

ENVIRONMENTAL POLLUTION AND BIBLICAL ANTHROPOCENTRISM: CASE STUDY OF NIGER DELTA OF NIGERIA

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Abstract

There is the general apprehension about an impending crisis that affects our environment. These environmental concerns include problem of the pollution of air, water and land which are vital, not only to continued industrialization and a high standard of living, but also to our health and general well-being. The aim of this work, therefore, is to have a closer view at the issue of environmental pollution from a biblical cum theological perspective. The specific objective here includes to: (i) investigate the confusion of interpretation of the Biblical command for man to go, be fruitful and multiply, have dominion over the earth and subdue it, meaning that man can dispose of nature as he pleases; (ii) take a critical look at the issues of environmental pollution in Niger Delta region of Nigeria; and (iii) provide the way forward and the means of getting out of the dilemma called environmental pollution in Niger Delta, Nigeria. This research has shown that the key issue at stake is human misplacement of moral value and not the biblical terms that, apparently, have been given inadequate interpretation, hence a misapplication. The anthropocentric nature of the biblical creation stories actually place responsibility of caring for man and not for destruction and devastation.

Introduction

Humanity today stands at a very important crossroad. For the first time, we possess the technical knowledge and productive potential, if used rationally, to assure every person the basic means of life. On the other hand, the present irrational and unjust use of this same knowledge and productive potential threatens not only to bring about the destruction of human civilization but also the extermination of all lives on our planet, through the economic activities that inflict irreversible damage to the Earth's biosphere (Taylor, 2004). Indeed, environmental pollution is an “*environmental crisis, economic crisis and moral crisis*” (Taylor, 2004:48).

Though man has always impacted on the environment, sometimes “*detrimentally*” (Ahlers, 1990: 433), it has only been relatively recently, with the coming of industrialization, that he has had the capacity to seriously damage the natural order and to do so, on a global level. These environmental concerns include problems of air, water and land qualities which are vital, not only to continued industrialization and a high standard of living, but also to our health and general well-being. Nowhere else is this issue of more concern as in the oil and gas exploration areas. Nigeria's Niger Delta is a special case studies here (Taylor, 2004).

Before the oil and gas exploitation in the Niger Delta started, vegetation was comprised of extensive mangrove, swamp and rain forests. The large expanses of mangrove forests were estimated to cover approximately 5,000 to 8,580 km² of land (Nwilo, 2007). But the constant pollution from the exploration activities has caused between “*five to ten per cent of these mangrove forests to disappear*” (Nwilo, 2007: 37). Both the volatile, quickly penetrating, and viscous properties of oil have wiped out areas of vegetation. When spills occur close to and within the drainage basin, the hydrologic powers of both the river and tides force spilled oil to move up into communities of vegetation.

Yet man's attention is more on the accumulation of wealth and material goods. Indeed, it is not just an environmental or economic crisis, but a moral crisis. As Pope Benedict puts it, "*The external deserts are growing, because the internal deserts have become so vast*" (Anderson, 1975: 67).

Lynn White's Allegation: Biblical Anthropocentrism

Though this issue has been greatly discussed in the various media and discourses over the past decades, yet with the persistent rise of dangerous effect of environmental crises, a search for the true causes is most desirable now than ever before. One cause which has been suggested is man's attitude to nature and the factors which shape this attitude (Tayloy, 1989). Some researchers have concluded that many of the environmentally destructive attitudes have been shaped by man's religious beliefs which are essentially Biblical (White, 1967). But, it is worrisome that some are finding biblical excuses for this unhealthy and very dangerous trend.

White (1967) seems to be the one who brought the issue into its present limelight when he first proposed that the biblical heritage was the "root" of our ecological crisis. White, a historian of medieval history, wrote a brief essay linking our current technological exploitation (and abuse) of the natural world with the biblical religion. He posits thus:

Christianity provided the conditions for the democratic fusion of science and technology that enables us to alter our environment radically and permanently... Christianity had desacralized and demystified nature by destroying pagan animism... made it possible to exploit nature in a mood of indifference to the feelings of natural objects. The anthropocentrism of the biblical tradition and Christianity placed humans at the center of creation, separating man from nature, and insisting that 'it is God's will that man exploit nature for his proper ends' (White, 1967:1205).

Although his arguments were not wholly new (Derr, 1975), White's essay has been accepted, reprinted and preached as gospel by innumerable environmental advocates. It has become fashionable to blame this "heritage" as the philosophical or attitudinal basis of environmental problems (Benjamin, 1979). The allegation is that the Biblical command for man to be fruitful and multiply, to have dominion over the earth and subdue it, encourages the view that man can dispose of nature as he pleases. A number of commentators have actually accused Christianity of being part of the problem (Derr, 1975). White actually drew a link between the rise of modern science, environmental crisis and western Christianity, famously stating that western Christianity was "*the most anthropocentric religion the world has seen*" (White, 1967:1207).

The Old Testament passage in question is Genesis 1:26 - 28, which states thus:

Then God said, 'Let us make man in our image, according to our likeness, let them have dominion over the fish of the sea, over the birds of the air, and over the cattle, over all the earth, and over every creeping thing that creeps on the earth.' So God created man in His own image, in the image of God He created him, male and female He created them. Then God blessed them, and God said to them, 'be fruitful and multiply, fill the earth and subdue it, have dominion over the fish of the sea, over the birds of the air, and over every living thing that move on the earth.' (NKJV)

Definition of Key Terms

Environment: Hornby (2006: 490) defines environment as “*the condition that affect the behaviour of somebody or something*”, “*the physical condition that somebody or something exist in...the natural world in which man, animal and plant live*” McGraw-Hill (2005), in his Encyclopedia of Science and Technology defines it as “*The sum of all external factors, both biotic (living) and abiotic (nonliving), to which an organism is exposed.*” McGraw-Hill (2005: 203) biotic factors include influences by members of the same and other species on the development and survival of the individual. Primary abiotic factors are light, temperature, water, atmospheric gases, and ionizing radiation, influencing the form and function of the individual.

For each environmental factor, an organism has a tolerance range, in which it is able to survive. The intercept of these ranges constitutes the ecological niche of the organism. Different individuals or species have different tolerance ranges for particular environmental factors—this variation represents the adaptation of the organism to its environment. The ability of an organism to modify its tolerance of certain environmental factors in response to a change in them represents the plasticity of that organism. Alterations in environmental tolerance are termed acclimation. Exposure to environmental conditions at the limit of an individual's tolerance range represents environmental stress (Bradley, 1994).

Pollution: The term pollution, which carries with it a sense of an impurity, has been defined as “*the process of making air, water, soil, etc. dirty; the state of being dirty*” (Hornby, 2006: 1123). It is a chemical or physical agent in an inappropriate location or concentration. The sources of pollution are varied. Natural sources include those that are not directly under human control, such as volcanoes, which spew forth sulfur oxides and particles; and those people could avoid, such as groundwater with naturally high levels of arsenic, which has caused poisoning in Bangladesh and Taiwan. All human activities have the possibility of polluting the environment by contaminating air, water, food, or soil. The earliest human pollution-control efforts dealt with avoidance of diseases caused by contamination of water and food by human excreta and with the control of smoke from fires used for cooking and heating. Sanitary engineering to manage human wastes remains a central public health need. Indoor air pollution due to the use of wood and fossil fuels in poorly ventilated residences also remains a major source of exposure to pollutants and a cause of respiratory disease in many parts of the world.

Morality: Morality as used in this work is as derived from the Latin word “*moralitas*” (implying manner, character or proper behaviour). We are really more concern here with the ethical sense of the word which refers directly to what is right or good as per human value for the benefit of all irrespective of what specific individual thinks. We are referring to virtuous behaviour or conduct that is in accord with accepted moral standards. In other words, we mean things done with an intension that carries goodness, decency, probity, honesty, integrity, honour, virtue, godliness or saintly as opposed to wickedness.

Values: Values as used here refers to personal or societal principle or standard of judgments of what is important in life or how we prioritize issues, ideals and action.

Crisis: Crisis refers to a situation of uncertainty and unstableness that portends esteem danger. Venette (2003: 3) defines it as “*a process of transformation where the old system can longer be maintained.*” Crisis (from the Greek word “*κρίσις*”) is any event that is, or is expected to lead to,

an unstable and dangerous situation affecting an individual, group, community, or whole society. Crises are deemed to be negative changes in the security, economic, political, societal, or environmental affairs, especially when they occur abruptly, with little or no warning. More loosely, it is a term meaning 'a testing time' or an 'emergency event'.

Environmental Crisis and Humanity: Global Perspective

As awareness of environmental crisis and global deterioration has grown, explanations and remedies are being sought. The initial conventional popular assessment of the environmental problem, which was seen as a temporary crisis - largely of pollution caused by mismanagement or neglect, and correctable by a few new laws and better engineering (Mankievics, 1990), has given way to the more comprehensive perspective – that the environmental crisis is actually “*a systemic-multi-dimensiona*” (Ashworth, 1995:45) and inherent in “*socioeconomic trends*” which, left uncorrected, could lead to destructive consequences “*neither preventable nor remedial by technical or legal means alone*” (Gore, 2000:176). Avoidance would require major social changes-including a reorientation of popular expectations; a redirection of many public policies; a reformation of institutions impacting adversely upon the environment and, most importantly, a reordering of our moral values, when things are done in the fear of the LORD (Hebrew פֶּקֶדֶי -יְהוָה).

The Threat We Cannot Ignore:

The world faces a global emergency that demands emergency measures. A study of the state of the world's icecaps and glaciers, for instance, reveals that the Antarctica is hotter now than at any time in the past 4000 years, “*already producing the collapse of small ice shelves and threatening that of ice sheets so vast that a six-metre rise in sea levels would result*” (Gore,2000: 34). Arctic sea ice is up to “*a third thinner than 20 years ago*” and across the world's mountain ranges glaciers have shrunk by “*between 22 and 32 per cent this century*” (Wilson, 1992: 56). These titanic changes could “*easily produce complex interactions between a warming atmosphere and melting ice capable of triggering calamitous changes in climate and sea level*” (Fung, 2002: 7).

We are waking up to the cost of human activities on the earth. Major environmental trends are building inexorably toward a dramatic climax (Mankievics, 1990). These trends have steadily worsened in the last 50 years, and serious disruptions in our current lifestyles lie just ahead. Overuse of resources, pollution of the natural environment and the growing effects of climate changes are, as the United Nations Development Program, *Human Development Report* (1997: 219) puts it, “*changing the face of the earth.*” *In such a way that,* “*we are seeing the death of life in the extinction of species on a scale not previously experienced by humanity*” (Sherkat and Ellison, 2007: 76).

Moreover, the world's population continues to explode. Whereas it took from the beginning of human history until 1940 for the world's human inhabitants to reach two billion, it took only 35 years to add another two billion, and only 25 years to add yet another two billion! At the present doubling rate (40 years) the world could have 12 billion people by 2040 AD, twice as many people as we have on earth today (United Nations Development Program, *Human Development Report*, 1997: 87-89). Considering that most of this growth will occur in developing countries that are already suffering the effects of environmental degradation, the world of the next several decades will be a “*world without sufficient food to eat, without clean water to drink, without adequate shelter, without sanitation, without education, without the basic necessities of*

life" (Gore, 2000:21). In fact, Dr. Robert McNamara, former president of the World Bank, once commented that *"rampant population growth more certainly threatens humanity than any catastrophe the world has yet endured"* (Wortman, 2003: 34).

In other words, this burgeoning population will have a devastating impact on the environment. As populations grow, so does the rate of consumption of natural resources. Strategic planners estimate that, in the next century, per person consumption rates will increase between 400 and 800 percent (Schneider, 1996). This only spells trouble when we realize that currently, *"a third of the world's cropland is losing topsoil at a rate that is undermining its long-term productivity... 50 percent of the world's rangeland is overgrazed... two-thirds of oceanic fisheries are being fished at or beyond their capacity"* (Ruether, 1993: 37). Additionally, fresh water supplies around the world are dwindling, and by 2050, fully two-thirds of the world's population could be living in regions with chronic, widespread shortages of water. The predicted *"Water wars"* (Ruether, 1993: 41), of more than a decade are becoming an imminent threat. It is, indeed, a sobering picture close to what the Bible refers to in Genesis 1: 2 as, *"without form and void,"* a state of desolation, confusion, ruin and waste.

Furthermore, in the last several centuries, humans have burned fossil fuels – coal, oil and gasoline – to meet the energy needs of our industrial and automobile-based societies. This has released into the atmosphere increasing amounts of greenhouse gases (carbon dioxide, methane, etc.), which have contributed to global warming and violent weather changes (Fung, 2002: P.85). Glaciers around the world are melting, and polar icecaps are thinning and shrinking. In the last 40 years, the earth has lost 10 percent of its snow cover (Fung, 2002: 88). Brown, *et al.* (1998: 115) posits the Scientists prediction thus:

Rising sea levels will inundate large areas of America's Atlantic and Gulf coasts, coastal Mediterranean areas and much of Holland, Denmark and eastern Britain. Many islands will disappear. Prime agricultural land will be lost, and large-scale population displacements will occur, as two-thirds of the world's largest cities lie in vulnerable coastal locations.

Add to this the thinning away of the ozone layer that shields the earth from dangerous ultraviolet radiation, damage to forests and freshwater systems from acid rain, polluted air and water, growing mountains of solid waste, all from human misuse of the natural resources, and rising rates of species extinctions; it should be obvious to even the most casual observer that we are facing a *"real eco-crisis"* of global proportions (Dixon, 1999).

The Accord of the Copenhagen Climate Change Conference

The United Nations Climate Change Conference in Copenhagen, Denmark took place from 7-19 December 2009. It included the fifteenth Conference of the Parties (COP 15) to the United Nations Framework Convention on Climate Change (UNFCCC) and the fifth Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (COP/MOP 5). COP 15 and COP/MOP 5 were held in conjunction with the thirty-first sessions of the Subsidiary Body for Scientific and Technological Advice (SBSTA 31) and the Subsidiary Body for Implementation (SBI 31).

The COP Decision:

The Copenhagen Conference marked the culmination of a two-year negotiating process to enhance international climate change cooperation under the Bali Roadmap and came up with what is now general Copenhagen Accord or the COP Decision. They are:

- i. That they pursue the ultimate objective of the Convention;
- ii. That they are guided by the principles and provisions of the Convention;
- iii. That they are the results of work done by the two AWGs;
- iv. That it endorses the decisions by the COP and COP/MOP to extend the mandate of the AWGs; and
- v. Indicates that parties have agreed to the Accord, which is “*operational immediately.*” (Schulzel *ta*, 2009: 9)

The Accord contains a placeholder for the list of parties wishing to associate themselves with it. The Accord operative texts were:

- i. Identifies climate change as one of “*the greatest challenges of our time*” and emphasizes “*strong political will*” to urgently combat climate change in accordance with the principle of common but differentiated responsibilities and respective capabilities.
- ii. Agrees that deep cuts in global emissions are required according to science and as documented by the IPCC Fourth Assessment Report, with a view to reducing global emissions in order to limit the increase in global temperature to below 2°C.
- iii. States that parties should cooperate in achieving the peaking of global and national emissions as soon as possible, recognizing that the time frame for peaking will be longer in developing countries;
- iv. States that adaptation to the adverse effects of climate change and the potential impacts of response measures is a challenge faced by all countries, and that enhanced action and international cooperation on adaptation are urgently required in developing countries, especially in the LDCs, SIDS and Africa. They also agree that developed countries shall provide adequate, predictable and sustainable financial resources, technology and capacity building to support adaptation actions; etc. (Schulzel *ta*, 2009: 17-19)

The question begging for urgent answer is how the World Leaders and Chief Executives of Multi-National Companies, who were part of this accord, easily turn their faces from gas flaring and other monumental man-made environmental pollution agents as seen all over the world and especially in the Niger Delta, where pollution has virtually become glamorized. Could the alleged anthropocentric nature of the biblical passage or passages be responsible?

Environmental Issues in the Niger Delta

The Niger Delta covers areas of about 20,000 km² within wetlands of 70,000 km² formed primarily by sediment deposition. Home to 20 million people and 40 different ethnic groups, this floodplain makes up 7.5% of Nigeria's total land mass. It is the largest wetland and maintains the third-largest drainage basin in Africa.

The Delta's environment can be broken down into four ecological zones: coastal barrier islands, mangrove swamp forests, freshwater swamps, and lowland rainforests. This incredibly well-endowed ecosystem contains one of the highest concentrations of biodiversity on the planet, in addition to supporting abundant flora and fauna, arable terrain that can sustain a wide variety of

crops, lumber or agricultural trees, and more species of freshwater fish than any ecosystem in West Africa.

The region, it is reported, could experience a loss of 40% of its inhabitable terrain in the next thirty years as a result of the carelessness of the oil industry. The situation is best encapsulated by a 1983 report issued by the NNPC, long before popular unrest surfaced as captured by Nwilo and Badejo (2007: 47):

We witnessed the slow poisoning of the waters of this country and the destruction of vegetation and agricultural land by oil spills which occur during petroleum operations. But since the inception of the oil industry in Nigeria, more than twenty-five years ago, there has been no concerned and effective effort on the part of the government, let alone the oil operators, to control environmental problems associated with the industry.

Some Environmental Issues in Niger Delta

However, the key environmental issues in the Niger Delta can better be articulated as follows:

1. Oil spillage.
2. Gas flaring.
3. Environmental degradation.
4. Poor health status
5. Poverty

Oil Spillage: The issue of spillage is as old as drilling itself. In every area where there is oil exploration, oil crude spills on the surface of the earth and surrounding waters. This kills plants, de-fertilizes the earth, harms animals, fouls farmlands, and destroys aquatic life. Consequently, farming and fishing industries, the major sources of economic sustenance in oil producing areas have suffered irredeemably from oil exploration. Apart from destroying the delicate ecosystem of the Niger Delta, oil spills destroy natural freshwater reservoirs that serve as sources of drinking water, with potential health hazards. Since oil and gas pipelines crisscross the Niger Delta, it is sometimes difficult to spot spills immediately and take remedial action. However, the most difficult aspect of oil spillage is the recurring battle between oil/gas companies and host communities over the role of "sabotage." As stated earlier, oil/gas companies by law are not obligated to pay compensation for spills from deliberate, destructive acts. Rows over who will clean up oil spills, and pay compensations are often at the core of acrimonious relationships between host communities and oil/gas companies. However, one thing is very clear: oil spillage is a fact of life in the oil producing communities with widespread pollution of creeks, rivers, farmlands, and mangrove forests.

Gas Flaring: Nigeria flares more gas than any other nation in the world. At least 75 percent of Nigeria's total gas production is flared and about 95 percent of associated gas, a by-product of crude oil extraction from reservoirs. According to the Nigeria's Department of Petroleum Resources (DPR), between 1998 and 1999, the total volume of gas utilization for industrial and domestic use in Nigeria was approximately 916 million standard cubic meters. However, during the same period, the oil producing companies flared about 1.7 billion standard cubic meters of associated gas. Much of the flared gas is methane, with high warming potentials, and potential destructive health hazards. Although Nigeria since 1969 had laws requiring oil-producing companies to utilize the associated gas from their exploration activities, not much has happened in this area. Gas flaring has continued unabated. For the host communities, gas flaring is a cause of

acid rains that corrode metal roofing sheets atop houses, increase soil temperatures, and visibly damage vegetation near the flares. However, there is an on-going scientific controversy over the link between gas flares and acid rain, according to conclusions by independent consultants. The Shell Petroleum Development Company contends that the low sulphur dioxide content and nitrous oxide in the gas flares are unlikely to lead to acid rains. However, for the inhabitants of the host community, the acid rain is real with adverse effects on their lives. The Federal government consistent ordered to end and the unending shifting of the terminal date, gas flaring persists still in Niger to this date.

Environmental Degradation: According to the World Bank, there are five great plagues of mankind: war, famine, pestilence, environmental pollution, and death. The Niger Delta is in the throes of becoming an environmental wastebasket. From the oil spills to the round-the-clock gas flares and effluents from industrial wastes, the fragile ecosystem of the Niger Delta is under constant assault (Okwueze, 2003). However, it is still a mystery that no comprehensive study of oil exploration in Niger Delta and its effect on the environment exists.

The role of population growth, industrialization, and physical development are also important environmental research issues. The Niger Delta Environmental Survey, largely funded by the oil/gas industry appears to be a response to this need. However, because of the tentative, formative steps of the Survey and the unsettled issue of intellectual and scientific independence, the jury is still out on the long term effectiveness and veracity of its eventual findings. It is safe to say that until the rumblings of the Ogoni people, the issue of environmental degradation was not a central political or economic issue in Nigeria. Although Nigeria has an impressive array of environmental laws, it is no secret that enforcement has been lax. Apart from the concern for their staff safety, oil companies have been largely clay-footed regarding the safety hazards of oil exploration in host communities.

Poor Health Status: From a simple perspective, the scarcity of clean drinking water in the water soaked Niger Delta is not only an irony but also a potential health hazard. According to the landmark 1999 Human Rights Watch report on Niger Delta, an oil producing community reported that 180 people died following a large scale oil spill; Spills had made people sick or hospitalized, and; Fish from contaminated streams sometimes tastes of kerosene (paraffin), suggesting hydrocarbon contamination (Nwilo and Badejo, 2007). It is important to note that the long term effect of hydrocarbons on humans is still evolving, with speculations on carcinogenic consequences. The influx of moneyed oil/gas workers into poor villages and communities in oil producing areas have led to public health tensions over the spread of sexually transmitted diseases and prostitution. Recently, the Mangrove Forest Conservation Society of Nigeria filed a lawsuit in a Port Harcourt High Court accusing the Nigeria Liquefied Natural Gas Company (NLNG) of complicity in the high rate of AIDS in the Bonny Community of Rivers State (Terman, 2008). Various fact-finding missions to the Niger Delta have documented complaints of increasing ill health among inhabitants of oil producing areas, and shortened lifespans. It is however surprising that the comprehensive health status of Niger Delta inhabitants is not available.

Poverty: The destruction of the land and waterways of the Niger Delta Region has denied the people their major source of fishing and farming livelihoods. One of the most visible images of Niger Delta is the distinct world that exists: the affluent Government/Petro business alliance versus the wretched poverty of host communities. The economic strangulation of some oil producing

communities is total, with unemployment rates of 80 percent or more (Terman, 2008). Families in these communities find it difficult to keep their children in school because of limited disposable income. Consequently, intergenerational poverty has become a fact of life in these communities. Access to healthcare is also sporadic, as families have to make gut-wrenching choices between hunger and clinical care. Poverty and the attendant struggle for scarce resources remains a fact of life in Niger Delta. How possibly could the alleged anthropocentric nature of the biblical passage or passages be responsible for all these?

Biblical Anthropocentrism is not the Problem:

As seen in the above passage, man is indeed told in Genesis to have dominion (רָדָה *rādāh*) over the Earth, to subdue (כָּבַשׁ *kābash*) it. The Hebrew words used can have the sense of crushing, like grapes in a winepress, but also reigning over something, controlling it. Control or reign can of course be benevolent, as well as destructive. E.g. Micah 7:19, in which to subdue (*kabash*) our sins is a sign of God's compassion. Leviticus 25:43ff condemns *ruthless* dominion (*radah*). In contrast, 1 Kings 4:24–25 says that Solomon's dominion (*radah*) resulted in peace, safety and 'each man under his own vine and fig tree'. So the type of *radah* must be decided by *context*. Since these words were spoken by God into an endemic situation, before the fall it is especially hard to imagine any sort of destructive or ruthless implication to them.

Consistent evolutionary thinking, of course, cannot permit the notion that the whole of creation is focused around mankind, and seeks to portray such an attitude as arrogant anthropocentrism (man-centeredness). Interestingly, the idea that, because man is nothing special, we should treat other species with special favour, suffers from an ironic inconsistency; since these other species are all 'out for themselves', why should mankind, if we are 'just another species', not do likewise? In other words, it is the very uniqueness of mankind which gives us the capacity to exercise special care, benevolent *radah*. Therefore, though the Biblical view is indeed man-centred, it is not in any sense meant to appeal to man's vanity. Though man-centred, in a deeper sense it is God-centred.

Conclusion/Recommendation

Conclusively, Biblical anthropocentrism is far from being the problem. Instead the interpretation of the said bible passage has either been abused or inadequately interpreted or misapplied. Man's failure to protect the earth, as Lyn White would made the world to believe, is not in what is written but what is in man – debased mind. In other words, the Bible, and the Old Testament in particular, has not encouraged environmental pollution. The Bible does not give man "*carte blanche*", or even a "commandment", to do with 'nature' just what we selfishly wish. Not in Genesis 1:28, the entire Old Testament or anywhere else in the Holy writ. Rather, this writer posits that as a command, the passage in question puts a responsibility onto us. The responsibility of caring. We are duty-bound as God's co-creators to guarantee the sustainability of the earth and of future generations.

Therefore, what we need to address is the moral state of man and this is where we must go back to the Creator for repentance. We should thereafter adopt a holistic view of nature – it is *not* an entity that exists separately from us; the nature *is* us, we are an inalienable part of it, and we should care for it in the most appropriate manner. Only then can we possibly solve the problem of environmental pollution.

We therefore, suggest what we term the five principles of sustainability: they are:

- i. Principle of zero irreversibility. Irreversible damage and cumulative pollutant emissions must be reduced to zero. If this can happen in the Niger Delta, the Nigerian Government and the Multi-National Companies would have made a moral statement.
- ii. Principle of sustainable harvesting: The rate of harvesting renewable resources must not exceed their rate of regeneration. The near absolute absent of harvesting renewable resources in the Niger Delta makes the issue criminal.
- iii. Principle of sustainable depletion: The rate of depletion of non-renewable natural resources must not exceed the rate of creation of renewable substitutes. In Niger Delta, no renewable substitute is created and where they are said to exist, it is so insignificant to be noticed.
- iv. Principle of sustainable technology choice: Technology choice should favour those technologies which extract maximum value per unit of resource rather than those where growth rates dictate resource throughput. Technology choice should promote the replacement of non-renewable by renewable resources. If this can happen in the Niger Delta, government will be taken serious for her effort.
- v. Precautionary principle: Uncertainty and the risk of potential environmental disasters should dictate an attitude of prudent foresight which identifies and discards, in advance, any production technique or method which could have catastrophic consequences, even if the chance of such an outcome is small and alternatives are more troublesome and costly. Whatever it cost to stop gas flaring in the Niger Delta is still far less than the environmental risk, human wastage and other monumental damages going on there.

References

- Ackerman, S (1992). *Under Every Green Tree: Popular Religion in Sixth-Century Judah*. Atlanta: Harvard Semitic Monograph Scholars Press.
- Adams, C. J (ed.) (1975.). *Ecofeminism and the Sacred*. New York: Continuum Publishing.
- Ahlers, Julia (25 April, 1990). Thinking Like a Mountain: toward a Sensible Land Ethic. *Christian Century*, 1 (46), 433-34.
- Ajakaiye, D. Enilo and Jonathan King (27 October, 1980). First World, Third World: Uses and Abuses of Science. *Christianity and Crisis*, 298-303.
- Allerton, John (1985). About a Theology of Conservation. *Faith and Freedom*, 67, 114-26.
- Alpers, K. P (1976). Toward an Environmental Ethic. *Dialog*, 43, 49-55.
- Amnesty International Report (2009). *Nigeria: Petroleum, Pollution and Poverty in Niger Delta*. London: Amnesty International Publications
- Anderson, B.W. (1975). Human Dominion over Nature. in M. Ward (Ed.). *Biblical Studies in Contemporary Thought*. Somerville: Greeno, Hadden, and Co.
- Barr, J. (1972). The Images of God in the Book of Genesis. *Bulletin of the John Rylands University Library*, 1 (212), 11-28.
- _____ (1972). Man and Nature: the Ecological Controversy and the Old Testament. *Bulletin of the John Rylands University Library*, 1 (213), 9-32.
- Bauckham, (1986). First Step to a Theology of Nature. *Evangelical Quarterly*, 176, 229-44.
- Bradley C. K. (1994). Plain Meaning: Justice Scalia's Jurisprudence of Strict Statutory Construction. *Harvard Journal of Law and Public Policy*, 17 at <http://www.greenpeace.org>. Accessed on 6th July, 2008
- Becker, W. H. (1992). Ecological Sin. *Theology Today*, 1 (xxxv), 152-64.
- Beisner, E. C. (1990). *Prospects for Growth: a Biblical View of Population, Resources and the Future*. Westchester, Ill: Crossway Books.
- Bennett, J. B (1974). Nature and God's Body: A Whiteheadian Perspective. *Philosophy Today*, 354, 248-54.
- _____ (1976). A Context for the Land Ethic. *Philosophy Today*, 367, 124-33.
- _____ (1977). On Responding to Lynn White: Ecology and Christianity. *Ohio Journal of Religious Studies*, 541, 71-77.
- Benjamin, W. W. (1979). A Challenge to the Eco-Doomsters. *Christian Century*, 132, 252-72.
- Berry, R.J (1991). Christianity and the Environment: Escapist Mysticism or Responsible Stewardship. *Science and Christian Belief*, xxiii, 3-18.
- _____ (1972). *Ecology and Ethics*. Downers Grove, Ill.: Inter-Varsity Press.
- Birch, C. (1971). *Purpose in the Universe: A Search for Wholeness*. New York: Zygon Press
- Crossan, J. (1995). *Jesus: A Revolutionary Biography*. New York: Harper San Francisco Press.
- Derr, T. S. (1975). Religion's Responsibility for the Ecological Crisis: An Argument Run Amok. *World View*, 18 (41), 39-45.
- Dubos, R. (1972). *A God Within*. New York: Charles Scribner's Sons.
- Fuggle, R.F. (2004). *Africa Environment Outlook Lake Victoria: A Case Study of Complex Interrelationships*. London: Inter- Varsity Press.
- Fung, M. J. (2002). *Dominion of Co-Creators*” <http://www.directionjournal.org>. Accessed on 14th August, 2008
- Gore, A. (2000). *Earth in the Balance: Ecology and the Human Spirit*. Boston: Houghton Mifflin
- Hornby, A.S. (2006). *Oxford Advanced Learner's Dictionary of Current English*. Oxford: University Press.
- Hughes, J. D. (1975). *Ecology in Ancient Civilizations*. Albuquerque: University of New Mexico Press.

- Human Rights Watch (1995). Nigeria: the Ogoni crisis: a case- study of military repression in south-eastern Nigeria. *Human Rights Watch/Africa*, 7 (5). New York: Human Rights Watch
- Human Rights watch (1999). The Price of Oil: Corporate Responsibility and Human Rights Violations in Nigeria's Oil Producing Communities. *Human Rights Watch* Vol. 12 (4). New York: Human Rights Watch
- Itebiye, B.O. (2006). Niger Delta and the Struggle for Resource Control: Paradigms from the Old Testament. A dissertation submitted in partial fulfilment of the requirements for Masters of Art (Religion), Department of Religion Studies, University of Nigeria, Nsukka.
- Lohfink, N. (1982). *Great Themes from the Old Testament*. New York: Clark Publishing.
- Mankievics, F. (1990). *Environment, Capitalism and Socialism*.
<http://www.directionjournal.org>. Accessed on 24th August, 2008
- Marx, K. (1981). *Capital*, Vol. 1. Harmondsworth: Penguin Books.
- McGraw-Hill, T. (2005). *Encyclopedia of Science and Technology*.
<http://www.answer.org>. Accessed on 14th August, 2008.
- McHarg, I.L. (1992). *Design with Nature*. Cambridge: Wiley Publishing.
- Monaghan, M. (1999). Fill the Earth and Subdue it. <http://www.ozone.org>. Accessed on 12th September, 2008
- Nwilo, P. C., and Badejo, O.T. (2007). *Impacts and Management of Oil Spill Pollution along the Nigerian Coastal Areas*". <http://www.greenpeace.org>
- Okereke, J N., S O. Oiekezie, and K O. Obasi, comps (2007). Microbial Flora of Oil-Spilled Sites in Agbema, Imo State, Nigeria. *Academic Journals*. 6 (8), 14-45
- Okwueze, M. (2003). *Ethics, Religion and Society: Biblical, Traditional & Contemporary Perspectives*. Nsukka: Prize Publishers
- _____. et al. ed. (2004). *Religion and Societal Development: Contemporary Nigerian Perspectives*. Lagos: Merit International Publications.
- _____. and Ugwueye, L.E. (2002). *Prophecy in the Old Testament: The Concept of Moral Responsibility in Ezekiel*. Enugu: Aicon International Publishers.
- Pawlikowski, J. T. (1994) *Theological Dimension of an Ecological Ethic*. In Kevin, W. I. & Edmund, D (Eds.). *The Ecological Challenge: Ethical, Liturgical and Spiritual Responses* Washington, DC: Georgetown University Press.
- Perelmuter, H. G. (1994). Do not Destroy - Ecology in the Fabric of Judaism. In *The Ecological Challenge: Ethical, Liturgical and Spiritual Responses*. Washington, DC: Georgetown University.
- Platt, L. ed. (1987). *Hope for the Family Farm*. Newton, KS: Faith and Life Press.
- Presbyterian Eco-Justice Task Force (1989). *Keeping and Healing the Creation*. Louisville, KY: Committee on Social Witness Policy.
- Ralston, H. (1988). *Environmental Ethics*. Philadelphia: Temple University.
- Rayan, S. (1993). Theological Perspectives on the Environmental Crisis. In Sugitharajah, R.S. (Ed.). *Frontier in Asian Christian Theology: Emerging Trends*. New York: Orbis Books.
- Roberts, E. and Amidon, E. eds. (1991) *Earth Prayers*. San Francisco: Harper.
- Rogerson, J. W. (1991). "Genesis 1-11." <http://www.directionjournal.org>. Accessed on 14th August, 2008
- Rowe, W. L. (1993). *Philosophy of Religion: An Introduction*. Belmont, CA: Wadsworth Publishing Company.
- Ruether, R. R. (1993). *Gaia and God: An Ecofeminist Theology of Earth Healing*. New York: Harper Collins.
- Russell, P. (1990). The Environmental Crisis: A Challenge to the Churches. <http://www.directionjournal.org>. Accessed on 14th August, 2008

- Santmire, H. P. (1970). *Brother Earth: Nature, God and Ecology in Time of Crisis*. Nashville: Nelson.
- _____. (1985). *The Travail of Nature: The Ambiguous Ecological Promise of Christian Theology*. Philadelphia: Fortress Press.
- _____. & Paul Lutz (1972). *Ecological Renewal*. Philadelphia: Fortress.
- Schulz, A. et al. (2009). Summary of the Copenhagen Climate Change Conference. *Earth Negotiation Bulletin*, 12 (459), 3-25
- Sessions, George S. (1974). Anthropocentrism and the Environmental Crisis. <http://www.greenpeace.org>. Accessed on 8th July, 2008
- Sherkat, D. E., and Ellison, C.G. (2007). Structuring the Religion-Environment Connection: Identifying Religious Influences on environment Concern and Activism. *Journal for the Scientific Study of Religion*, 46 (55), 71-85.
- Sittler, J. (1972). *Essays on Nature and Grace*. Philadelphia: Fortress.
- Stewart, R.B. (2001). *A New Generation of Environmental Regulation*. Oxford: University Press.
- Strong, J. (1995). *The New Strong's Exhaustive Concordance of The Bible*. Nashville, Tennessee: Thomas Nelson, Inc.
- Stone, G. C., ed. (1971). *A New Ethic for a New Earth*. New York: Friendship Press.
- Stott, J. R. W. and Robert T. C, eds. (1980). *Down to Earth: Studies in Christianity and Culture*. Grand Rapids, Mich.: Wm. B. Eerdmans
- Swimme, B. (1984). *The Universe is a Green Dragon*. New York: Bear & Company.
- Taylor, B. (2004). A Green Future for Religion? *Futures*, 36, Supplement Series 3, 991-1008.
- Taylor, P. W (1989). *Respect for Nature: A Theory of Environmental Ethics*. Princeton: Princeton University Press.
- Terman, M. (2008). The Environmental Crisis: Thoughts of a Christian Ecologist. *Environmental Science and Religion*, 29 (1), 38 - 45
- Teilhard, D. Chardin, P. (1974). *Hymn of the Universe*. New York: Harper & Row.
- Thurber, L. N (1990). Care for the Creation as Mission Responsibility. *International Review of Mission*, xxiii, 143-49.
- Trible, P. (1971). Ancient Priests and Modern Polluters. <http://www.ozone.org>. Accessed on 12th September, 2008
- Tuan, Yi-Fu (1970). Our Treatment of the Environment in Ideal and Actuality. *American Scientist*, 58, 244-49.
- Venette, S.J. (2003). *Risk Communication in a High Risk Reliability Organization*. <http://www.em.m.wikipedia.org/wiki/crisis>. Accessed on 24th August, 2010
- Webster, N. (1828). *American Dictionary of the English Language*. Cambridge, Massachusetts: G & C Merriam Publishers
- Westermann, C. (1977). *Blessing: In the Bible and the Life of the Church*. Philadelphia: Fortress.
- White, Lynn, Jr. (1967). The Historical Roots of our Ecologic crisis. *Science*, 155 (3767), 1203 – 1207
- Wilson, E. O. (1992). *The Diversity of Life*. Cambridge: The Belknap Press of Harvard University Press.
- Worthing, M. W. (1996). *God, Creation and Contemporary Physics*. Minneapolis, MN: Fortress Press.
- Wortman, J.M. (2003). *Dwellness: A Radical Notion of Wilderness*. A dissertation submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy, Department of Philosophy, College of Arts and Sciences, University of South Florida, United State of America.