A LEGAL APPRAISAL OF THE CHALLENGES OF ENVIRONMENTAL PROTECTION*

Abstract
The environment is one universal heritage that human beings have irrespective of race, sex or ethnic backgrounds. This fact has become acceptable and undisputable over the years. However, the cleanliness, sanitary condition and protection of the environment has become an issue especially as it has become bedevilled by several challenges and setbacks particularly development and urbanization. This article aims at legally appraising the challenges of environmental protection emphasizing the need for a proper preservation and reverence of the environment to ensure availability and sustainability of environmental resources.

Keywords: Law, Environment, Protection, Challenges

1. Introduction

Every life depends upon a wholesome and well-functioning ecosystem and the resources of the earth, although not limited but however not unlimited, must be shared by proportionately by all living things. Human beings disobey the law of nature at their risk while human success results from co-operation with nature, fitting into the web of life.[1] It is trite that one of the greatest challenges facing humanity today is environmental degradation. Therefore, the need for a clean or unpolluted environment or less polluted environment cannot be overemphasized.[2] Environmental challenges occur as a result of unguarded activities of human beings in the exploitation of natural resources especially in the area of sourcing for energy supply[3] which the present writer refers to as urbanisation. Also, at other times the environmental challenges are as a result of natural disasters such as earthquakes, erosion, volcanic eruptions, desertification etc. Thus, issues of environmental protection *viz-a-viz* investment and development remain one of the greatest concerns of human beings globally.[4] Environmental problems can be considered as nothing new in the world. It exists in both the developing world and the developed world as well. It is stated that environmental problems existed in human societies as early as the first century B.C when the drinking waters of Rome were reported to be polluted.[5] Environmental problems can be classified here into two-fold characteristics, substantive an procedural which influences the range of solutions as well as planning and management strategies.[6] Substantive environmental problem according to Olokesusi[7] relate to the intrinsic nature of the environmental system which have linkages with land, the intensity of its usage, demographic characteristics and socio-economic variables, which each have impacts on the environment. Consequently, these impacts determined the nature and intensity of environmental degradation. Before highlighting and discussing the challenges of environmental protection, the writer shall first discuss the basic principles of environmental protection.

2. Some Environmental Problems and Challenges

Urbanisation

Urbanisation is caused by high population growth rate and rural – urban migration. Urbanisation is characterized by city slums with serious environmental consequences.[8] The problem has been described as acute and exemplifies the inability of development measures to keep pace with the rate of population growth. The problem with the

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[1] H. A. Akinsola, *A-Z of Community Health in Medical, Nursing and Health Education Practice* (Ibadan: College Press Publishers Ltd) p. 3

[2] O.V.C. Ikpeze, E. Osaro and N.G Ikpeze, 'Analysis of Energy Sources, Impact on Environment and Sustainable Development Referencing Landmark Cases in the USA, South Africa and Nigeria' in *Journal of Environment and Earth Science* Vol. 5 No. 18, 2015 p.147 available at www.iiste.org accessed on 27 April 2016

[3] A. Oladeji, 'Environmental and Health Implication of Processing, Harvesting, Distribution and Using Both Renewable and Non-Renewable Energy Sources' in *Journal of Energy; Technologies and Policy* ISSN. 2224-3232 (Paper) ISSN 2225-0573 (Online) Vol. 5 Nos. 7, 2015

[4] O. V. C Ikpeze *et al, Op. Cit* at p. 146

[5] L. E Ruff, 'The Economic Common Sense of Pollution' in R. Dorfman (ed) *Economics of Environments* (New York: W.W Norton & Company Inc.1993) p. 15

[6] A. Olokesusi, 'Characteristics of Environmental Problems in Nigeria', *the Environmentalist* Vol. 1 No. 1

[7] *Ibid*

[8] S.I Omofonmwan and G.I Osa-Edoh, 'The Challenges of Environmental Problems in Nigeria' in *J. Hum. Ecol*., 23 (1): 53-57 (2008) at p. 53

disposal of sewage and refuse is quite serious because of the rapid rate of generation of non-biodegradable material such as plastics.[9] Environmental conditions in cities have gradually deteriorated due to the rapid growth of the cities and the attendant inability of social services and infrastructures to keep pace with the rate of growth. Inadequate storm drains, dumping of refuse in drainage lines and construction of houses close to and even on the natural water channels have been shown to be responsible in that order for the increasing cases of flood in the urban centres especially within countries like Nigeria.[10] Environmental problems associated with the increasing growth of urban slums including overcrowding in squalid housing conditions, poor quality or unavailability of basic infrastructure and social services, such as water and sewage facilities and even lack of access routes.[11]

Overpopulation

Population is a major factor in all environmental-related issues. Overpopulation causes stress on the environment. Environmental problems such as overpopulation, degradation, erosion, desertification etc are caused by man's misuse of environmental resources. Until very recently, Nigerians for example regard their 'large population size' as a symbol of greatness, power and prestige and tend to resist attempts to reduce it drastically.[12] It is only just becoming clear, that overpopulation is forcing traditional societies to abandon age old production systems and resources management techniques that allowed them to produce enough food for themselves at minimal impacts on the environment. There is evidence everywhere of rapid decline in environmental quality and human living conditions occasioned by rapid increase in human numbers. Considering the situation in Nigeria, Mabogunje[13] reasoned that because of the economic emergency that was declared in the country, the next few years will be witnessing tremendous efforts at increased production and enhanced productivity in the country. Under such stressful situation, 'it will be easy for people to become so exigent, worrying only about what to get out of the environment for their own immediate needs and uses, without caring very much for the consequence, especially for succeeding generations.[14] Further, the Federal Government of Nigeria in its National Policy on Population for Development observed that the rate of our population growth is already contributing substantially to the degradation of the ecology of the country. It observes that land fragmentation, over-farming and over-grazing, and deforestation have led to soil erosion and desertification and that overcrowding has led to the spread of shanty towns and urban blight, all of which would worsen if the present population growth continues.[15]

Deforestation

Forests are large areas of land with trees and are noticeable in areas with sub-equatorial and monsoon types of climates. The importance of the forest to man cannot be overemphasized. They act as sanctuary for rare and/or endangered animals. Forests act as storm breakers thereby protecting the towns and villages from destruction. They provide useful products such as wood and charcoal for fuel, fibre for paper and textiles, medicine from the back and leaves of some plants, breeding ground for animals, check erosion and as supply of materials for building houses.[16] Deforestation is a process whereby trees are felled for several purposes, but without replanting to replace the ones that are felled. Deforestation is dangerous to man, animal and property. It leads to the erosion of the soil and storm, which can cause destruction of properties, flora and fauna life. When forests are cleared, the soil is exposed to erosion devastation, floods occur, and rivers and lakes, are filled up with silt. The water becomes dirty and impure for mankind. The removal of tree canopies (particularly the leaves) has effect on the rainfall of that area as there is less leaf surface area for the transpiration of water, which in turn affects the relative humidity of the atmosphere. The repeated cultivation of crops on cleared area of land tends to exhaust the soil of its mineral content.[17] Deforestation in general – for agricultural development, urban growth, industrial expansion and pressure from an increasing population – has militated against effective environmental protection procedure. Commented on the Nigerian situation the Food and Agricultural Organisation estimated that Nigerians destroy about 600,000 hectares of her forest every year through careless exploitation and husbandry.[18] Such careless

[9] *Ibid*
[10] S.I Omofonmwan and G.I Osa-Edoh Op. Cit. at p. 54
[11] NEST, 'The Challenge of Sustainable Development in Nigeria'. Pp. 152-172 An NGO Report prepared for the United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, June 1-12 (1992).
[12] S.I Omofonmwan and G.I Osa-Edoh Op. Cit. at p. 54
[13] A.L Mabogunje, 'The Debt to Posterity: Reflections on a National Policy', in P.O Sada and F. O Oemerho (Eds) Environmental Issues and Management in Nigeria (Ibadan: Evan Brothers Nigeria Publishers, 1988) p.17
[14] *Ibid*
[15] NEST, 'The Challenge of Sustainable Development in Nigeria'. *Op. Cit* at p.153
[16] S.I Omofonmwan and G.I Osa-Edoh Op. Cit. at p. 54
[17] O. Omiegbe, 'Bush Burning and its Effect in Africa: A Case Study of Nigeria', *Benin Journal of Environment Education*, 1(1): 10-20 (1999)
[18] F. C. Okafor, 'Rural Development and Environment: Degradation versus Protection' in P. O Sada and F. O Odemerho (Eds) *Environmental Issues and Management in Nigeria Development* (Ibadan: Evans Brothers Nigeria Publishers Limited, 1988)

exploitation of the forest has been implicated in a number of worsening environmental problems in the country including soil erosion and infertility, desertification and flooding.

Desertification

Deserts are barren lands waterless sand treeless and often covered by sand such as the Sahara Desert which spread across the African continent. Desertification therefore is the encroachment of the desert on land that was hitherto fertile. Desertification can be induced either by natural processes or by the actions of man. Natural hazards such as drought and sand deposit b winds are prime factors in the desertification process. In Nigeria for example, desertification is more pronounced in the Northern part of the country where the Sahara Desert has eaten deep into the once fertile land. The Lake Chad basin which is situated in the area is not left out of desertification. The lake basin has diminished from a water surface area of about 24,000 sq kilometres as far back as 1963 to about 3,000sq kilometres in 1984.[19] This is due to natural hazards (drought and sand particles transported by winds to the area) and man's unwise use of the lake environment. Desertification is dangerous to man. It leads to famine, diseases, and destruction of crops, livestock and man. Desertification can be controlled through irrigation, terrace ploughing and planting of trees and grasses.

Pollution

Environmental pollution can be categorised into three groups. These are air or atmospheric pollution which is perhaps the earliest form of pollution,[20] aquatic or water pollution and land or surface area pollution. The World Health Organisation (WHO)[21] defined air pollution as 'limited to situation in which the outer ambient atmosphere contains materials in concentrations which are harmful to man and his environment'. Man's activities on the earth surface have largely degraded the quality of the lower atmosphere. The growth and development of industries and urbanisation has contributed greatly to the excess carbon monoxide produced by combustion and other human activities. Carbon monoxide reacts with the blood vessel and prevents it from taking up oxygen and the people are suffocated.[22] Rural communities that had in the past enjoyed fresh and dry air are currently experiencing air pollution problems.[23] This is due to industrialisation process and expansion in human activities. Aquatic or water pollution is the discharge of unwanted biological, chemical and physical materials into water bodies from man's environment. The pollutants are usually chemical, physical and biological substances that affect the natural condition of water. This incidence is responsible for the wide spread water contamination in most Nigerian cities. Also, solid wastes have equally flooded the water ways in these urban centres. Land surface pollution is the occurrence of unwanted materials or waste on land. The commonest pollutant on land is the waste products that are often scattered on land area in the cities. According to Onwioduokit[24] most environmental problems are due to production or consumption of goods whose waste products translates easily into pollutant. Ayeni[25] and Sada[26] believed that the emergence of urbanisation is responsible for the rapid accumulation of solid waste. Generally, it would appear that the growth of urbanisation and industrial development coupled with improper waste management control have added a great dimension to land area pollution especially in Nigeria.[27]

3. Basic Principles of Environmental Protection

There are a number of principles that are at the core of most environmental protection systems, whether at the international or at the national level. Familiarity with these principles can offer an insight into the purpose and thrust of the various legal mechanisms that have been built around them. The principles are best understood in the context of the modern ecological era.[28] The present ecological era began at the end of the 1960s, after post-World War II reconstruction led to unprecedented global economic development. This development was unequal, accentuating differences in wealth between countries of the Northern and Southern hemisphere as well as within countries. It also required unprecedented use of exhaustible natural resources such as clean water, air, flora, fauna,

[19] Daily Times, May 21, 1985

[20] I. L. Nwokike, 'Pollution under international Environmental Law', A Ph.D Seminar paper presented to the Faculty of Law Nnamdi Azikiwe University Awka 2016 at p.7

[21] World Health Organisation: The Impact of Development Policies on Health. Pp. 21-40 in A Diana and D. Cooper (eds) *A Review of the Life Nature*(WHO: Geneva 1990)

[22] S.I Omofonmwan and G.I Osa-Edoh Op. Cit. at p. 55

[23] *Ibid*

[24] E. A Onwioduokit, E. A, An Alternative Approach to Efficient Pollution Control in Nigeria, Proceedings of the Annual Conference of Environmental Protection Society of Nigeria (University Ilorin, Ilorin Nigeria 1998)

[25] M. O Ayeni, *Patterns, Process and Problems of Urbanisation in Nigeria: Geography of National Developments* (Ibadan: Heineman Education Books Ltd 1978)

[26] P. O Sada and F. O Odemerho, *Environmental Issues and Management in Nigeria Development* (Ibadan: Evans 1988)

[27] *Ibid*

[28] D. Shelton and A. Kiss (eds) *Judicial Handbook on Environmental Law* (Nairobi: United Nations Environment Programme 2005) at p. 19

and minerals. As it became clear that limited resources would ultimately become incapable of satisfying the various needs of industrial and developing countries, public opinion increasingly demanded action to protect the quantity and quality of the components of the environment. Ecological catastrophes such as the 1967 'black tides' off the coast of France, England and Belgium, caused by the grounding of the oil tanker *Torrey Canyon*, and realisation that the environment increasingly was threatened, incited governments to take an action. In some circumstances, action was taken by individual states to address state specific problem. In other circumstances, efforts focused on international cooperation, as a means of addressing shared concerns. These international collaborations bear particular attention because they both illustrate and articulate some of the key principles that undergird national and international environmental law.[29] A turning point in the development of international environmental law was undoubtedly the United Nations-sponsored 1972 Stockholm Conference on the Human Environment which produced a non-binding Declaration of Principles and a Programme for Action containing 109 recommendations.[30] This development gave rise to intense and diverse activity, particularly within inter-governmental organisations whose mandate could extend to environmental problems. Numerous national and international non-governmental environmental organisations and various governments also engaged in considerable preparatory work.[31]

International and national environmental law substantially increased in the two decades after Stockholm. The United Nations reaffirmed and developed the general principles of the Stockholm Declaration in 1982 when the General Assembly adopted the World Charter of Nature. A few principles of customary law concerning environmental relations among states also emerged during this period. Some of them were embraced by the United Nations Environment Program as part of the 'principles of conduct in the field of the environment for the guidance of States in the conservation and harmonious utilisation of natural resources shared by two or more States'. Approved by UNEPs Governing Council 19May, 1978, the Principles on Shared Resources reiterated Stockholm Principle 21 in recognising the sovereign right of states to exploit their own resources coupled with an obligation to ensure that the activities undertaken within the limits of their jurisdiction or under their control do not damage the environment in other states.[32] The UNEP Principles also expressed the obligation of states to notify the latter of plans that can be expected to affect significantly their environment, to enter into consultations with them, and to inform and cooperate in the case of unforeseen situations that could cause harmful effects to the environment. The measures also guaranteed equality of access for non-residents to administrative and legal procedures in the state originating the harmful conduct, and non-discrimination in the application of national legislation to polluters, whatever the place of the harmful effects.[33] In 1992, the United Nations convened a second global meeting known as the United Nations Conference on Environment and Development (UNCED), which met in Rio de Janeiro from the 3 to 4 June 1992. Two texts adopted at UNCED have a general scope; the Declaration on Environment and Development and an action program called Agenda 21. The Declaration reaffirms the Stockholm Declaration of 1972 on which it seeks to build, but its approach and philosophy are very different. The central concept is sustainable development which integrates development and environmental protection. Principle 4 is important in this regard: it affirms that in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it. Agenda 21 is the program of action to achieve sustainable development.[34] In the aftermath of Rio, virtually every major international convention concerning multilateral cooperation includes environmental protection as one of the goals of the states parties. Areas of international law that developed during earlier periods evolved in new directions because of insistence that they take into account environmental considerations. The result has been an infusion of environmental principles and norms into nearly every branch of international law. At the same time, in the decade after the Rio Conference environmental concerns encountered increasing competition on the international agenda from economic globalisation, an emphasis on free trade, and the development crises of poor countries. In addition, mounting evidence could be seen of the disastrous environmental consequences of armed conflict.[35] Between August 26 and September 4, 2002 the representatives of more than 190 countries met in Johannesburg, South Africa, in order to 'reaffirm commitment to the Rio Principles, the full implementation of Agenda 21 and the Programme for the further implementation of Agenda 21'. At the end of the conference the participating

[29] D. Shelton and A. Kiss (eds) *Judicial Handbook on Environmental Law* (Nairobi: United Nations Environment Programme 2005) at p. 19
[30] O.O Mbanugo, 'History, Nature and Sources of International Environmental Law' A Seminar paper presented to the Faculty of Law Nnamdi Azikiwe University Awka, International Environmental Law Ph.D Class of 2016 p. 8
[31] D. Shelton and A. Kiss (eds), *Op. Cit*. at p. 19
[32] D. Shelton and A. Kiss (eds) *Judicial Handbook on Environmental Law* (Nairobi: United Nations Environment Programme 2005) at p. 19
[33] *Ibid*
[34] D. Shelton and A. Kiss (eds), *Op. Cit*. at p. 19
[35] *Ibid* at p. 19

governments adopted a Declaration on Sustainable Development affirming their will to 'assume a collective responsibility to advance and strengthen the interdependence and mutually reinforcing pillars of sustainable development – economic development, social development and environmental protection – at local, national, regional and global levels'.[36] These decades of legal developments have led to the emergence of basic principles of environmental protection that are recognised in international and national law, which have in turn informed the development of environmental law by giving meaning to concepts not yet contained in formal legal instruments.[37] These principles can also be said to have emerged following the increased concerns for the deterioration of human environment as a result of the impact of science, technology and population growth on the global landscape,[38] These principles can be foundational (e.g. equality and legal certainty) or technical (e.g. proportionality). The key environmental principles developed over the past several decades are discussed below. Some of them have been reproduced in domestic laws and thus have provided a foundation for many environmental decisions. They are influential in most legal systems, although they sometimes may be applied differently.

Prevention

Experience and scientific expertise demonstrate that prevention must be the Golden rule for the environment, for both ecological and economic reasons. In some instances, it can be impossible to remedy environmental injury once it has occurred: the extinction of a species of fauna or flora, erosion, and the dumping of persistent pollutants into the sea create intractable, even irreversible situations. Even when harm is remediable, the cost of rehabilitation is often very high. In many instances it is impossible to prevent all risk of harm. In such instances, it may be judged that measures should be taken to make the risk 'as small as practically possible' in order to allow necessary activities to proceed while protecting the environment and the rights of others. This was the position of the court in *Solothurn v. Aargau, Switzerland Bundesgericht* (Federal Tribunal), 1 Nov. 2000. The issue of prevention is complex, owing to the number and diversity of the legal instruments in which it occurs. It can perhaps better be considered an overarching aim that gives rise to a multitude of legal mechanisms, including prior assessment of environmental harm, and licensing or authorisations that set out the conditions for product or process standards, the use of best available techniques (BAT), and other similar techniques can all be seen as applications of prevention. Prevention is also linked to the notion of deterrence and the idea that disincentives such as penalties and civil liability will cause actors to take greater care in their behaviour to avoid the increased cost, thus preventing pollution from occurring. In addition to prevention as a generalised goal of international or national environmental law, the notion of 'pollution prevention' includes the concept that pollution may be reduced, or prevented, at its source, by changing raw materials or production techniques or technologies. Often 'pollution prevention' and 'source reduction' are conceived as goals of voluntary efforts that complement 'command and control' or 'end-of-pipe' environmental regulations that limit the amount of pollution that may be emitted. Pollution prevention sometimes produces economic benefits for industries in terms of increasing efficiency, reducing waste, and reducing liability. Governments may engage in strategies or programs to educate the regulated community and encourage it to implement pollution prevention techniques, in addition to their efforts to promote and enforce compliance with mandatory regulations.[39] Case law discussing the concept of prevention includes: *Greenpeace Australia Ltd v. Redbank Power Company Pty. Ltd and Singleton Council* 86 LGERA 143 (1994 Australia); *Leatch v. National Parks and Wildlife Service and Shoalhaven City Council* 81 LGERA 270 (1993, Austrlia); *Vellore Citizens Welfare Forum v. Union of India AIR* 1996 SC 2715; *Shela Zia v. WAPDA* Vol. XLVI All Pakistan Legal Decision 693. Pollution prevention is also a core concept in a variety of environmental projects and regulatory actions, such as the Great Lakes Action Plan for the Great Lakes in the United States.

Precaution

While there is no single agreed formulation or 'principle' of precaution that is used in all contexts, and precaution has not acquired generally accepted status as a legal principle in its own right or as customary international law, there is a basic concept of precaution that animates much of modern environmental protection regimes – the notion that environmental regulators often have to act on the frontiers of knowledge and in the absence of full scientific certainty. Precaution has variously been associated with the ideas that: 1. Scientific uncertainty should not be used as a reason not to take action with respect to a particular environmental concern; 2. Action should affirmatively be taken with respect to a particular environmental concern; 3. Those engaging in a potentially damaging activity should have the burden of establishing the absence of environmental harm; and 4. A State may restrict imports based on a standard involving less than full scientific certainty of environmental harm.[40]

[36] *Ibid* at p.19
[37] *Ibid* at p. 19
[38] O.V.C Ikpeze, 'International Environmental Law', PhD Lecture Notes, Faculty of Law, Nnamdi Azikiwe University, Awka, 2016 at p.2
[39] D. Shelton and A. Kiss (eds) *Op. Cit.* at p. 20
[40] D. Shelton and A. Kiss (eds) *Op. Cit*. at p. 20

Properly viewed the concept of precaution operates as part of a science-based approach to regulation, not a substitute for such an approach, and in practice, the concept is multi-faceted. Samplings of some of the ways different facets of precaution are expressed in different instruments are as follows:[41]

a. The likelihood of environmental harm (e.g., the Rio Declaration Principle 15 uses 'where there are threats'; the 1996 Protocol to the London Dumping Convention, Article 3 uses 'reason to believe [dumping] is likely to cause harm').
b. The extent of environmental harm (e.g., Biosafety Protocol Articles 10 and 11 use 'potentially adverse effects'; UN Framework Convention on Climate Change Article 3 uses 'threats of serious irreversible damage').
c. Level of scientific certainty or uncertainty needed for precautionary action (e.g. Rio Principle 15 references a lack of 'full' scientific certainty; Article 5.7 of Sanitary and Phytosanitary Agreement (SPS) references 'insufficient' relevant scientific evidence).
d. Whether cost-effectiveness of measures is relevant (e.g. the UN Framework Convention on Climate Change article 3 contemplates cost effective measures; the Straddling Fish Stocks Agreement Article 6 does not).
e. Whether precaution applies to individual parties or to one of the treaty's institutions (such as the Conference of the Parties or a scientific/ technical body in its decision-making).
f. Whether precaution is being applied in an environmental context to encourage action (e.g. SPS Article 5.7)

The so-called 'precautionary approach' is relatively recent, dating from the late 1980s. The 1992 Rio Declaration, Principle 15, formulates it thus: 'In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation'. Because of its many permutations and facets, precaution is at once both useful as a flexible tool or 'approach', and difficult to capture in the context of a generally applicable legal 'principle' or standard. This being said, it has found reference in a number of judicial cases. An Argentinean court, for example, required immediate suspension of efforts to establish an electricity grid until defendant prepared a report with the participation of concerned persons, addressing the impacts and preventive or mitigation measures to avoid the potentially negative effects of the electromagnetic field to be created by the project. The court explicitly stated that it was applying the precautionary principle embodied in the law and several international environmental instruments. *Asociacion Coordinadora de Usuarios, Consumidores y Contribuyentes v. ENRE-EDESUR*, Federal Appellate Tribunal of La Plata (2003). The European Court of Justice has likewise been influenced by the concept, particularly in respect to environmental risks that pose dangers to human health. The court held that the European Commission had not committed manifest error when banning the export of beef during the so-called 'mad-cow' crisis. Case C 180/96, *United Kingdom v. Commission*, [1996] ECR I-3903, para. 83; Case T-76/96 R, *National Farmers' Union (NFU)* [1996] ECR II-815, para. 88. The ECJ said in the NFU case:

> At the time when the contested decision was adopted, there was great uncertainty as to the risk posed by live animals, bovine meat and derived products. Where there is uncertainty as to the existence or extent of risks to human health, the institutions may take proactive measures without having to await the reality and seriousness of those risks to become fully apparent.[42]

In a European Free Trade Association case, the court held that it was appropriately precautionary to presuppose identification of potentially negative consequences and a comprehensive evaluation of the risk based upon the most recent scientific information. Case E-3/00, *EFTA Surveillance Authority v. Norway*, paras. 16,21. According to the Court, where the insufficient, inconclusive or imprecise nature of relevant scientific conclusions make it impossible to determine risk or hazard with any certainty, but the likelihood of significant harm persists, the decision to take restrictive measures is justified. The criteria cited by the court are as follows:

> Such restrictive measures must be non-discriminatory and objective, and must be applied within the framework of a policy based on the best available scientific knowledge at any given time. The precautionary principle can never justify the adoption of arbitrary decisions, and the pursuit of the objectives of 'zero risk' only in the most exceptional circumstances.

[41] *Ibid*
[42] *NFU Case* at para. 63

Polluter Pays

The 'polluter-pays' principle was originally enunciated by the Organisation for Economic Cooperation and Development (OECD) to restrain national public authorities from subsidizing pollution control cost of private firms. Instead enterprises should internalise the environmental externalities by bearing the cost of controlling their pollution to the extent required by law.[43] Historically pollution control cost has been born by the community at large, rather than by those who pollute. Community assumption of the costs can be demonstrated using the example of an industry that discharges pollutants into a river. There are at least three possible ways for the community to assume the economic cost of the pollution.[44]

1. The river can remain polluted and rendered unsuitable for certain downstream activities, causing the downstream community to suffer an economic loss;
2. The downstream community can build an adequate water treatment plant at its own cost;
3. The polluter may receive public subsidies for controlling the pollution.

In each case, the affected community bears the cost of the pollution and of the measures designed to eliminate it or to mitigate its effects. The polluter pays principle avoids this result by obliging the polluter to bear the cost of pollution control, to 'internalise' them. In most cases the enterprise will in fact incorporate the costs in the price of the products to some degree and pass them on to the consumer. The polluter pays principle is therefore a method of internalising externalities. Those who benefit from air made cleaner have a positive externality if they do not pay for the cleanup. Where air is fouled by a producer who bears no cost, it is a negative externality; those who buy the products also are free riders if the fouling is not reflected in the price of the goods. Internalisation requires that all the environmental costs be borne by the producer/consumer instead of the community as a whole. Price will reflect the full cost if regulatory standards or taxes on the production or product correspond to the true cost of environmental protection and damage.[45] The principle can be applied most easily in a geographic region subject to uniform environmental law, such as a state or a regional economic integration organisation. The polluter can be defined as one who directly or indirectly damages the environment or who creates conditions leading to such damage.[46] Generally, polluters should pay for the cost of pollution control measures, such as the construction and operation of anti-pollution installations, investment in anti-pollution equipment and new processes, so that a necessary environmental quality objective is achieved. Other means of ensuring the polluter pays principle are through taxes and charges. Application of the principle may be difficult in practice where identifying the polluter proves impracticable because the pollution arises from several simultaneous causes or from several consecutive causes, or where the polluter has become financially insolvent. In such instances, there may be no alternative to community assumption of the costs of remediation. National courts may define and elaborate on the implications of the polluter pays principle. In *Marlene Beatriz Duran Camacho v The Republic of Colombia* (Sept. 26, 1996), the Constitutional Court, in reviewing the constitutionality of some environmental legislation, approved provisions that impose a special economic burden on those who contribute to the deterioration of the environment and impose on those who take advantage of natural resources the cost of remedying the negative effects that their actions have on the environment. The Indian Supreme Court has said that once an activity carried on is hazardous or inherently dangerous, the person carrying on that activity is liable to make good the loss caused to any other person by the activity. *Indian Council for Environmental Legal Action v Union of India*, AIR 1996 SC 1446 (1996), 2 SCR 503, 3 SCC212 (1996).

4. Judicial Reaction to the Challenges of Environmental Protection

Under this heading the writer shall analyse the attitude of courts with decided cases in various jurisdictions with a case each from each jurisdiction. The jurisdictions considered shall be United States of America, South Africa and Nigeria. The aim is to access the impact of the decisions on the application of available legislations and general attitude towards developmental investment in each of the jurisdictions considered.

The USA Case

***United States of America v Shell Offshore INC & Shell Exploration and Producing Company* (2003) Civil Action No. CV031458.2**

It was a case instituted on gas flaring in the Western District of Louisiana at the Lafayette Opelousas Division. The USA made allegations that Shell has engaged in unauthorised flaring and/or vesting of natural gas in excess of small volumes much of which was economically recoverable at different location in the country. Example is at

[43] D. Shelton and A. Kiss (eds) *Op. Cit*. at p. 20
[44] *Ibid*
[45] D. Shelton and A. Kiss (eds) *Op. Cit*. at p. 21
[46] *Ibid* at p. 22

Tahoe, Enchilada etc from fifty thousand cubic feet per day to about six million cubic feet per day since 1975 to 1999. Shell admitted to the claims/allegations made against it by the USA. Shell also acknowledged that it flared the gas without first obtaining permission from appropriate authority and that it also failed to state accurately and timely calculate and pay royalties on national gas flare as required. Consequently, Shell agreed to pay the USA Forty-Nine Million Dollars ($49,000,000) minus (or less) the royalties of One million six hundred and Seventy-eight thousand, one hundred and twenty-four dollars ($1, 678, 124) already paid. It is noteworthy that Shell Company readily admitted its irresponsible acts on the USA environment exhibiting sensitivity and honesty as against what it does in Nigeria. This is very instructive to the Nigerian Courts.

The South Africa Case

***Wildlife Society of Southern Africa & Ors v Minister of Environmental Affairs & Tourism of the Republic of South Africa & Ors.* (1996) (3) SA 1095 (T)**

In this case, the applicants sought an order against the respondents to enforce section 39 of Decree No. 9 (Environment Conservation) 1992 to declare that the Environmental Conservation Act 73 of 1989 and the General Policy in terms of the Act are applicable to the in the former Transkei and that the policy and act are enforced. In terms of section 39(2) no person is allowed without permission from the relevant authorities to carry on infrastructural development activities which may harm the environment. It was noted that certain land use practices have developed along almost the entire Transkeian Coast which have been destructive of the ecology of the coast line. Therefore, constitute real threat to the environmental sensitivity of the whole area. The 1st Respondent admitted all the averments.

The Court held:

1. On locus Standi: that where a statute imposed an obligation upon the State that a body such as the 1st Applicant can apply to the court to promote environmental conservation in South Africa by order compelling the State to comply with the obligation in terms of such statute.
2. That the law on locus must change so as to protect the interest of the people on environment.
3. The court ordered the respondents to take all necessary steps to enforce section 39 of the Dcree.

It must be noted that the Environmental Conservation Act 73 of 1989 currently applies throughout the Republic of SA by virtue of Proc. R29 GG. 16346 of 1995 and Proc R43 GG 17354 of 1996.

The Nigeria Case

***Gbemre v Shell Petroleum Dev. Co. Nig. Ltd & AG Fed.* (2005) Unreported judgemt of the Federal High Court Benin, Suit No. FHC/B/CS/53/05**

Mr. Jonah Gbemre sued Shell PDC, Totalfina Elf and Agip JVC, NNPC Nig and AG Federation Gas flare in his community (Iwhereka) in Niger Delta as pollution by way of poisoning the community's air, water, food and vegetation which caused them terminal diseases such as chronic bronchitis, cancer and painful breathing etc. It was an application on Fundamental Rights Enforcement on right to life and dignity of human person in accordance with sections 33and 34 of the Nigerian constitution and Article 42 of African Charter on Human and Peoples' Rights (ACHPR). It was posited by Counsel o the Plaintiff BEI Nwofor SAN that 'right to life meaning only if the things that endanger it are removed which is the massive gas flaring. He further analysed right to life in its widest calculative using the Black's Law Dictionary to mean:

a. The sum of all the forces by which death is resisted.
b. The state of humans in which they are organised and capable of performing their functions.
c. All personal rights and enjoyment of the faculties which gas flaring definitely diminishes. The Applicants insisted that the 1st and 2nd Respondent had no valid Ministerial certificates permitting them to flare gas and that their action is actionable under section 4 of the Associated Gas Re-injection Act which is an offence that makes violators liable to penalties. The Federal High Court sitting in Benin City per C.V Nwolorie J. Held as follows:

i. That Mr. Jonah Gbemre had authority to represent himself and the community.
ii. That the fundamental right to life and dignity of human person as guaranteed by section 33 and 34 respectively of the 1999 Constitution inevitably includes the right to clean, poison free, pollution free, healthy environment.
iii. That the respondent's continuous acts of gas flaring amounted to gross violations of their (the Communities) fundamental rights to life including healthy environment and dignity of human person as enshrined in the constitution.
iv. That failure of the respondents to carry out Environmental Impact Assessment (EIA) in the applicants' community amounted to a clear violation of their human rights.
v. The court apart from holding that specific sections of the Associated Gas Re-injection Act and of the Regulations made under it were inconsistent with the applicant's rights to life and dignity guaranteed under the Constitution, also declared that the above laws were inconsistent with the

> African Charter on Human and Peoples' Rights (Ratification and Enforcement) Act Cap A9 Laws of the Federation of Nigeria (LFN) 2004.
> Further the court put restraint on the respondents, their servants, or workers from engaging in further flaring of gas in the applicants' community and dismissed the case put forward by the 1st and 2nd Respondents as well as their various preliminary objections and declared that they lacked merit. It must be noted that the respondents refused to obey the judgment of the court and applied to the Federal High court which varied the order and gave the 1st and 2nd Respondent till April 2007. That is one year after the application to obey the court's judgment which was a conditional stay of execution. This in the present writer's opinion was most unfortunate. The Respondents further appealed to the Court of Appeal. On 26th September, 2006, the Benin Court of appeal Division ordered the Federal High Court not to sit on the day appointed for personal appearances (that was May 2006) or any other day and granted the stay of execution but left the order of the Federal High Court untouched.

This case goes to demonstrate that the arms or organs of government mandated to ensure justice and guarantee Nigerian citizens healthy environment, for reasons best known to them but obviously bordering on unaccountability, shirk such constitutional duties thereby exposing the environment which includes human beings in Nigeria to grave danger, mean while they pretend to protect the investment while yielding unsustainability and non-development. The Nigeria courts are urged to emulate what happens in the USA and South Africa as in many other countries on the attitude of the courts towards investment, environmental protection and sustainable development.

5. Conclusions and Recommendations

In conclusion, the foregoing presents some of the challenges of environmental protection. It is their continued existence that has hampered the much-desired progress in the area of environmental protection. This issue of Environmental Impact Assessment (EIA) is quite new and environmental actors and stakeholders are barely coming to terms it. This has also exacerbated the problems environmental protection. The final analysis the present writer makes recommendations in the next sub-head with respect to how best challenges of environmental degradation can be curbed or ultimately cured. The challenge/problems of environmental protection have become serious issues nationally and internationally in the last few decades. Also, national and international concerns at reducing, stemming and or mitigating the consequences of environmental degradation are recent. The various international instruments, treaties, conventions and protocols, national legislations targeted at protecting the environment and curbing environmental degradation are quite commendable. However, to achieve greater success towards eradicating or reducing environmental degradation certain basic ideas about environment management has to be conceptualised. Before modernisation, communities of the world especially African communities were tied intricately to their environment. They had the local technology of utilising the resources within the environment and protecting same from despoliation. For example, in Nigeria, farmers adopted the technology of shifting cultivation in order to protect the soil. This practice is highly recommended. The environmental protection mechanisms and techniques should be taken down to the local communities in order to enlighten the rural dwellers on modern methods and techniques of environmental protection.