPS has been largely opposed by developing countries on several grounds. They argue that the twenty (20) years period of protection granted to creation or innovation by Article 33 keeps the protected creation or innovation too expensive for too long. This, they argue, tilts the balance too far toward the innovator; by making access difficult, raising prices, limiting follow-on innovation, and impeding access to information necessary to

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prices of cotton at the international market by leading to over production and flooding of the international market with cheap subsidised cotton.

67. UNEP Handbook, ibid, pp 73- 80.
68. *Ibid*, p 71.
69. *Ibid*, p 69.

reproduce inventions.[70] This is regarded as slowing down the spread of new technologies and impeding research and development that seeks to use the patented material as the basis for new innovations.[71] Where such innovations fall under clean technology for use in environmental preservation, environmental concerns are affected. More specifically, they are made unaffordable and unavailable to developing countries that may not be able to afford them.

The Multilateral Environmental Agreements (MEA)

Some MEAs contemplate trade measures to achieve their objectives. The most important MEAs in this context are: *the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);*[72] *the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol;*[73] *the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal 1989;*[74] *the Convention on Biological Diversity (CBD)*[75] *and the Cartagena Protocol on Biosafety, 2000;*[76] *the UNFCCC* and *the Kyoto Protocol.*[77] One of the major uses of these MEAs is to control trade itself, where trade is perceived as contributing directly to the environmental damage. The *CITES*, which controls trade in endangered species and the *Basel Convention* prohibiting the export of hazardous wastes are good examples. Some MEAs bar parties from trading in restricted goods with non-parties; for example, the *Montreal Protocol* bans

70. UNEP Handbook, *op cit*, p 71.
71. *Ibid.*
72. 27 UST 1087; 993 UNTS 243, entered into force in 1975.
73. 1513 UNTS 323; 26 ILM 1529 (1987).
74. 1673 UNTS 126; 28 ILM 657 (1989).
75. 1760 UNTS 79; 31 ILM 818 (1992).
76. 2226 UNTS 208; 39 ILM 1027 (2000).
77. UNEP Handbook, *op cit*, pp 68-69.

trade with non-parties in ozone-depleting substances and products containing them.[78]

The problem with MEAs incorporating trade measures is that they may conflict with WTO rules.[79] For example, they may conflict with obligations of WTO members to observe the most-favoured nation and national-treatment principles, as well as provisions on eliminating quantitative restrictions.[80] An MEA that permits parties to use trade restrictions against some countries (non-parties) but not against others (parties) as the *Montreal Protocol* does, potentially violates all three Articles. This plays out in the following trend: by discriminating between otherwise "like" products based on their country of origin; by imposing quantitative restrictions; and by treating imported goods differently from "like" domestic goods.[81] Despite this potential, the principle of mutuality is not completely lost on MEAs and is actually reaffirmed in some cases. For instance, the Preamble to the *Cartagena Protocol on Biodiversity* settled the issue of conflict and underscored mutuality by stating that "neither trade law nor the Protocol has a hierarchical position above the other, and, where there is overlap, the interpretation of each should be done in a manner striving to find consistency between both".[82]

Secondary Instruments

Secondary instruments refer to bilateral and multilateral trade agreements between countries, and soft agreements like MOUs. These instruments, by their nature, do not have the force of a *Treaty*. Nevertheless, they are binding and enforceable against the

78. Some experts have noted that the rationale behind the banning of trade to non-parties is to use trade as a means of enforcing the agreement and prevent free-riding by non-parties. See Aparna Sawhney, "WTO-Related matters in Trade and Environment: Relationship between WTO Rules and MEAs", ICRIER Working Paper Series, Working Paper No. 133, May, 2004, p 6.
79. UNEP Handbook, *ibid*, p 66.
80. See Articles I, III and XI of *GATT*.
81. *Ibid.*
82. *Ibid*, pp 67-68.

parties to the agreements.[83] In some cases, secondary instruments may not be binding, but may introduce incentives encouraging poorer countries to adopt environmental friendly technologies.[84] Secondary instruments have introduced a number of market-based trade-related environmental measures (TREMs) into the environmental law milieu; but at the same time, they constitute an area most likely of conflict with other multilateral regulatory frameworks –especially WTO rules – because of their potential to distort free trade by being potentially discriminatory.[85]

The Nigerian Experience

The arguments and perceptions arising from the trade and environment linkages are of much relevance to Nigeria in different ways. From the legal perspective, Nigeria is bound by the obligations and standards of the major international instruments to which she has committed herself by ratification. This has legal implications in two contexts – first; in the implementation of the commitments locally and secondly; in her trade relations with other countries on the basis of those standards implemented in their domestic laws.

From the perspective of economics, the benefits of trade and its import as a catalyst for development holds much relevance for Nigeria as a developing economy. If well managed, trade could

83. E.g., the North Atlantic Free Trade Agreement (NAFTA), I.L.M. 605 (1994). See also *ibid*, p 80.
84. E.g., under the terms of the European Union's (EU) Generalised System of Preferences (GSP), developing countries that have ratified and implemented global environmental agreements can receive special tariff under the GSP+ when they export to the EU. See *http://ec.europa.eu/trade/wider-agenda/environment.*
85. For elucidation of these discriminatory aspects see "*Climate and Trade Rules – Harmony or Conflict?*", (Sweden: National Board of Trade, 2004); available at: *http://www.kommer.se/upload/Analysarkiv/ ublikationer/limate%20and20trade%20rules.pdf;* Steve Charnovitz, "Trade and Climate: Potential Conflicts and Synergies" in *Beyond Kyoto – Advancing the International Effort against Climate Change*, PEW Centre on Global Studies, July 2003, pp 141-170.

serve as a vehicle for lifting the country from her present state of underdevelopment, or at least position her for growth.[86] Trade liberalisation is a key objective of Nigeria's trade policy, which she furthers through her association with, and active participation in, the Economic Community of West African States (ECOWAS),[87] the proposed Economic Partnership Agreement (EPA) between the European Union and ECOWAS,[88] the Generalised Trade Preferences (GSP) offered by the EU,[89] the Africa Growth and Opportunity Act (AGOA) representing the US equivalent of trade preferences to developing countries;[90] among several other platforms promoting liberalisation of trade or encouraging greater access of Nigeria's exports to developed countries, as the case maybe.[91] Her positions in relation to the

86. See Article XXXVI (1) (b) of *GATT*; ECOWAS Secretariat, *2009 Mid-Term Report: Regional Integration as a Solution to the Global Crisis*, (Abuja: ECOWAS Commission, 2009), p 05; (hereafter *2009 Mid-Term Report*) and J. A. Aremu, "Trade Policy as an Instrument of Poverty Reduction", in Ken Ukaoha and Rose Mande (eds.) *"The Dynamics of Contemporary Trade"* (National Association of Nigerian Traders (NANTS), 2005), p 19.
87. One of the major objectives of ECOWAS is to liberalise intra-regional trade. See Article 3 (2)(d) of the *ECOWAS Revised Treaty* 1993, available at: See also Briggs, *op cit*, p 4
88. European Commission Trade, "Economic Partnerships", *http://ec.europa.eu/trade/wider-agenda/development/economic-partnerships/negotiations-and-agreemnts/#west-africa*.
89. The EU's GSP provides preferential access to the EU market to 176 developing countries and territories, in the form of reduced tariffs for their goods entering the EU market. See *http://ec.europa.eu/trade/wider-agenda/development/generalised-system-of-preferences/*.
90. AGOA was enacted by the US on May 18, 2000 as Title 1 of the *Trade and Development Act of 2000*, Pub. L. 106-200, 19 USC 3701. It offers tangible incentives for African countries to continue their efforts to open their economies and build free markets. Nigeria became eligible to benefit under AGOA on July 14, 2004. For list of eligible countries visit *http://www.agoa.gov/eligibility/country_eligibility.html*. For text of AGOA, visit: *http://www.agoa.gov/agoalegislation/index.asp*.
91. See UNEP, *Integrated Assessment of the Impact of Trade Liberalisation on the Nigerian Rice Sector: A Country Study on the Nigerian Rice Sector* (UNEP: 2005), pp 11-14, available at; *http://www.unep.ch/etb/publications/intAssessment/RapsSynRice.pdf;* (hereafter

WTO are aligned with those of other developing countries seeking improved market access to developed countries' markets and preferential treatment.[92]

Statistically, Nigeria is the hub of trade and economic activities within the West African region. She operates a vibrant export trade dominated by petroleum exports, followed by agricultural products and extractive minerals in that order.[93] The synergies that can be derived from the growth of these sectors provide great impetus for expansion of production and market access in these sectors, and consequentially increase the risk of exposing the environment to damage in the process.

This brings into contemplation the environmental aspects of the linkage between trade and the environment. The three sectors identified above are known to deplete the environment if not properly regulated. Moreover, agricultural export is one of the sectors most affected by international environmental standards and measures, and where their effects on market access have been felt more by developing countries. The multilateral regimes of environmental management and safeguards may also affect the volume of trade in agricultural products through their implementation locally. The interface of these different dimensions of the trade and environment nexus in Nigeria is the focus of this section.

Economics Perspective

UNEP Rice Study). The important point here is that ultimately, Nigeria is encouraged to increase her production capacity and volume of exports through these platforms.

92. *Ibid.*
93. *2008 ECOWAS Handbook on International Trade* (Abuja: ECOWAS Commission, 2008) (*ECOWAS Handbook on International Trade)*. In terms of contribution to GDP, some reports put agriculture first, followed by mining and quarrying. See World Trade Organisation, *Trade Policy Review Nigeria: Secretariat Report*, 2005, WT/TPR/S/147, pp 1-2 (hereafter *Trade Policy Review*); citing IMF (20004a), Nigeria: Selected Issues and Statistical Appendix; and IMF (2004b), Staff Report for the Article IV Consultations.

The fact that economic activities threaten the wellbeing of Nigeria's environment has been clearly established by various reports and other literature. This is particularly true of the petroleum sector where the effects of oil exploration in the Niger Delta Region are well-documented.[94] Agricultural activities also exert much pressure on the environment because of the proximity of agriculture with the use of natural resources – especially water, soil and forests – with potentially significant negative environmental effects.[95] This was established by the UNEP study on Nigeria's rice sector.[96] The study clearly established the two-way effects of trade and environmental measures with reference to the Nigerian agricultural sector, by showing that agricultural activities affect the environment and international standards on agricultural products equally affect the foreign market base of farmers. It thus confirmed that free trade without environmental considerations can have negative impacts on the agricultural trade.

The Legal Perspective

At first, the Nigerian legal framework appears to have adequately catered for the need to install and operate a mutually beneficial system of trade and environment policies. This impression however disappears when the framework is properly scrutinised.

National Framework

94. See Olarenwaju Fagbohun, "Enforcement of Environmental Standards in Nigeria's Oil and Gas Sector", paper presented at the One and Half Day Technical Meeting on *Livelihood Issues and Legislative Reform of Environmental Law*, held at the Nigerian Institute of Advanced Legal Studies (NIALS), University of Lagos, from 14th – 15th December, 2010.
95. See Cordero, *et al*., *op cit*, p 8.
96. See UNEP Rice Study, *op cit*. The UNEP-backed study presents a picture of negative environmental impacts of trade liberalisation, (with resulting increase in rice production), where appropriate policies are not in place. Such impacts range from the growing use of agro-chemicals (pesticides) and the resulting soil degradation, water pollution and loss of biodiversity to the increased destruction of forests and wetlands as demand for new agricultural land intensified.

Nigeria became a founding member of the WTO with the coming into effect of the *WTO Treaty* in 1995. Her commitment to the principles and objectives of the multilateral trading system, in itself, implies that Nigeria is bound by the obligations she has undertaken under the *WTO Treaty*. She is also bound by the multilateral environmental treaties aimed at securing sustainable environment that she has ratified.[97]

In addition to these core trade and environmental treaties, there is a gamut of extant legal and institutional mechanisms at the national level that are tailored towards regulating the interface between trade and the environment, to guarantee their mutual sustainability.[98] Some of the major legislations responding to the possible negative impacts of trade on environment include: *Gas Re-Injection Act*;[99] *Endangered Species (Control of International Trade and Traffic) Act*;[100] *Minerals and Mining Act*;[101] *Harmful Wastes (Special Criminal Provisions, etc) Act*;[102] *Environmental Impact Assessment (EIA) Act*.[103] There are also mandatory guidelines and regulations made pursuant to the substantive statutes, principal among which are the EIA Environmental Guidelines and Standards of 1991 EIA and the Procedural Guidelines of 1995. Statutory monitoring mechanisms are also in place to oversee enforcement of relevant laws, regulations and standards; covering design, construction and operation. The

97. In 1994, she ratified the international environmental conventions signed during the Rio Conventions. These include the *Convention on Biological Diversity and the Framework Convention on Climate Change (FCCC)*; the *Convention to Combat Desertification in Countries Experiencing Drought and/or Desertification, Particularly in Africa*, was also signed in October 1994.
98. See "Economic Aspects of Sustainable Development in Nigeria", National Agenda 2, available at: *http://www,in.org/esa/agenda21/natlinfo/countr/nigeria/natur.htm*.
99. Cap A25 LFN 2004.
100. Cap E9 LFN 2004.
101. Cap M12 LFN 2004.
102. Cap N1 LFN 2004.
103. Cap E12 LFN 2004.

following are some of the key institutional mechanisms involved in monitoring and enforcing the relevant regulations and standards:

i. Federal Ministry of Environment with the institutional arrangement of overall coordination of environmental management in Nigeria, and administers and enforces environmental laws on behalf of the Federal Government of Nigeria;
ii. The National Environmental Standards and Regulations Enforcement Agency (NESREA) which replaced the Federal Environmental Protection Agency (FEPA) in 2007;
iii. National Oil Spill Detection and Response Agency (NOSDRA);
iv. Nigeria Delta Development Commission with the mandate to, *inter alia*, develop, clean up and manage the oil producing areas of Nigeria in an environmentally sustainable manner;
v. Export Commodity Coordinating Committee with the mandate to, *inter alia*, monitor environmental sustainability of products for export;
vi. National Committee on the Implementation of Nigeria's National Agenda 21;
vii. Standards Organisation of Nigeria (SON), which establishes and monitors industrial quality standards;
viii. National Agency for Food and Drug Administration and Control (NAFDAC), which establishes and monitors industrial quality standards;
ix. Consumer Protection Council dealing with the protection of consumer interests. It seeks redress for injury, damage and loss suffered and seeks ways to eliminate hazardous products from the market;

x. Operational monitoring in industries for standardisation and safety purposes.[104]

Added to these are a number of public institutions, including federal ministries, dealing with matters relating to sustainable consumption and production; as well as state laws and equivalent institutions.[105]

Several mandatory standards and technical regulations, developed along both international and domestic norms conceived in line with the *TBT* and *SPM Agreements* have been established in Nigeria for the protection of human, animal and plant health; and for the protection of the environment.[106] Statutes regulating the importation of seeds, plants, oil, artificial fertilizers, and other similar goods include the *Agriculture (Control of Importation) Act*,[107] the *Animal Disease Control Act*.[108] The SON is saddled with the statutory duty of standardising and regulating the quality of all products in Nigeria both local and foreign. For medicines, cosmetics, medical devices and chemicals, SON does so in conjunction with the NAFDAC. In the absence of established Nigerian Standards, international standards set by the International Standard Organisation (ISO) and other certified organisations are adopted.[109] Furthermore, as a strategy for motivating manufacturers to maintain high quality standards, the Nigerian Industrial Standards (NIS) certification mark is awarded to local manufacturers as a symbol of good performance.[110]

Challenges

104. See National Agenda 21, *op cit.*
105. See *ibid.*
106. See *Trade Policy Review, op cit*, pp 42-43.
107. Cap A13 LFN 2004.
108. Cap A17 LFN 2004.
109. *Trade Policy Review, ibid*, p 44.
110. *Trade Policy Review*, op cit, p 43.

Notwithstanding the parade of such an "impressive" mosaic of trade and environmental laws and institutions for harmonising trade and environmental concerns, economic activities have increasingly constituted serious threat to the environment in Nigeria.[111] This can be attributed to a number of challenges, which undermine the efficacy of the extant framework. They include: lack of compliance; weak enforcement of relevant laws, standards and regulations; lack of full participation of the civil society, non-governmental organisations and the public; impediments to seeking redress from the justice system; lack of proper demarcation and harmonisation of functions in order to avoid overlapping or contending roles; community resistance to change; frequent changes in government policies and programmes; lack or reliable database; lack of institutional capacity.[112]

The country also faces challenges from the implementation of international environmental measures. Environmental measures, whether in MEAs or international trade agreements, may have negative effects on the competitiveness of her exports. This is especially true where those exports are destined for markets in developed countries, where environmental concerns are generally greater and are increasingly being expressed in demands for healthier products, produced with the use of environmentally sound technology and methods.[113] Developing countries generally lack the appropriate legal framework, infrastructure, expertise and

111. This conclusion is derived from the different literature cited in this discourse with reference to the oil sector and agriculture. See Fagbohun, *op cit* and UNEP Rice Study, *op cit.*

112. Fagbohun, *op cit*.

113. See Cordero, et al., *op cit*, p 8. Environmentally sound technologies protect the environment by being less polluting, using all resources in a more sustainable manner, recycling more wastes and bi-products, and handling residual wastes in a more acceptable manner than the technologies for which they are substitutes. Environmentally sound technologies are not just individual technologies, but total systems which include know-how, procedures, goods and services, equipment, and organisational and managerial procedures. See National Agenda 21, *op cit*.

resources to enable them implement the standards.[114] This creates non-tariff barriers to their exports in the markets of developed countries. Like other developing countries, Nigeria lacks the expertise and capacity to fully apply the requirements on safeguards and technical standards provided under the *Agreement on Technical Barriers to Trade* and the *Agreement on sanitary and Phytosanitory Measures*.[115]

Moreover, the requirements of environmental-related standards are highest in those sectors where developing countries have export potentials and comparative advantages; such as textiles and clothing, leather and leather products, forestry products and food products.[116] In Nigeria, like most West African countries, these sectors are dominated by small and medium-sized entrepreneurs, who are not able to cope with the challenges of complying with the usually complex requirements.[117] This causes their products to be rejected in countries where such standards are required. In Nigeria's case, it is estimated that, between July 2001 and May 2002, 80 of her export consignments were refused for reasons like filth; misleading labelling; preparation and packaging under unsanitary conditions; presence of pests in consignments; unsafe colourings and additives.[118] It is conceivable that this trend still exists given the fact that there is no evidence of any major

114. See Adeyemo and Bankole, "Standards, Technical Regulations, and Product Quality: Institutional Evidence from Nigeria", in *Standards and Global Trade: a Voice for Africa,* (Washington D.C., World Bank, 2003), p 165 (168) for exposition of the effects of the current the SPS standards on African countries. See also Enrique Aldaz-Caroll, "Regional Approaches to Better Standards Systems", *World Bank Policy Research Working Paper No. 3948*, June, 2006, *http://ssrn.com/abstract=923255*.

115. *Trade Policy Review, op cit*.

116. See *ECOWAS Handbook on International Trade, op cit.*

117. See UNCTAD, "Elements of the Positive Agenda on the SPS Agreement", UN Conference on Trade and Development (Geneva, Switzerland, UNCTAD, 1997); UNCTAD, "Opportunities for Vertical Diversification in the Food Processing Sector in Developing Countries", (Geneva, Switzerland: UNCTAD, 1997).

118. *Trade Policy Review*, *ibid*, pp 44-45.

change in law or policy towards improving the level of standards implementation.

The challenges are not limited to market access for exports. The protection of the domestic market and the national environment from hazardous imported products is very much part of the balancing concern of trade and environment policies, and is also an area where challenges exist. In the absence of effective regulations, imports could also harm the domestic environment. A critical example concerns imported goods that have been prohibited in the domestic market (domestically prohibited goods (DPGs)[119] because of their harmful effect, but are still being produced for export to poor countries, thus putting the health and lives of millions at risk.[120] This also occurs in Nigeria notwithstanding the establishment of several mandatory standards and technical regulations developed along both international and domestic norms, for the protection of human, animal and plant health; and for the protection of the environment.[121] The existence of monitoring/regulatory bodies like the SON and NAFDAC has not prevented this from happening. On the contrary, Nigeria's framework for blocking the entry of hazardous and sub-standard products remains porous. Challenges include shortage of manpower, logistics facilities and testing equipments; evading of SON inspection by importers and clearing agents.[122]

The *TRIPS Agreement* also has implications affecting the interest of developing countries with regards to the environment. Liberalisation of environmentally friendly goods and services is regarded as pivotal to achieving sustainable development, and as an area with a clear win-win potential. It can favour environmental protection in developing countries by allowing them to purchase at

119. These are products that are either banned or have severe restrictions on their use in the country of origin, for instance, certain pesticides, cosmetics and pharmaceuticals; however, they are freely exported to other countries.

120. Mehta, *op cit*, p 137.

121. *Trade Policy Review*, *op cit*, p 42.

122 *Ibid*, p 43.

lower prices the environmental goods and services they need. The *TRIPS Agreement* however subverts this incentive by creating barriers to the dissemination of environmentally sound technology and environmental goods and services.[123]

Recommendations and Conclusion

The trade and environment nexus has great relevance for Nigeria because of her status as a developing economy. While trade serves as a catalyst for growth and development, intensive economic activities wear down and threaten the wellbeing of her environment because of the absence of the right structures facilitating a harmonious interface of her trade and environment concerns. In another context, environmental protection measures in the multilateral trading milieu and MEAs affect her exports. This indicates an imbalance in the trade and environment nexus that this paper has been concerned with. The paper has attributed this to lack of enabling framework and wherewithal to implement the measures that would guarantee the mutual benefits of trade and environmental sustainability. Overcoming the underlined challenges requires some legal and policy measures at the national and international levels.

First, it should be clearly determined at the earliest that the objective of Nigeria's trade policy is to lift large numbers of people out of poverty while maintaining and promoting a healthy, clean and environmentally sound nation.

All necessary measures should be taken to ensure that trade and environmental policies are mutually supportive. This includes

123. Environmental goods and services are defined as those that measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as manage waste, noise and ecosystems. See *EG&S in the OECD/ Eurostat Environmental Goods and Services Industry: Manual for Data Collection and Analysis* (OECD/Eurostat, 1999) cited in "Environmental Goods and Services: A Synthesis of Country Studies", Maxime Kennett and Ronald Steenblik, OCED Trade and Working Papers 2005/3, COM/ENV/TD(2004)10/FINAL, p 3. See also Thomas Cottier, "WTO Negotiations on Environment Goods and Services: A Potential Contribution to the Millennium Development Goals", (Geneva: United Nations, 2009), pp 4-5.

collaboration and the promotion of dialogue between the trade and environmental communities. More especially, attention should be given to the need for coherent policies when trade and environmental interests intersect.

Given the enormity of the damage caused on the environment by oil exploration, and the importance of the oil sector to Nigeria's export trade, regulation of the sector to curtail the damage of the environment is highly recommended. This should be facilitated by a review of the present laws regulating the sector to properly cover the field; and an exhibition of a more enthusiastic preparedness on the part of government to operationalise the statutes. The roles of the different regulatory bodies, more especially those charged with oversight functions over the petroleum industry, should be harmonised.

There is need to acquire latest environmentally sound technologies not only for use in the production process, but also in diagnosis and the cleaning of the environment.[124]

To facilitate this, Nigeria's technology acquisition initiative should address human resource development, as well as local and indigenous capacity-building aspects of technology options. Furthermore, qualification for foreign participation in domestic production ventures should focus on measures to ensure equity (e.g. maximum prices for consumers, percentage of profits that should be reinvested in the infrastructure) or capacity-building (e.g. technology and managerial know-how transfer, training of personnel), in conformity with Articles IV and XIX of *GATS*.

There is need to establish adequate framework for implementing the standards and measures provided under the *TBT* and the *SPM Agreements*. Measures like eco-labelling should be

124. Environmentally sound technologies protect the environment by being less polluting; using all resources in a more sustainable manner; recycling more wastes and bi-products' and handling residual wastes in a more acceptable manner than the technologies for which they are substitutes. Environmentally sound technologies are not just individual technologies, but total systems which include know-how, procedures, goods and services, equipment, and organizational and managerial procedures. See Chapter 34 of Agenda 21, *op cit.*

promoted as an example of a win-win parallel policy, being good for both trade and environment. It deals with legitimate health, safety, and environmental concerns; and harnesses market power to generate environmental benefits. Labels alert consumers to the conditions under which products are produced (e.g. timber certified as harvested from "sustainable forests," refrigerators labelled as CFC free, and prints made from recycled paper). They also allow consumers to decide by purchase or patronage, which environmental conditions they want to see continued and which ones they do not want to see continued. At the very least, environmental and developmental impacts should be considered when formulating and negotiating trade policies; and complementary policies should be developed to minimize or to avoid the negative effects of trade.

At the international level, the multilateral trade system can contribute to environmental protection in Nigeria by removing all remaining barriers to trade in environmental goods and services in order to reduce the costs of cleaner production and of environmental management systems. Elimination of environmentally damaging subsidies is also recommended. Also; developing countries should be assisted in promoting environmentally friendly goods and services; alongside initiatives to help the transfer of environmentally sound technologies and practices. In this regard, the provisions for technology transfer, financial assistance and special and differential treatment provided under different multilateral environmental and trade agreements should be explored fully.[125] Inter-governmental agencies (such as UNEP) should also assist developing countries in formulating, enforcing and monitoring regulatory mechanisms vis-à-vis trade in toxic wastes.

Particular concern about striking the right balance between safeguarding market access for developing countries and

125. See for example, the *Montreal Protocol* and *Basel Convention.*

protecting the environment should be shown. In this regard, it is necessary for the negotiating authorities at the multilateral negotiation platform to examine how importing countries could design environmental measures in such a way that a)- would be compatible with WTO rules; b)- not be exclusive; c)- take into account developing countries' capacities and d)- fulfill the legitimate objective of the importing country.[126]

In order for Nigeria to achieve its development vision, it is critically important to understand the intersection of international trade and environmental sustainability. To bring sustainable development and poverty reduction within reach, the country must capitalise on opportunities presented by these dynamics. A robust inter-sectoral policy framework is required for the different sectors to jointly generate benefits and limit counter-productive outcomes.

126. Cordero, *op cit*, p 73.

IMPLEMENTING AN EFFECTIVE REGULATORY SCHEME FOR CLIMATE CHANGE IN NIGERIA: THE ROLE OF LAW

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Introduction

The impacts of climate change as is being felt across the entire world will continue to influence how we live, our work, culture, health and environment, and in the years to come will affect future generations. Given this scenario, measures have been taken and are still ongoing at the global level under the United Nations Framework Convention for Climate Change (UNFCCC), the Kyoto Protocol (KP) and through further negotiations, prior to and aftermath of Copenhagen Conference, to mitigate the causes of climate change and adapt to some effects already being experienced.[1]

Mitigating the causes of climate change and adapting to its effects is important not only to protect human life and, natural resources, but also to aid nature's capacity to absorb or control impacts. This requires the application of global measures through a set of thoughtful preventive and adaptative actions, measures and investments at all levels of governance. The application process will be more enhanced where there is established a domestic programme that can understand, predict and respond to human

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1. There is a growing consensus that the prospect of adverse climate change is not going to diminish in the near future unless dramatic mitigation and adaptation measures are adopted and implemented. See Bagis Osman Elasha *et al*., "Impacts, Vulnerability and Adaptation to Climate Change in Africa" - Background Work Paper for African Workshop on Adaptation Implementation of Decision IKP.10 of the UNFCCC Accra, Ghana 21- 23 September, 2006.

induced and natural processes of climate change through the conduct of national climate assessment and furtherance of the research and science necessary to support mitigation and adaptation. All of these can only be achieved through the instrumentality of law.

Law sets standards for acceptable behaviour in the society by creating regulations, policies and measures, and establishing agencies with responsibility for implementation.[2] If we acknowledge the overall vulnerability of Nigeria like other developing countries to climate change, it then becomes necessary for us to stimulate appropriate mitigation and adaptation measures through the instrumentality of law. Such laws will have their root in using best practices derived from science and the experience and knowledge of governments and stakeholder groups. It is only then that the laws would be capable of providing an effective regulatory framework. This is necessary in order to save man, natural resources and the environment. Consequently, this paper seeks to examine climate change and its impacts, and how law has been used and can be used to implement an effective framework to address climate change in Nigeria.

Climate Change and Its Impacts

Climate change is a change of climate which alters the composition of the global atmosphere in addition to natural climate variability observed over comparable time periods.[3] It is a change

2. R. Verheyen, "Adaptation to the Impacts of Anthropogenic Climate Change- The International Framework" 2002 RECEIL No. 2 p. 129.
3. Scientists claim that since creation there have been variations in climate pattern. From the Roman conquest, Greenland population to the medieval warm period up to the freezing of River Thames, there has been series of climate change. While some of the changes are predictable, some are not and this is due to the complex interactions between the Earth, the atmosphere and the sun which has not been completely understood. They claim that climate change has always existed even without human interference. See "Global Warming Environmental Disaster"@ *http://hubpages.com/hub/Global-warning-Environmental-Disaster. Accessed May 11th, 2010* and Olawuyi Damilola Sunday, "Detonating the Global Climate

in the statistical distribution of weather over periods of time that ranges from decades to millions of years. It can be a change in the average weather or a change in the distribution of weather events. It may be linked to a specific region or may occur across the whole earth. The UNFCCC defines it as an alteration in the atmospheric temperature caused by greenhouse gases (GHGs) which are accumulating in Earth's atmosphere as a result of human activities.[4]

Climate change is perhaps the most important sustainability issue facing today's generation in the way it is impacting on every other aspect of human life. As has been noted, if left unchecked it will lead to more serious devastating effects in the coming years.[5] Scientists have explained that climate change is caused by the emission of GHGs as largely exacerbated through such human activities as the burning of fossil fuel, land use activities (e.g. deforestation), cattle and livestock rearing, rice agriculture, landfills, chemical industries, cattle feed lots and agricultural soils.[6] GHGs[7] are like blankets which absorb heat radiation that should escape to the space, thereby occasioning atmospheric heat at a rate beyond normal. The developed countries have been identified as the major emitters, and with increase in levels of

Change Time Bomb- The Role of Law" Faculty of Law: University of Calgary, Alberta, Canada, 2009.

4. Available @*http://www.eoearth.org/article/global_warming*, accessed May 6, 2010.
5. Michael Grubb, *The Kyoto Protocol: A Guide and Assessment* (London: Earth Scan 1999) 29.
6. B. Mckee, "Solutions for the 21st Century, Zero Emissions Technologies for Fossil Fuel" (2002) OECD / IEA 1.
7. GHGs that contribute to climate change include carbon dioxide (Coz), methane (CH4), nitrous oxides (Nzo), Chlorofluorocarbons (CFCs) and halocarbons. Sustained emissions of these gases will eventually result in an increase in the average temperature of the earth's atmosphere to a level sufficient to cause climate change. See James E. Hansen, "Defusing the Global Warming Time Bomb" (2004) 3 Sci. Amer. 68 – 77.

development, production and consumption; emissions of these gases have increased and will continue.[8]

The Intergovernmental Panel on Climate Change (IPCC), a group of 2,000 scientists tasked by the World Meteorological Organisation (WTO) and the United Nations Environment Programme (UNEP) to investigate the causes and effects of climate change warned that climate change is real as the world is already experiencing the effects of rising temperatures and extreme weather events. Among others, it has been attributed as the cause of disasters such as increased meteorological and hydrological extremes and their impacts (severity of floods, droughts, heat waves, increased wild fires and sea level rise[9] and storms). These impacts in turn pose threat to lives, livelihoods and socio-economic assets, and food security. Climate change also results in dislocation of millions of inhabitants of affected areas, ill health,[10] loss of forests and biodiversity,[11] social and political instability and economic decline.[12] It has been identified that the impacts will be

8. IPCC : The Third Report @ *www.ipcc.ch* Accessed September 3rd, 2010. See also, Williams Chandler et al., "Climate Change Mitigation in Developing Countries"@*http://www.pnl.gov/aisu/pubs/CCMitDevCo.pdf*, accessed September 3, 2010.
9. Sea level rise will cause migration of marine species, alteration of near shore currents, loss of coastal community livelihoods as a result of harmful tide events which cause mortality of fish, shell fish, marine mammals, sea birds and other animals.
10. Health impacts can be expected from increases in temperature and changes in rainfall patterns. This includes increase in the occurrence of strokes, skin rashes, dehydration and the incidence of melanoma skin cancers. Changes in ecosystem can also result in water-borne diseases, vector borne diseases and water unavailability.
11. Changes in rainfall pattern could cause acidification, affect crop yield and land availability. The loss of biodiversity may also result in substantial losses of species and their composition, extinction of species and changes in vegetation structure.
12. Climate change has three important economic dimensions especially in developing countries – these are: the direct costs / benefits to taking mitigation actions for climate change, the costs incurred in adapting to the physical changes that result from climate change and the indirect costs incurred in the loss of markets in the rest of the world as a result of their mitigation actions.

felt more by the poor as they have the least capacity to respond to the problems..[13] Small islands states in particular are vulnerable to climate change due to tropical cyclones and storm surges in addition to the limited availability of natural resources such as fresh water and land-use patterns. Though, there are still wide ranges of uncertainty especially in relation to the size of the impacts and their implications, it is obvious that climate change impacts are pervasive, wide ranging and affect the core systems of our society – transportation, ecosystems balance, agriculture,[14] business, water, energy infrastructure among others. The variability and multi-faceted nature of climate change impact also has a major effect on the performance of developing economies especially because of their high dependence on natural resources.

Climate change causes the underperformance of investments because resulting uncertainties can be a powerful deterrent to investment, permanently reduce economic growth and compromise the sustainability and performance of economic and social infrastructure assets. The poor suffer disproportionately from climate change phenomenon due to loss of livelihoods which is a major trigger for population movements, thereby undermining the effectiveness of poverty reduction strategies. This is worse in Africa because the climate risk exposures is exacerbated by a range of endemic structural vulnerabilities such as widespread

13. Sheila Cloutier, "Global Warming and Human Rights" @ *http://www.ceil.org/Climate/IACHR/nuit5Mar 07.html* Accessed September 1, 2010. See also Osborne, H., "Stern Report: the Key Points (2006)"@ *http://www.eia.doc.gov/emeu/cabs/South_Africa/pdf.pdf*, accessed September 5, 2010.
14. The crop lands, pastures and forests are progressively being exposed to threats from increased climatic variability. Abnormal changes in temperature and rainfall result in increases in frequency and intensity of droughts and flood events which affect climatic patterns, spatial distribution of agro-ecological zones, habitats, distribution patterns of plant disease and pests, fish population and ocean circulation patterns. This has significant impacts on agriculture and food production because species habitat will be lost leading to shift and changes in biodiversity and yields.

poverty, reduced yields of the main staples, entrenched inequalities in rights over land resources and lack of access to technology and information, corruption, inter-tribal and other conflicts, and lack of effective governance.

The Role of Law

As scientists continue to warn that the world stands the risk of witnessing an abrupt sea level rise, frequency of extreme weather events, the spread of diseases and loss of lives as a result of climate change if no drastic action is taken, municipal law, conventions, protocols, policies and treaties are also being developed and fine-tuned to deal with the problem. What this emphasizes is the importance of law in influencing the actions of governments, multinational corporations and individuals within the society with a view to protecting the environment and maintaining a balance in human activities. The role of law which is to set standards for acceptable behaviour in the society and to set sanctions for defaulters can be undertaken through different modes of governance namely, - self governance, control and compliance governance, governance by provision and governance by enabling.

Self- governance relates to the capacity of the government to shape its own activities. In this mode government seeks to lead by example in the way it undertakes its own activities.[15] Control and compliance governance is the use of traditional forms of authority such as using regulations and planning laws to promote activities that contribute to the reduction of GHG emissions.[16] Governance by provision is achieved through the delivery of particular forms of service or resource. It involves the ability to control the nature of infrastructure development in ways that influence practices of

15. It promotes the desire to improve energy efficiency in operations e.g. housing stocks and vehicle fleets, building integrated renewable energy systems or by switching to LPG as a type of fuel.
16. This can be done through increased use of renewable and decentralised energy generation in new developments.

individuals and the trajectories of future development.[17] Governance by enabling takes place through facilitating, coordinating and encouraging actions through partnership with private and voluntary agencies and various community engagements. It involves promotional activities, public-private partnerships and the provision of financial incentives or subsidies to encourage action by other actors for particular policy ends. Governance by provision and enabling are critically important in the way they involve stakeholders and build local support base in developing solutions.[18] All these modes of governance influence the overall approach in the use of legal instruments in the context of multi-level governance.

In recognition of the role of law, governments all over the world, policy makers and international organisations have used law to address the challenges of climate change. In this regard, stemming from the fact that climate change is not the responsibility of any one particular person but that of all,[19] the global approach pushed by the United Nations is one in which there is concerted effort at ensuring sustainability of the common heritage of mankind.[20] It was this approach that in 1998 informed the setting up of the IPCC which subsequently proffered the scientific evidence that led to the negotiation of the United Nations Framework Convention on Climate Change (UNFCCC) at the Rio Summit in 1992.

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17. For example, in relation to waste management, it is possible through infrastructure development to convert waste in such a way that it become useful both for the manufacturing industry and to generate renewable energy.
18. Heike Schroeder and Harriet Bulkeley, "Global Cities and the Governance of Climate Change: What is the Role of Law in Cities" FORDHAM URB L.J. Vol xxxvi available @ *http://www.tyndall.ac.uk/publications/working_papers/twp123.pdf*, accessed September 1, 2010.
19. Global problems seldom lend themselves to unilateral fixes.
20. UN General Assembly Resolution on Protection of the Global Climate for Present and Future Generations of Mankind 22 December, 1989 A/Res/44/207@ *http://www.unog.ch/library* accessed August 28, 2010.

The stated objective of the UNFCCC was to stabilise atmospheric concentration of GHGs at safe levels with countries pledging to prevent dangerous anthropogenic interference with the climate system. To achieve this objective, all countries signatory to the Convention have a general commitment to address climate change, adapt to its effects and report their actions to implement the Convention.[21] Emphasis was placed on the need for parties to protect the climate system on the basis of equity and in accordance with common but differentiated responsibility and respective capabilities. Developed countries were expected to take the lead by reducing their aggregate levels of emissions.

The Convention also established the Conference of Parties (COP) with responsibility to oversee the progress towards achieving the objectives of the Convention while parties were mandated to periodically develop and publish to the COP their national inventories of GHGs sources and sinks. The objective of the Convention was transformed into legally binding agreement between parties in 1997 at the meeting of the COP3 in Kyoto, Japan in what is called the Kyoto Protocol (KP). The KP sets the

21. Signatories to the UNFCCC and KP have to fulfil certain obligations such as: Prepare and periodically update a national inventory of GHG emission and sinks; Formulate and implement national and where appropriate regional programmes to mitigate climate change and facilitate adequate adaptation to climate change by undertaking National Adaptation Programmes of Action (NAPA); Promote and cooperate in the development, application and diffusion of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of GHGs; Promote sustainable management and promote and cooperate in the conservation and enhancement of sinks and reservoirs of all GHGs; Cooperate in preparing for adaptation to the impacts of climate change; Take climate change considerations into account in the relevant social, economic and environmental policies and actions with a view to minimising adverse effects on the economy, public health and on the quality of the environment; Promote and cooperate in scientific, technological, technical, socio-economic and other research, systematic observation and development data activities related to climate system and intended to further the understanding and to reduce or eliminate uncertainties; Promote and cooperate in full open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to climate system and climate change; Promote and cooperate in education, training and public awareness related to climate change.

framework for the acceptance of legally binding emission reduction targets for each country included in Annex 1 of the UNFCCC with 38 industrialised countries and 11 countries in Central and Eastern Europe being obliged to return their emissions to an average of approximately 5.2% below their 1990 levels over the commitment period 2008 – 2012. The KP also allowed for the implementation of these obligations by providing developed countries with opportunity to utilise its flexible mechanisms- the Clean Development Mechanism (CDM),[22] Emissions trading (EI) and the Joint Implementation (JI). The decisions on the implementation of these mechanisms were later taken in Marrakesh in November 2001 at the meeting of COP 7.

To comply with the UNFCCC and the KP, countries are to regulate forest use and management by limiting harvesting and instituting immediate reforestation of logged areas with greater priority for carbon sequestration, regulate the production and use of forest products as well as the disposal of waste, regulate producers of GHG and promote investment in carbon sinks. Every country seeking to implement this must conduct and update inventories on emissions and removal of GHG including deforestation, plantations and forest regeneration, burning or decomposition of wood, develop programmes for mitigating the effects of climate change including measures in sequestration and sinks, promote emission reducing technologies, prepare sustainable management of sinks and reserves, prepare for adaptation to the

22. The CDM of the KP was created to allow the conversion of GHG emission reductions in developing countries into carbon credits that industrialised countries can use for complying with the emission targets set under KP. Under the CDM, projects that reduce GHG emissions and contribute to sustainable development can earn a saleable Certified Emission Reduction Credits (CERs) and countries with a commitment under KP can purchase the CERs to meet portion of their obligations under the KP. This has consequently generated a huge carbon market. There is a very large and currently untapped potential for mitigation in the agricultural and forestry sectors in Africa through activities that are not allowed under the CDM such as avoided deforestation, sustainable agriculture and forestry practices and soil carbon sequestration.

impacts of climate change and develop appropriate plans for areas that could be affected by flooding, drought and desertification processes.[23] To be sustainable the projects must be consistent with national development priorities, strategies and any existing plans and targets for sustainable development.

In 2007, a new sense of urgency was injected into the United Nations climate change negotiations aftermath of the IPCC publication of its fourth assessment report. Parties at the end of the Conference in Bali, agreed to enhanced national and international actions including the consideration of measurable, reportable and verifiable nationally appropriate mitigation commitments or actions by developed countries, and nationally appropriate mitigation actions by developing countries that are parties to the Convention. Such developing countries are to be supported and assisted with technology, finance and capacity-building that is measurable, reportable and verifiable. Other subjects covered at Bali include the use of approaches that can enhance the effectiveness of mitigation actions including market mechanisms and the issue of reducing emission through curbing of deforestation and forest degradation in developing countries. Parties were also encouraged to support capacity-building and undertake efforts including demonstration activities to address drivers of deforestation in order to address the needs of local and indigenous communities who depend on forest resources for their livelihoods. All of these decisions that were adopted made up the

23. A CDM Executive Board consisting of 10 members are appointed to approve proposed projects under the CDM and a number of rules have been established to apply to CDM projects in general. The advisory bodies within the COP, namely – Subsidiary Body for Scientific and Technological Advise (SBSTA) and the IPCC have been actively involved in preparing advice and guidance. The established rules and guidelines have been criticised because the definition for reforestation and afforestation are narrow and liable to eliminate many projects aiding forest rehabilitation, regeneration, revegetation and enrichment planting. Further, that there is no discrimination between small scale and large scale projects and in addition units may be pure, mixed or multi-purpose arrangements which may include different management systems such as forestry and farming.

Bali Road Map.[24] Regrettably, the accord reached at the Copenhagen Conference in Demark in 2009, did not further advance this cause.

It is significant to note that law making in relation to global issues is generally at one extreme managed by fully integrated institutions that impose regulations through comprehensive hierarchical rules and at the other end by a highly fragmented collection of institutions with no identifiable core or characterised by weak or non-existent linkages between regime elements. In between is a wide range that include regimes with identifiable core and non-hierarchical but loosely coupled institutions.[25]

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24. The UNFCCC SBSTA Five Year Programme of Work on Impacts, Vulnerability and Adaptation to Climate Change UNFCCC/SBSTA/2006/5 now renamed Nairobi Work Programme on Impacts, Vulnerability and Adaptation to Climate highlighted the need for action in the following priority areas for the coming five years – methods and tools, data and observation, climate modelling scenarios and downscaling, climate related risks and extreme events, socio-economic information, adapting planning and practices, research, technologies for adaptation and economic diversification. All these measures are to integrate the response to climate change into national risk strategies by requiring that specific programmes and projects include strategies and measures to manage risks arising from climate change variability and change and knowing that reducing GHG emissions will take many decades, it is necessary to help societies adapt themselves to the realities of changing and changed climate conditions by introducing fundamental changes in the structure of their economies, production processes and technologies, livelihoods, consumption patterns, value systems, organisation and governance etc in order for the planet earth to be sustainable.. Adam, R. A. et al., "Economic Effects of Climate Change on United States Agriculture" in Mendelssohn R and J. E. Neumann (eds), *The Impacts of Climate Change on the United States Economy* (Melbourne: Cambridge University Press, New York, 1999). See also Elizabeth Kolbert, "A Reporters' Field Notes on the Coverage of Climate Change, Environment 360 @ *http://e360.yale.edu/content/feature. msp?1d=2130*, accessed September 2, 2010
25. It is increasingly recognised that mitigation and adaptation to climate change have become unavoidable as the precautionary principle and common sense of preservation makes mitigation and adaptation wise decisions. See Roger N. James et al., "The Relationship Between Adaptation and Mitigation in Managing Climate Change Risks: A Regional Response for North Central Victoria", Australia Mitigation Adaptation Strategies Global Change (2007) 12: 685 -712.

Consequently, in addressing climate change at international level, the use of law have been criticised as not capable of yielding sufficient meaningful result. Some of the arguments that have been put forward can be highlighted as follows:

(1) The first relates to the impossibility of agreeing an integrated comprehensive law on climate change. An integrated comprehensive regime is possible where there is a common objective to yield a single institution. Here, the interest of all the actors must be similar across a broad issue area. In relation to climate change, however, the existence of conflicts between individual parties as a result of their different interest, power, information and beliefs results in fragmentation and is a major challenge for the achievement of a comprehensive regime. Further, international law making evolve through the process of converging expectations or tacit bargaining. The result is that international regimes vary in membership[26] leading to the existence of different forums which frequently leads to forum-shifting, abandoning organisation or pursuing the same agenda in more than one organisation. Therefore, there is always the dire need to link issues in related fora in order to achieve the objectives of the law.[27] Although the UNFCCC was designed to be universal in membership with the aim of thickening into a comprehensive regime, it invariably did not achieve this goal. What has emerged is a situation whereby world leaders have continued in their bid

The precautionary principle and common sense of preservation makes mitigation and adaptation wise decisions.

26. Institutional design may also favour fragmentation when patterns of interests shaped by beliefs, constrained by information and weighted by power diverge to a greater or lesser extent or when it is administratively difficult to create extensive links between distinct regulatory elements.
27. Keohane Robert O. and David G. Victor "The Regime Complex for Climate Change" Discussion Paper 2010-33, Cambridge, Mass,: Harvard Project on International Climate Agreements, January 2010.

to construct institutions that will suit their purposes and interests. Structural interest diversity is inherent due to contemporary world politics, high uncertainty settings of climate change impacts and the varieties of problems that are addressed by regulatory action on climate change implying different tasks competing for pressing contemporary actions.

(2) The second relates to the lack of effective implementing and enforcement authority. Both the Convention and Protocol have no effective implementing and enforcement authority. This loose arrangement is what a number of the Parties have consistently favoured.[28]

(3) Third criticism of law in addressing climate change at global level relates to the Protocol's heavy reliance on sinks and flexible mechanisms which were incorporated after the insistence of the United States and most of the OECD countries during negotiations. It is argued that the flexible mechanisms may lead to short-term results in that attention of parties may shift from the real focus of emission reduction to cost savings and investment gains.[29]

(4) There is also the challenge of the principle of territorial sovereignty pursuant to which a state can decide to act in only its best interest. It is in furtherance of this principle that a country like the United States has refused to ratify the Kyoto Protocol notwithstanding the fact that it is a major emitter of GHGs. This is a major obstacle to any meaningful progress in the fight against climate change using legal regimes.

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28. This situation is referred to as the concept of Planetary Trust adjudged as the most realistic approach to solving climate change. See R. Nanda, "The Public Trust Doctrine: Viable Approach to International Environmental Protection" (1976) 5 Ecol, L.Q. 291.
29. F. Yamin, "Climate Change Negotiations: An Analysis of the Kyoto Protocol" (1998) 10 International Journal of Environmental Pollution 428.

(5) A fifth criticism is the existence of differences in the distribution of technology, natural and financial resources among and within nations and regions as well as differences to them in relation to mitigation and adaptation costs. These are important considerations in the analysis of climate change options and have raised serious challenge for the law on the extent to which nations should bear obligations of the impacts of climate change and mitigation and adaptation policies.

Imperatives of an Effective Regulatory Scheme

The need for a regulatory framework to support mitigation and adaptation policies is very vital. As earlier indicated, the focus of law is to stipulate measures towards reducing causes of climate change and more importantly the most appropriate responses to climate change in case the predicted impacts manifest.[30] Already, there are identified and defined global measures that an effective regulatory framework must be able to respond to i.e. preparation of an inventory of sources and sinks of GHGs; elaborate assessment of potential impacts of climate change, analysis of potential measures to abate the increase in GHGs emissions and adapt to climate change; designing an action plan to address climate change and its adverse impacts; preparation of national communication to the COP; enhancing general awareness and knowledge on climate change and related issues and strengthening dialogue, information exchange and cooperation among the relevant stakeholders including government, non-governmental, academic and the private sector agencies.

In structuring any regulatory framework, there are two policy perspectives- technical policy design (that seeks to meet goals of efficiency, cost effectiveness and equity) and international / political economy perspective (that tempers technical perspective

30. Houghton, J. J *et al*., *Climate Change 1995: The Science of Climate Change* (Contribution of Working Group 1 to the 2nd Assessment Report of the IPCC)(Cambridge: Cambridge University Press, 1996).

with the notion that states will only make, participate and comply with agreements that are in their own self interest). The best policy design is one that meets the combination of both technical policy decision and international political economy perspective. In this regard, the design rules of any framework must be incentive compatible in order to elicit on-going participation and implementation. The range of policies and agreements should be designed to be sensitive to political needs, promote cooperation, encourage changes in behaviour and be able to assess environmental effectiveness (on short-term, medium term, and long-term).

For Nigeria, as is the case with other countries, the impacts of climate change is beginning to manifest in the different phases of the economy Therefore, the need to strengthen mitigation and adaptation strategies has become an imperative. This will involve the development and mainstreaming of policies and measures that can address climate change in ongoing and new development policies, while also encouraging continuity of initiatives that are directed at reducing climate change-related risks.

An effective framework requires an enabling environment i.e. institutions with knowledge and skills which must prioritise[31] climate risks, and be imbued with capability for continuous improvement using appropriate indicators to monitor and review. It must have the capacity to address multi-layered environmental problems and factor in such critical components as individual lifestyles, business consensus, public opinion, market opportunities and environmental advocacy. It must also have a clear understanding of the two responses to climate change, namely mitigation and adaptation.

Understanding the Place of Mitigation and Adaptation

31. When you prioritise, you are able to make decision based on information, understanding and available technology, skills and methods.

Mitigation is a response measure aimed at reducing GHGs emission into the atmosphere or enhance their sinks. The need for mitigation stems from the observations of the IPCC's work which stated that if no mitigation of GHGs emission is done, the negative effects of climate change will be difficult to reverse. Mitigation focuses on how to achieve renewable energy supply, develop fuel efficient vehicles, and design buildings in ways that will require less of energy use among others.

Adaptation on the other hand is a process whereby policies, actions and other initiatives are structured to minimise the effects of climate change. Thus, while mitigation primarily involves reduction in the concentration of GHGs, adaptation involves acting to minimise the effects of global warming Adaptation is often reactive i.e. induced by observed extreme weather events and their impacts. It requires international cooperation, risk management, risk reduction strategies and disaster reduction strategies including mechanisms such as insurance. The UNFCCC provides for adaptation in Article 4 and lists specific domains in particular need of adaptation. These are coastal zones, water resources, agriculture and areas affected by drought, desertification as well as floods. Article 8 complements the list with its reference to small island countries, countries with forest areas liable to forest decay, countries prone to natural disasters and countries with fragile ecosystems including mountain ecosystems.

Adaptation involves long-term measures that proactively analyse real and potential risks and prepare communities for expected and unexpected threats that may emerge. The significance of adaptation is underscored by the fact that climate change will still occur even when emission reductions have proved successful. Adaptation actions help to boost the resilience of the communities and the confidence and skills of those living within them so that they can better protect themselves against hazards. The objective of adaptation is to offset vulnerability.

In order to mainstream mitigation and adaptation, the regulatory framework must underscore the nature and content of

the different governances of law which include issues like imposition of obligations, partnerships, promotions and incentives to innovate and invest in new and cleaner forms of energy that will shape the economy mode towards a development pattern respectful to the environment. Also, realising that adaptation is inherently local as the direct impacts of climate change are felt locally, response measures must be tailored to local circumstances such that every stakeholder will be carried along. Furthermore, because climate change is connected with many aspects of economic development, the mainstreaming process must be embedded within broader developmental efforts and complemented by the effort of everyone.[32] It must cut across relevant sectors and sector policies and involve a broad range of players.

The following have been found as capable of mainstreaming practical mitigation and adaptation strategies:

1) Establishment of a national group to give focus to climate change initiatives;
2) Establishment of series of policies and measures to strengthen mitigation and adaptation. This includes ways of reducing GHG emissions and the development of renewable energy sources, supported financially and technologically to protect vulnerable people and places;
3) Establishment of long-term plans towards a shift in the national economic / industry base away from dependence on natural resources export and primary minerals to manufacturing and other value-adding activities;

32 For example, replacing one normal light bulb with a compact fluorescent bulb could result in savings of money. Money can also be saved by the production and promotion of environmentally-friendly biodiesel and bio ethanol fuels from crops such as soya, sunflower, sugar beet, maize, sorghum, wheat, sugarcane. See Lucky Khumalo, "Bio fuels to Power", Eastern Cape South Africa. Info @ *http://www.southafrica.info/business/investing/opportunities/biofuels-080307.htm*, accessed September 2, 2010.

4) Development of new strains of drought –resistant crops or livestock that are better suited to changes in farming conditions;
5) Evolvement of new technical and social standards for the siting of human settlements and the construction of individual dwellings to maintain ambient temperature and humidity with minimum energy consumption per capita;
6) Institutionalisation of behavioural changes in the direction of greater energy efficiency, water conservation and greater social valuation of natural ecosystems; and
7) Emphasizing win-win opportunities[33] for both economic recovery and the environment. For instance, in the development of cleaner technologies,[34] policies which support economic and social development innovation such as job creation, the provision of basic amenities and infrastructure development, the reduction of poverty and the provision of housing are most appropriate.[35]

Further, by way of practical example, a price can be placed on carbon emissions to encourage greater efficiency in the use of

33. Some of the win-win policies are removal of subsidies in fossil fuel based energy production and consumption. This would reduce GHG emissions while increasing the efficiency of the economy. Also, cutting trade barriers to climate-friendly goods (e.g. on energy efficient equipment technologies for generating electricity, energy efficient light bulbs), addressing market failures that prevent improvements in the energy efficiency of buildings and transport systems (e.g. through building codes and household electrical appliances) and embracing policies that could achieve given environmental objectives more cost effectively.
34. E.g. wind power turbines, low carbon transport and energy systems, "smart" electricity grids and energy efficiency buildings.
35. These priorities are compatible with the principle of sustainable development as defined in the Rio Declaration of 1992. The objective is to create a synergy between national government objectives, sustainable development and climate change in order to include climate change issues in sustainable policies, indicators and criteria. The process calls for holistic screening and examination of projects and proposals to ensure they promote national development objectives while serving climate change prevention orientation.

energy.[36] The diversification of energy mix is also encouraged by investment in lower carbon emitting technologies as they become available and meet feasibility requirements. For the transport sector, the highway networks are modernised to accommodate systems such as mass rapid transport systems[37]. In the area of agriculture, conditions to adapt are appropriately supported by government strategies aimed at autonomous and planned adaptation.[38] Focus is also on critical factors such as water management (including new dams, distribution channels and irrigation strategies) and new crops adapted to stress factors.

Adaptation can be undertaken at the community level by using seed varieties and technologies, adjusting times of sowing and harvesting and moving spatially. A reduction of reliance on industrialised mono-cropping and diversification of the range of crops will ultimately reduce vulnerability and potentially reduce irrigation needs.[39] In the health sector, adaptation can also be

36. Price based approaches such as carbon taxes and auctioned permits in cap-and-trade schemes can also help to bring revenues. Energy efficiency depends on the type of fuel used and the characteristics of particular appliances. Potential energy savings can be achieved from the use of available efficient technologies for cooking, heating, lighting, electrical appliances and building insulation. Attempts must be made to get them available at the cheapest costs. Also, energy efficiency should be encouraged in the activities which have tax implications in order to reduce harmful emissions while incentives should be introduced for investments in energy efficient equipment.
37. Implementing a transport sector mitigation programme requires the control of exhaust emissions as the transport sector is the most rapidly growing source of GHG emissions due to the extensive use of synthetic fuels. There is need for urban and semi-urban planning to improve public transport system significantly enough to retain more commuters through public transport initiatives e.g. the introduction of BRT buses initiative of Lagos State.
38. Autonomous adaptation is the reaction to changing precipitation patterns e.g. changing crops or using different harvest and planting / harvesting dates while planned adaptation measures are conscious policy options or response strategies often multi -sectoral aimed at altering the adaptive capacity.
39. Julia Laukkonen et al., "Combining Climate Change Adaptation and Mitigation Measures at the Local Level" Habitat International 33 (2009) 287 – 292. Adaptation strategy in agriculture includes change in topography of land, use of artificial systems to improve water use / availability and protect against soil

undertaken by encouraging health protection and health promotion measures,[40] water resources management and contingency plans.[41] Adaptation in forestry require changes in forestry practices e.g. genetic engineering could be used to develop more heat and drought resistant hybrids which will allow the forestry industry to counter the threat of climate change and maintain current production areas. Also, community based forestry and use of indigenous species and knowledge which has demonstrable benefits can be encouraged and incorporated. For plant biodiversity, existing plant covers are being managed using sensitive indicator species to serve as warning entities, while for animal biodiversity, species inventory are being established with distribution monitoring networks. Potential detector species aid to indicate point of departure and highlight areas that are most vulnerable.[42] In the area of land use, national policies that can guide sustainable development and efficient allocation of land use in an open and transparent manner are being developed. This is of particular importance in hosting CDM projects because investors would like to minimise their risk by being assured that the project

erosion, change farming systems and timing of farming operations, use of different crop varieties, conservation tilling, furrow dying, terracing, contouring and planting vegetation act as wind breaks and protect fields from water and wind erosion. In soil and land management, a key element is soil organic matter which improves and stabilises the soil structure which ensures that the soil can absorb higher amounts of water without causing surface run-off in order to maintain permanent soil cover.

40. E.g. monitoring and forecast systems to warn of disease outbreaks as well as treatment facilities.
41. Flexibility in water use allocations, water demand management and conservation measures.
42. For biodiversity, the concept would need to build in resilience in ecosystems, coherent ecological networks, large reserve areas, connectivity and ecological models to predict shifting ranges of species. Therefore, all its components-genes, species and ecosystems has to be considered in order to increase resilience to changing environmental conditions. This can be done with the use of indigenous and locally adapted plants and animals, and multiplication of crop varieties with tolerance to biotic stresses.

will be rewarded if the land allocation system is efficient and transparent.

In addressing climate change, there clearly must be a synergy between mitigation (which is global and long-term) and adaptation (which is local and short-term involving major structural changes) as different activities have various blends of mitigation and adaptive capacity. Both mitigation and adaptation manage different components of climate related risks. The challenge[43] is to put in place the right incentives within the right regulatory frameworks. Whichever way one looks at it, ambitious climate change regulatory frameworks are achievable and affordable compared to the costs of inaction. What is required is the appropriate linkage of all government sectors and the total involvement of the private sector and NGOs. The regulatory framework must also meet the standards of coherence, effectiveness, determinacy, sustainability, accountability and epistemic quality to effectively address the issue of climate change. The starting point is to conduct a comprehensive assessment of existing policies and their relative effectiveness to guide the design and development of future policy programmes. The key challenges that will be faced in mainstreaming mitigation and adaptation policies into development planning, policy and investments can be outlined as follows:

1) Absence of a unified vision and approach;
2) Lack of understanding of the challenges of climate change at different levels of government;

43. Harrison, P.A. *et al*., "Modelling Climate Change Impacts on Wheat, Potato and Grapevine in Europe" in Downing et al (eds) *Climate Change, Climate Variability and Agriculture in Europe: An Integrated Assessment, Research Report No. 21* (Oxford: Environmental Change Institute, University of Oxford, 2000) 367. See also, Shaun Benton, "South Africa Adopts 'bold' Climate Change Policy" South Africa Information July 30, 2008 @ *http://www.southafrica.info/about/sustainable/climate-300708.htm*, accessed September 5, 2010.

3) The issues related to climate change are plagued with substantial uncertainties making mitigation and adaptation strategies difficult to sell[44];
4) Lack of comprehensive and localised risk and vulnerability assessments;
5) Absence of coherent research programmes to identify and describe impacts associated with near term, long term and abrupt global climate change;
6) Absence of organised and coordinated efforts across local, state and federal agencies as well as absence of a strong link between indigenous communities and other local partners;
7) Absence of strategies for evaluating and applying lessons learned;
8) Limited availability of reliable, useful and usable climate information. In planning for adaptation, information is very critical as such there must be capacity and resources to track meteorological patterns, forecast impacts and assess risks in order to target investments and develop policies that can reduce vulnerability.[45] Africa of which Nigeria is a part is believed to be the world's lowest density of meteorological stations with one site for every 25,460km.^{2} This is one-eighth of the minimum level recommended by the World Meteorological Organisation (WMO). In contrast is a country like Netherlands that has one site for every 716^2. (This is four times above the WMO minimum;
9) Post institutional capacities to provide competent Climate Change Risk Management and Adaptation (CRMA) and champion long-term adaptation – Exposure to risk is sometimes a function of post human development and

44. The fact that we have partial knowledge of future climate change is itself a challenge.
45. There is need for knowledge generation and capacity building in order to use climate information and adaptation best practices for further climate risk management. This entails the building of climate information systems, support negotiating capacities to post-KP discussions especially in the area of tapping into new available resources and benefits.

current public policy and institutional capacity.[46] Same event can produce different outcomes in different countries due to governance problems, low levels of finance and a limited disaster planning and response capacity by public agencies. Two institutional problems to mainstreaming CRMA into developmental processes are lack of appropriate institutions at all levels and chronic dysfunction of existing institutional arrangements;[47]

10) Limited integration among sectoral agencies – Climate change affects wide-ranging sectors as such, it is important to engage relevant agencies at all levels from national to local. Many sectoral agencies operate in isolation and it is

46. Studies have linked poverty to lack of sustainable adaptive capacity. There is need to ensure progress towards eradication of poverty by reducing vulnerability and promoting climate resilience in development investments.

47. The guiding principles in CRMA strategy is strengthening internal capacity and undertaking comparative approach in collaborations in order to draw lessons to ensure that it is aligned to the strategies in the national development plans. The states have to be integrated by extensive cross-state collaboration and monitoring in the interest of protecting global, national and state policy goods. Also, in order to provide adequate support and maximise knowledge generation, there is need to build synergies with the intervention of other agencies, private sector, Non-governmental organisations and civil society organisations. This way collaboration, harmonisation and the distribution of labour with a range of developmental partners will be achieved in dealing with long-term trends of adaptation which are beyond the capacity of any single bilateral, multi-lateral and non-governmental agreements. Also, pilot projects can be launched with the potential to affect future emissions. To achieve these, there must be climate-proofing of investments in order to ensure that investments are implemented as planned by adapting infrastructural facilities to be more resilient to climate change through designing, construction, operating and maintaining them to serve under such changed conditions. This calls for policy and legal reforms in many areas e.g. in the area of land degradation to promote afforestation and sustainable land practices, development of land tenure reforms, fishery sector regulation, climate risk insurance, establishing anti-pollution standards for rivers, basins and lakes as well as strengthening trans-boundary cooperation in the management of fresh water resources. It should be extended to strengthening regulatory over-sight over extractive industries particularly in the case of oil and gas and precious stones industries and include strict monitoring of the industries to ensure compliance with international safeguards, standards and codes.

not uncommon to find more than one agency being responsible for specific responsibilities making the integration of climate change planning difficult;

11) Limited financial resources – Finance poses one of the greatest limitations to management of climate risks and adaptation and the ability to mainstream them into national development planning. Estimates of costs are usually tentative depending on the climate change scenario and how ambitious the adaptation regimes are expected to be. A list of donor agencies with specific donor country interests and potential funds available must be maintained;[48]

12) Lack of due diligence procedures – There is need for due diligence procedures comprehensively to incorporate climate change risks and to pay attention to multiple vulnerabilities. This will culminate into environmental climate and social impact assessment guidelines which will ensure that project endorsement is given on the grounds of non-duplication, economic and social benefits and overall feasibility according to the severity of the required adaptation;

13) Absence of strong political will on the part of government to fight climate change - Many countries view climate change as a serious problem that must be addressed but national support by government does not always translate into concrete action. The greatest challenge here relates to the dichotomy between developed and developing countries. Developing countries are not under obligation to meet specific targets, while the industrialised countries want to reduce emissions in the most cost effective way. The

48. The UNFCCC created in addition to existing Global Environment Facility (GEF) Trust Fund, the Special Climate Change Fund (SCCF) and the Least Developed Country Fund (LDCF) to provide funding to assist developing countries that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation to those adverse effects.

difficulties in underlying interests pose a difficult diplomatic issue.

Despite the above enumerated challenges, mainstreaming of mitigation and adaptation strategies will create substantial opportunities. First, much of the accumulated rich and extensive indigenous knowledge of local communities which have been used in dealing with climate change over the years would be improved upon. Secondly, developing countries with clear vision and who understands what they are doing are likely to enjoy goodwill from the international community in addressing climate change in relation to the threats faced. Third, there is opportunity for green development by charting a sustainable path towards a low carbon development.[49]

The Need for a Viable Institutional Structure

Implementing an effective regulatory framework requires appropriate institutional arrangement within national government departments set-up to address climate change issues. The appropriate institution must possess the requisite capacity to carry out their assigned functions such as proper procedure for registration, coordination and reporting. The functional operational component starts with the Ministry of Environment as the national focal umbrella point assisted by other administrative bodies or agencies (working groups) to interface with international institutions and engage in international negotiations regarding policy analysis, capacity-building and technical support. Such an institution must also be able to coordinate with other government departments, industry, NGOs, and research institutes.

Among others, an appropriate institutional framework must be able to deliver on the following:

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49. E.g. outlawing development at certain areas in order to avoid huge impact - see Jekwu Ikeme, *Climate Change Adaptation Deficiencies in Developing Countries: The Case of Sub-Saharan Africa* (Kluwer: Academic Publishers, 2003).

1) Facilitate the development of CDM proposals for approval;
2) Perform a comprehensive technology need analysis that builds on and integrates existing knowledge;
3) Set-up a data base of climate change related research, development and demonstration projects;
4) Extend health protection and promotion measures to counter climate change impacts;
5) Develop and maintain an investment friendly climate to attract developed country partners to invest in climate change related projects;
6) Develop protection plans for plants, animal and marine biodiversity;
7) Accelerate the process of education, training and awareness of climate change and its impacts to speed up the implementation of response actions;
8) Ensure the cooperation and buy in of all stakeholders to climate change response to facilitate a coordinated national programme;
9) Harness the efforts of all stakeholders to achieve the objectives on renewable energy and the energy efficiency strategy to promote a sustainable development path through coordinated government policy;
10) Implement sustainable industry development through coordinated policies, strategies and incentives;
11) Accelerate water resources management and contingency planning;
12) Adapt agricultural, rangeland and forestry practices appropriately;
13) Maintain appropriate attendance at UNFCCC and related meetings;
14) Sharpen the connection between project activities and climate change vulnerability and change;
15) Strengthen monitoring of and reporting on mainstreaming climate change;

16) Strengthen support to policy and other reform interventions related to climate change;
17) Set a time frame for action with specific achievable milestones and responsibility to formulate appropriate national policies and measures for climate change action and implementation;
18) Integrate science into decision-making, improving information about risks and opportunities, enhancing communication and capacity building among relevant stakeholders, defining process of coordination and collaboration among stakeholders, identifying priorities for a coordinated government response, promoting flexible framework that will enable government and entities to understand, analyse and respond to climate change and a commitment to dynamic engagement, interactive understanding of results and rigorous evaluation.

Furthermore, a viable institutional structure must also ensure that implementation strategies are guided by the following principles:

1) Ensure that the strategy is consistent with national development priorities including poverty alleviation, access to basic amenities including infrastructure development, job creation, rural development, foreign investment, human resource development and improved health leading to sustainable economic growth;
2) Ensure alignment with the need to consistently use locally available resources;
3) Ensure compliance with international obligations;
4) Recognise that climate change is a cross-cutting issue that demands integration across the network of programmes of several government departments and stakeholders, and

across many sectors of industry, business and the community;

5) Focus on areas that promote sustainable development;
6) Promote programmes that will build capacity, raise awareness and improve education in climate change related issues;
7) Encourage programmes that will harness existing national technological competencies;
8) Recognise that Nigeria's emissions will continue to increase as development is realised; and
9) Ensure that the strategies are such that can constantly be reviewed in the light of national priorities and international trends.

Conclusion

Climate change is at the moment the most important menace to earth's biodiversity, natural resources, agriculture and access to food, poverty eradication and water availability. The increasing threats to livelihoods and poverty reduction have reinforced the need for management of risks as well as proactive actions in addressing climate change issues. Presently, the existing legal and institutional framework for regulating climate change is in a fragmented form. There are several incoherent laws and implementing agencies for environmental protection in relation to climate change. The lack of infrastructure for regular monitoring and enforcement and the non-deterrent nature of penalties for violations are critical challenges.

Addressing climate change is beneficial, both financially and economically and fighting it through global concerted effort makes sense. This is why nations and governments are expected to make the best possible use of the different available tools. The role of law is very critical in meeting commitments and actions to mitigate GHG emission and adapt to its effects if progress is to be made globally in addressing climate change. The nature and content of an effective and implementable regulatory framework is the focus

of this paper. From what we have seen, the challenge is complex but solving it is unavoidably the responsibility of all.

TOWARDS THE SUSTAINABLE MANAGEMENT OF NIGERIA'S COASTAL ENVIRONMENT

By

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and
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Abstract
Nigeria's coastline is one of the most expansive in Africa and has immense biological and mineral resources. The resources include aquatic flora and fauna, heavy minerals, fisheries, sand, gravel, clay, forest, mangrove, wildlife, crude oil and gas. However, the coastal region is equally plagued with a lot of environmental problems that are as a result human activities in the use and exploration of these resources. The environmental problems include oil pollution, deforestation, sand mining, and poor environmental sanitation. A frightening dimension to these environmental problems is that they have continued unabated despite the existence of a plethora of environmental legislation in the country. This paper highlights the laws that regulate the environment. It posits that while some of the laws have inherent shortcomings that make their enforcement difficult, institutional shortcomings are significant factors that hamper the sustainable management of Nigeria's coastal region.

Introduction

The coastal zone is the interface between the land and the sea[1] and its boundaries are the coastal waters, the adjacent shorelines, and the lands therein and there under.[2] The coastal area of any nation is a very important part of the nation's territorial boundary and is an important resource for agriculture, fisheries, navigation

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1. Osanwuta, D.A. & Nwilo, P.C. 2003. Capacity Building for Integrated coastal Areas Management (IC2M) in Nigeria. <http://www.gisig.it/coastgis/papers/osanwuta/htm>. [Accessed 1 June 2008] p.2.
2. *Ibid.*

communication, military, commerce, tourism and mining activities. With a coastline of about 8.35km stretching from the western border with Benin Republic to the eastern border with Cameroon in close proximity with the Gulf of Guinea on the South eastern Atlantic Ocean, Nigeria has one of the most extensive coastlines in Africa.[3] Nigeria's extensive coastline is environmental is endowed with both biological and mineral resources. The biological resources include aquatic flora and fauna, forest, mangrove, wildlife and fisheries.[4] It is estimated that the fresh water fisheries provide about thirty-five percent of the total domestic fish production in Nigeria.[5] The area is rich in natural resources including oil and gas, sand, gravel, clay deposits and heavy minerals including garnet, rutile, apatite, zircon, tourmaline, illminite and sillimanite.[6] Apart from these resources, the beaches around the coast could serve as holiday resorts with recreational activities like swimming, cruising and yachting.

However, the full capacity of the region has not been utilized for reasons connected with the degraded state of the environment. This paper highlights the environmental challenges that face the region. It also examines the laws that regulate the protection of the environment of the delicate region to determine how effective they are to promote the sustainable development of the region's vast natural and human resources. This paper is structured into four parts including this introductory section. The second section highlights the environmental problems that face the region while the third examines relevant laws on the protection of the coastal. The fourth section concludes the paper.

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3. Ibe, A.C. *Coastline Erosion in Nigeria.* (Ibadan, Ibadan University Press, 1988).
4. Ibe A.C. and Awosiku L.F., and Antia E.E., (1984) Progress Report No. 2 Coastal Erosion Project. NIOMR Special Publication. 106.
5. Amokaye, A.G., *Environmental Law and Practice in Nigeria.* (Lagos: University of Lagos Press, 2004), p. 423.
6. FEPA (Federal Environmental Protection Agency), 1997. *Coastal Profile of Nigeria.* Lagos: FEPA. *www.globaloceans.org/icm/profiles/**nigeria**/**nigeria**.pdf* [Accessed 17 June 2008], 12-13.

Environmental Challenges of Nigeria's Coastal Region

There are several factors responsible for the environmental pollution of Nigeria's richly endowed coastal region. The rising human population and increased economic activities such as oil exploration and production activities, sand mining and exploitation of coastal resources contribute significantly to the pollution of the region.[7] It is argued that oil activities that are carried out in proximity to this region contribute significantly to marine pollution.[8] Some of the factors that contribute to the environmental challenges of Nigeria's coastal region are highlighted below.

Pollution

Pollution in Nigeria's coastal region may be grouped into three broad categories. These include industrial, municipal and agricultural.[9] Industrial pollution comprises of oil exploration activities, gas flaring and other gaseous emissions and industrial wastes such as radioactive waste.[10] The most prominent causes of this form of pollution are oil spills caused mainly by equipment failure and sabotage as well as gas flaring from oil activities.[11] Municipal wastes including sewage and garbage dumped into the lagoon, creeks and along the river courses also contribute to the coastal region. It has been observed that in Nigeria, quantities of industrial, household and municipal wastes (mainly sewage and transport-related sedge) generated on shore are disposed of by

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7. The Oceans, Our Heritage: Towards Sustainable Management of the Nigeria Marine Environment. *http://www.org.ng/lineThe20Oceans%20Our%20Heritage.htm.* [Accessed 6 March 2008], 1.
8. Schatzl, L.H., *Petroleum in Nigeria*. (Oxford: Oxford University Press, 1969), p. 47.
9. Coastal Profile of Nigeria by FEPA, *op. cit*. p.51.
10. *Ibid.*
11. See, Omoweh, D., 2005. *Shell Petroleum Development Company, the State and Underdevelopment of Nigeria's Niger Delta: A Study in Environmental Degradation*. Trenton: Africa World Press, Inc. See also, Environmental Rights Action/Friends of the Earth Nigeria, 2005. *Gas Flaring in Nigeria: A Human Rights, Environmental and Economic Monstrosity*. Netherlands: ERA/FOE.

dumping at sea.[12] This is prevalent particularly in densely populated towns located around the coastal region where excavated human wastes are disposed into coastal waters.[13] The pesticides, herbicides, and fertilizer used by farmers leave toxic residues that ultimately sip into the water bodies and contribute to the death of aquatic resources and pollution of the water bodies.[14]

Depletion of Coastal Resources

It has been observed that human activities such as deforestation, hunting, over fishing, introduction of exotic species and poaching has resulted in biodiversity depletion of the living resources in the Nigerian coastal region.[15] The depletion of fish stock in the region due to over fishing is a major problem.[16] Moffat and Linden noted that official catch figures have greatly exceeded the maximum sustainable yield for 1980 to 1989 and serious decline in stocks of some important fish species such as sardines, snappers, croakers and Mackerels has already been reported.[17] The fish resources are depleted by both the small (artisanal) fishermen and the commercial transfers.[18]

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12. Oni, S.I., 2003. "*Towards Sustainable Coastal Hazard Management in Nigeria*". Paper presented at International Conference on Estuaries and Coasts, 9-11 November, Hangzhou, China. *www.irtces.org/pdf-hekou/020.pdf* [Accessed 17 June 2008]. p.183.
13. This practice is very common in Lagos, Warri and Port Harcourt.
14. Adedeji, A. A. & Ako, R. T., "*Towards Achieving the United Nations' Millennium Development Goals: The Imperative of Reforming Water Pollution Control and Waste Management Laws in Nigeria*". Paper delivered at the International Workshop on Water and Sanitation in International Development and Disaster Relief, Edinburgh, UK, May 28-30, 2008.
15. Coastal Profile of Nigeria by FEPA, *op. cit.* p.62.
16. *Ibid.*
17. Moffat D. and Linden O., 1995. Perception and Reality: Assessing Priorities for sustainable Development in Niger River Delta. *AMBIO* 27 – 538.
18. The Status of the Nigerian Coastal Zones. *http://www.unep.org/AbidjanConvention/docs/THE%20STATUS%20OF%20THE%20NIGERIAN%20COASTAL%20ZONES%20version%202.pdf* [Accessed 28 June 2008]. p.33.

Sand Mining

Unfettered sand mining is another source of environmental degradation of the Nigerian coastal region.[19] It is a common feature in the region to mine for sand in order to reclaim land, construct and replenish beaches.[20] For instance, the sand used for reclaiming Victoria Island, Ikoyi and Lekki were dredged from the Lagos lagoon and near shore.[21] Between 1984 and 1989, it is estimated that over 13.22 million m3 of sand was dredged from the Lagos lagoon.[22] These activities result in the reduction and destruction of breeding and nursery grounds in creeks, swamps, mud flats, river channels estuaries and near shore zone.[23]

Coastal Erosion and Flooding

Coastal erosion and flooding are rife along the entire Nigerian coastline.[24] While some incidences of coastal erosion and flooding may be attributed to natural forces, anthropogenic activities also contribute significantly to them. The topography and low nature of the Nigerian coastline area makes the area very prone to flooding particularly at high tides and in the rainy season.[25] Increasing inundation of low-lying coastal areas of Nigeria is also exacerbated

19. Coastal Profile of Nigeria by FEPA, *op. cit*. p. 56.
20. *Ibid* .
21. *Ibid.*
22. Awosika, L.F. and Dublin, C.O. 1984. Sand Mining in the Lagos and Lekki Lagoons and Strategies for Effective Management. *Journal of Mining Geology* 30(1), 137-140.
23. Report on the Status of the Nigerian Coastal Zones, *op. cit*. p.33.
24. Awosika L.F. *et al*., 1993. Implications of Climate Changes and Sea Level Raise on the Niger Delta, Nigeria Phase 1. OCAPAC/UNEP, Nairobi.
25. *Ibid*, p.55.

by sea level rise due to global climate change.[26]Human activities including the construction of harbour protection structures and oil production facilities, damming of rivers, sand mining and dredging, deforestation, subsidence due to fluid extraction, poor physical and land use planning contribute to the erosion and flooding in the region.[27] The modification of the region has contributed to the loss of biodiversity, reduced ecosystem viability and value of coastal systems.

Deforestation

Deforestation is a serious problem in Nigeria, which currently has one of the highest rates of forest loss (3.3 percent) in the world.[28] Since 1990, the country has lost some 6.1 million hectares or 35.7 percent of its forest covers.[29] Deforestation has been acknowledged as a serious problem in the Nigerian coastal region. Uninhibited felling of mangroves renders the environment very susceptible to erosion and flooding since mangrove trees tend to reduce the impact of waves, tides and long shore currents along the coast.[30]

Legal Framework for the Sustainable Management of Nigeria's Coastal Environment

This section reviews the existing laws regulating the coastal environment to determine their efficacy in promoting the sustainable management of Nigeria's coastal environment. In this regards, it is remarkable to note that there is a plethora of laws with provisions that regulate (directly or indirectly) the coastal environment. That notwithstanding, it has been observed that the

26. Awosika L.F. *et al*, 1992. Impacts of Sea Level Rise and Nigeria. Paper presented at the IPCC symposium on the Rising Challenge of the Sea, Margarita Island, and Venezuela 14–19.
27. Coastal Profile of Nigeria by FEPA, *op. cit*. p.51.
28. Nigeria. *http://rainforests.mongabay.com/20nigeria.htm* [Accessed 28 June 2008].
29. *Ibid.*
30. Coastal Profile of Nigeria by FEPA, *op. cit.* p.55.

efficacy of these laws are constrained by several factors.[31] Amokaye identifies the reasons for this to include: the fact that several international conventions on marine pollution that Nigeria is a signatory to have not been enacted into law as required by Section 12(1) of the 1999 Constitution; the existing laws are uncoordinated and scattered in our statutes books; and, inherent institutional constraints in the enforcement of existing legislation with many federal agencies jostling for control.[32] Relevant provisions of some federal legislation are considered below.

The Federal Environmental Protection Agency (FEPA)[33] established in 1988 was the first cross-sectoral environmental regulatory body in Nigeria. The Agency was responsible for the protection and development of the environment between 1988 and 2007 that it existed. Pursuant to the provisions of section 37 of Act, FEPA made the following regulations: *The National Guidelines and Standards for Environmental Pollution control in Nigeria* that is the basic instrument for monitoring and controlling industrial and urban pollution; *The National Effluent Limitation Regulations* that mandates industrial facilities to install anti-pollution equipment, makes provision for effluent treatment and prescribes maximum limits of effluent parameters allowed for contraventions. It also provides that all industries in Nigeria should be operated on the basis of Best Available Technology (BAT); *Pollution abatement in Industries and facilities Generating Wastes Regulations* that imposes restrictions on the release of toxic substances and stipulates requirements for monitoring of pollution. It also mandates existing industries and facilities to conduct an environmental audit; and the *Waste management Regulations* that regulates the collection, Treatment and disposal of solid and hazardous wastes from municipal and industrial source.

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31. Amokaye, A.G., *op. cit.* p.454. See also, Adedeji, A. A. & Ako, R. T., 2005. Hindrances to Effective Legal Response to the Problem of Environmental Degradation in the Niger Delta. *UNIZIK Law Journal*, 5(1), 415-439.
32. Amokaye, A.G., *op. cit*. p.454.
33. Decree 58 of 1988.

The FEPA Act was repealed in 2007, following the enactment of the *National Environmental Standards and Regulations Enforcement Agency (NESREA) (Establishment) Act***.** NESREA functions include enforcement of compliance with laws, guidelines, policies and standards on environmental matters and media other than the oil and gas sector.[34] The Act expressly prohibits the discharge in such harmful quantities of any hazardous substance into the air or upon land and the waters of Nigeria or at the adjoining shorelines except such discharge is permitted or authorised under any law in force.[35] The National Oil Spill Detection and response Agency (NOSDRA) bears the responsibility to protect the environment from oil-induced pollution. It was established to co-ordinate the implementation of the National Oil Spill Contingency Plan (NOSCP) for Nigeria in accordance with the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) 1990, to which Nigeria is a signatory.[36]

The *Petroleum Act*[37]which is the principal Act that regulates petroleum operations in Nigeria empowers the Minister to make regulations on the safe working and prevention of pollution of watercourses as well as the atmosphere.[38] In addition the minister can suspend any operations that are not conducted in accordance with good oil field practice.[39] The *Petroleum Regulations*[40] is another subsidiary law made under the Petroleum Act. Regulation 13 of these Regulations specifically prohibits the discharge or escape of petroleum into waters of the port.[41] The *Petroleum (Drilling and Production) Regulations* via Regulation 25 mandates

34. See generally section 7 NESREA Act.
35. Section 27.
36. National Oil Spill Detection and Response Agency (NOSDRA) Act, Federal Republic of Nigeria official Gazette No. 72, Vol. 93, Act No. 15, A407-425.
37. Cap. P10 Laws of the Federation 2004.
38. Section 9(1) b (i) and (iii).
39. Section 8(1) (c).
40. Cap. P10 Laws of the Federation 2004.
41. Regulation 13.

the licencee or lessee to adopt all practicable precautions including the provision of up-to-date equipments approved by the Directorate of Petroleum Resources to prevent pollution in inland waters, rivers, the territorial waters of Nigeria, or the high seas by oil, mud other fluids or substances which might contaminate the high seas, banks or shoreline or which might cause harm or destruction to fresh water marine life, and where any such pollution occurs or has occurred, shall take prompt steps to control, and if possible, end it.[42] The *Oil Terminal Dues Act*[43] that basically regulates the levying and payment of terminal dues on ship evacuating oil at terminal ports in Nigeria and services provided at ports, also contains provisions that prohibit the discharge of oil or mixture containing oil at oil terminals into the territorial waters of Nigeria from any vessel or apparatus used for transferring oil to any vessel.[44] In the same vein, the *Nigerian Port Authority Act*[45] empowers the Port Authority to control pollution arising from oil or any substance from ships using the port.[46] The Act also empowers the Authority to make bye-law for the purpose of setting up pollution control guidelines and monitoring oil spillage, dumping of waste and garbage by ships arriving at the port, wharves and jetties.[47]

Other relevant laws include the *Nigerian Maritime Administration and Safety Agency Act*[48] that empowers the Agency to, among other things, make regulations in relation to the dumping of ships and shore generated waste in the Nigerian waters; removal of wreck which constitute risk and threat to the environment.[49] It is also empowered to make regulations on the prohibition of carriage, shipment and jettisoning of harmful

42. Regulation 25.
43. Cap O8 Laws of the Federation of Nigeria 2004.
44. Section 6.
45. Cap N126. Laws of the Federation of Nigeria 2004.
46. Section 7(i).
47. Section 40(1) (h).
48. This Act was signed into Law on the 25th of May 2007.
49. Section 44.

substances.[50] The *Oil in Navigable Waters Act*[51] was enacted to protect the marine environment particularly sea areas within 50 miles from land and outside the territorial waters of Nigeria,[52]and prohibited Sea areas. It makes it an offence for a Nigerian ship to discharge oil (including crude oil, fuel oil, lubricating oil and heavy diesel oil) or any mixture containing not less than 100 parts of oil, into any part of the sea classified as "Prohibited Sea Area".[53] Furthermore, the Act makes it an offence for the owner or master of the vessel, the occupier of the land and the person in charge of the apparatus to discharge oil or any mixture containing oil from "any vessel", place on land, or any apparatus used for transferring oil from or to any vessel (whether to or from a place on land or to or from another vessel).[54]

There are other Federal laws relevant to the sustainable management of the coastal and marine areas. They include amongst others, the Environmental Impact Assessment Act,[55] Harmful Waste Act, National Parks Act, Exclusive Economic Zone Act,[56] Endangered Species Act, Associated Gas Re-injection Act, Land Use Act,[57] Inland Fisheries Act Sea Fisheries Act, and Water Resources Act.[58] In addition to these laws, Nigeria is a signatory to a number of International Convention on the Protection of the Marine and Coastal Environment. Principles of the Common Law of torts including negligence, nuisance, and the rule in Ryland v. Fletcher may also be utilized by individuals to protect and seek redress for damage done to the environment. It is however important to note that liability in respect of these torts is based essentially on the fault principle which implies that it must

50. Section 45.
51. Cap. O6 Laws of the Federation 2004.
52. *Ibid* at Schedule, para.1.
53. Section 1.
54. Section 3(1).
55. Cap. E12 of the Laws of the Federation of Nigeria 2004.
56. Cap. E17 of the Laws of the Federation of Nigeria 2004.
57. Cap. L5 Laws of the Federation of Nigeria 2004.
58. Cap. W2 Laws of the Federation of Nigeria 2004.

be shown that the defendant infringed on the plaintiff right and that this was either intentional or negligent.[59] It is noteworthy to refer to the *Niger Delta Development Commission (NDDC) Act*[60] which seeks to some extent to address the problem of coastal environment in Nigeria and promote the sustainable development of the region generally.[61]

Despite the array of legislation cited above amongst others, the Nigerian coastal environment is faced with serious ecological crisis. The major problem remains the inadequate institutional framework and capacity to enforce extant laws. The agencies that bear the responsibility to enforce these laws usually lack the requisite human capacity, infrastructural logistics, or, and, funds. Furthermore, the designation of responsibilities is not clear in most cases while the level of co-ordination is also weak. A study described the situation aptly thus: Most...government institutions involved in environment resources management lacked trained staff, technical expertise, adequate information, analytical capability and other prerequisites for policies and programmes. In the case of the oil ministry, overlapping mandates and jurisdiction between FEPA and the DPR frequently contribute to counter-productive competition.[62] Regarding funding, the diversion of ecological funds into other things particularly at the state level for example exemplifies how funds are rarely channelled into ecological purposes as required to ensure the sustainability of the coastal environment. It is trite to note that the penalty clauses in many of the relevant legislations are inadequate to deter environmental delinquents. This is more so that these laws contain exceptionally wide defences that render their enforcement

59. Atsegbua, L., *et al*., Environmental *Law in Nigeria: Theory and Practice*. (Lagos: Ababa Press Ltd, 2003), p.189.
60. Cap. N86 of the Laws of the Federation of Nigeria 2004.
61. Refer to section 7 of the Act.
62. Environmental Resource Managers Ltd., *Niger Delta Survey Final Report Phase I: Volume I: Environmental and Socio-Economic Characteristics*.(Lagos: Niger Delta environmental Survey, 1997).

nugatory.[63] The problem of citizens' access to justice is another contributory factor in this regard. Many of the indigent communities cannot afford the legal costs of enforcing some of these laws where the State has failed in its duty to do so.[64] This is more so where the offending party is an oil-multinational that is notorious for exploiting the legal process to frustrate litigation against them.[65]

Conclusion

It is apparent that the coastal environment is very important to the economic and environmental well being of Nigeria. The country's reliance on the region's resources makes it imperative that the government pays close attention to its sustainable management. The legal framework for environmental protection in this regard is very important. The paper has revealed that despite an array of laws on relevant to the protection of the coastal region and its resources, they remain largely unenforced. Thus, it is imperative that the legal framework is reviewed particularly to address the lacuna in its provisions and enforcement procedures to facilitate the sustainable management of the region and its resources. It is suggested that it is necessary to implement a National Plan of Action to articulate issues of adequate legal and institutional framework, human capacity building/development, infrastructures and funding of the coastal region.

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63. Popoola, A.O., "Oil Pollution in Nigeria's Marine Environment: Implications for Sustainable Development and Challenges for the Law" in Obidi S.S. *et al* eds, *Book of Readings on Education, Environment and Sustainable Development*. (Cardinal Crest Ltd, 1998), p. 196.
64. Adedeji, A. A. & Ako, R. T., "Hindrances to Effective Legal Response to the Problem of Environmental Degradation in the Niger Delta" 2005. *UNIZIK Law Journal*, 5(1), 433-438.
65. See for instance *Shell v. Udi* (1996) 6 NWLR 483 and *Gbemre v. Shell* Suit No. FHC/B/C/153/05 delivered on 14 November 2005.

NESREA VIS-À-VIS FEPA: AN OLD WINE IN A NEW BOTTLE?

By

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Abstract

This paper examines the question whether the NESREA Act has introduced any substantive change in the environmental legislation for protection of the environment or whether it is a change in name only. To this end, the administrative structure, functions and powers of both NESREA and its predecessor, the Federal Environmental Protection Agency (FEPA) are examined. The nature of the offences created by both enactments were also compared. The author's conclusion is that there are substantive changes particularly in the area of functions of the agency i.e. there is an identified major shift towards the enforcement of environmental standards as opposed to just creation of the standards. Also specific offences were created for breach of each aspect of the environmental standards i.e. air, water & land; and the penalties prescribed for violation of environmental standards were reviewed upwards as more realistic monetary fines can now be imposed. In addition, fines for continuing violations were introduced. The omission in the FEPA Act to empower the Agency to set standards in respect of land protection was also addressed in the NESREA Act.

Introduction

Man has the ability to meddle and alter his environment in pursuit of an improved quality of life. Indeed, the environment is at the core of man's existence on earth in that he cannot exist without it. Therefore anything that affects the environment must affect the quality of his life. According to Mammam Kotangora, 'Nigeria was rudely awakened from environmental inactivity by the well publicized illegal dumping of toxic and hazards wastes at Koko.

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That singular event opened the eyes of the Nation to the dangers inherent in adopting a casual approach to the problems of environment protection.'[1] Prior to the Koko[2] toxic incident, the Nigerian state had no central policy on environmental issues.[3] The 1989 National Policy on the environment was the first major step taken by the country to readjust the nation's relationship with its environment based on the principle of sustainable development and proper management of the environment and its resources.[4] The first legislative reaction to the Koko toxic waste incident was the Harmful Waste (Special Criminal Provisions etc) Act, 1988.[5] A direct environmental provision was introduced for the first time into the 1999 Nigerian constitution by virtue of section 20.[6] The section provides that 'the state shall protect and improve the environment and safeguard the water, air, land, forest and wildlife of Nigeria.' Though this section did not create environmental rights for the Nigerian citizen, its integration in the constitution is

1. Brigadier Mamman Kotangora, Federal Minister of Works and Housing at the time of the incident (1988), referred to in Okorodudu – Fubara, M.T, *Law of Environmental Protection*, 1998, Caltop Publishers, Ibadan, p. 27-30.
2. Koko is a town in the present Warri North Local Government Area of Delta State, Nigeria.
3. Following its colonial heritage, existing legislations in England on the environment found its way into Nigerian Statutes, but these were limited to specific activities already known to be prone to environmental degradation such as the Factories Act. Other selective legislations include the Petroleum (Drilling and Production) Regulation (S.25);The Criminal Code (S. 245, 247); Environmental Sanitation Edicts in the states, etc For a fuller discussion on the development of environmental legislation in Nigeria, see Ajibola, Bola:(1989),' The Protection of the Environment through Law', in Shyllon, F.(ed) *The Law and the Environment in Nigeria*, Ibadan, Vintage Publishers, p.5 at 7-10. See also Ladan, M.T. (2010): *Review of NESREA Act and Regulations, 2007-2009: A New Dawn in Environmental Protection in Nigeria*, Nigerian Bar Journal, Vol. 6, No.1, July 2010 for an overview of the development of environmental law in Nigeria.
4. Ladan,, *ibid.*
5. Now Cap H.1, LFN 2004. See Akintayo, J.O.A; (2006) "Legal and Policy Reforms to Enhance the Nigeria Environment" in Matt. F.A. Ivbijaro, Festus Akintola & R.U. Okechukwu (eds.) *Sustainable Environmental Management in Nigeria*, Ibadan, Mattivi Productions, pp. 391 at 408-409.
6. S. 20, Constitution of the Federal Republic of Nigeria, 1999.

however a powerful evidence of societal awareness in Nigeria of the need to protect and preserve the environment.

The Federal Environmental Protection Agency (FEPA) Act 1988 was enacted to project the environmental values and precepts contained in the National Policy on Environment. It was the first major holistic legislation for the protection of the environment in Nigeria. Prior to the promulgation of FEPA, legislation dealing with environmental issues were piecemeal and basically made violations of the air and water criminal offences. These laws include the Criminal Code Act[7] of 1916 which prohibited water pollution and air pollution and created the offence of nuisance. Also the Public Health Act[8] was enacted in 1917. Most of the provisions on environmental protection were scattered in different laws, and were basically *ad hoc* responses to different situations or emergencies.[9] Some of the environmental laws still in effect today include Animal Diseases (Control) Act;[10] Agricultural (Control of Implementation) Act;[11] Agricultural and Rural Management Training Institute Act;[12] Pests (Control of Produce) Act;[13] Quarantine Act;[14] Associated Gas Re-injection Act;[15] Civil Aviation Act;[16] Oil and Navigable Waters Act;[17] River Basin Development Authority Act;[18] Sea Fisheries Act;[19] Territorial Waters Act;[20] Exclusive Economic Zone Act;[21] National Water

7. Cap.C.38 LFN 2004.
8. Cap.P.40 LFN 2004.
9. See F. Shyllon, 'Present and Future Institutional Framework for Environmental Management in Nigeria', in F. Shyllon (ed.), *The Law and the Environment in Nigeria*, supra, n.3.
10. Cap. A.17 *Laws of the Federation of Nigeria* (*LFN*) 2004.
11. Cap. A.13 *LFN* 2004.
12. Cap. A.10 LFN 2004.
13. Cap. P.9 *LFN* 2004.
14. Cap. Q.2 *LFN* 2004.
15. Cap. A.25 *LFN* 2004.
16. Cap. C.13 *LFN* 2004.
17. Cap. O.6 *LFN* 2004.
18. Cap. R.9 LFN 2004.
19. Cap. S.4 *LFN* 2004.
20. Cap. R.5 *LFN* 2004.

Resources Institute Act;[22] Harmful Waste Act;[23] Land Use Act;[24] Minerals Act;[25] Petroleum Act;[26] Criminal Code Act;[27] Energy Commission of Nigeria Act;[28] Federal Environmental Protection Agency Act;[29] Environmental Impact Assessment Decree;[30] and the Nuclear Safety and Radiation Protection Decree.[31] The successor to FEPA, the National Environmental Standards and Regulation Enforcement Agency (NESREA) Act came into force in 2007 to address some of the identified problems of the FEPA Act. Akintayo had opined[32] that though the penalties stipulated under FEPA were more stringent than those in the Criminal Code and Criminal Procedure Act, they were nonetheless inadequate. Fines of N50,000 for individuals and N500,000 for corporate bodies is not a serious deterrent especially to multinational companies, such that it is even cheaper in some cases for a company to pay the fine rather than try to comply with the letter and spirit of the law. Oyewo has also observed that the penalty of fines attached to some of the offences have had the effect of making pollution cheaper.[33]

Even though the NESREA Act repealed the FEPA Act, because this paper is comparative, an overview of both statutes will first be attempted in the next section of this paper. According

21. Cap. E.17 *LFN* 2004.
22. Cap. N.83 *LFN* 2004.
23. Cap. H.1 *LFN* 2004.
24. Cap. L.5 *LFN* 2004.
25. Cap. M.12 *LFN* 2004.
26. Cap. P.10 *LFN* 2004.
27. Cap. C.38 *LFN* 2004.
28. Cap. E.10 *LFN* 2004.
29. Cap. F.10 *LFN* 2004.
30. No. E.12 LFN 2004.
31. No. N.142 of 2004.
32. See Akintayo *supra*, n.5.
33. See Fagbohun, O. (2010): *The Law of Oil Pollution and Environmental Restoration: A Comparative Review*, Lagos, Odade Publishers, p. 21.

to Reitz[34], the comparative method in legal research involves explicit comparison of two or more legal system to determine the precise ways they are similar or different bearing in mind the possibility of functional equivalence. This he says should be done not in the conventional way of describing the features of each of the legal system being compared in different chapters but rather by comparing each subhead or section i.e. the similarities and differences of a particular subtheme in the jurisdictions being compared is stated side by side.[35] This paper though not a comparison of two different legal systems but of two enactments within a single system, it will nonetheless follow the Reitz pattern

Overview of the Federal Environmental Protection Agency Act

The FEPA Act has forty two sections divided into four parts. Part 1 deals with the establishment, Membership, Functions and Powers of FEPA; Part II deals with National Environmental Standards, Part III the establishment of state and local government environmental protection bodies and Part IV supplementary and miscellaneous provisions. The Act contains both administrative and substantive provisions. It established a body corporate known as the Federal Environmental Protection Agency[36] to be governed by a council consisting of a chairman appointed by the President and sixteen other members fourteen of whom are the permanent secretaries of different ministries[37] The function of the Agency was to '*have responsibility for the protection and development of the environment and biodiversity conservation and sustainable*

34. John Reitz, *'How to do Comparative Law'*, The American Journal of Comparative law, Vol.46 No. 4 (Autumn, 1998), *www.jstor.org/stable/840981 (assessed 8/4/2010),*
35. *Ibid*.
36. See S. 1, FEPA Act, Cap F10, LFN, 2004.
37. See S.2 FEPA Act. The ministries are Agriculture and Natural Resources, Commerce and Tourism, Commerce, Culture and Tourism, Education, Finance, Health, Industry Petroleum Resources, Science and Technology, Solid Minerals, Transportation Works and Housing, and Youth and Sports. The two other members are to be appointed from the private sector.

development of Nigeria's natural resources in general and environmental technology, including initiation of policy in relation to environmental research and technology…[38] A Director-General whose function is to develop programmes to carry out the provisions of the Act, was appointed as head of the agency by the President.[39] Importantly, a technical committee was established for the agency to *'assist and advise the council and the agency in the performance of their functions under the Act and to give technical opinion on issues referred to it or delegated by the Council'*.[40]

Part II of the Act[41] empowered the Agency to make recommendations to the President on water standards necessary to protect public health and welfare; to establish effluent limitations for new and existing point sources; to establish the criteria, guidelines, specifications and standards necessary to protect and enhance the quality of Nigeria's air resources. The Agency was also to study, make recommendations and develop programmes for the control of any substance, practice, process or activity which may reasonably affect the stratosphere, especially the ozone therein; identify major noise sources and make recommendations to control same. The Act in this part also prohibited the discharge of hazardous substances in harmful quantities into the air or upon the lands and waters of Nigeria.[42] The penalty for violation of the section is in the case of an individual, a fine not exceeding N100,000 or maximum of ten years imprisonment or both, and for a body corporate, a maximum of N500,000 and an additional N1,000 for everyday the offence subsists.

Further details of this Act are provided in part four of this paper where substantive comparison is made between it and its successor. The next section provides a brief overview of the

38. See S. 5, FEPA Act.
39. See SS. 8 and 10, FEPA Act.
40. See S. 3 of the FEPA Act.
41. SS 16-21 FEPA Act generally.
42. See S. 21, FEPA Act.

National Environmental Standards and Regulation Enforcement Agency (Establishment) Act,

The National Environmental Standards and Regulation Enforcement Agency Act

The National Environmental Standards and Regulation Enforcement Agency (Establishment) Act, 2007 took effect from 30th July 2007. It is an Act 'to provide for the establishment of a body corporate, the National Environmental Standards and Regulation Enforcement Agency, charged with responsibility for the protection and development of the environment, biodiversity conservation and sustainable development of Nigeria's natural resources in general and environmental technology, including coordination and liaison with relevant stakeholders within and outside Nigeria on matters of environmental standards, regulations, rules, laws, policies and guidelines.[43] The Explanatory Memorandum to the Act provides thus:

> This Act establishes the National Environmental Standards and Regulation Enforcement Agency for the effective enforcement of standards, regulations and all national and international agreements, treaties, conventions, and protocols on environment to which Nigeria is a signatory.[44]

Like its predecessor, the NESREA Act is divided into different parts. Part 1 establishes the Agency and deals with matters such as the objectives of the agency as well as membership, composition, emolument and tenure of the Governing council of the agency. Part II prescribes the functions and powers of the agency and council, whilst parts III and IV provides for the structure of the agency and its staff respectively. Part V is headed Financial Provisions but it

43. See S. 2 of the NESREA Act.
44. See the General Heading of the NESREA Act.

includes a very vital part of the law, which is the section on National Environmental Standards. In the FEPA Act, a separate part was created to deal with the important provisions of environmental standards. One is left to speculate at the justification for muddling the Environmental Standards sections with the financial provisions as done in the NESREA Act.[45] Part VI are miscellaneous provisions, and in particular S. 36 repeals the FEPA Act though by virtue of S.35 '*every other requirement, certificate, notice, direction, decision, authorization, consent, application, request, agreement or thing made, issued, given or done under any enactment repealed by this Act shall, if in force at the commencement of this Act, continue to be in force and have effect as if made, issued, given or done under the corresponding provisions of this Act.*

The next section of this paper will compare more closely the provisions of the FEPA and the NESREA Acts to determine whether any significant change has been introduced by the new law or whether it is a change in name only.

Fepa v. Nesrea: Comparisons

A section by section comparison of both legislations is not contemplated in this paper; rather, the comparison will be limited to the structure and administration of the agencies, their functions, powers, the environmental standards and offences provided for in the Acts.

Establishment and Administration

Both Agencies were established as corporate bodies with perpetual succession that may sue and be sued in their corporate names. The FEPA Amendment Act of 1992 had however introduced a new section 1(2) to make the agency an 'integral part of the presidency'. This section is not retained in the NESREA Act. One

45. SS 13-19 of the NESREA Act are financial provisions whilst SS.20-29 of the same Act deals with environmental Standards and related offences.

reason that can be proffered for this is that by virtue of section 148 of the Constitution of the Federal Republic of Nigeria (CFRN) 1999 which provides that the President may in his discretion assign to any Minister of the government of the Federation responsibility for any business of the government of the Federation including the administration of any department of government. President Olusegun Obasanjo during his tenure for the first time established the Ministry of Environment. This had the effect of enhancing environmental matters but reduced the status of FEPA. NESREA is a department of government which can now properly be supervised and coordinated by the Minister for Environment who in turn would report to the President. The Agency therefore does not be to be an integral part of the Presidency.

A Governing Council is established for both agencies, and the chairman in both instances is to be appointed by the President. In the NESREA Act, the appointment will now be made '*on the recommendation of the Minister for Environment.*[46] This in our view is a good addition to the Act, the President is now obliged by law to act in concert with the Minister for Environment even though he is not bound to accept the recommendation.[47] Membership of the council under the FEPA Act was made up of Permanent Secretaries from a very wide spectrum of identified Ministries. The Ministries were Agriculture and Natural Resources, Commerce, Culture and Tourism, Education, Finance, Health, Industry, Petroleum Resources, Science and Technology, Solid Minerals, Transportation, Works and Housing; and Youth

46. See S.2 (1) FEPA Act and S. 3 (a) NESREA Act.
47. Professor Nwabueze has opined that where the constitution requires the President to act on the recommendation of another person or body, the President cannot appoint anyone not so recommended. He may refuse those recommended and ask for other recommendations but he cannot appoint without a recommendation. See Nwabueze, B.O. (1982) *The Presidential Constitution of Nigeria*, London, C.Hurst & Co. (Publishers) Ltd. P.203. See also Akintayo, J.O.A.(2006): 'The Supreme Court of Nigeria: Evolution and Constitutional Environment', in Akeredolu, A.E. (ed), *Supreme Court Legacy*, Ibadan, St. Paul's Publishing House, p.34-35.

and Sports. The NESREA Act has however now limited membership to only five ministries as opposed to eleven under FEPA, i.e. the Permanent Secretaries of the Federal Ministry of Environment or his representative and a representative each of the Federal Ministry of Solid Minerals Development; Agriculture and Natural Resources; Water Resources and Science and Technology. It is submitted that the FEPA Act scope of membership in this regard is to be preferred because it recognizes the interrelationship between all the different Ministries with the environment and the necessity for all stakeholders to work together and be represented. In our view there is no real justification for the new law to limit the membership to just these five Ministries, it will be better to have a surplus than insufficiency.

The NESREA Act has also introduced a new set of members - it now provides for representation from the Standards Organisation of Nigeria, the Manufacturers Association of Nigeria and the Oil Exploratory and Production companies in Nigeria.[48] The Director-General of the Agency is also a member and three persons (as opposed to two under FEPA) are to be appointed to represent the public interest. Whilst the FEPA Act required that the persons to be so appointed should have distinguished themselves in environmental matters; should be from the private sector and be appointed by the President, the NESREA Act does not state any qualification/guideline for such appointment. This should not be encouraged; an appointing authority should be given some minimum guidelines to consider such appointments, so that suitably qualified and knowledgeable/skilled persons can be appointed. This is even truer in this instance where qualifications already existed in the previous legislation. Again appointment as council member under the NESREA Act is now to be made by the Minister of Environment not the President. This is a good development in our opinion, because this is a government

48. Considering the provision of section 7 of the Act which expressly excludes oil and gas matters from the ambit of NESREA, what is the justification for including their representatives in the council?.

parastatal just like any other supervised by a Minister, he should be able to handle appointments under his Ministry without interference from the President. More so as the Agency is no more an 'integral part of the Presidency' as it was under the FEPA Act.

An interesting provision can be found in S.3 (2) of the NESREA Act which provides that *'A member of the Council, other than the Chairman, shall be appointed by the Minister* ***on the recommendation of the body, if any, he represents***. By this provision, the Minister is obliged to request for a recommendation from the body a person will represent, rather than the hitherto *ad hoc* and non-consultative choices made by the appointing authority.[49]

The NESREA Act states more clearly the tenure of office of a member of the Council and the grounds for cessation of membership. Indeed, the FEPA Act had no specific provision for tenure of members of council, thus members could be said to hold their office at the pleasure of the President. The NESREA Act now provides that members of Council other than the Director-General would hold office for four years and are eligible for re-appointment for only one further term of four years.[50] Their appointments are also on a part-time basis.[51] The office of a member may become vacant if he resigns or the Minister with the approval of the President so notifies him that it is not in the interest

49. The author is aware that the Nigerian Bar Association had in recent past stated at one of its National Executive Committee meetings which this author attended declared that it had a right to nominate its representative on public commissions and agencies. It would appear that this provision validates that position This writer is also aware that the Nigerian Bar Association has had to take up with the Chief Justice of Nigeria the issue of appointing people to represent the Bar in different commissions and public bodies such as the Body of Benchers without any input from the Bar. The Bar has therefore insisted that it reserved the right to make recommendations for such appointment for such persons to truly represent it as a body.
50. S.4. These provisions were in the original FEPA Decree of 1988 but were removed when the FEPA Act was amended in 1999.
51. S.3 (3) NESREA Act.

of the Agency for him to continue or he is guilty of misconduct or cannot perform the functions of his office.[52]

The Technical Committee which was introduced into the FEPA Act by a subsequent amendment[53] has been omitted in the NESREA Act, thus reverting to the original form of the FEPA Act of 1988. The function of the technical committee was to assist and advice the council and the agency in the performance of their functions under the Act and to give technical opinion on issues referred to it or delegated by the council. The committee consisted of the Director-General and three persons not below the rank of director, expert and knowledgeable in environmental matters and one representative each from the ministry of Agriculture and Natural Resources, Commerce, Culture and Tourism, Education, Finance, Health, Industry, Petroleum Resources, Science and Technology, Solid Minerals, Transportation, Works and Housing; and Youth and Sports. Thus under FEPA, the Permanent Secretaries of the Ministries formed the membership of the governing Council while the Technical Committee was made up of directors with expert knowledge. Why did NESREA change this arrangement? One reason that can be advanced is that given the wide range of membership of the Council under FEPA, it is possible that there would be members who were not sufficiently skilled in environmental issues and would need the services of external experts. Under NESREA however, the membership is limited to those Ministries which have direct stakes in environmental matters such that it can be assumed that they do have the necessary skills required to fulfill their duties. Another argument in favour of the NESREA position is that the Council can as and when necessary seek the advice of experts, without maintaining a permanent Technical Committee.

The Director–General under both Acts, is the Chief Executive Officer of the Agency, but while under the FEPA Act the Director-

52. S.5 NESREA Act.
53. No.59 of 1992, See Section 3.

General holds office for five years in the first instance and can be reappointed for another five year term only, under the NESREA Act the tenure of the Director-General has been reduced to an initial four year term and a further four year term[54]. Also new under the Director-General provisions of the NESREA Act is the criteria/guidelines for appointment of a person as Director-General S.11(2)(c) provides that he *shall* be 'a person with good working knowledge of the environment with a minimum of 15 years post graduate experience in environmental management or related discipline'. As stated earlier, it is commendable to have guidelines for the appointment of a person into a statutory office.

S.10 of NESREA provides that the agency shall have five directorates: administration and finance; planning and policy analysis; inspection and enforcement; environmental quality control and legal services. Each directorate is headed by a director and zonal offices are to be established in the six geopolitical zones of the country. In the FEPA Act what section 25 provided was for the President subject to the provisions of the Act, to encourage States and local government councils to set up their own environmental protection bodies for the purpose of maintaining good environmental quality in the areas of related pollutants under their control. By creating zonal offices of NESRA there is an indication that the federal government wishes to decentralize environmental matters which is a welcome development

Functions of the Agency

Function can be described or defined as the job that something is designed to do or responsibility.[55] Black's law dictionary defined it as the activity that is appropriate to a particular business or

54. S. 8 FEPA Act & S. 11 NESREA Act.
55. Macmillan English Dictionary for Advanced Learners, 2nd ed. (2007), Oxford, Macmillan Education, p.608.

profession, a duty.[56] For ease of reference and comparison, the provisions on the functions of the Agencies are stated below.
The functions of FEPA as stated in the Act include:

(a) Prepare a comprehensive national policy for the protection of the environment and conservation of natural resources, including procedure for environmental impact assessment for all development projects;
(b) Prepare, in accordance with the National Policy on the Environment, periodic master plans for the development of environmental science and technology and advise the Federal government on the financial requirements for the implementation of such plans;
(c) Advice:

(i) The Federal Government on national environmental policies and priorities, the conservation of natural resources and sustainable development, and scientific and technological activities affecting the environment and natural resources;
(ii) The President on the utilization of the one per cent Ecological Fund for the protection of the environment;
(d) Promote co-operation in environmental science and conservation technology with the similar bodies in other countries and with international bodies connected with the protection of the environment and the conservation of natural resources;
(e) Co-operate with Federal and State Ministries, local governments, statutory bodies and research agencies on matters and facilities relating to the protection of

56. Black's Law Dictionary, 9th ed. Garnier ed.(2009), West Publishing, Minnesota, p.742-743.

the environment and the conservation of natural resources; and

(f) Carry out such other activities as are necessary or expedient for the full discharge of the functions of the Agency under this Act.

The functions of NESREA on the other hand are as follows:

(a) Enforce compliance with laws, guidelines, policies and standards on environmental matters;
(b) Coordinate and liaise with stakeholders, within and outside Nigeria, on matters of environmental standards, regulations and enforcement;
(c) enforce compliance with the provisions of international agreements, protocols, conventions and treaties on the environment, including climate change, biodiversity, conservation, desertification, forestry, oil and gas, chemicals, hazardous wastes, ozone depletion, marine and wild life, pollution, sanitation and such other environmental agreements as may from time come into force;
(d) Enforce compliance with policies, standards, legislation and guidelines on water quality, environmental health and sanitation, including pollution abatement;
(e) Enforce compliance with guidelines and legislations on sustainable management of the ecosystem, biodiversity conservation and the development of Nigeria's natural resources;
(f) Enforce compliance with any legislation on sound chemical management, safe use of pesticides and disposal of spent packages thereof;

(g) Enforce compliance with regulations on the importation, exportation, production, distribution, storage, sale, use handling and disposal of hazardous chemicals and waste other than in the oil and gas sector;
(h) Enforce through compliance monitoring, the environmental regulations and standards on noise, air, land, seas, oceans and other water bodies other than in the oil and gas sector;
(i) Ensure that environmental projects funded by donor organizations and external support agencies adhere to regulations in environmental safety and protection;
(j) Enforce environmental control measures through registration, licensing and permitting systems other than in the oil and gas sector;
(k) Conduct environmental audit and establish data bank on regulatory and enforcement mechanisms of environmental standards other than in the oil and gas sector;
(l) Create public awareness and provide environmental education on sustainable environmental management, promote private sector compliance with environmental regulations other than in the oil and gas sector and publish general scientific or other data resulting from the performance of its functions;
(m) Carry out such activities as are necessary or expedient for the performance of its functions.

A prima facie perusal of the above provisions reveal that the NESREA Act has enlarged the functions of the agency. Is this a 'real' enlargement or a mere breaking down of existing provisions? It is submitted that there is a substantial shift in the nature of the functions prescribed for the FEPA and those now imposed on the NESREA. Whilst the emphasis in FEPA was to prepare policies

and master plans; advise the Federal government on environment policies; and promote cooperation with stakeholders for protection of the environment, the language of NESREA is '*Enforcement*' which reoccurs at least eight times in subsection seven. NESREA is empowered to among other things enforce compliance with environmental laws, guidelines, policies and standards, international agreements protocols, conventions and treaties, legislation on pollution abatement and sustainable management of Nigeria ecosystem. Enforcement of environmental regulations was not expressly stated to be a function of FEPA even though FEPA created some offences for violations of environmental standards. It can be argued that the choice of words in NESREA is deliberate, i.e. it is the intention of the legislature to state in unmistakable terms that the Agency cannot only bark; now it is authorized to 'bite' – by enforcing compliance, even though this was a task it was already performing.

Noteworthy among the new functions of NESREA is subsection 7(c) which mandates the agency to enforce compliance with international environmental agreements, conventions, treaties and protocols. This section raises the question whether such international obligations can be enforced without formal ratification by the National Assembly as required by S.12(1) of the 1999 constitution. Professor Ladan draws an analogy from the case of *Mojekwu v. Ejikeme*[57] where the Court of Appeal decided that the Convention on the Elimination of all forms of Discrimination against Women (CEDAW) applies to Nigeria based on the principle of good faith, even though it has not been ratified by the National assembly to opine that this is one interpretation of the section.[58] He however concluded that NESREA constitutionally can only enforce domesticated treaties but that the agency could

57. (2002) 5 NWLR (PT.657) 402.
58. Ladan, *op cit*, p.184.

play a vital role in the domestication process of relevant environmental treaties.[59]

It is also worthy of note here that S.7(c) specifically mentions oil and gas as part of the international agreements, treaties, conventions, and protocols that NESREA can enforce its compliance; whereas in all other subsections of section 7, it specifically excludes oil and gas issues.[60] For example, S.7(g) empowers NESREA to enforce compliance with regulations on the importation, exportation, production, distribution, storage, sale, use handling and disposal of hazardous chemicals and waste *other than in the oil and gas sector*. These subsections left as they are can create some confusion. On the one hand, it can be argued that the legislative body in section 7(c) intended to include enforcement of international oil and gas matters only, under the jurisdiction of the Agency and exclude domestic issues hence the emphasis in the subsequent subheads that notwithstanding subsection 7(c) no one should be left with the impression that all oil and gas issues could be handled by the Agency. On the other hand it can be argued that the inclusion of oil and gas in subsection (c) was an oversight and that all oil and gas matters whether domestic or international were excluded from the agency's jurisdiction. This in my view is the better argument and as such it is hereby suggested that the phrase oil and gas be deleted from section 7(c).

A close look at subsections (d) – (h) of the NESREA Act would appear to be 'further and better particulars' for subsection (a) of the same Act which is like an omnibus clause. It states that the agency shall enforce compliance with laws, guidelines, policies and standards on environmental matters' would cover every sphere relisted again in subsection (d) – (h) i.e. water quality, biodiversity conservation, safe use of pesticides, disposal of hazardous wastes

59. *Ibid.* Some of the treaties that have been domesticated include the Convention on International Trade in Endangered Species of Fauna and Flora and Convention on the Prevention of Pollution of the Sea by Oil. There is also the African Charter on Human and Peoples Rights.
60. See section 7(g),(h),(j),(k), and (l) of the NESREA Act.

etc as all these matters are regulated by laws, guidelines and standards issued by the legislature or regulations made by the minister. It may be that the drafters felt that these latter areas are worthy of special mention, but it is submitted that they add nothing to the section save emphasis.

NESREA has obviously introduced new functions for the agency in subsections (i) – (l) whilst abandoning functions previously bestowed on the Agency. In particular, it appears it is no more the function of the agency to advise government on environmental policies[61] nor indeed does it have the function of establishing programmes for the prevention, reduction and elimination of pollution of the national air, land and waters or restoration programmes and such like[62] though it is part of its function to enforce such policies and programmes once made. Obviously, the focus/function/objectives of the National Environmental agency have changed to 'Enforcement'. This is further emphasised by the change in name from FEPA to NESREA. The question now is which agency will prepare the periodic master plans for development of environmental science and technology?[63] Which agency will utilize and promote the expansion of research, experiments, surveys and studies by public or private agencies, institutions and organizations concerning causes, effects, extent, prevention, reduction and elimination of pollution and such other matters related to environmental protection and natural resources conservation as the Agency may, from time to time, determine necessary and useful.[64] Section 8 of NESREA provided for these matters under the heading 'Powers of the Agency.'[65]

61. See S. 5 (a) – (c) of the FEPA Act.
62. These were powers of the Director-General under S. 10 of the FEPA Act.
63. See S. 5 (a) FEPA Act.
64. See S. 10(c) FEPA Act.
65. See in particular sections 8(l) – (p) of the NESREA Act.

Powers

One of the meanings of power is the official or legal authority to do something.[66] It can also be described as the ability to act; the legal right or authorization to act or not act.[67] S.6 (a) – (j) of the FEPA Act provided that in carrying out its functions, it shall be lawful for the agency to make grants to suitable authorities and bodies with similar functions; collect and make available through publications, scientific data and other information on pollution and environmental protection; enter into contracts for the purpose of executing its function; establish, encourage and promote training for its staff and other appropriate individuals from public and private organizations; enter into agreements to develop, utilize, co-ordinate and share environmental monitoring programmes, research efforts and related activities; establish advisory committees; establish such environmental criteria, guidelines, specifications or standards for the nation's air and waters, necessary to protect the health and welfare of the populace; establish procedures for industrial or agricultural activities to minimize damage to the environmental and natural resources; maintain a programme of technical assistance to bodies concerning implementation of natural resources conservation, and monitoring enforcement of the standards and regulations; to develop and promote such processes, methods, devises and materials as may be useful or incidental to carrying out the purposes and provisions of the Act. Specific powers were given to the Director-General subject to the policies laid down by the Agency, to develop programmes to carry out the purposes and provisions of this Act. In particular, in consultation with appropriate Agencies he is to establish programmes for the prevention, reduction and elimination of pollution of the nation's air, land and inter-State waters, as well as national programmes for restoration and enhancement of the nation's environment and natural resources. He is also to

66. Macmillan, *op cit* 1160.
67. Blacks, *op cit* 1288

encourage and promote the co-ordination of the conservation of natural resources and environmentally related activities at all levels and utilize and promote the expansion of research, experiments, surveys and studies by public or private agencies, institutions and organizations concerning causes, effects, extent, prevention, reduction and elimination of pollution and such other matters related to environmental protection and natural resources conservation as the Agency may, from time to time, determine necessary and useful. In addition, he can conduct public investigations on pollution and the degradation of natural resources.[68]

S.11 of the FEPA Act gave power to the Agency to accept gifts in cash and kind upon terms and conditions, provided they are not inconsistent with the functions of the Agency. S.14 empowered the Agency with the consent of the President to borrow moneys it requires to meets its obligations and functions as well as power to invest its funds.

By virtue of section 40, he was also given power with the approval of council to make regulations generally for the purposes of the Act and in particular, prescribe standards for the water quality; effluent limitations; air quality; atmospheric protection; ozone protection; noise control; and control of hazardous substances and removal control methods.

Section 8 of the NESREA Act gives to the Agency the same powers provided in sections 6, 10, 11, 14 and 40 of FEPA with respect to powers to borrow money, accept gifts, provide regulations, criteria and standards, promote and undertake research, monitor programs and activities and such like. These powers are all primarily directed at the prevention of pollution and environmental harm rather than remedying harm that has already occurred. Where pollution is already occurring, the mandate of the Agency is to enforce abatement.[69]

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68. See S.10 of FEPA Act.
69. Ladan, *op cit*, 186.

The new substantive powers that have been introduced by NESREA are in sections 8(d) and (f) which empowers NESREA to prohibit processes and use of equipment or technology that underline environment quality; and subject to the provisions of the Constitution of the Federal Republic of Nigeria, 1999, and in collaboration with relevant judicial authorities establish mobile courts to expeditiously dispense cases of violation of environmental regulations.

Mobile courts manned by Magistrates are common place in most jurisdictions for the purpose of summary trial of offenders of state declared environmental sanitation days. The NESREA Act is endorsing and encouraging the use of such mobile courts to expeditiously dispense with violations of environmental regulations. How this will eventually be implemented is yet to be seen bearing in mind that whatever inferior courts the National Assembly establishes has jurisdiction only in the Federal Capital Territory.[70] Section 286 of the Constitution gives jurisdiction to state courts in respect of federal causes; it is therefore possible that the Agency can collaborate with state judiciaries for the trial of offences under the Act by mobile environmental courts already in existence in such states.

National Environmental Standards

Part II (SS. 16-23) of the FEPA Act established the National Environmental Standards with respect to water, air, noise and hazardous substances. The NESREA Act does not have a separate part devoted to Environmental Standards; it comes under Part V whose heading is Financial Provisions. Sections 20 – 29 deal with Air quality and atmospheric pollution;[71] Ozone protection;[72] Noise pollution;[73] Federal Water Standards;[74] and Effluent Limitations.[75]

70. See S.6(4)(a) of the CFRN, 1999.
71. S.20. in the FEPA Act, S.18.
72. S.21. in the FEPA Act, S.19.
73. S.22. in the FEPA Act, S.20.
74. S.23. in the FEPA Act, S.16.

These sections are basically the same in substance with what obtained under FEPA i.e. that the agency is basically required to establish criteria, guidelines and standards. What is new under NESPA is the issue of offences and prescription of differentiated punishment which has been added to each section to deal with cases of violations. (The details of offences are treated separately in the next section).

S. 25 of the NESREA Act provides that the Agency may make regulations for the purpose of protecting public health and promotion of sound environmental sanitation. There was no such equivalent provision in the FEPA Act. S.26 of the NESREA Act is also new. It empowers the Agency to make regulations, guidelines and standards for the protection and enhancement of the quality of land resources, natural watershed, coastal zone, dams and resources including preventions of flood and erosion. This is a substantive input to the Act as it corrects an obvious gap in the FEPA Act. If the environment is defined under both Acts to include water, air and land, it was an omission for FEPA not to be specially empowered to make regulations and set standards in respect of land quality as was done for air quality and water.

With regard to ozone protection, the NESREA Act introduced the issue of the Agency working in collaboration other relevant agencies**.** This is a necessary because the issue of ozone protection is a global effort which would require the cooperation of all stakeholders.

In my view, the definition of stratosphere which was included in the body of the FEPA Act has been relocated to the interpretation section of NESREA as there really was no justification for such inclusion in the first place.

S.20 (2) of FEPA which required that any noise criteria identified should ‘reflect the scientific knowledge most useful in indicating the kind and extent of all identifiable effects on the public health or welfare which may be expected from differing

75. S.24. in the FEPA Act, S.17.

qualities and quantities of noise' is not repeated in the NESREA Act. One can only speculate on the rationale for this, but it can be argued that the section had only stated the obvious because any noise criteria identified obviously would reflect the scientific knowledge available to the agency at the time.

Section 34(c) of NESREA empowers the Minister of the Environment to make regulations generally for the purposes of carrying out or giving full effects to the functions of the Agency under the Act. Pursuant to this, eleven environmental regulations were made in 2009. These are National Environmental (Wetlands, River Banks and Lake Shores) Regulations, 2009; National Environmental (Watershed, Mountainous, Hilly and Catchment Areas) Regulations, 2009; National Environmental (Sanitation and Wastes Control) Regulations 2009; National Environmental (Permitting and Licensing System) Regulations 2009; National Environmental (Access to Genetic Resources and Benefit Sharing) Regulations, 2009; National Environmental (Mining and Processing of Coal, Ores and Industrial Minerals) Regulations 2009; National Environmental (Ozone Layer Protection) Regulations, 2009; National Environmental (Food, Beverages and Tobacco Sector) Regulations, 2009; National Environmental (Textile, Wearing Apparel, Leather and Footwear Industry) Regulations, 2009; National Environmental (Noise Standards and Control) Regulations, 2009; National Environmental (Chemical, Pharmaceutical, Soap and Detergent Manufacturing Industries) Regulations, 2009.[76]

Offences

As stated earlier, the NESREA Act created separate offences for the different aspects of the environment i.e. air, water land and then like its predecessor it provided a general section on discharge of hazardous substances.

76. See Federal Republic of Nigeria Official Gazette, Vol. 96, Nos. 58 – 68, dated 22nd October, 2009. See also Ladan, *op cit.*

Section 21 of FEPA dealt with offences for hazardous substance discharge and this is repeated in Section 27 of NESREA. NESREA has reviewed upward the penalties for any such discharge of harmful quantities of hazardous substances into the air, upon the land and the waters of Nigeria. An individual offender under FEPA on conviction was liable to a fine not exceeding N100,000.00 or ten years imprisonment or both. Under NESREA it is a maximum fine of N1m. or a maximum of five years imprisonment. In the case of corporate offenders, under FEPA it was a maximum fine of N500,000.00 and an additional N1,000.00 for every day the offence subsists. This has been upped under NESREA to N1m with an additional daily fine of N50,000.00. The person who is in charge of the body corporate who commits an offence under the Act *shall be deemed to be guilty of such offence* and shall be liable to be proceeded against and punished accordingly[77] provided the offence was committed with his knowledge. This provision is repeated in S.27 (4) under NESREA. The underlined phrase can be argued to be against S.36(5) of the 1999 Constitution of the Federal Republic of Nigeria which provides that anyone charged with a criminal offence shall be presumed innocent until proved guilty. The way S. 27(4) is drafted, the person is *deemed guilty* and therefore can be proceeded against. Though the intention of the legislature might have been to shift the burden of proof to the offender, in order to avoid a breach of the constitutional provision, it would be expedient to delete this part of the section or redraft same to conform to the constitution.

S.22 of FEPA dealing with spillers' liability for costs of removal of harmful discharges or costs of third parties for reparation, restoration, restitution and compensation has not been repeated in the NESREA Act.

FEPA had a general penalties section. Section 36 of the Act provided that 'any person who contravenes any provision of this Act or any regulation made there under commits an offence and

77. S.21 (4) FEPA Act.

shall on conviction, where no specific penalty is prescribed therefore, be liable to a fine not exceeding N20,000 or to imprisonment for a term not exceeding two years or to both such fine and imprisonment.

The specific offences provided in the NESREA Act for pollution of the air, water and land are stated in subsections (3) and (4) of sections 20 – 25 respectively. For breach of Air and Atmospheric standards by individuals, there is a maximum fine N200,000, or maximum imprisonment of one year or both. An additional daily N50,000 fine is also imposed for everyday the offence subsists. In cases of corporate offenders, a maximum fine of N2m can be imposed and an additional fine of N50,000 for everyday the violation subsists.[78] In the case of breach of ozone protective standards by individuals, no provision is made under the Act to deal with this. In cases of corporate offenders, a maximum fine of N2m can also be imposed and an additional fine of N50,000 for everyday the violation subsists.[79]

For breach of Noise standards by individuals, there is an maximum fine N50,000, or a maximum imprisonment of one year or both. An additional daily N5,000 fine is also imposed for everyday the offence subsists. In cases of corporate offenders, a maximum fine also of N50,000 can be imposed and an additional fine of N10,000 for everyday the violation subsists.[80] For breach of Water standards by individuals, the maximum fine that can be imposed is N50,000, or maximum imprisonment of one year or both. An additional daily N5,000 fine is also imposed for everyday the offence subsists. In cases of corporate offenders, a maximum fine of N50,000 is prescribed, and an additional fine of N10,000 for everyday the violation subsists.[81]

Where there is a breach of the Effluent limitation provisions/standards by individuals, there is a maximum fine

78. Section 20(3) & (4).
79. Section 21(4).
80. Section 22(3) & (4).
81. Section 23(3) & (4).

N200,000, or maximum imprisonment of two years or both. This is the highest imprisonment term prescribed in the Act. An additional daily N5,000 fine is also imposed for everyday the offence subsists. In cases of corporate offenders, a maximum fine of N1m can be imposed and an additional fine of N50,000 for everyday the violation subsists.[82] Violation of provisions on Land protection/standards by individuals, attracts a maximum fine of N200,000, or maximum imprisonment of one year or both. An additional daily N10,000 fine is also imposed for everyday the offence subsists. In cases of corporate offenders, the maximum fine that can be imposed is N1m and an additional fine of N50,000 for everyday the violation subsists.[83]

From the above, the greatest punishment is reserved for violators of the air, atmosphere and ozone protection standards. Next is violations against land standards, but amazingly, punishment for violation of water quality standards attracts the same maximum fine of N50,000 only whether for individual or corporate offenders. Contrast this with punishment for corporate violators of noise quality standards which carries a maximum fine of N500,000. This would appear to be an anomaly, why would the punishment for violation of water standards be so low? One way out of this dilemma could be to proceed under S.27 dealing with discharge of hazardous substances on water (where applicable), as a higher fine limit of N1m is prescribed.

Another innovation of NESREA under offences section is the penalty for continuing offences. Each violation attracts an additional fine for every day the violation continues. The objective of this provision is to discourage violators from continuing pollution activities because they belive they can opt to pay the fine. The language of the Act does not appear to give any discretion to the Judge in imposing the additional fine. For example, section 26(4) says *where an offence under subsection (1) of this section is*

82. Section 24(3) & (4).
83. Section 25(3) & (4).

committed by a body corporate, it shall on conviction be liable to a fine not exceeding N1,000,000 and an additional fine of N50,000 for every day the offence subsists.

Another offence created under both Acts, is that of willfully obstructing an authorized officer in the exercise of his powers under the Act. Under S.28 of the FEPA Act such individual is liable to a fine not exceeding N500,000.00 or a maximum of ten years imprisonment or both. There is no provision for corporate offenders. S.31 of the NESREA Act remedies this by providing for a fine of N2m for corporate offenders and additional N200,000 for everyday the offence subsists. Individual offenders shall be liable to a fine of not less than N200,000.00 or a maximum of one year imprisonment or both and an additional fine of N20,000 for each day the offence subsists. This provision is quite distinct from all the other *offences sections*. Whereas the language in all the other provisions were for fines *not exceeding* a stated amount, this section provides for fines of *not less than*, giving a minimum and no maximum for individual offenders; and in the case of corporate offenders, the court has no discretion but to fine the guilty party N2m.

Miscellaneous Provisions

Enforcement Powers

The issue of enforcement powers i.e. the powers to inspect or seize documents or things – are dealt with under the miscellaneous provisions in both Acts. A major distinction brought by NESREA is with regard to the issue of warrants. Whereas Sections 26 and 27 of FEPA empowered an authorized Agency official who has reasonable grounds to believe that an offence has been committed, to enter and search properties, perform tests and take samples, require documents to be produced, examine, seize items or substances and cause persons to be arrested *without a warrant*, by virtue of S.30 of NESREA, such officer can only enter and search properties (*excluding oil & gas facilities, marine tankers, barges or floating production storage offload),* only *with a court warrant*.

Two things are clear from this provision; the first is that for an officer of the Agency to exercise his power to enter and search premises, he must have reasonable grounds to believe that same is being used for activities or storage of goods which violate environmental standards. The question whether he has reasonable grounds has been shifted to the courts to decide. The issuance of a warrant by the court is therefore prima facie evidence that the court accepts that there are reasonable grounds for the officers belief. Secondly, the provision requiring NESREA officers to conduct searches under warrant brings the law in line with the constitutional provision guaranteeing all citizens their right to privacy.[84] It also brings it in line with the existing provisions of the Criminal Code[85] and the Criminal Procedure Act[86] which requires a valid search to be made only under a search warrant. What is not clear however is whether this issue of obtaining a warrant applies only to S.30(1)(a) or if it applies to all the other subsections. For example, subsection (c), can samples or specimens be taken without a warrant? Or can articles be detained and seized under subsector (f) without a warrant? I submit that if to enter and search premises requires a warrant, then anything done whilst in the premises would be covered by the warrant.

S.30 (1) (g) however specifically requires a court order to suspend activities or to seal and close down premises or structures. The goal of this section may be to prevent the abuse of the wide powers of enforcement bestowed on the NESRA officials. It is a fact that the wheels of justice turns slowly, therefore if this requirement if not properly handled it may lead to delays in enforcement. The Agency's legal department will therefore have to be very diligent in the execution of their duties and not hesitate to seek *ex-parte* injunctions as the circumstances demand.

Legal proceedings

84. See section 37, CFRN, 1999.
85. See section 74.
86. See section 107.

S.30(1) of the FEPA Act provided that actions against the Agency and its staff for acts done in pursuance of the Act must be commenced within twelve months next after the act, neglect or default complained of, or in the case of a continuance of damage or injury, within twelve months next after the ceasing thereof. This provision is not repeated in NESREA. This does not however mean that there is no limitation of time for actions against the Agency. The Public Officers Act remains applicable.

The provision in relation to pre-action notice however remains. S.32 of NESREA provides for a one month written notice of intention to sue stating the cause of action, particulars of claim, name and place of abode of the intending plaintiff and the relief he claims. In the case of *Mobil Producing Nigeria Unlimited v. Lagos State Environmental Protection Agency*,[87] the Court of Appeal held that the purpose of a pre-action notice is to give a prospective defendant an opportunity to meet the prospective plaintiff and negotiate any possible out of court settlement. [88] It also held further that failure to serve a statutory pre-action notice before commencement of an action in court renders the action incompetent and the court will lack jurisdiction to entertain it.[89]

With regard to service of documents, notices, summons and similar processes, same under S.31 of FEPA could be by delivery to the Chairman of the governing Council, the Director- General or by registered post to the Director General. S.32 (2) of NESREA retains this provision save that service can no longer be made to the Chairman.

Conclusion

Having compared both enactments, it can be concluded that the change brought by the NESREA Act are substantive, particularly with regard to its enforcement roles and provision of more realistic monetary punishments that can help prevent destructive

87. (2001) 24 W.L.R. 42.
88. *Ibid*, p.53.
89. *Ibid*.

environmental practices. NESREA can enforce international agreements signed by Nigeria; it can prohibit processes and use of equipment or technology that undermine environmental quality. It has also put greater value on the environment by reviewing upwards the fines payable for violations of environmental standards, introducing specific penalties for the different aspects of the environment i.e. the air, water and land. Suggestions and recommendations have also been made in the body of the work which it is hoped will further position NESREA to fulfill its objectives. It is hoped that the Agency will be pro-active in the implementation of its functions so that the goal of the act will be fulfilled.