THE ECONOMIC ANALYSIS OF LAW AS THE SOLUTION TO ENVIRONMENTAL PROTECTION

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Abstract

The state of the environment is crucial to the sustenance of human life on planet earth, thus, the environment must be free from all forms of degradation and destruction. The need to protect the environment requires that environmental protection should be an integral part of public policies at all levels(local, national and international). It is not thought that there is a dearth of legislations on environmental protection in Nigeria, but it would seem that there is a major setback in the area of enforcement. It is therefore necessary to secure effective protection of the environment with the use of the market approach. This paper discusses the relationship between law and the market approach, showing how economic principles can be used to solve legal problems. It also presents a practical understanding of economic analysis and the series of economic instruments that can be useful in the protection of the environment.

Introduction

The protection and improvement of the environment which determines the quality of human life, has become a global concern. Hence, its management and preservation must be supreme if life must be sustained. Human activities over the years have created environmental challenges such as pollution, erosion, diminishing biodiversity, ozone layer depletion, desertification, global warming, etcetera. These in turn have engendered health challenges, destruction of property, ecosystem losses, economic losses and other welfare effects and sometimes death.

Over the years various legal frameworks and policies have been put in place to curb this menace, but it would seem that these efforts, have not met the growing challenges. There is therefore an urgent need for an alternative system which would help meet the current environmental challenges; and the market approach is considered a feasible option.

The market approach is set to draw a relationship between legal instruments and the use of economic instruments in creating environmental policies. Thus, if the environment must be secured and sustained, laws must not be developed without regard to the economic and social implications

The Necessity to Protect the Environment

Environmental Protection are policies and procedures aimed at conserving the natural resources, preserving the current state of the natural environment, by avoiding pollution and

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where possible, reversing its degradation for the benefit of both the present and future generations. The environment is professed holistically as having an inseparable relationship with man. This was also asserted by the United Nations General Assembly, in adopting the environmental ideals in the world charter for nature, and emphasizing the centrality of man in the environment by declaring that man is part of nature and its life depends on the uninterrupted functioning of the natural system which ensures the supply of energy and nutrient.[3] This means that the environment is made for man, but at the same time, man has a duty to maintain and care for his environment by guiding his actions in ways beneficial to both himself and the environment.

The above position by the UN General Assembly is on all fours with the philosophy of Ecocentrism, which posits that man has no mandate to overexploit the environment rather man and the environment are patterned in a symbiotic relationship and the non-existence of one, could result to the complete extinction of the other.[4]This relationship has resulted tofar reaching environmental crisis, leading some commentators to predict that there will be no free land (anymore) anywhere, the forest will be gone, the problem of food that is difficult today, will escalate unfathomably; mineral and oil will be exhausted; water will be in short supply, wild and domestic animals will gradually go into extinction.[5]

It is now factual that the environment has become a victim of man's vices which is detrimental to his acclaimed pursuit for economic growth and survival and has engendered adverse environmental impacts. Thus, if there were ever doubts over its reality, such doubt must now be shaky as its effects have taken a feral turn against man. This view is in line with the philosophy of ***Anthropocentrism*** which believes that the environment exists for man's use and therefore it must be exploited to its fullest; and it is only when this is done that economic growth and development can be achieved.

Man's exploration and exploitation activities on the environment have produced deleterious effect. Such activities include Pollution (Land, Water, Air, Noise, Etc), deforestation and bush burning, indiscriminate dumping of waste, among others.

It is reported that about one half of the forest that covered the earth is gone, and each year, another 16 million hectares disappear. The World Resource Institute estimate that only about 22% of the world's original forest cover remains 'intact' most of which in large areas; the Canadian and Alaskan boreal forest, the boreal forest of Russia and the tropical forest of North western Amazon Basin and the Guyana Shield (Guyana, Suriname, Venezuela, Columbia etc.).[6] The effect will range from loss of habitat for millions of species, the advancement of climate change and the moisting of forest soil due to the absence of sun-blocking trees which serves as covers. Trees acts as canopy reducing the sun ray in the day and holds in heat at night. Its absence has extremely increased the temperature swing, which

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3 United Nations General Assembly Resolution 7 (XXXVII) of 20th October 1982.

4 A. K. Adewusi. *The Environment; Law and Management in Nigeria* (Lagos; Hybrid Consult Publishers. 2011),20-22

5 Available at <http://www.Sciencefictionnovelist/theworldinside.com> Last accessed 20 October 2015

6 Global Deforestation; Land set data show the effects of deforestation in Rondonia, Brazil, 1975 and 1992. Available at www.globalchange.umich.edu/global/deferestation.html.Last accessed, 24 January 2015.

can be harmful to both plants and animals. These trees also absorb the greenhouse gases that fuel global warming.

In traditional African societies, wastes were dumped and burnt openly or deposited in bushes where they later decompose in non-hygienic manner or deposited in flowing rivers.[7]With the advent of technology, waste products from industries were discharged directly into the environment. The effect of these activities of man on the environment, has now taken a sharp turn against man. In *Ethyl Corp v Environmental Protection Agency,*[8] the United States court of Appeal, Columbia District, Per J. Skelly Wrigth stated thus:

> Man's ability to alter his environment has developed far more rapidly than his ability to foresee with certainty the effects of his alterations. It is only recently that we have begun to appreciate the danger posed by unregulated modification of the world around us, and have created watchdog agencies whose task it is to warn us, and protect us, when technological advances present dangers unappreciated or unrevealed by their supporters...Questions involving the environment are particularly prone to uncertainty. Technologically man has altered his world in ways never before experienced or anticipated. The health effects of such alterations are often unknown, sometimes unknownable...

Depletion of the ozone layer, swift increase in climate change and global warming, damage to properties, contamination of underground waters, economic sabotage and death are some of the effects of man's interaction with the environment.

The ozone layer is found at a height of about 20-30km above sea level which absorbs the dangerous ultraviolet radiation from the sun and converts it to heat and chemical energy. Its depletion causes various skin diseases, like melanoma which is dangerous to human health and can result to death.[9] It also increases the incidence of cataracts and photokeratis as ultraviolent rays are easily absorbed by the lens and the cornea of the eye. Ultraviolent radiation, causes leukaemia and breast cancer.[10] Similarly the presence of sulphur dioxide in the atmosphere has the tendency of causing deterioration to building materials. Hydrogen sulphide on the other hand, destroys materials such as paints, textiles and plants. In *St Helen's Smelting Co. v Tipping,*[11] the Plaintiff/Respondent who lived in an industrial area proved in an action that his trees and shrubs had been damaged by fumes from the Defendants/Appellant copper smelting works. The contamination of the water resulting from waste dumping, chemicals, sipping of sewage and oil spill, tend to disrupt activities such as

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7 O. G. Amokayo, "Environmental Pollution and Challenges of Environmental Governance in Nigeria" (2012) 10 (1) *British Journal of Art and social sciences*, 26, 28.also available as http://www.bjournal.co.uk/BJASS.aspx. Last accessed 21 April 2016.

8 (1976) Court of Appeals, Dist. of Columbia Circuit.

9 S.C. Bhata, *Environmental Chemistry*, Reprint Edn, (Delhi; Satish Kumar Jain for CBS Publishers, 2003),242

10 Ibid

11 (1865) 11 ER. 1483; see also Trail Smelter Arbitration's case (1941) Vol. 3 Report of International Arbitration pg 1905

fishing and the destruction of aquatic lives. Contamination of coastal areas with high amenity value is considered a common feature of many oil spills which consequently results into the expense of resources incurred in clean-up activities. In Minimata Japan, between 1953–1960, the eating of fishes polluted by mercury led to the death of over 120 persons and numerous injuries.[12] In Bhopal India, in 1984, the accidental release of methyl isocynate from the pesticide plant in America (Union Carbide Corporation), led to the death of over 3,000 persons with claims running into hundreds of billions of US dollars.[13] The Gulf of Mexico oil spill in 2010, which occurred on an off shore facility owned by British Petroleum is considered the biggest environmental disaster in America, and about 4.9 million barrels of oil was spilled. For about three month, the company struggled to cap the underground drilling facility. The clean-up of the spill cost over two billion dollars. Recently in Nigeria, it was estimated that the oil clean-up of the Ogoni land by the Federal government in collaboration with the Oil Company which began in June 2016 after five decades of oil industry activity, will cost over one hundred million dollars[14]and will take up to thirty years for a complete restoration of the land and waters of the Ogoni people.[15] It is obvious therefore that the effect of oil pollution is deleterious both on man and marine life. Another report by the Nigerian National Petroleum Corporation (NNPC) shows that Nigeria lost $868.8 million which is about ₦173.76 billion to oil industry pollution in 2014.[16] The data shows that over 28.9.6 billion standard cubic feet of gas representing 11.47% of the total gas produced in the country was lost to gas flaring, with an associated sum of $518.33 million which is also about ₦103.6 billion in 2015.[17]

The level of decline in the environmental quality has necessitated a dire need to protect the environment, as a safe environment, is a vehicle to sustainable development and this is the chief responsibility of man. This was affirmed in principle 1 of the Stockholm Declaration which provides that "man has fundamental right to freedom, equity and adequate conditions of life, and he bears a solemn responsibility to protect and improve the environment for present and future generation."[18] The court has also reiterated this in *People United for Better Living in Calcutta v State of West Bengal,*[19] that the present day society has a responsibility towards posterity for their proper growth and development as to allow the posterity to breathe normally and live in a cleaner environment and have consequent fuller development.

Similarly principle I of the Rio declaration emphasized the need for the protection of the environment which is that Human beings are at the centre of concerns for sustainable development; they are entitled to a healthy and productive life in harmony with

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12 L. Atsegbua, et al, *Environmental Law in Nigeria; Theory & Practice*. 2nd (Benin, Ambik Press. 2010), 119

13 Ibid

14 Available at www.cehrd.org.ng/index.php/reports/human-right-and-governance/item/23/niger-delta-oil-spil-cleanup/hmt. Last accessed 1 June 2016.

15 Ibid

16 Available at www.vanguardngr.com/2014/07/nnpc.htm. Last accessed June 1st 2016

17 Available at www.punchng.com/gas.flaring-in-2015-nnpc.htmLast accessed June 1st 2016

18 Supra

19 AIR 1993 Cal 215 at 227

nature.[20]Therefore, the relationship between a healthy and productive environment as well as sustainable development is tied to a protected environment.

Existing Approaches to Environmental Protection

Over the years, various measures have been taken to protect the environment, some of these measures include, the voluntary approach, the legal approach (otherwise described as the command and control strategy)and the common law approach. A pertinent question is whether these various approaches have adequately addressed the problem of environmental protection. The answer is an unequivocal no.

Voluntary Approach(es)

These are schemes whereby firms make commitments to improve their environmental performance beyond legal requirement. Such firms, often, non-governmental organisations (NGOs), with the aim of providing a framework and guidelines that will evaluate and manage environmental risk; engage in direct negotiation between companies, stakeholder as well as individuals that pollute the environment to provide modes of operation that will be beneficial to the economy and friendly to the environment.[21] Agenda 21 Principle 10 of the Rio Declaration underlines the importance of public participation as environmental issues are best handled with the participation of all concerned citizens.[22]Some of these NGOs include; Nature and Life Network, Friends of the Earth, Green Peace, Basal Action Network. Others use the court to enforce environmental requirements like the Centro Mexicano de Derecho Ambiental in Mexico city, being the first public interest environmental law firm in Mexico; Euronatura, the first public interest environmental Law firm in Portugal; Lawyers' Environmental Action Team (LEAT) in Tanzania etc.

These NGOs have made significant impact in the protection of the environment, ensuring policies that are environmentally friendly are complied with and those that will have adverse effect on the environment are changed. For instance, the operation of Green Peace in Argentina, led to the availability of potable water by ensuring that governmental policies that will make negative impact on the citizens were changed. Similarly, the operation of NGOs in India has influenced government policies, as seen in the policy statement for abatement of pollution which stresses the need for partnership with NGOs and general public in implementing environmental Laws.[23] The activities of these volunteers, has laid a foundation for environmental protection.

The Command and Control (CAC) Strategy (Legal Approach)

This is the most predominant approach which deals with the use of environmental legal regulations formally enacted by a body which has the constitutional power to do so. The Stockholm Declaration of 1972 was conceivably the first major attempt to protect the human

[20] United Nations Conference on Environment and Development Held at Rio de Janeiro Brazil 1992

[21] P. Karamanos, "Voluntary Environmental agreements. Evolution and Definition as a New Environmental Policy Approach" (2001) 44(1) Journal of Environmental Planning and Management, 67-67-84.

[22] United Nations Conference on Environment and Development held at Rio de Janeiro

[23] Available at www.moef.gov.in/..../introduction-psap.hmt Last accessed 7 June 2016.

environment at the international level. As a consequence of this declaration, the states were required to adopt legislative measures to protect and improve the environment. This urgent call has also found expression in Nigeria especially after the Koko Saga of 1988 that increased Nigerian's awareness on the need not only to identify pollution agents but also to adopt a conceptual and legislative approach to environmental protection. Presently, there are floods of legislations enacted for the protection of the environment and a few shall be considered in this discuss.

Constitution of the Federal Republic of Nigeria (1999)

The importance of improving and protecting the environment is recognized by the Constitution of the Federal Republic of Nigeria, 1999, which in section 20 makes it an objective of the Nigerian Government to improve and protect the air, land, water, forest and wildlife of Nigeria. It must however be mentioned, that section 20 of the 1999 constitution is contained in Chapter of the constitution which forms part of the fundamental objectives and directive principles of state policy, and therefore non-justiciable. Section 12 further establishes (impliedly), that international treaties (including environmental treaties) ratified by the National Assembly should be implemented as law in Nigeria. Similarly, Section 33 and 34 which guarantee fundamental human rights to life and human dignity respectively, has also been argued to be linked to the need for a healthy and safe environment to give these rights actual effect,[24] as has been done in some other jurisdictions, such as India and Pakistan. In M.C. Mehta v. Union of India,[25] the Indian Supreme Court extended the frontiers of the right to life to include the right to live in a healthy and protected environment. In Similar vein, in Shehla Zia v. Water and Power Development Authority (WAPDA),[26] the court per Saleem Akhtar, J. held that by the combined effects of Article 14 of the Constitution which provides that the dignity of man and subject to law, the privacy of home shall be inviolable, and Article 9 which guarantees the right to life, every citizen has a right to a clean atmosphere and unpolluted environment.

National Environmental Standard and Regulation Enforcement Agency (NESREA) Act[27]

This Act is the successor of the Federal Environmental Protection Agency (FEPA) Act 1988, the legal framework for the protection and sustainable development of the environment and its natural resources. Section 7 provides authority to the agency in ensuring compliance with environmental laws, local and international, on environmental sanitation and pollution prevention and control through monitoring and regulatory measures. Section 8(1) (K) and Section 20(1) empowers the Agency to make and review regulations on air and water quality, effluent limitations, control of harmful substances and other forms of environmental pollution and sanitation. Sec 27 Prohibits without lawful authority, the discharge of hazardous substances into the environment. This offence is punishable with a fine not exceeding One Million Naira (1,000,000) or to imprisonment for a term of 5 years, and in

[24] *Jonah Gbemre v. Shell PDC Ltd and Ors* (Unreported) Suit No.FHC/B/CS/53/05.
[25] (1987) SCR (1) 819 or (AIR 1988 SC 1115)
[26] H.R. Case No. 15-K/1992-PLD 1994 SC 693
[27] Cap N164 LFN 2010

case of a corporate body, it shall be liable to a fine of One Million Naira(1,000,000) and an additional fine of N50,000 for every day the offence subsist.

Harmful Waste (Special Criminal Provisions) Act[28]

The Act which was originally Decree No. 42 1988 was a direct response to the Koko toxic waste dump. The Act in Section 1 declares as unlawful all activities relating to the purchase, sale importation, deposit and storage of harmful waste. It further prohibits, without lawful authority under section 2-5, the carrying, dumping or depositing or even transporting of harmful waste in the air, land or waters or contagious zone or exclusive economic zone of Nigeria and such a person shall be guilty of a crime. Similarly, the absence of mensrea is not a defense for an offender. Section 6 provides for a punishment of life imprisonment for offenders as well as the forfeiture of land or anything used to commit the offence. Section 12 also provides that the offender would be civilly liable to persons who have suffered injury as a result of his action. It is important to state that this Act under section 9 ousts the immunity of diplomats covered under the Diplomatic Immunities and Privileges Act. It however remains to be seen how this situation will play out in reality, it is doubtful whether a foreign diplomat can be successfully prosecuted for an offence under this Act.

Environmental Impact Assessment (EIA) Act[29]

The Act assesses the potential impacts whether positive or negative of a proposed project on the natural environment, particularly at the early stage of project identification and planning. Section 2 (1) requires an assessment of public or private projects likely to have a significant (negative) impact on the environment. Subsection (4) requires an application in writing to the Agency before embarking on projects. Section 13 establishes cases where an EIA is required. Section 15 makes it mandatory for an assessment to be carried out. Section 51 further prohibits project that is likely to cause any serious adverse environmental effects. Section 60 provides a legal liability and punishment for contravention of any provision.

Associated Gas Re-Injection Act[30]

This Act provides for the viable utilization of all associated gas produced from a field or group of fields. The Act therefore makes provisions for combating air pollution by oil producing companies in Nigeria. Section 3 and 4 prohibit, without lawful permission, any oil and gas company from flaring gas in Nigeria.

Petroleum Act and the Petroleum Drilling and Production Regulations[31]

The petroleum Act and its Regulations remain the primary legislation on oil and gas activities in Nigeria. It promotes public safety and environmental protection against air land and water pollution. Section 9(1) (b) provides for the making of regulations on operations for the prevention of air and water pollution, and the Petroleum Drilling and Production Regulations was made pursuant to this provision. Regulations 13 and 67 of the Petroleum

[28] Cap HI LFN 2010
[29] Cap E12 LFN 2010
[30] Cap A20, LFN 2010
[31] Cap P10 LFN 2004

Drilling and Production Regulations prohibit the discharge or escape of petroleum into the water or any inlet or drain. The regulation further provides penalties against offenders.

The Common Law

The common law principle(s) is another approach to the protection of the environment. The Indian Supreme Court in *M.C Mehta v Kamal Nath,*[32] observed that pollution is a civil wrong by its very nature, it is a tort committed against the community as a whole. A person, therefore, who is guilty of causing pollution, has to pay compensation for damages. This can be brought under an action for negligence, nuisance, and trespass or under the strict liability rule in *Rylands v Fletcher*. In *Pakkle v P. Aiyasami Ganpathi,*[33] the court held the defendant who laid salt pans in the tank which belonged to the government, liable for the tort of nuisance as it has polluted the tank water rendering it useless for bathing, drinking and other purposes .Similarly, in *Agbara v S.P.D.C,*[34] the defendant whose operation caused pollution to underground water and caused acid rain which resulted into hardship to the population, was sued by the plaintiff for nuisance in a personal and representative capacity and succeeded as the court awarded both special and general damages for the pollution caused.

Negligence is yet another common law remedy which provides a means of protecting the environment. The law expects a person to make sure that his act or omission does not cause any physical injury or damage to another person or his property.[35] The degree of care however depends on the circumstances of the case. The plaintiff is required to prove that violation of his legal right is a direct consequence of the defendant's negligent act which has resulted in damages.[36]*In Mukesh Textile Mills P. Ltd. v H.R Subramaniya Sastry*.[37] The defendant was held liable in negligence for failure to exercise due care when his tank which was used to store molasses in his sugar factory collapsed and emptied into water channel ultimately causing serious damages to the paddy crop in plaintiff's field. Similarly in *Deepak Nitrate Ltd. v State of Gujarat*,[38] the Indian Supreme Court, held that industries may be held liable for the offending activities which causes environmental degradation on the basis of polluter pays' principle.

Furthermore, the common law doctrine of strict liability propounded by the House of Lords in the historic English case of *Rylands v Fletcher,*[39] is known as "liability without fault". The doctrine as propounded by Blackburn J. states that the person who for his own purpose brings on his land anything likely to do a mischief if it escape, must keep it at his own peril, and if he does not do so, is prima facie answerable for all the damage, which is the natural consequence of its escape. Bringing of none natural user, escape and resultant damage

32 AIR 2000 SC 1997.
33 AIR 1969 Mad 351.
34 (Unreported) (2001), Suit No. FHC/ASB/CS/231/2001,
35 V. D. Paranjape, Environmental Law, (Allahabad; Central Law Agency Publishers, 2013), 314
36 Donoghue v Stevenson, 1932 AC 562 per Lord Atkin.
37 AIR 1987 Kant 87.
38 AIR 2004 SC 3407
39 (1988) LR 3 HL 330

are the three requirements to be proved by the plaintiff to show that the case is covered within the applicability of the doctrine which excuses him from necessity to prove the negligence of the defendant.[40] The principle therefore presupposes a non-delegable duty on the part of a polluter to prevent environmental pollution and be prepared to face all direct, indirect or foreseeable consequences if there is environmental pollution due to its activities.[41] In *Sam Ikpede v S.P.D.C Nig. Ltd*,[42] the plaintiff claimed against the defendants, the payment of compensation for damages suffered by him and his family as a result of the escape of crude oil and chemicals from pipes belonging to the defendant. The court held inter alia, that the defendants were strictly liable under the provision of section 11 (5) of the Oil pipeline Act.

An Appraisal of Existing Approaches to Environmental Protection

The existing approaches are indicative of the series of intervention from different standpoints to protect the environment, but it is now apparent that these various approaches have not met the increasing challenges of environmental protection. The effectiveness of a policy in any society is determined by the level of compliance and enforcement. The problem in our society is not the lack of regulations capable of protecting the environment, but the lack of proper enforcement due to certain limitations with questions of subject-matter, jurisdiction, locus standi, pre-action notice and limitation of action, as well as issues of sabotage and the non-justiciability of relevant constitutional provisions relating to the environmental.

At common law, an action in environmental litigation leading to the award of damages to victims or other forms of remedy, may take different forms. But the problem is that an award of damages is dependent on technicalities based on proof and may even be insufficient to redress harm. The failure of a plaintiff to prove negligence in environmental cases especially where technology or expertise is needed, often results to the dismissal of several cases. In *Atunbi v. S.P.D.C. Nigeria Ltd.*[43] the plaintiff claimed that the defendant has caused oil, gas and chemical to escape from pipeline under their control, thereby destroying fishes in the lake and their farmland, the court held that the plaintiff could not prove that the defendants were negligent. Also in *Ogiale v Shell Pet. Dev. Co. Ltd*,[44] the plaintiffs lost their case both at the High Court and the Court of Appeal simply because they could not match the quality of the expert evidence given on behalf of the defendant in that case. The Supreme Court has also alluded to this principle making evidence of expert indispensible.[45]

Jurisdiction is another impediment to a successful litigation. In dealing with a case, the court first assumes jurisdiction. There are conditions precedent to the assumption of jurisdiction by the court before the determination of a dispute. This is because where action is not initiated by due process of law, the proceedings before the court is a nullity.[46] The

40 V. D. Paranjape, above note 31 p. 315.
41 Ibid
42 (1973) MWSJ 61
43 Suit No UCEH/48/73,judgement delivered on 12 November 1974 ,Ugelle High Court. 112
44 [1997] 1 NWLR (Pt 480) 148.
45 Seismograph Services v Onokpasa (1972) 1 All NLR (pt 1) 347.
46 Jika v. Akuson (2006) ALL FWLR (pt.293), 276.

Supreme Court held in *Yahaya v. The State,*[47]that once a mandatory provision of the law is not followed, the trial is rendered null and void abinitio. For example, section 13 of the Harmful waste (Special Criminal Provision) Act, provides that the Federal High Court shall have exclusive jurisdiction to try matters relating to this Act. This implies that where matter relating to this Act is brought before a state high court for the sake of speedy dispensation, such decision will be null and void.

The issue of pre-action notice is another limitation that is fatal to environmental litigation. Where there is need for a Pre-action Notice, the plaintiff must serve such pre-action notice. Section 32 of the National Environmental Standards and Regulations Enforcement Agency Act 2007, provides inter alia, that an intending plaintiff or his agent must give a pre action notice to the Agency. The absence of a pre-action notice was held to be fatal in *Lateef Kalani v A.G. Federation,*[48] where damages were claimed against FEPA and the Nigerian National Petroleum Corporation (NNPC) for allowing the importation of poisonous premium motor spirit (PMS) into Nigeria. Also in *Asogwa v. Chukwu,*'[49]the court held that where there is no issuance of pre-action notice as provided by a statutes, there is lacking a condition precedent, and the courts would not be able to assume jurisdiction and consequently, such case would be thrown out of the court's precincts, irrespective of the genuineness of the plaintiff's claim.

Locus -standi is another barrier to litigants getting remedy in environmental pollution cases. The trend of case law, especially in Nigeria is that in order to have standing to sue, the plaintiff must show "sufficient interest", that is, an interest which is peculiar to the plaintiff and not an interest which he shares in common with general members of the public.[50]While the issue of locus standi is rightly to help the court close its doors to meddlesome interlopers, it has undoubtedly worked hardship against pollution victims with genuine claims. In *Shell Petroleum Development Company Nig. Ltd v. Chief Otoko and Others,*[51]the respondents who were plaintiffs at the Bori High Court in Rivers State claim the sum of ₦499, 855.00 as compensation payable to the defendants (appellants herein) for injurious affection to and deprivation of use of the Andoni Rivers and creeks as a result of the spillage of crude oil. The action was brought in a representative capacity. The Court of Appeal held that it is essential that the persons who are to be represented and the person(s) representing them should have the same interest in the cause or matter and the relief sought be beneficial to all whom the plaintiff proposes to represent. The Court rejected the purported representative action.

47 (2002) 3 M.J.S.C 103

48 Unreported Suit No. FHC/L.SC/11/9.

49 (2003) 4 N.W.L.R (pt. 811) 540 at 552; See also Mobil Producing (Nigeria) Unlimited v. LASEPA (2002) 2 M.J.S.C 69; Eze v. Okechukwu (2003) 2 M.J.S.C. 188; Abakaliki Local Government Council v. Abakaliki Rice Mills Owners Enterprises Nigeria (1990) 6 N.W.L.R. (pt. 155) 182;; Amadi v. N.N.P.C (2000) 10 N.W.L.R (Pt. 674) 6; Nigerian Ports Plc V. Oseni (2000) 8 N.W.L.R (Pt. 669) 410.

50 M. T. Ladan, Materials and Cases on Environmental Law and Policy, (Kaduna: ECONET Publishing Co. Ltd, 2004), 117 - 365

51 (1990) 6 NWLR(pt. 159) 693

Although the Supreme Court sought to abolish this restriction in *Adediran and Anor v. Interland Transport Ltd*,[52] by interpreting the constitutional right of access to court, this is commendable. But the question remains whether an individual can sue in a representative capacity and secure damages. In *Amos v. Shell BPLtd,*[53] the plaintiffs sued the defendants in a representative capacity claiming special and general damages. One of the issues was whether special damages could be claimed in a representative action, when the plaintiffs suffered unequal losses, or whether the plaintiffs as general public could claim for losses suffered by them individually. It was held, dismissing the claim That since the creek was a public waterway, its blocking was a public nuisance and no individual cold recover damages therefore unless he could prove special damage peculiar to himself from the interference with a public right but that since the interest and losses suffered by the plaintiffs were separate in character and not communal, they could not maintain an action for special representative capacity.

Statute of limitation is another factor. By this principle, any action brought after the time of limitation given to it, would be said to be statute barred and would not be entertained in court. Where there is time limit for commencement of the action the victim must comply with the time limited for the commencement of action. The court held in *Akibu v. Azeez*,[54] that in limitation of action, time begins to run from the date the cause of action arose. This of course hinders justice as in certain instances the effect of the hazard does not immediately become obvious, as for example cases of oil spillage, where extent of damage to the soil may not be immediately apparent. Such instance may raise the issue of when cause of action arose and where it is beyond the stipulated time, the action will be statute barred.

The defense of Act of God or sabotage by third a party is another limitation. The Oil Pipelines Act has made provisions for the payment of compensation to victims where there is oil pollution. Ovie-Whisky J. stating the obligation of oil companies, observed that:

> Oil companies which have been granted a licence to prospect for crude oil in this country under the Petroleum Decree. 1969, No 15 can only lay pipes carrying crude oil on or under the land by virtue of the licence granted...the Act also made it abundantly clear that the holder of such a licence shall pay compensation to any person suffering damages as a consequence of any leakage from pipeline.[55]

The Decree mentioned above is the current Petroleum Act and Paragraph 37 of Schedule 1 of the Act, makes provision for adequate compensation, which is similar to Section 11(5) of the Oil Pipeline Act. However, Section 11(5)(c),[56] creates a defense of

[52] (1991) 9 NWLR (pt. 214) 155.

[53] (1974) 4 ECSLR 48.

[54] (2003) 5 N.W.L.R. (Pt. 814) 643.

[55] Sam Ikpede v Shell B.P Nig. Ltd. (Supra)

[56] Oil Pipelines Act, (Cap O7 LFN 2004) S. 11(5)(c), "The Holder of a licence shall pay adequate compensation to any person suffering damage (other than on the account of his own default or on account of the malicious act of a third person) as a consequence of any breakage of or leakage from pipeline or ancillary installation..." See also Mandraj v. Texaco Trinidad Inc. (1769) 15 WIR 251

sabotage for oil companies which is often times relied upon by oil companies in order to avoid liability; and in such instance, no compensation will be paid and if a plaintiff must succeed, he must prove that such leakage was caused by the company. This is however strange as the plaintiff who is the victim is not the custodian of oil pipeline or ancillary installation.[57]

Another major setback, is the non-justiciability of Chapter two of the constitution which is the *fundamental objectives and directive principles of state policy.* It is true that the Constitution of Nigeria 1999 in section 20 speaks to the protection of the environment as the primary objective of the government. However, similar provisions in some other jurisdictions have been interpreted to the effect that aright to life includes a right to live in a clean environment, thereby making it enforceable. The Indian Supreme Court stated that "issues of the environment must and shall have the highest attention from this court".[58] Thus, in *Subhash Kumar v State of Bihar*,[59] the court observed that the right to life guaranteed by Article 21 of the Indian constitution, includes right to enjoy pollution free water and air for the full enjoyment of life. This was also emphasized in *Mathur v Union of India.*[60]

In Ghana, the Directive principles of state policy are not expressly declared non-justiciable by the 1992 Constitution of Ghana. The Ghanaian Supreme Court in *Ghana lotto Operators v National Lotteries Authority,*[61]observed that the provisions of the constitution are justiciable because it contains the most important rule on political governance, save such provisions are expressly excluded in the constitution. Thus those principles were held justiciable as an otherwise intention does not appear in the Constitution of Ghana.

Section 24 of the Constitution of the Republic of South Africa 1996 makes a healthy environment, a guaranteed right. The constitution provides that everyone has the right;

a. To an environment that is not harmful to their health or wellbeing and
b. To have the environment protected, for the benefit of the present and future generation through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation and secure ecology...

Similarly, Section 46 of the 1992 Constitution of the Democratic Republic of Congo (DRC) provides; "Every citizen shall have the right to a satisfactory and sustainable healthy environment and shall have a duty to defend it..."

The fore goings has militated against achieving adequate protection of the Nigerian environment through existing approaches. The result is that the physical and human

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[57] D.K. Derri and G. O. Popoola "A Critical Examination of Paragraph 37 of Schedule 1 of the Petroleum Act and Section 11(5) of the Oil Pipeline Act" *Law Students' Association of Nigeria, Niger Delta University Journal (The Juris Consult), Vol. 5(2014)*9

[58] Tarun Bharat Sangah, Alwar v Union of India, 1992 Supp (2) SCC 448

[59] AIR 1991 SC 420

[60] 1996, 1 SCC, 199

[61] (2007-) 2 SCGLR, 13

environments are at a risk of total extinction. There is therefore a need to adopt alternative approaches that will be capable of maintaining a safe and healthy environment.

The Market Approach

The market approach or system, is a systematic approach to determining the optimum use of scarce resources involving comparison of two or more alternatives in achieving specific objective(s) under the given assumption and constraints. The theory seeks to pull or distribute resources to the most valuable user which will ultimately result into allocative efficiency also known as 'pareto optimal'[62]. Therefore a market approach will lead to and promote the general welfare of the society. Richardson in his thesis observed that:

> Economics is relevant whenever the court is reviewing existing legal principles or is considering alternative legal rules. And may be relevant in the exercise of discretionary power. Obviously, no judge can or should always privilege efficiency over all other values. The justice of compensating those who find themselves drinking decomposed snails may outweigh the costs associated with imposing a duty of care on ginger beer manufacturers. And precedent may, and parliamentary intention, when interpreting statutes, must trump efficiency. But efficiency should at least be taken into account.[63]

The neo-classical economists have argued that the reason for the unacceptable level of environmental degradation arising from pollution is because the polluter can discharge effluent at no cost to himself, that is, he acquires a benefit free of charge while the cost accrue to others.[64] This is known as the free rider,[65] Thus to achieve a pollution free environment, the externalities[66] of the environment must be internalized and this can be done through the use of economic instruments which primarily seek to discourage firms and individuals from causing pollution or damaging the environment, not by persuasion or prohibiting the

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[62] Efficiency, in particular allocative efficiency, is usually here defined in the context of Pareto superiority principles, or the weaker version of Kaldor-Hicks efficiency. A legal rule is said to be Pareto (named after economist Vilfredo Pareto, (1848-1923) efficient if it cannot be changed so as to make one person better off without making another worse off. Any exchange of goods or resources which increases the well being of a least one person without reducing the well being of another is said to increase social welfare, and when it reaches the point where it is impossible to do any further exchange without somebody becoming worse off, the resulting allocation is said to be Pareto-efficient. The rule posits that a legal rule is efficient if can be made Pareto efficient by some parties compensating others to offset their loss. The Kaldor-Hicks efficiency proposition is named after Nicholas Kaldor (1907-1986), Welfare Propositions of Economics and Interpersonal Comparisons of Utility (1939) 49 *Economics J.* 549; and JR Hicks (1904-1989), The Foundation of Welfare Economics (1939) 49 *Economics J*. 696, cited from Brian Bix, *Jurisprudence: Theory and Context,* London: Sweet & Maxwell, 2006, 194 ft. nt. 18.

[63] I. Richardson. "Law and Economics and Why New Zealand Needs It", (2002) 8(2) *New Zealand Business Quarterly*. 151, 166.

[64] A. G. Oludayo; *Environmental Law and Practice in Nigeria* (Lagos, University of Lagos Press, 2004), 578.

[65] A free Rider in Economics, refers to someone who benefit from resource, Goods and Service without paying for the cost of the benefit.

[66] They are unintentional side effect of pollution operations which affect others other than those directly involved in the activities. that is when the welfare of one is adversely affected by the action of another.

polluting activity, but by imposing economic cost that is higher than the cost of pollution, which will result into alternative ways of polluting less rather than paying more.

The Dilemma of Choice and the Market Bargain Arrangement

The market system contemplates the placing of the actors in a state of equilibrium without any alteration in their mode of operation which therefore means that the parties can exercise their choices and maximize their welfare through voluntary bargain which will ensure allocative efficiency and increase social welfare.

Coase in his economics theory, '*The problem of social cost'* [67] examined activities of firms which have harmful effect on others such as a cement factory which emits dust in high density, and has harmful effect on those occupying neighbouring properties. In analyzing it economically, one will consider the difference between the private and social product of the factory and would conclude that the factory should be made liable for damages caused to those injured by the dust or better still impose a tax on the factory owner which amount would be equated or should exceed the damage it would cause in its operation or to put off the factory from residential areas or areas in which the emission will cause harmful effects. The effect of the traditional approach is not on the basis of equilibrium as one party is being restrained from carrying out his activities by way of an injunction, which will consequently result in economic loss while the other party pays or parts with nothing. It therefore means that existing approach makes the nature of choice that has to be made vague and difficult.

In another situation where A inflicts harm on B, to avoid further harm to B, will mean restraining A from carrying out his operation, but this will rather result into economic loss to A. However, allowing A to continue his operations, will further inflict harm on B. Traditionally, the law will consider the option of restriction. But in the evaluation of Coase, it will be wrong to resort to the option that will result into restraining a party because the problem being dealt with is reciprocal in nature as the avoidance of harm on B, will further inflict harm on A. The real question that has to be decided and issue to be resolved is: should A be allowed to harm B, or should B be allowed to harm A? [68]

Another illustration will be where an only local and international airport is sited in an environment that was once considered quiet, peaceful and proper location for homes before the airport was built, but dust, noise low flying of planes caused by the operation of the airport have rendered the existing homes unsuitable for living. Restraining the operations of the airport, will make the environment habitable but will completely put an end to international and local traveling which will certainly hamper transportation. And allowing the operations of the airport will completely render the homes and environment unsuitable for living. What choice to make is unclear until the value of what is obtained as well as the value of what is sacrificed to obtain such is known.

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[67] R.H. Coase: "The Problem of Social Cost" (1960) Vol. 3 *Journal of Law and Economic, the University of Chicago press.* 1-44

[68] Ibid

Stigler,[69] opined that in such situation what should be considered is whether or not the value of the product which causes the pollution is higher or lower than the value of the polluted object. Putting it differently, it is all about weighing up the gains that would accrue from eliminating these harmful operations and effects against the gains that accrue from allowing them to continue. In *Bass v Gregory*,[70] where fresh air was drawn in through the well which facilitated the production of beer but foul air was expelled through the well which made life in the adjoining houses less pleasant. The economic problem was to decide which to choose: a lower cost of beer and worsened amenities in adjoining houses or a higher cost of beer and improved amenities.

In *Adams v. Ursell,*[71] a fried fish shop in a predominantly working-class district was set up near houses of a much better character without fish-and-chips. Although a contradiction in terms that may be considered as nuisance, but the court stated that:

> It was argued that an injunction would cause great hardship to the defendant and to the poor people who get food at his shop. The answer to that is that it does not follow that the defendant cannot carry on his business in another more suitable place somewhere in the neighbourhood. It by no means follows that because a fried fish shop is a nuisance in one place it is a nuisance in another.

Although an operation may by law be a nuisance but the economist expects that a broader approach could be taken so as not to leave a party worse off and the other better off. Hence there is need for bargain by both parties. In the case of *Sturges v Bridgeman,*[72] where a confectioner used two mortars and pestles in connection with his business which has been in operation for more than 26 years. A doctor subsequently occupied adjacent premises. The confectioner's machinery caused the doctor no harm until eight years later, when he built a consulting room at the end of his garden right against the confectioner's kitchen. It was found that the noise and vibrations caused by the confectioner's operation, made it difficult for the doctor to use his new consulting room in attending to patient which prevented him from examining his patient by way of auscultation[73] on those with chest disease. The doctor brought an action seeking for an injunction restraining the confectioner from using his implements in his operation. The courts had little difficulty in granting the doctor the relief he sought. The court asserted that:

> Individual cases of hardship may occur in the strict carrying out of the principle upon which we found our judgment, but the negation of the principle would lead even more to individual hardship, and would at the same time produce a prejudicial effect upon the development of land for residential purposes.

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69 G. J. Stiger, "The Theory of Price" referred to in Coase, R.H. "The Problem of Social Cost" supra

70 (1890) 25 Q.B.D. 481.

71 [1913] 1 Ch. 269

72 (1879) 11 Ch. D. 852

73 Auscultation is the act of listening by ear or stethoscope in order to judge by sound the condition of the body.

The decision of the court indicates that the doctor had the right to restrain the confectioner from carrying on his operation with the use of the instruments that causes the difficulties. But in the opinion of Coase, such decision will result to economic loss hence a more broader and modified approach be considered through a system of bargain between the parties, in that, the doctor would have waived his right by allowing the confectioner to continue in his operation if the confectioner would have paid him a sum of money which is greater than the loss of income suffered, which also include moving to a more costly or convenient location. The confectioner would have been willing to pay the bargained sum if the amount he would have to pay the doctor was less than the loss of income he would suffer if he had to change his mode of operation at his present location. On the flip side, if the confection by the decision of the court, had the right to continue his operation which causes noise and vibration, he will need not to pay the doctor, but then, the doctor will need to compensate the confectioner in order to persuade him to stop using the said machines if the doctors income has reduced by the loss of patients with the continuous use of the machine and if such will add to the confectioner's and not reduce his income if he uses an alternative machine or move to another location. In all situations, it gives room for a bargain which will consequently result in optimal equilibrium.

The case of *Brayant v Lefever,*[74]also raised the problem of choice making resulting from the smoke of nuisance in a novel form. Here the plaintiff and the defendant were occupiers of adjourning houses, which were about the same height. Before 1876, the plaintiff was able to light fire in any room of his house without the chimney's smoking. Both houses had remained in that condition for about thirty to forty years. In 1876 the defendant re-structured their house; they carried up a wall by the side of the plaintiff's chimney much beyond its original height, and stacked timber on the roof of the house and thereby caused the plaintiff's chimney to smoke whenever he lights fires. The reason for the smoke was that the erection of the wall and the stacking of the timber prevented the circulation of air. In a trial before the jury, the plaintiff was awarded £40. On appeal, the court of appeal reversed the judgment and stated that there is no evidence to show that the defendant caused the nuisance and that the house and stacked timbers are harmless thus, it is the plaintiff that has caused the nuisance by lighting a coal of fire. Therefore, the plaintiff should be restrained from lightning the coal.Cotton L.J. in his dissenting opinion asserted that the nuisance is caused by both parties (the man who built the wall and the man who lit the fire). He observed:

> Here it is found that the erection of the defendants' wall has sensibly and materially interfered with the comfort of human existence in the plaintiff's house, and it is said this is a nuisance for which the defendants are liable. Ordinarily this is so, but the defendants have done so, not by sending on to the plaintiff's property any smoke or noxious vapour, but by interrupting the egress of smoke from the plaintiff's house in a way to which the plaintiff has no legal right. The plaintiff creates the smoke, which interferes with his comfort. Unless he has a right to get rid of this in a particular way which has been interfered with by the defendants, he cannot

[74] (1878 - 79) 4 C.P.D. 172

> sue the defendants, because the smoke made by himself, for which he has not provided any effectual means of escape, causes him annoyance. It is as if a man tried to get rid of liquid filth arising on his own land by a drain into his neighbour's land. Until a right had been acquired by user, the neighbour might stop the drain without incurring liability by so doing. No doubt great inconvenience would be caused to the owner of the property on which the liquid filth arises. But the act of his neighbour would be a lawful act, and he would not be liable for the consequences attributable to the fact that the man had accumulated filth without providing any effectual means of getting rid of it.

It follows therefore that there would have been no smoke without the fire and there would have been no smoke nuisance without the wall. This assertion by the learned Lord is in consonance with Coase's proposition on reciprocity. Thus eliminate the wall or the fire and the smoke nuisance would disappear. Under the market arrangement, both parties would have to come to a bargain to determine who is willing to pay for the inconvenience or nuisance caused to the other if the other will be willing to let go of his legal right since both of them by the principle of reciprocity, have a right and could restrain the other.

The market arrangement is always resorted to whenever such would lead to an increase in the value of production. The fact that the cost of pollution is not internalized may produce an inefficiently high level of goods production and an inefficiently low level of pollution control. Therefore there is need for firms to internalize externalities which would become part of its production cost whereby price signal are given to consumers and more environmentally harmful products and process would be relatively more costly, and this will ultimately regulate consumption and consequently reduce pollution.

The several illustrations and cases indicate that pollution occurrence are reciprocal in nature, which can only be better resolved by a broader approach of voluntary bargain of the actors than the use of the traditional system in order to achieve optimal equilibrium of the affected parties without governmental or third party intervention.

The Setting of Entitlement

One major issue faced by a legal system, is the protection of entitlement. Who has what right to do a thing and what should be protected. Thus whenever there is a conflicting interest of persons, there is always a problem to decide whose rights are to be protected. The principle was clarified by Calabresi and Melamed.[75] Entitlements are rights established and protected by law, the absence of which would result in "*Mights Make Rights*".[76] Everyone has a right provided by Law, to enjoy his property to the exclusion of others. Such rights may include the entitlement to pollute and an entitlement to live in a pollution free environment, the entitlement to explore oil from a land and an entitlement to a be free from oil spillage on land, the entitlement to life and an entitlement to take the life of another (lawfully), the

[75] G. Calabresi and D. Melamed, "Property Rules, Liability Rules and Inalienability; one view of the Cathedral" (1972) 85(6) *Harvard Law Review,* 1089-1128.

[76] Mights make right implies where the strongest, knowledgeable or clever, Emerge Victorious in any Conflict

entitlement to speak freely and an entitlement not to be defamed. However, it is not enough for the law to set out these entitlements as well as choosing which should prevail in the face of conflict, but it must seek to enforce the choice it has made.

The setting of entitlements is basically set out for economic efficiency, which entails the adequate use of economic resources for the benefit of all without any waste or inefficiency, where no one is made better or worse off, which also include those who will need to compensate those who lost or have given up their entitlement, will still be better.[77]

The setting of entitlement could be for several reasons such as on the basis of distributional goal which could either be the distribution of wealth or distribution of certain specific goods given away by society to one freely but at same time requires another to pay for the use of that entitlement. For instance, the right given to one to pollute freely,[78] conversely means that another has to buy the right to live in a pollution free environment, the right to make noise as a result of operation also means that another has to pay for the right to live in a noise free environment. But where such right to live in pollution or noise free environment is given freely, it means that a would-be polluter must pay for the right to pollute, otherwise it will place the party who has a right to live in a pollution and noise free environment worse off. Again a society may give an entitlement freely but could also limit such use by paying the holder, in which case, it seeks to protect those who may be victims of such entitlement. Or may sell out certain entitlements in form of license to pollute but at the same time induce them to take precautionary measure.[79]

Rules of Entitlement

Entitlements are rights established and protected by law. Whenever a society chooses an entitlement, it must also ensure that it protects and enforces it and has to decide whether the law allows such entitlement to be traded.[80] In an action, a court determines what entitlement to protect and by what rule such choice should be made, which could either be by property rule, liability rule and or inalienability rule. This is done to determine the appropriate relief to be granted.

Property Rule

Property rule protects property rights in that, where there is a violation, there is an injunctive remedy to be granted to the holder. This is akin to immunity of right to be protected by law. Under this rule, the holder is at liberty to sell his right if he wishes where his right has been violated. Thus, anyone who decides to take away such right must buy it in a voluntary bargain for an amount which exceeds the damage caused. In such negotiation, the value is determined by the actors (buyer and seller). The state is expected to protect such right from violation, by way of injunction. However, where there is already a violation, it

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77 G. Calabresi " The Cost of Accident" (1970) 24-33, cited in G. Calabresi and D. Melamed, as above p. 1093.

78 Associated Gas Re-Injection Act Sec 3. Cap A.25 Laws of the Federation 2004. This gives an oil company the right at the permission of the Minister to flare gas continually in a particular oil field.

79 Environmental Impact Assessment Act. Cap E12 LFN 2004.

80 Calabresi and Melamed, as above p. 1105

must ensure that the sanction by way of compensation to the holder, exceed the cost of damage done in order to deter further violation of such right.

Liability Rule

Under the principle of liability in civil litigation, where there is a right, there is a remedy (*ubiius ibi remidium*). Under liability rule, there is an allowance for violation of right but such must be with the payment of reparation. In this case, the right is sold not at the will of the holder but because there is already a violation of such right to an irrecoverable state hence, he is forced to give away his right and the value of the damage is determined not by the value placed on it by the holder, but will be objectively determined by an independent body such as the court especially where voluntary bargain is impossible or costly and such value in most instances, may be undervalued. In *Allar Iron v Shell B.P,*[81] the plaintiff sought an injunction restraining the defendant whose oil exploration activities has caused pollution to his land, but this was not granted and he was made to accept compensation for the damages caused.

Inalienable Rule

Under this rule, entitlements are protected by the state, by imposing a restriction or forbidding the sale or transfer of such rights irrespective of the wiliness of the actors to sell and buy. Restriction on the transfer of certain entitlements may be on the basis of enforcement or problem of obtaining information on external cost, for instance restriction on the sale of land to polluters, commercial outfit or airports in residential areas.[82] It therefore means that even where such operation will be beneficial to society, provided it is covered by inalienable rule, it will be restricted.

In the event of conflict as to who possess what entitlement, it is the responsibility of the state to determine who has a right to the entitlement sought to be protected and by what rule such entitlement is to be protected. In the case of noise pollution by a licensed construction company, where the plaintiff alleges that the defendant is polluting its premises with noise and dust, and the defendant admits that although there is pollution but such is not wrongful, as there is a license to carry out the operation. The court would need to decide which of the competing rights to protect. The court will have to determine if the plaintiff has a property right to protect and in such situation, the defendant can only continue his operation if there is an agreement between the parties having evaluated the cost. Also the court will determine that although there was a license, but the cause of pollution was not legal hence it could only continue its operation by way of paying Damages to the plaintiff.[83]In *Delta Air Corporation v Kersey*,[84]a case of nuisance emanating from an airport within residential area, the court asserted that:

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81 Supra

82 I. R. Elvis-Imo, "An Economic Analysis of the Climate Change Phenomenon" (Awaits Publication, Nigerian Bar Journal, Bayelsa State Chapter .2016) p. 15.

83 *Allar Iron v Shell B.,P* Supra

84 (1942) Ga 862,20 S.E 2d 245.

> .... For the sake of public convenience, adjoining property owners must suffer such inconvenience from noise and dust as resulted from the usual and proper operation of an airport, but their private rights are entitled to preference in the eyes of the law where the inconvenience is not one demanded by a properly constructed and operated airport.

The above opinion of the court is an indication that irrespective of a license, where there is a pollution which violates the right of a holder of such right, damages will be awarded if the operation must continue. On the other hand, where the defendant has such right to pollute which is protected by property right, the plaintiff would have to pay the defendant to consider an alternative if he must enjoy a pollution free environment.[85]The payment of damages by the defendant may in most cases, be accompanied by an injunction restraining the defendant from carrying out his operation in order to avert further pollution. The Arizona Supreme Court in *Spur Industries, v Del E. Webb Dev. Co*[86]**.** where the developer of an expanding retirement community demanded that a pre-existing cattle feedlot be shut down because it generated odours and flies that annoyed the community residents, the court in trying to balance the competing interests, and the seriousness of the harm, granted an injunction against the operation of the feedlot operator "for a reasonable amount of the cost of moving or shutting down.

This principle as seen in the above case, is also well represented with an established Rule Four (4) hypothesis but a deviation from *Sturges v Bridgeman.*[87]

The rule is represented thus;[88]

Initial Entitlement	**Injunction/ Property Rule**	**Damages/ Liability Rule**
Resident	**Rule 1:** Court issues an injunction against polluter for pollution caused	**Rule 2:** Court finds a nuisance but permits pollution to continue if the polluter chooses to pay damages.
Polluter	**Rule 3:** Court finds the pollution not to be a nuisance and permits the polluter to continue without paying damages.	**Rule 4:** Court permits polluter to continue unless resident chooses to pay polluter, in order not to enjoy further pollution.

A rule 5 has been formulated to expand the cathedral, as a solution for the shortfalls of Rule 4. It postulates that in determining whether to use the property or liability rule to protect entitlements, the key is "transaction costs." Thus if transaction costs are low, property rules should be used and if transaction costs are high, then liability rules should be used,

85 *Sturges v Bridgeman,* Supra
86 (Ariz 1972) 494 p.2d 700
87 Supra
88 Calabresi and Malamed as above.

because when transaction costs are high, a liability rule will help substitute for bargaining. Under Rule 5, the court would use a best-chooser principle.[89]

Economic Instruments

Economic instruments are market-based mechanisms that are designed to influence human behaviour.[90] They are guiding principles other than the regulatory or best available technology (BAT) system,[91] that is aimed at inducing a change in the behaviour of economic agents by internalizing environmental or reduction cost through a change in the incentive structure that these agent face, which includes tools from pollution taxes and operational permits to deposit-refund system performance bonds as well as carbon credit.[92]

Years ago, Pigou and Dales suggested the introduction of corrective taxes to discourage activities that generate externalities,[93] transferability of property right and the use of market permit[94] which is now applied in the United States to reduce the leaded content of gasoline; limit the production and use of chlorofluorocarbons; and limit sulfur dioxide emission as a precursor of acid rain.[95]

Economic instruments therefore operates by juxtaposing rights and responsibilities of firms, groups or individuals so that they have both the incentive and the power to act in a more environmentally responsible manner in order to reduce societal cost to achieve any given level of environmental quality. Putting it differently, it encourages people to use goods and services that do less environmental damage, and allows polluting firms to control more than required in order to sell their excess to others at a profit.

The applicability of the economic instruments, can involve varying degrees of incentives, information and administrative capacity for effective implementation and enforcement as well as abatement cost reduction. These instruments used include.

Operational Permit

Operational permit or license is an instrument that allows firms or individuals to carry out operation (industrial or commercial) within a particular area wherein there was no initial entitlement. The permit creates legal conditions for the activity or project to operate causing the least possible impact to the environment. It thus requires that the permit holder operates the facility in such a way that minimizes the risk of pollution. Under the Nigerian Law, before an oil exploration company will begin to explore for oil, it must obtain a license from

89 J. E. Krier, cited in I. R Elvis –Imo, as above

90 M. Y. Raja. "Economic Approaches in Addressing Environmental Issues", *Cover Feature. Malaysia's Government Annual Bulletin Ingenieur* P.19

91 B. Ackerman and R. Stewart, "Reforming Environmental Law: The Democratic Case for Market Incentives", Vol. 13. (1988) *Columbia Journal of Environmental Law*. 171, 172-173

92 United Nations Brief on Economic, Trade and Sustainable Development Information and Policy tools from United Nations Environment Programme published July, 2002.

93 A.C. Pigou, *The Economics of Welfare* 1st edn. (London: Macmillan and Co. Ltd. 1920), 5

94 J. Dales; "Pollution, Property and Price", Toronto: University Press, 1968

95 R. Hahn and N. Stavis "Incentive-Base environmental Regulation in New Era from an old idea" (1991) 18(2) *Ecology Law Quarterly,*1-42.

the minister to do so and such license is revocable upon violation of terms. Similarly the Environmental Impact Assessment Act provides for the assessment of the potential impacts whether positive or negative, of a proposed project on the natural environment. Section 2 (1) of the Act, requires an assessment of public or private projects likely to have significant (negative) impact on the environment. Subsection (4) requires an application in writing to the Agency before embarking on projects for their environmental assessment to determine approval. Operational permit is therefore a way the government regulates specific industrial and commercial activities to protect the environment.

Pollution Charges

A pollution charge is a "price" to be paid on the use of the environment. The four main types of charges used for controlling pollution include:[96]

(i) effluent charges, which are charges based on the quantity and/or quality of the discharged pollutants;
(ii) user charges, are fees paid for the use of collective treatment facilities;
(iii) product charges, are charges levied on products that are harmful to the environment when used as an input to the production process, consumed, or disposed of and;
(iv) administrative charges, which are fees paid to authorities for such purposes as chemical registration or financing licensing and pollution control activities.

Germany, France China and Netherlands have used effluent charges to control water and air pollution.[97] The Netherlands have combined effluent user charge system, wherein the water Board and firms pay an effluent charge to the state water authority for discharge into waters; firms and households pay a user charge to water board for discharge in other waters that are treated by the water boards. The charge is based on the volume and concentration. The charge system has been effective not only in raising substantial revenues to finance water quality improvement, but also in its significant incentive impacts, and in behavioural and technological changes in certain industries such as chemicals, food, beverages and tobacco.[98]In Malaysia, the Malaysian Environmental Quality Act of 1974 included provisions for using economic incentives and disincentives in the form of pollution charges in support to controlling discharges. The Act requires that all dischargers pay a fee to obtain a license to discharge waste into public water bodies. This fee varies according to the class of premises,

[96] J.D. Bernstein: "Water Pollution Control- A Guide to the use of Water Quality Management Principle" (1997) Published on behalf of the United Nations Environment Programme, *The Water Supply & Sanitation Collaborative Council on the World Health organization by E & F Spon. 22*

[97] R.W. Hahn and G. L. Hester. "Marketable Permit: Lessons for Theory and Practice", (1989) 16, *Ecology Law Quarterly*. 361 f.

[98] A. Hussein, "The Use of Economic Instruments in Environmental Policy: Opportunities and Challenges" (2004), United Nations Environmental Programme (UNEP) 1, 69

the location of such premises, the quality of wastes discharged, the class of pollutants and the existing level of pollution.[99]

Enforcement Incentives

These instruments are penalties designed to induce polluters to comply with environmental standards and regulations. They include non-compliance fees (i.e. fines) charged to polluters when their discharges exceed accepted levels, performance bonds payments made to regulatory authorities before a potential polluting activity is undertaken, and then returned when the environmental performance is proven to be acceptable, and liability assignment, which provides incentives to actual or potential polluters to protect the environment by making them liable for any damage they cause.[100]

Deposit Refund System.

This is an economic system that aims to shift responsibility for controlling pollution, monitoring, and enforcement to individual producers and consumers who are charged in advance for the potential damage with an amount higher than the usual amount of the product. So that when the user of the product returns it to an approved center for recycling or proper disposal, their deposit is returned.[101] A well known example is when container of product is asked to be returned after use, examples are beverages, drinks, pesticides and battery containers; the deposited amount is refunded. This mechanism will enhance a proper waste management system. For instance, in America and Europe, Deposit-refund systems on beverage containers combined with product charges on non-reusable containers have been operating successfully in Finland, Norway, and Sweden. The percentage of containers returned is 90% for beer and soft drinks and 70%-80% for wine and liquor, while the market share of non-returnable bottles is kept small (less than 5% in Finland). Similarly, successful deposit-refund systems for beverage containers also operate in many states in the U.S. The success with deposit-refund systems has encouraged several European countries to extend the system to other products such as batteries, car hulks, and pesticide residues. Denmark and the Netherlands introduced refundable deposits for batteries with a high content of cadmium and mercury to control soil contamination. Norway and Sweden have introduced deposit refund systems for car hulks since the mid-to-late 1970s to reduce solid waste and visual pollution and to promote the reuse of materials.[102] This system has witnessed huge successes in pollution control.

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99 J. Vincent, "Reducing Effluent While Raising Affluence: Water Pollution Abatement in Malaysia" cited in United Nations Environmental Programme (UNEP)

100 J.D. Bernstein, as above

101 Ibid

102 T. Panayotou, "Economic Instrument for Environmental Management and Sustainable Development", (1995), *Prepared for the United Nations Environment Programme's Consultative Expert Group Meeting on the Use and Application of Economic Policy Instruments for Environmental Management and Sustainable Development, Nairobi*, p. 31

Price System

This is a system whereby people tend to make decisions which affect their behavior based on the preference and value placed on a product. Hence they tend to choose a particular product when such is lower compared to another product capable of giving same satisfaction. Marginal cost pricing can reduce excessive water use and consequent pollution as well as ensure the sustainability of water treatment programs. Water tariffs or charges set at a level that covers the costs for collection and treatment can induce commercial organizations to adopt water-saving technologies, including water recycling and reuse systems, and to minimize or eliminate waste products that would otherwise be discharged into the effluent stream. For instance, in Thailand many hotels along the country's eastern coast are treating and recycling their water for landscape irrigation because the cost of freshwater now exceeds the cost of treatment.[103]

Subsidies

These are incentives, grants and low interest loans designed to encourage polluters in order to reduce the quality and quantity of their discharge by investing in various types of pollution control measures. The essence of this is to speed up the enforcement of direct regulation as well as assist firms, especially small ones that face cash flow problems or financial difficulties caused by capital investments required by compliance to new regulation, and to support the research, development and introduction of pollution control equipment and clearer technologies. But this has been abused severally. For instance, considering surface irrigation systems in developing countries. Farmers receive irrigation water free of charge and consequence is over-use resulting into water logging and salinization[104] of soils and shortage thus, the value of the marginal product of water in much of the irrigated agriculture is near zero or even negative.[105]The removal of subsidy and allowing firms and individuals to pay for the product they use is another effective tool for controlling pollution. In Colombia, Brazil and Venezuela, subsidies where removed on wood harvesting thereby charging the harvesting of wood on the level of consumption, except when the harvest is offset by equivalent reforestation. Thus the government foregoes revenues from timbers so long as the cuts are properly replanted.[106] This encourages the planting of trees in order to reduce deforestation and greenhouse gas emission.

Marketable Permit

This is a system where regulatory authority sets maximum limit on the total allowable emission of pollutant. The permit authorizes firms or plants to emit a stipulated amount of pollutant over a specified period of time, after their initial distribution. The said permits can be bought and sold externally between different firms or internally between different plants

[103] J.D. Foster, "The Role of the city in environmental management" (1992) Paper prepared for USAID Office of Housing and Urban Programmes Workshop, Bangkok, Thailand. Cited in J.D. Bernstein, as above. Pg. 3

[104] Soil Salinisation is the accumulation of soluble salt of sodium, magnesium, and calcium in soil to the extent that soil fertility is reduced is caused by irrigation.

[105] J.D. Bernstein, as above

[106] A. Hussein, as above. 70

within the same organization. This is an incentive which induces firms having large carbon credit to seek for alternatives in their operation in order to pollute less than its permit so as to trade the unused permit to another firm that has exhausted its credit and seeks to continue operation. On the other hand, where all plants in an industry has a carbon credit, the firm would seek for alternative mode of using its plants in order to pollute less and transfer the unused credit to other plants within its firm in order to continue operation. This system would provide much stronger incentive for monitoring and enforcement of pollution control by way of rewarding innovative improvement in cleanup techniques, as well as generate revenue, as polluters would have the right to trade their carbon credit among themselves during the years they are valid and would be obliged to buy new ones when the existing ones expires.

The set of economic instruments available for implementing an economic approach to natural resource management and environmental protection spans a wide range of options and possibilities, and the potential variations and combinations are virtually limitless. Any instrument that aims to induce a change in behaviour of economic agents by internalizing environmental or depletion cost through a change in the incentive structure that these agents face rather than mandating a standard or a technology (command and control), or out-rightly prohibiting an operation, qualifies as an economic instrument whereby all actors involved are well considered with no one being made better off or worse off but are on the scale of equilibrium.

Conclusion

The quality of the environment and human life is determined by the degree of environmental protection. The environmental benefit arising from existing legal and institutional frameworks, are minimal and sub-optimal resulting in social and environmental welfare losses. There is no shortage of legislations on environmental protection in Nigeria but the problem is adequate enforcement hence, more legislation could mean more difficulties in enforcement. While the environmental regulation may be justified in one breathe, the strict application of the command and control approach may be counter-productive in environmental protection and management as it has a weak system of enforcement. This system, (command and control as well as the common law remedies) are based on the best available technology (BAT) i.e. it imposes on firms a mandate to install the best technology to reduce or eliminate pollution with no recourse to whether such installation will shut down the firm or not. Thus, commercial organizations would be subjected to the same emission standards regardless of their pollution abatement costs. This will mean that only the larger polluters would install pollution control equipment.

Compliance of the existing regulations in most cases depends on the enforcement capacity of the regulatory agency and the number of organisations or individuals being regulated. Thus, the greater the number of organisations or enterprises to be regulated, the more difficult it is to enforce the regulations properly.

The regulatory tools influence environmental outcomes by regulating processes or products, limiting the discharge of specified pollutants, and by restricting certain polluting activities to specific time or areas. Similarly, where there is litigation arising from

environmental pollution, several limitations arise which can deny the victim appropriate remedy.

Economic activities that generate goods and services, incur cost not only to the private parties in production and consumption, known as private costs but also to the public, known as social cost. Social cost includes cost of pollution, depletion of natural resources or degradation of the environment. These costs which should have also been included in the private cost have over time been borne by society alone. The failure of the command and control approach to address the externalities, in private decision making, has necessitated the call for a market system in environmental protection.

Applying the market approach to environmental challenges, would give policy makers better insight on how to develop legal rules, as well as the consequences of alternative rules. The economic approach though novel, is one that will grow in the future if adequately implemented.

The economic approach influences polluter's behaviour through persuasion and the use of economic instruments, discouraging firms and individuals from causing pollution or damaging the environment not by prohibiting the activity, but by imposing a price or economic cost on such conduct which is greater than the damaged caused. In the case of firms, it may involve voluntary agreements to undertake pollution control measures. In the case of consumers, it may involve public education and information campaigns to influence patterns of consumption and waste disposal. Hence, the system allows commercial organizations and individuals to respond flexibly and independently in line with market prices in order to meet environmental management objectives at the least cost as it provides continuing incentive for the reduction of pollution and the adoption of new pollution control technologies and processes to reduce waste.

The economic approach reduces compliance and administrative costs for both government and industry. For instance, the use of environmental taxes or carbon credit eliminates the need for government assessment certification of production processes and technologies. They also eliminate the government's need for large amounts of information to determine the most feasible and appropriate level of control for each regulated plant or product. The system is apparently a means of raising revenue in order to finance pollution control activities.

It is important to state that although the market approach is often considered as an alternative to the regulatory approach, but the present writers believe that both approaches are necessary for the effective protection of the environment, because the market principles and instruments would need adequate implementation by the regulatory authorities.