

# **Environmental Pollution and Challenges of Environmental Governance in Nigeria**

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## **Abstract**

The aim of this article is identify, analyse and articulate the rationale for the failure of environmental governance in Nigeria. It identified various environmental challenges confronting Nigeria and justification for regulation. This paper focused on strategies that will increase the efficiency of environmental regulation and ensure the optimal maximization of social and environmental welfare. Drawing from the economic analysis of legal rules this paper identified normative reasons for the poor formulation and implementation of environmental law in Nigeria which resulted in increased pollution and environmental injustice. The paper concluded by proffering practical regulatory techniques that can challenge policymaker to improve environment governance in Nigeria. On the basis of our analysis, innovate environmental governance strategy may be identified and new solutions developed.

**Keywords** – pollution, regulation and environmental governance.

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## **Introduction**

The efforts of the federal, state and local governments in Nigeria at ensuring sustainable development through numerous environmental legislation, fiscal incentives and grants to environmental ministries and agencies remain elusive as Nigeria continues to experience complex environmental problems of atmospheric, noise and water pollution, oil pollution, climatic change including flooding, coastal erosion<sup>2</sup> and perennial oceanic surge and municipal solid waste management. The reasons for such regulatory failure are many. Foremost among these reasons is the problem of designing best practices to secure effective and efficient enforcement and compliance with international and municipal environmental laws. A necessary conclusion that could be drawn from this analysis is that environmental benefits arising from existing legal and institutional frameworks are minimal and sub-optimal resulting in social and environmental welfare losses.<sup>3</sup> The question that should puzzle the mind of policymakers is why this sub-optimal results? What can we do to maximize our environmental gains? What changes in policy formulation and enforcement strategies are necessary to produce optimal environmental results? The answers to these questions are the focus of this paper: environmental governance using the best international practices to assess and improve on the national environmental governance strategies.

This paper seeks to nudge forward debate on how best to protect Nigerian environment to a condition approximating sustainability and real world implementation of environmental programmes. This paper focuses on strategies that will increase the efficiency of environmental regulation and ensure the optimal maximization of social and environmental welfare. In doing so, the paper begins by analysing the contemporary environmental challenges that confront Nigeria and proceeds to examine the legal justification for environmental regulation amidst other strategies. Next, the paper provides the justification for governmental regulation of environmental pollution in the face of market failure by providing both socio, political and economic perspectives of environmental policy with regard to both normative and positive dimensions of securing optimal environmental governance. It begins with an examination of central problem in environmental regulation: the tendency of pollution generators in an unregulated market economy to externalize some of the costs of their production, leading to an inefficiently large amount of pollution. Then, it proceeds to highlight many regulatory imperfections which produce the sub-optimal environmental and social outcomes. These imperfections represent the underlying causes which culminated in the clamour for environmental governance that will achieve desired results. Using the economic concepts of rationality, this paper also examines in details the means of environmental policy, that is, the choice of alternative instruments, with particular focus on cost-effectiveness and efficiency as against the conventional command-and-control mechanisms. As a sub-set of political economy of environmental governance, the paper also discusses the political question of environmental federalism and seeks to illustrate how environmental responsibilities among the levels of government and levels of authorities within the state can be rationalized to secure maximum cooperation. It further explores the

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<sup>2</sup> Several states in Nigeria were affected by various flooding of Rivers Niger and Benue that destroyed several properties worth billions of naira and displacement of many people in neighbouring six states from their ancestral homes rendering them homeless or forced them to migrate from their homes. See J. Ajani, RAGE OF NATURE: Flood ravages communities across Nigeria, Vanguard, 7<sup>th</sup> October, 2012 (available online at <http://www.vanguardngr.com/2012/10/rage-of-nature-flood-ravages-communities-across-nigeria/> (last visited 28<sup>th</sup> October, 2012); "Flood claims 104 lives, displaces 50,000 in N/CentralThe Zonal Coordinator, National" in Nigerian Tribune, 28<sup>th</sup> September, 2012 available online on <http://tribune.com.ng/index.php/lead-stories/48361-flooding-1-million-nigerians-may-die-nema/> (last visited 28<sup>th</sup> October, 2012).

<sup>3</sup> Welfare losses include increased emission of noxious and dangerous substances into the environment, exposure of citizens to risk of epidemic, cancers and other related diseases associated with environment and degradation of the ecosystems.

role of citizens in environmental management and how law could be used as an instrument of citizen empowerment.

## **II. Environmental Challenges**

Environmental pollution has been in existence since man began to live in settlements. In the earlier days of nomadic hunting communities, the tribal group moved on when food in their current location became depleted and the area around their camp became polluted or soiled. These nomads were a part of a balanced eco-system. As human societies developed, land became cultivated, livestock domesticated; and as permanent settlements became established, environmental pollution began to emerge. The problem became more serious as these permanent communities grew into cities. The increase in human population and consumption pattern also led to the increase in wastes generated, thereby creating environmental problems of collection and disposal.<sup>4</sup> In response to waste disposal challenge, various societies developed waste collection and disposal systems that best suited their immediate environments.

In traditional African societies, waste was dumped and burnt openly or centrally deposited in bush where they later decomposed in hygienic manner or deposited in a flowing river. In developed societies, sewage systems were developed to collect and move the untreated sewage to the nearest river or sea where nature was left to deal with the problem. Apart from this river-borne pollution, however, the effect of man's activities tended to be local in nature. Energy sources for domestic heating were coal and wood; and, transportation power was provided by animal or the wind. None of these produced waste products at a rate greater than the ecosystem could absorb.

With the advent of science and technology, the nature, magnitude and impact of polluting activities began to expand. Science and technology made it possible for man to harness energy from burning fossil fuels to drive machines. They were developed at an ever-accelerating pace, developing more and more products, including chemicals to meet the ever-increasing and insatiable demands of the marketplace. The waste products from these new industries were discharged directly into the environment. As industries multiplied, so did the waste products of combustion and manufacturing processes, creating environmental problems of disposal of nuclear and other hazardous substances. The scope of environmental pollution also increased to accommodate new ones such as atmospheric pollution, acidic rain, water and marine pollution, soil pollution, noise pollution, climate change and deforestation. The result being that humankind lives today in an environment where all life-supporting elements are polluted. The air we breathe in is no longer healthy. The water we drink is impure and decreases in volume and quality daily. The food we eat is contaminated. Humankind continues to witness persistent drought, low harvest, diseases and poverty as a result of climate change, deforestation, accumulation and disposition of nuclear and other hazardous substances. These ominous trends are symptoms of an unhealthy planet; a planet that can no

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<sup>4</sup> For example, in the Middle Ages the accumulating wastes of increasing populations bubonic fixed locations in Europe was caused serious public health problems. In Nigeria, the outbreaks of plague in Lagos and Ijebu Provinces in 1924 and 1926 respectively, which left about 1,200 people dead were clear evidence of public health problem arising from overcrowding and unhygienic living conditions of the people.

longer cope with all the demands man is heaping upon it. The direct and indirect effects of natural and anthropogenic perturbations are manifested in early death, diseases, physical deformities, genetic mutations and physiological malnutrition suffered by humankind. In developing countries where poverty, diseases and population explosions are prevalent, environmental issues become more confused and complex. The effects on the plants, animals and ecosystem are equally devastating and condemnable.

Locally, the wild environmental facts confronting Nigeria as a nation are enormous. A few of Nigeria's glaring environmental problems include (a) excessive pressure on available resources, infrastructure and space due to unabated rural-urban migration in the past three decades; this stress has been reinforced by industrial and urban development that has caused a rising rate of pollution; (b) the high rate of soil degradation, sheet, gully and coastal erosion and flooding through non-judicious land use practices; (c) the depletion of natural forest resources through uncontrolled logging, tree felling and over-grazing; (d) unfettered bush burning and the risk of exterminating wildlife species as well as uncontrolled fishing and related activities which endanger the species of fish in Nigeria waters; (e) pollution of surface and underground water systems through indiscriminate disposal of solid and liquid wastes; (f) destruction of valuable agricultural land through bad mining practices; (g) permanent dangers posed by the encroachment of the desert on vast agricultural lands along northern borders; and (h) oil pollution and related environmental consequences, particularly in the Niger Delta area of Nigeria.<sup>5</sup>

### III. Justification for Environmental Regulation

The fundamental theoretical argument for government regulation of environmental benign activities is that pollution is a classic example of an externality – an unintended consequence of market decisions, which affects individuals other than the decision maker. Because polluters do not take into account full social costs, pollutant emissions tend to be higher than socially efficient levels. The process of forcing the polluters to recognize environmental and social costs is known as internalizing externalities. The underlining economic lesson is that when we have to pay for something, we use less of it than we do if it is free. Cost internalization will only be achieved if there is governmental regulation that forces such polluters to internalize.

Legal regulation of any activities may be undertaken in two broad ways: regulation and case laws. Regulation or regulatory law, in this context refers to all state actions designed to influence industrial or social behaviours.<sup>6</sup> This may be in form of promulgation of a binding set of rules (e.g. legislation or administrative regulation, executive directives) to be applied by a body devoted to this purpose or other modes of influence - for instance, those based on the use of economic incentives (e.g. taxes or subsidies), contractual powers, deployment of resources, franchise; the supply of information or other techniques in order to promote and protect both public and private interests. Here, the focus is on the rationale for State's intervention through regulatory law in promoting sustainable development and why effective and efficient enforcement and compliance systems must be institutionalised. The grounds advanced for regulating voluntary exchanges and marketplace behaviour are

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<sup>5</sup> E.O. Aina, "The Journey So far" in E.O. Aina & N.O. Adedipe (eds), *The Making of the Nigerian Environmental Policy*, (FEPA Monograph No. 1, Ibadan University Press 1991) p 17-25. J. Akinbanmi, I.O. Akinwunmi & A.T. Salami, "Implications of Environmental Degradation in Nigeria" 20 *Nat. Res. F.*, 319-331 (1996); A.L. Mabogunje, "The Environmental Challenges in Sub-Saharan Africa" 37 *Environment*, 34 (1995).

<sup>6</sup> For a seminal treatment of regulation and its economic impact, see Ogus, *Regulation: Legal Form and Economic Theory* (Oxford, 1994), ch. 1; Baldwin & Cave, *Understanding Regulation, Introduction*; B. Mitnick, *The Political Economy of Regulation* (New York, 1980), Ch. 1.

commonly divided into two categories.<sup>7</sup> The first is composed of rationales for intervention where the animating principle is the promotion of efficiency. The second category is made up of arguments for state action which are derived from other principles. Non-economic goals which are commonly identified as providing a suitable foundation for regulation are the promotion of fairness and the fostering of community ideals.

(a) *Efficiency*

Efficiency is one of the legacies of law-economic movement to legal analysis. Economic analysis of regulation rests on the assumption that in a free market economy, where the invisible forces of demand and supply dictate prices and actors are rational in maximising their utilities, parties can exercise their preferences and maximise their welfare through voluntary bargains. Voluntary bargain ensures allocative efficiency and increases aggregate social welfare. In law and economic rendering, efficiency relates to the rational allocation of resources among alternative uses in ways that maximize value. To be “efficient” in economic terms, the benefits from a programme should exceed its costs. In addition, the efficiency criterion dictates that a choice between two or more equally effective means should be decided in favour of the least expensive one. However, efficiency may not be achieved due to many factors arising from the misbehaviours of the market actors - for example, information symmetric and asymmetric problems, externalities, selfish behaviours by the market actors, such as producers deciding to hoard goods to influence higher price, producer deciding to undercut price to frustrate other competitors, production of fake and adulterated products for consumer consumption and marketed at a higher price. All these point to market failures which state intervention through regulatory law may adopt to correct market failures. Government action is *prima facie* justified since intervention will ensure that resources are allocated to more highly valued uses, thereby increasing aggregate social welfare. Market failure rationale for state intervention in environmental risk regulation may be discussed under the foregoing heading: imperfect information, externalities, promotion of business, collective action problem and transaction costs.

(i) *Imperfect information*

At the heart of economic notion of “allocative efficiency” lies the consumer choice.<sup>8</sup> If market participants do not have full information, they will not be able to predict with precision whether transactions they enter into will in fact yield mutual beneficial outcomes. Instead, the possibility exists that events will occur which will cause bargaining arrangements to yield disadvantageous results for one or more of the parties. Although traditional economic analysis of markets often assumes ‘perfect information’; this phenomenon never exists in the real world: some degree of uncertainty as to present or future facts must always be present.<sup>9</sup> Two kinds of imperfect information may prevent a consumer from making utility-maximising choices: symmetric information and asymmetric information. Symmetric information will arise where parties share the same information deficiencies. When all parties to a transaction are unaware of certain significant facts, they may be unable to anticipate and address every issue that affects their relationship. There may thus be gaps in the relevant contractual documentation. When issues have been dealt with by express clauses, statutory measures and case laws decided by judges will govern. The law, in such circumstances, will be acting as ‘gap filler’.<sup>10</sup> Regulation can be designed and structured to fulfill efficiency goals. The

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<sup>7</sup> See, A. Ogus, Regulation et al... at p. 29

<sup>8</sup> Ogus, p. 38

<sup>9</sup> Ogus, p. 38

<sup>10</sup> On categorizing the information scenario, see M. Trebilock, *The Limits of Contract* (Cambridge, Mass, Harv. Un. Press., 1993), chs 5 and 6 and D. Charny, “Non-Legal Sanction in Commercial Relationship”, (1990) 104 Harv. L. Rev. 373 at 430-1.

approach involved is to design laws so as to match what the parties would have selected if they possessed full information and otherwise contracted under ideal conditions.

Information asymmetric will arise where one party knows more than the other and fraudulently or deliberately provide false and misleading information to induce other party to enter into the contractual relationship. From an efficiency perspective, there are three reasons why the state should regulate transactions procured by fraud.<sup>11</sup> First, systematic production of misinformation should be deterred in some measure. Second, potential victims should be discouraged from making socially wasteful investments to protect themselves from unscrupulous parties. Third, numerous transactions which will fail to allocate resources in an efficient manner should be discouraged.

In the environmental regulatory context, information symmetric often arise when scientific information and knowledge of a novel technology, production process or products is absent or inconclusive about the existence, nature and severity of risks posed by it.<sup>12</sup> Governmental intervention, through legislation mandating full disclosure of information on the composition or ingredients of products, effects of products on consumers and product labeling will ultimately reduce information costs incurred in relation to 'credence' goods, promote consumer choice, minimize risks and efficiently allocate resources to value uses. Again, governmental regulation requiring mandatory record keeping of products ingredients, waste disposal methods and emission will promote environmental sustainability.

#### *(ii) Negative Externalities*

Negative externalities arise where people who are not parties to a consumption or production decision are adversely affected by the decision. They are third party effects which are not taken into account by the producers. If firms do not take externalities into account, they might set their prices lower than they could if they had taken into account the social costs they were generating. Lower prices encourage increase in consumption and production. The ultimate result will be over-production from the point of view of society and increased pollution of the environment. Government, it has often been argued, can solve the problem by using taxes and liability rules to force firms to internalise the cost involved. The reason for regulating externalities (or spillovers) is that the price of a product does not reflect the true cost of production, and excessive consumption accordingly results.<sup>13</sup> Economic analysis of regulatory laws, and the one more pertinent for our current purposes, studies the incentives that influence the polluters who actually make the crucial production decisions and compensatory decisions.<sup>14</sup> Economists have argued that for resources to be rationally allocated and value maximized, every cost (external or internal) associated with the production process must be internalized as a disincentive to mismanage scarce resources. It is obvious that, without some form of cost internalization, the polluter would simply ignore the victim.

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<sup>11</sup> See Trebilock, *supra* note 11 at 103, R. A. Posner, *Economic Analysis of Law*, 4<sup>th</sup> ed., (Boston...) at 109-13; P.G. Mahoney, 'Precaution Costs and the Law of Fraud in Impersonal Markets', (1992) 78 *Va L. Rev.* 623, at 630.

<sup>12</sup> Information uncertainty when the relevant data is not collected, although it could be, or when existing information is not made available to the decisionmaker who needs it. Knowledge uncertainty, in comparison, stems from a lack of adequate scientific understanding or from situations where the collection of necessary information is infeasible. As to the relevance of this distinction to legal analysis and environmental decisionmaking, see H. Latin, "The Significance of Toxic Health et al" *Id* Note at p. 357, 358; Gelpe & Tarlock, *The Uses of Scientific Information in Environmental Decisionmaking*, (1974) 48 *S. Cal L. Rev.* 371.

<sup>13</sup> Breyer, *Regulation and Its Reform*, 23-6, Ogus, *Regulation* 35-8

<sup>14</sup> For an excellent introduction to law and economics in compulsory acquisition of land, see WA Fischel 'Introduction: Utilitarian balancing and formalism in taking' (1988) 88 *Columbia Law Review* 1581; WA Fischel & P Shapiro 'Takings, insurance, and Michelman: Comments on economics interpretations of "just compensation" law' (1988) 17 *Journal Legal Studies* 269; L Blume & DL Rubinfeld 'Compensation for takings: An economic analysis' (1984) 72 *California Law Review* 569.

The concept of cost internalization was first articulated by Arthur Pigou. Pigou had put forward an influential view, that to keep the economy efficient, business should be forced, by taxation, regulation or the operation of tort system, to “internalize” the costs they impose on other activities (externalities).<sup>15</sup> Pigou’s argument is based on the idea that the pollution an industry creates is a cost of that industry, and that for that cost to be paid for by other people (whether through the extra expense of cleaning clothes dirtied by polluted air or taxes paid so that the government can clean up polluter water) is to create a subsidy for that industry. Therefore, for the market to return to being true and fair, these externalities should be internalized – the industry should pay the equivalent of the costs its activity has imposed on other actors. In this context, compensation provides the appropriate incentive for these decision makers.<sup>16</sup> When a polluter does not need to pay compensation for its polluting activities, its officials may disregard the cost implication of their decisions impose on the victims and their private properties. Compensation creates a budgetary effect which forces polluters to internalize these costs. Compensation serves as a built-in mechanism that verifies the efficiency of polluters’ decisions which affect private interest.

Coase, expanding on the Pigou’s concept of externality, articulated the idea of “transaction cost” in business transactions.<sup>17</sup> Coase argues that “once the costs of carrying out market transactions are taken into account... the initial delimitation of legal rights does have an effect on the efficiency with which the economic system operates.”<sup>18</sup> In formulating any liability regime, we must be careful in advocating one rule over another, because the parties may not be able to adjust to maximize their joint production. As Coase warns, unless the efficient arrangement of right is that “established by the legal system, the costs of reaching the same [efficient] result by altering and combining rights through the market may be so great that this optimal arrangement of rights, and the greater value of production which it would bring, may never be achieved.”<sup>19</sup> Coase’s analysis implies one of two corrective measures: (i) diminishing transaction costs through government action; or (ii) if that is not possible, the employment of taxes, legislative action, standards, prohibitions, agencies, or whatever else can be thought of that will achieve the allocation of resources optimally. In essence, Coase’s theorem suggests that transaction cost could be diminished by whatever kind of action is necessary, including governmental action.<sup>20</sup> Both scholars argue that a business firm whose activities have harmful effects on others must be subjected to a cost-benefit analysis that requires it to bear the cost of harms to others. So long as a polluter does not bear the cost of the pollution, he has no reason to prevent it. Again, the fact that the cost of pollution is not internalized may produce an inefficiently high level of good production and an inefficiently low level of pollution control.<sup>21</sup> In effect, without some form of cost

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<sup>15</sup> See A.C. Pigou, *The Economy of Welfare* (4<sup>th</sup> ed., Macmillan, London, 1932).

<sup>16</sup> See, e.g., Margaret Jane Radin, *Reinterpreting Property* 158 (1993) (describing how losses in transaction are balanced by gains elsewhere); Saul Levmore, *Just Compensation and Just Politics*, 22 *Conn. L. Rev.* 285, 306-08 (1990) [hereinafter Levmore, *Just Compensation and Just Politics*] (discussing how individuals who cannot effectively participate in political arena are protected by Compulsory acquisition Clause); Saul Levmore, *Compulsory acquisition, Torts, and Special Interests*, 77 *Va. L. Rev.* 1333, 1344-48 (1991) (arguing that compensable taking is found when government singles out private parties); Marc R. Porier, *Compulsory acquisition and Natural Hazards Policy: Public Choice on the Beachfront*, 46 *Rutgers L. Rev.* 243, 260-83 (1993)(arguing same premise in beachfront context).

<sup>17</sup> R.H. Coase, *Problem of Social Cost*, *J.Law & Pol’y* (1960) 1.

<sup>18</sup> *Coad Id* Note 19 at p.14.

<sup>19</sup> Coase, *Id* Note 14.

<sup>20</sup> Calabresi concurs in this interpretation: “Some may take Coase’s analysis to suggest that little or no government intervention is usually the best rule. My own conclusions are quite different. His analysis, combined with common intuition or guesses as to the relative costs of transactions, taxation, structural rules and liability rules, can go far to explain various types of heretofore inadequately justified governmental actions” Guido Calabresi, *Transaction Costs, Resource Allocation, and Liability Rules: A Comment*, 11 *J. Law & Econ.* 67, 73 (1968).

<sup>21</sup> David Pearce et al., “Blueprint for a Green Economy (noting that efficiency allocation of resources will arise if prices of commodities reflect the cost of producing an extra units of output, the so-called “marginal cost” and a free market will work best if there is no divergence between private and social cost.)

internalization, the polluter would simply ignore its neighbours, overuse the air and water, maximizes short term economic gains and carries on its business as usual by continuing polluting the environment to the detriment of person or category of persons affected by its action. The most economical way to measure accurately the costs and benefits of a given use of property is to internalize externalities and to insist on the right to prior compensation for accepting a harmful effect or on prior payment for delivering a beneficial effect. Thus, if environmental externalities were internalized, accurate price signals are given to the consumers and more environmentally harmful products and processes would be relatively more costly.<sup>22</sup>

*(iii) Problem of Collective Action and Challenges of coordination*

A collective action problem exists when the rational and self-interested behaviour of individuals precludes them from structuring a co-operative arrangement which will increase the joint welfare of all involved. The problem of collective action was first articulated by Mancur Olson<sup>23</sup> and subsequently refined by others.<sup>24</sup> Indeed, the logic of collective action implies that, under certain circumstances, the bigger the “public in question” the farther below the desirable level will the supply of public goods be. Olson’s classic work emphasises the danger of anthropomorphizing groups, whether citizens at large or individual with similar regulatory interests. A group defined simply as “a number of individuals with a common interest”<sup>25</sup> will not always make an investment in some group goods (or “collective goods” or “public goods”). This is true because a rational member of a group, upon considering whether to spend time or contribute money or other resources to gain something that benefits the group collectively, may refuse to do so even where all group members agree that they all would be better off if everyone participate.

In the environmental regulatory context, collective action problem will arise in many respects. Firstly, citizens cannot inspect food and drugs, protect the environment, ensure the safety of nuclear plants or control the quality and quantity of food additives, allocate trade permits or grant licenses to companies, or provide what other essential public goods.<sup>26</sup> Doing such things would require high level of coordination and cooperation, even on the assumption that citizens could afford to give such problems sustained attention in the face of many life’s competing demands. Again, even if some citizens decide to provide some public good – whether out of sense of public spirit or because those citizens happened to value the public good more than others – still, others could enjoy the benefits of that good

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<sup>22</sup> Hunter, Salzman & Zaelke (eds.), *International Environmental Law and Policy*, (Foundation Press, New York, 2<sup>nd</sup> ed., 2002) at 129.

<sup>23</sup> M. Olson, *The Logic of Collective Action: Public Goods and Theory of Groups* (Cambridge, Massachusetts: Harvard University Press, 1971).

<sup>24</sup> See generally, R. Hardin, *Collective Action* (New York: Resource For The Future, 1982); M.L. Lichbach, *The Co-operator Dilemma* (Michigan: University of Michigan Press, 1996); Steven, J. B., *The Economics of Collective Choice*, (Westview Press, 1993).

<sup>25</sup> Olson, *supra* note 25 at p. 8. It is worth emphasizing that Olson does not equate groups and organizations. In fact, his central point is that groups will usually lack organizational structure. They will, in other words, fail to organize so as to provide “group goods.” Thus, Olson sometimes distinguishes between “groups” and mobilized group.

<sup>26</sup> A public good or “group good” (often used, and here interchangeably) is defined as a good characterised by jointness of supply and nonexcludability. A good is characterised by “jointness of supply” if one person’s enjoyment of that good does not reduce the amount of that good available to anyone else. A good characterised by perfect jointness of supply is considered a “a pure public good.” But jointness admits of degrees. A good characterised by partial jointness of supply is one susceptible to “crowding.” For example, a free concert in a public park is a good characterised by partial jointness. Up to a point, one person’s enjoyment of the concert does not reduce the amount of the concert available to someone else. As more and more people attend the concert, however, the park (and thus the concert) becomes crowded and, at the margin, newcomers have difficulty hearing the music.

A group good is characterised by “nonexcludability” if once it is supplied, it is infeasible to exclude others from enjoying that good. Excludability is thus similar to, but distinct from jointness of supply.

without pitching in. The possibility of ‘free riders’ would in turn provide a second rational reason not to contribute, hence there will be a collective action problem.

Secondly, citizens cannot provide information on risks associated with many novel technologies. The information deficit is further exacerbated by inability of individual or group of individuals to finance a risk-assessment project to conduct sufficient enquiry into the validity or otherwise of such claim to produce credible scientific information in order to inform the public or induce governmental regulation of risks. The provision of information is itself subject to market failure because of its public good characteristics: consumption by the party who pays for it does not reduce the quantity available to other consumers and it is difficult to prevent such other parties from “free riding” on its availability. In any of these scenarios, governmental intervention may be necessary to act as intermediary to provide independent, reliable comparisons of prices and quality offered by different traders. Government may also impose standards, forcing the industry to undertake internal risk-assessment and quality control measures, and report same to the regulatory authorities. In addition, it can establish a system of public registration or certification of firms who meet certain minimum standard of quality. Registration simply provides information and preserves consumer choice.

### **(b) Non-Economic Justifications**

The legal regulation of environmental risks and harms can be justified on a number of non-economic grounds: fairness and morality articulated by natural rights advocates. Classical natural rights theorists as diverse as John Rawls, Robert Nozick, Richard Epstein and Ronald Dworkin have defined the requirements of justice in terms of recognizing and preserving the essential characteristics of individual as free and autonomous moral agents. In this approach, the individual can be acted upon or interacted with, and those terms are consequently specified so as to protect and preserve what is essential to the individual. In the rights tradition, the crucial criteria for assessing risks emanating from the impact of pollution on the victims, and the criteria are defined independently of the benefits flowing from risk creation. Risk creation is circumscribed by criteria exclusively derived from considerations of the integrity of the individual, not from any balancing or weighing process. Theories in the rights tradition resonate with ideals regarding life and its sanctity.

In *A Theory of Justice*, Rawls outlines the social structure of a society governed by this principle of justice. Under Rawls theory, society offers a structure for the cooperation of individuals for their mutual advantage, including the production of greater material benefits than could be achieved independently. Rawls contends that all social value – liberty and opportunity, income and wealth; and the bases of self-respect, are to be distributed equally unless an unequal distribution of any, or all, of these values is to everyone’s advantage.<sup>27</sup> Of all these values, liberty is so important to individuals, Rawls believes that by placing liberty on a higher plane than other social values “the basic wants of individuals can be fulfilled.” Charles Fried, on the other hand, outlines a theory of absolute, categorical norms that the moral individual should never violate. The freedom of an actor to refrain from doing wrong and to maintain his moral integrity is a paramount value in Fried’s world. A personal right exists when the “underlying moral theory requires not only that certain things be judged wrong, but also that this judgment is fully realized only if we put the rein of the wrong into the (potential) victim’s hands, only if we recognize his right in the premises.”

Contemporary human rights scholars have extended the classical notions of liberty and justice further by contending that the inalienable right to life will be meaningless and

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<sup>27</sup> J. Rawls, *A Theory of Justice* (1971) at 62.

undermined if man is unjustifiably exposed to environmental pollution.<sup>28</sup> Governmental intervention through sustainable environmental regulation is necessary in furtherance of its social contract function to prevent diseases, loss of lives and properties. Much of the modern risk regulation reflects a view of social harms, including environmental harms as “violations of moral rights of the citizens.”

If it is deemed appropriate for government to be involved in environmental protection, how intensive should that activity be? How stringent should our environmental goals and targets be? What choice of specific policy instrument must be employed by government to secure compliance and enforcement? How should environmental responsibilities be allocated among the various levels of authorities within the State to promote optimal environmental performance? How should State authorities relate with the Federal authorities on environmental policing and enforcement? As stated above, although governmental regulation may be necessary to improve environmental quality when market mechanisms fail to generate socially efficient allocations of resources, such regulation is by no means sufficient to improve social welfare or even environmental quality. This is because governmental regulation itself may not be efficient, that is, government may under-regulate or over-regulate, or it may regulate in ways that require unnecessarily large costs of compliance.

#### **IV. Inadequacies of Nigerian Regulatory Laws**

Governmental intervention to regulate environmental pollution through law, establishment of regulatory agencies and imposition of sanction to deter polluters may to certain extent enhance social welfare. However, these efforts may be inadequate, resulting in failure and sub-optimal environmental results unless adequately complemented with other measures. The reasons for failure are varied, complex and wide. As explained by Daniel Esty, many regulatory frameworks fail because government lacks necessary information and data to regulate environmental pollution.<sup>29</sup> According to him, government may not have information necessary to intervene appropriately to internalise externalities, or they may lack the incentive structures needed to regulate efficiently. Government decisions may also be skewed by structural failures that arise because policy-makers systematically exclude from their regulatory cost-benefit calculus some of those who are either causing or suffering harms or those who might have been affected by government action. Regulatory efforts may, furthermore, be distorted by public choice failure. Sometimes outcomes of governmental intervention are manipulated by outright corruption of the decision makers. More often, special interest influence on the decision-making process causes policy choice not to reflect the true will of the people.<sup>30</sup> Some of these regulatory imperfections will be closely examined.

##### *(a) Information Shortcoming*

One of the banes of policy formulation and implementation in many developing countries, such as Nigeria, is the absence of reliable data and information to guide

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<sup>28</sup> Human right activists and scholars in support of right to health have invoked the alienable right to life. See, A.Boyle, “The Role of International Human Rights Law in M. Anderson & A.Boyle, Protection of the Environment, Human Rights Approaches to Environmental Protection (Oxford University Press, London, 1994) 43; S. B. Shah, “Illuminating the Possible in the Developing World: Guaranteeing the Human Rights to Health in India” 32 (2) Vanderbilt J. of Trans’ L. 435 (1999); T. J. Schorn, “Drinkable Water and Breathable Air: A Livable Environment As A Human Right” 4 G. P. Nat. Res. J. 121 (2000); See *infra* Chapter 15. See also B. O. Nwabueze, *ibid.* at p. 147 (noting that government function on public health is concerned mainly with the prevention of diseases through better sanitation and hygiene, inoculation against infectious and contagious diseases and epidemics, quarantine and inspection of animal meats for human consumption.)

<sup>29</sup> See the seminal article of Daniel Esty, “Toward Optimal Environmental Governance”, 74 (6) NYU L.R. 1496 at 1508-1515.

<sup>30</sup> Daniel notes that the “special interest” may be the polluters who seek to block regulation. But the problem may also be “capture” of the regulatory process by some subset of the regulated industry who would benefit from certain government-imposed restrictions, by those with a “solution” to sell, or by environmental advocates who seek to burden polluters with costs as a matter of moral indignation, no matter how large or small the benefits obtained.

policymaker at decision-making.<sup>31</sup> Some degree of uncertainty plagues many areas of government activity, but few face the pervasive information inadequacies that are found in the environmental realm.<sup>32</sup> Environmental regulation cannot be effective in an atmosphere of inadequate, unreliable and inconsistent data. How do regulatory authorities measure injuries to the victims of air, noise and water pollution? How do they know when a polluter has exceeded its permit when we do not have appropriate technologies to measure the level of his emission? How do we disentangle the combination of harms from multiple sources? Undoubtedly, information and reliable data are key factors in formulating and implementing sustainable development. Determining what is going wrong when environmental problems arise is not easy. Pollution is often hard to perceive but the effect is easy to determine. Who can see the ozone layer thinning or recognise the brain damage caused by exposure to lead? Even if a source of harm is identified, specific harm causers are difficult to track down. For example, the discovery of mesothelioma (cancer of the lung) which the plaintiff in *Margereson & Ors v. J. W. Roberts Ltd*,<sup>33</sup> alleged arose from the exposure to asbestos dust<sup>34</sup> in his childhood between 1925-45 within the vicinity of the J.W. Roberts factory but it was not noticed until 1990. Seven years later, however, he died of this disease.<sup>35</sup>

In addition to the difficulties outlined above, further complexities emanate from our limited understanding about the policy options that may be available to mitigate these harms and to lower the direct costs of pollution as well as the costs from the unintended and unforeseen consequences of governmental intervention.

(b) *Administrative Shortcomings*

In addition to the lack of data and technical capacity, regulatory bodies may operate inefficiently or ineffectively. Bureaucracy in general and government agencies in particular frequently lack incentives to act otherwise. This is so where the functions of agencies overlap, it may create jurisdictional problem. They may refuse to act or cooperate with one another. Even where they act, they may under-regulate or condone polluting activities rather than perform their assignments with full diligence. The practice of under-regulation is well pronounced in the area of planning law but it is becoming a cankerworm in the field of environmental protection. For example, despite the myriad of environmental statutes imposing strict and stringent penalties on polluters, pollution continues unabated.<sup>36</sup> First,

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<sup>31</sup> See Paul Mosley, "Policy Making Without Facts: A Note on the Assessment of Structural Adjustment Policies in Nigeria 1985-1990" 91 Afr' Affairs 227-240 (1992) (suggesting that the failure of economic reform in Nigeria is attributable to lack of adequate data, discrepancies in data and political instability which necessarily implicates the nature of choices of appropriate strategy. He argued that a great deal of improvement in the economies of Nigeria and of other non-adjusting African Countries was due to extraneous factors (in particular, better weather and an improvement in the world economy) and that only a small part of the turnaround in Nigeria was due to the SAP but without effect on local food production but an appreciable increase in export crops.

<sup>32</sup> See Alyson C. Flournoy, *Legislating Inaction: Asking the Wrong Questions in Protective Environmental Decisionmaking*, 15 Harv. Envtl. L. Rev. 327, 333-38 (1991) (discussing nature and extent of scientific uncertainty in environmental decisionmaking); Adam Babich, 'Too Much Science in Environmental Law', Colum.J. Envtl. L. 119 (2003) (analysing the influence of science in formulation of environmental standards and risk analysis); D.J. Whalan, 'The Science Law Relationship: Are Lawyers Really Necessary?' 56 Aust. L. J. 56 (requesting for law to be anticipatory and preventive but not reactive to the emerging subjects of biotechnology and genetic engineering).

<sup>33</sup> (1996) Env. L.R. 304; *Croners Environmental Case Law Special Reports, May 1996; Hancock v. J. W. Roberts Ltd; Hancock v. T & N Plc* (1996) Env. L.R. 304; *Croners Environmental Case Law Special Reports, May 1996*

<sup>34</sup> The generic term "asbestos" was used to cover several minerals including chrysotile (white asbestos) which accounted for 90% of world asbestos production, amosite (brown asbestos) and crocidolite (blue asbestos). The minerals were naturally fibrous and could be spun like thread but were also resistant to alkalis, acids and heat.

<sup>35</sup> It is not unlikely that many inhabitants of the cement-producing areas in Nigeria are not exposed to such diseases or lung-related diseases but for lack of statistical data no data could be used to support this assertion.

<sup>36</sup> There is no known case of judicial prosecution of many polluters since the emergency of FEPA in 1988 until its ultimate demise in 1999. Even its successor, Nigerian Environmental Standards and Regulations Enforcement Agency established in 2007 has no record of enforceability of several regulations. Although this agency, in whatever name, formulated stringent regulations, it lack enforcement power and operated during as a toothless bulldog.

planning officials are guilty of condonation. This arises where a person develops property without prior development permit from the appropriate planning authority but such development is in substantial compliance with the planning standards. In this respect, the authority has a choice of either ordering the demolition of the structure or imposing penalty for such illegal development. In most cases, the official imposes financial penalty rather than demolition. Primarily, condonation usually encourages corruption and involves some elements of collusion with government officials and ultimately distorts the planning scheme in place within the affected area.<sup>37</sup> This aspect of regulatory failure is a complex one and a combination of many factors. Some of these are inadequate funding, personnel and improper delineation of authority among the regulatory authorities.<sup>38</sup>

### (c) Allocation of Environmental Responsibilities

In the celebrated case of *Attorney-General of Lagos State v. Attorney General of the Federation*,<sup>39</sup> the Supreme Court set a bright-line standard on how Federal and State governments should relate on physical planning matters but failed to set any precise standard on environmental protection. In that case, the Supreme Court held that though physical planning matter is a residual matter for the component states, the protection of the Nigerian environment is a joint responsibility of the Federal, State and Local Government in accordance with provision of Section 20 of the 1999 Constitution. Since then, diverse comments and opinions have been proffered on how best to achieve sustainable environmental governance in Nigeria. Some of these questions border on how we should regulate our environment under the present federal system of government being practiced in Nigeria. What level of inter-governmental relationship and cooperation do we expect in environmental matters? Which tier of government has the responsibility to regulate the aspect of environmental pollution within the constitutional framework of Nigeria? What happens in cases of conflicts? How should such conflicts be resolved? What level of inter-governmental relationship is required to achieve sustainable development? Also tangential to this matter is the question of resource control, fiscal federalism and human rights abuse arising from oil exploitation and exploratory activities in Nigeria.

Aside from the conflict arising from vertical structure of the Federal Government, there exist conflicts arising from horizontal structure of governance. This is often pronounced among the line of ministries charged with responsibilities to manage the nation's environment. No doubt, answers to these questions border on various aspects of socio-legal order: constitutional, environmental, politics and economics.

## V. Securing Effective and Efficient Enforcement Strategies

### (a) Rule of Law

The use of law as a tool for sustainable development cannot be over-emphasised. However, for law to be continuously relevant in the sustainable development paradigm, there must exist a sound legal framework for environmental protection. Such legal framework must possess three essential characteristics. The first element represents the legally binding nature of the rules. Environmental rules and standards, whether legislative or administrative in character, should not only be known in advance but they must also apply equally to all those issues addressed by them. Their content should address the genuine social and environmental needs and where appropriate, reflect a pre-existing or emerging public opinion on the matter.

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<sup>37</sup> *Defacto Bakeries & Catering Services Limited v. Ajilore & Anor*[1974] All N.L.R. 878 (Reprint); *Ipadeola & Ibadan Metropolitan Planning Authority v. Abiodun* (1987) 3 N.W.L.R. (Pt. 59) 18

<sup>38</sup> Amokaye O.G. "Securing Compliance with Environmental Law in Nigeria" FEPA Publication, 1998

<sup>39</sup> [2003] 12 N.W.L.R. (Pt. 833) 1

They should be based on sound social, ecological, economic and scientific principles. A sound environmental law must regulate all the media of pollution and provide for adequate civil remedy and criminal penalties for infringement and provide access to environmental justice and information.

The second element consists of the appropriate processes through which such rules are made and enforced in practice. The appropriateness of such processes of rulemaking, rule enforcing and rule changing, obviously varies according to the culture, political system and other circumstances of each country. Experience shows, however, that legal processes will normally succeed to the extent that they are not complex or arbitrary. Sustainable development laws, made upon consultation with the people they affect, are realistic in terms of implementation and transparency. Simplicity of procedures, transparency of legal processes, participation of the affected people and the accountability of public officials involved in the regulatory processes add to the legitimacy of the rule and contribute to the public confidence in the legal framework as a whole. The success of each enforcement mechanism depends on how the State exercises its discretion in determining its particular needs and environmental priorities and on choosing the appropriate enforcement method. The legal transposition of sustainable development principles must be pursued objectively and scientifically so as not to exacerbate the current state of poverty mostly prevalent in our society. The law should not unnecessarily dislocate existing positive culture, structure and economic welfare of the people. For example, government policy that unduly imposes strict environmental law will discourage investment and render a majority of the citizens jobless. Similarly, government policies that discourage large-scale farming and modern agricultural practice under the guise of sustainability risk the invasion of famine, war and hunger.

The third element consists of well-functioning public institutions such as regulatory agencies, efficient court system and administrative agencies that are staffed by trained personnel. These are transparent and accountable to the citizens and apply such environmental regulations without arbitrariness or corruption. A well-functioning law enforcement apparatus and judiciary, in which judges normally apply the law in a fair, justiciable and predictable manner, without undue delay or unaffordable cost, are essential conditions and proper legal framework for sustainable development. The existence of an efficient and honest regulatory body for environmental monitoring and surveillance will ensure the appropriate application of legal rules, especially when its decisions are subject to judicial review. Without some efficient and honest institution for the enforcement of rules and the resolution of conflicts, the first two elements: “rules and “processes” will fail to provide a sound legal framework for sustainable development. The foregoing calls for a review of environmental laws and policies as a means of reducing multiplicity and duplication of institutions, laws and policies. It also calls for domestication of some of the international environmental treaties to which Nigeria is a signatory.

#### *(b) Efficient Government Regulation*

Another strategy to achieve environmental enforcement and compliance is the analysis of governmental regulations in terms of efficiency. Analysis of governmental regulations, however, focuses on the choice of appropriate regulation to achieve the desired result. Therefore, in regulating any medium of environmental pollution a clear assessment of the effect of such regulation on the regulated entities must first be undertaken. It also calls for the choice of appropriate strategies to achieve desired result. What are the goals of the chosen regulation? Will it achieve the stated goal or standard? If the goal of any environmental regulation is to mobilize or increase government revenue, such additional revenue must be justified against cost incurred by government to provide other environmental services to the citizens. If the goal of any environment regulation is to reduce emission standards, the

permissible target must be set. If the object of a regulation, for example is to reduce the level of air pollution, the choice of target and effect must be ascertained. The regulator must determine the categories of activities that contribute maximally to the regulated pollution. Should the regulation target the main source of pollutant or all media of pollutants? The regulator must also determine the effect of regulation on stakeholders and possible alternatives. Should the regulation target the use of clean technology in industrial process, a moratorium must be given to allow operators to change their plants and other processes. In addition, environmental regulation should be broad enough to encompass known and potential polluters.

### *(c) Cost Effectiveness*

Cost and benefit analysis of environmental regulation is understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. In choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impact; and equity). In choosing environmental regulation suitable for environmental management, a variety of economic criteria have been posited. Will the regulation achieve the stated goals or standard at the lowest possible cost, including both private sector compliance and public sector monitoring and enforcement? Will it provide government with the information it needs to implement the policy? Will the instrument be flexible in the face of changes in taste and technology? Will the instrument provide dynamic incentive for research, development and adoption of better pollution-abatement technologies?

The need for cost-effectiveness in environmental governance is better appreciated when compared with the cost of implementing regulations. When applied in the context of multiplicity of environmental institutions in Nigeria, the cost implication is obvious. For example, there is Nigerian Agency for Food, Drug and Administrator (NAFDAC), Nigerian Environmental Standards and Regulations Enforcement Agency (NESREA), Nigerian Oil Spill Detections and Response Agency (NOSDRA), Biotechnology Agency, Department of Petroleum Resources (DPR), State EPA, Local Governments environmental laws. There is the need to streamline some of law to reduce cost and wastage associated with the administration of environmental problems in Nigeria.

### *(d) Public Participation*

Another strategy for achieving compliance with environmental laws includes motivating the community and creating public awareness through education and incentives. Environmental education must be integrated into the curricula of primary and secondary schools to enable the citizens inculcate environmental culture at earlier stages of their lives. It will not be out of place if environmental studies are integrated into the curricula of primary and secondary schools. It will allow our children to appreciate the environment early enough and understand the basis for its protection. We need to develop an environmental ethic and redesign our decision-making procedure and educational process to address these problems by going back to the oldest values of community responsibility by giving a great regard for the land and the resources we share.<sup>40</sup> Mass media must be deployed to inform, educate and mobilise our citizens (old, young, educated and uneducated) to appreciate the importance of

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<sup>40</sup> Al Gore, *Earth in the Balance*; (Earthscan Publication, 1992); See also, L. L. Butler, "The Pathology of Norms: Living Within Nature's Boundaries" 73 *S. Cal. L. Rev.* 927, 943-52.

healthy living and protection of our common heritage: environment. Again, access to environmental information and public participation in environmental decisions constitute another impetus in achieving environmental compliance and efficient enforcement of our environmental laws. This will involve amending our environmental laws to allow citizens to participate in environmental decision-making at different levels particularly as it affects them most and to have access to courts when State refuses or neglects to act on environmental issues.

(e) *Cooperative Federalism*

An important step to achieve compliance and enforcement is to embrace the concept of cooperative federalism in the nation's environmental management. Cooperative federalism refers to cooperation among all the tiers of government in the implementation of environmental laws and policies affecting the citizens. As opposed to the present confrontation attitudes where Federal, State and Local Governments regard each other as competitors, and jostle for relevance, the administration of the Nigerian state particularly from environmental perspective, must be done in a way to promote cooperation among the tiers of government because environmental damage has no trans-boundary hindrance. The Federal Government must devise some schemes whereby State Governments are given incentives to enforce and implement certain federal environmental policies and laws at the State level. This can be better appreciated if we agree that climate change, flooding, water pollution and oil and gas pollution cannot be best administered by individual component states. Section 11 of the Constitution provides the constitutional base for mutual cooperation between the Federal and State Governments for effective and sustainable management of the nation's environmental problems. It authorises both the federal and state governments to exercise concurrent powers on matters bordering on maintenance and securing public safety and public order. As rightly remarked by Nwabueze, the exercise of public safety and public order power is wide enough to accommodate legislative measures to control any activity that endangers the safety of a community either arising naturally or from any human activity, including earthquake, drought, oil spillage, natural disaster and emergency.<sup>41</sup>

In doing this, the National Assembly may enter the field of environmental regulation by choosing from a number of regulatory processes. First, it can simply establish a set of Federal rules to govern environmentally hazardous activity; give authority to a government agency or official to ensure compliance with such rules, and authorise either the Federal courts or Federal agency to hear claims to enforce the law.<sup>42</sup> Where the National Assembly has taken a comprehensive step, its regulatory scheme may pre-empt the existing State laws and foreclose the States from adopting conflicting rules or standards where the federal legislation evinces such intention or objective. This is consistent with the doctrine of covering the field as decided by the Supreme Court in *Attorney-General of Ogun State and Ors v. Attorney-General, of the Federation*.<sup>43</sup> The States cannot enact laws to abrogate or vary the objective of the federal legislation as such laws will be inconsistent with the provision of Constitution which confers superiority on Federal law.

(f) *Voluntary Compliance*

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<sup>41</sup> Nwabueze, *ibid* at 81.

<sup>42</sup> See item 1 of Part III of the Second Schedule which provides "where by this schedule the National Assembly is required to designate any manner or thing or to make any declaration, it may do so either by an Act of National Assembly or by a resolution passed by both Houses of the National Assembly."

<sup>43</sup> (1982) 3 NCLR 166 at 179 per Fatayi-William CJN; *Attorney-General Lagos v. Attorney-General of the Federation* [2003] 12 N.W.L.R. (Pt. 833) 1.

The techniques of negotiation and consultation have been used to resolve both domestic and international environmental disputes. At the national level, negotiation is a consultative process through which the regulatory authorities and the regulated person or organisation consider the existing environmental standards, directives and factors militating against effective compliance and the variety of alternative responses with a view to developing mutually acceptable compliance schedules.<sup>44</sup> It provides an opportunity to obtain additional information and correct interpretation before pursuing legal action. In practice, negotiations do occur in cases where relevant laws are not enforceable and this fact is recognised by the regulatory authorities, the policymakers and the public at large, or in situations where laws and regulations are promulgated without giving enterprises reasonable time to adjust; or circumstances in which regulation does not allow for a transition period at all. In all these cases, the regulatory authorities might also consider a concession in which a strict timetable, and control and reporting obligations with a number of checkpoints are to be considered. It also provides clear repercussions in case of non-compliance once the concession period is over.

*(g) Economic Approach*

Economic techniques involve the use of economic incentives and disincentives, mechanisms such as fines, effluent fees, pollution tax, licences, user charges, loans and grants, to reduce a level of pollution to the desired standard. This approach is based on the neo-classical economists' argument that inefficiency in resource allocation is the primary reason for the unacceptable level of environmental degradation. Pollution is encouraged because the polluter can discharge effluent at no cost to himself, that is, he acquires a benefit free of charge while a cost accrues to others. A minimum level of pollution, therefore, will only be achieved when these external dis-economies are internalised. The introduction of pollution tax and other economic disincentives will internalise these "externalities". It primarily seeks to discourage firms and individuals from causing pollution or otherwise damaging the environment not by persuasion or by prohibiting the polluting activity through legislation, but by imposing a price or economic cost on such conduct. By this process, environmental cost is internalised into the production process of the company. This presupposes that firms who wish to maximise profits will find ways of polluting less rather than paying more.

## **V. Conclusion**

This paper has closely examined both from the theoretical and practical points of view the modalities for achieving effective and efficient enforcement of Nigerian environmental laws. While environmental regulation is justified in one breadth, strict application of command and control approach may be counter-productive in environmental management. What is needed to be done to complement the carrot and stick approach is the infusion of public confidence in environmental management through continuous environmental education and training. This will require a change in approach in environmental governance. Government must promote, implement and enforce environmental policies in a transparent manner. This calls for accountability and transparency in the environmental law making process, environmental policing and environmental prosecution. It will also involve liberalising public participation in environmental decision-making and accessibility to environmental information and courts to prosecute environmental delinquents in cases.

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<sup>44</sup> Shi-Ling Hsu, "A Game-Theoretic Approach to Regulatory Negotiation and A Framework for Empirical Analysis" 26 *Harv. Envt'l L. R.* 33 (2002).