ENVIRONMENTAL DEGRADATION IN NIGERIA - THE ROLE OF MAN

IBOAYA BENSON .A (M.Sc)
College of Education, Ekiadolor – Benin
TEL: 08027041798

ABSTRACT
Our present school system has not fully taken into consideration the need to build environmental education and consciousness into the school curriculum. It is a truism that technology (especially modern technology) has seriously harmed our local environment causing serious environmental degradation, global warming, depletion of the ozone layer, and serious human health problems. Despite all these environmental hazards, environmental awareness and consciousness among citizens of Nigeria is drastically low while government and corporate organizations have not done enough to ameliorate or put a stop to the menace of abuse of our environment by modern technology. Companies producing packaged water ("Pure Water") and those producing poly ethylene terephthalate (PET) – based packing materials generate products that block our drains thus causing flooding. Again, outdated computers and other electronics, gas flaring and uncontrolled bush burning generate greenhouse gases that deplete ozone layer and cause global warming, climate change and hazardous weather conditions. This paper examines environmental degradation occasioned by human activities and makes recommendations to solve the identified problems. Some of the recommendations include the need for a strong environmental education and advocacy, environmental conservation, punishment of environment offenders, payment of environmetal levy by big companies and the setting up of Environmental Impact Assessment Agency by Government.

INTRODUCTION:

Environmental degradation and bad environmental management practices have collectively resulted into poverty, economic depression and social crises. According to Adetunji (2006), every state across the ecological zones of Nigeria suffer from one form of environmental ill or the other. The exploitation of earth's resources has created unmitigation environmental disasters (Azan, 2009). These environmental hazards include deforestation, soil erosion, flooding, desert encroachment, drought, pollution and global warming. This forms the focal point of this paper which points out ways to achieve sound environmental management practices.

Technology refers to new tools and the knowledge surrounding the use of the tools. One uncritical view that is prevalent at the present time holds that technology is a virtually unalloyed blessing for man and society. Technology is seen as the motor of all progress, as holding solutions for most of our socio-economic problems, as helping to liberate the individual from the clutches of a complex and highly organized society as source of permanent prosperity – in short, as the promise of Utopia in our time.

A contrary view sees technology as an almost unmitigated curse. Technology is said to rob people of their jobs, their privacy, and their participation in democratic government; and even, in the end, of their dignity as human beings. The one undisputable fact about technology is that it develops according to the forces operating in a particular society. The term "technology" has often been confused with science and at other times, with industrialization. Although technology is closely related to science and to industrialization, yet it differs from them in many significant ways. Technology is the application by man of the systematic knowledge of nature (science) in exploitation of his environment – physical and social. Physical technology refers to application of physical science for the exploitation of the physical environment. Social technology on the other hand, refers to the application of social science for exploitation or administration of social environment or social relations. Technology is a field of cultural anthology and concerns itself with differential study of tools, procedures and methods.

Finally, technology - system is composed of the material, mechanical, physical, and chemical instruments, together with the techniques of their use.

THE CONCEPT OF ENVIRONMENT

"Environment" has been defined in a number of ways. In scientific terms, environment adds ecological considerations and elements to ambient physical milieu of life. Yet in some cases, the physical milieu alone

has been called the environment. It will be relevant to cite two major authorities concerning the definition of the term "environment"

Akinbode (2002) sees environment as the totality of places and surroundings in which we live and work and carry out socio-economic and cultural activities for self fulfilment and advancement. Secondly, the Webster New Collegiate Dictionary has defined the environment to mean, "the aggregate of all external conditions affecting the life and development of an organism."

A common thread running through all the definitions is that- environment comprises of physical and social factors or forces that affect the existence of man. Included therefore, are land, minerals, forests, water, air, social and economic systems of man.

In terms of typology, environment can be physical, economic, socio-cultural or political. This brings into play the inter-connections and inter- relationship between and among the various components of the Ecosystem- which are either acted upon, or act on others. Degradation of the environment is anchored on the disturbance (some irreversible) of the balance in ecosystem. What does the balance in ecosystem mean?

THE ECOSYSTEM, ITS BALANCE AND DEGRADATION

The total terrestrial Ecosystem is an interrelated and interacting system of organisms functioning in a Biophysical environment. Man depends on land, water, soil, climate and vegetation; plants too depend on land, water, soil and climate; and the rock is dependent on parent materials, water, climate, plants and animals. There is always a balance in these natural conditions, but man's technology has been destroying this balance or "cycle of nature".

Sen (2002) sess development as a process of expanding the real freedoms that people enjoy. Since the beginning of the historical period, the growth of world population, the need for increased food supplies, the developments in science and technology, the growing demand for raw materials, and increased output of manufactured artifacts- have had far- reaching effects upon natural ecosystems.

Increased human population equally put unbearable population pressure on land and its resources, thereby, introducing triggering factors that would set imbalance to the Ecosystem- pushing man's existence to the abyss.

Some of the complex and intricate systems of the Ecosystem are: Hydrological cycle, Carbon cycle, and Nitrogen Cycle. This means that man cannot disturb the Ecosystem or nature, without interfering with any of these natural cycles. For example, the hydrological cycle is made up of evapo-transpiration, condensation, precipitation and infiltration (or possibly, run- off). Excessive industrial pollution can interfere with this cycle by either causing reduced sunlight penetration and consequent reduction in Evapo- transpiration; or encouraging the formation of condensation causing increased rainfall. Industrial pollution especially carbon dioxide emission causes depletion of the ozone layer which results into global warming and climate change**.**

Heavy industrial pollution can also affect plant growth by influencing the rate of photosynthesis that balance the oxygen and carbon dioxide content of the atmosphere. Thus, a small imbalance can cause an avalanche of catastrophe.

ENVIRONMENTAL DEGRADATION BY MAN

Some 10,000 years ago, the total forested area of the world was about 6,000 million hectares. Since then, man has destroyed about 1,600 million hectares, (Agbola, 2008). Through modern technology, the rate at which man fell trees is becoming very high and alarming. This is even worse in the third world countries, where majority of the people still depend on firewood as source of fuel or energy. Bush burning and over-grazing are equally practiced with impunity and in the most reckless manner resulting in wanton destruction of he Earth's vegetative and protective cover. The inevitable result has been accelerated soil erosion in some areas and encouragement of desert encroachment in other areas. This sad state of affairs forced the Federal Government of Nigeria, to embark on a tree- planting campaign to restore to the Earth some vegetative and protective cover thereby, averting ecological disasters such as desert encroachment, drought, flooding and soil erosion.

With the present rate of deforestation, many trees will go into extinction including the animals that live in them- denying our generations unborn of the knowledge, pleasure and use of such plants and

animals. Biodiversity which is the cream of nature will therefore be destroyed. All in all, deforestation has caused active soil erosion in so many areas. A few examples will help to substantiate this. At Igueben Local Government Area of Edo state, within the last fifteen years, there has been active deforestation through farming and other human activities. This deforestation has caused serious soil erosion through increased rain drop impact and increased surface run offs (Iboaya, 2004). The Idumuogo erosional "Badland" located in Igueben is a case in point.

Similarly, fantastic erosional gullies are widespread in the Eastern part of Nigeria. The best known examples are those of Agulu- Nanka erosional surface in Anambra State of Nigeria. They have been copiously described by Grove and Ofomata. The spectacular nature of the gullies and the impact they have made on the lives of the predominantly farming population explains why the gullies have commanded great public attention. Active deforestation through intensive and poor farming methods are some of the adduced reasons. According to Ofomata (1975), gully erosion in the Agulu Nanka area accounts for a physical loss of over 930 hectares of agricultural land.

Finally, Omuta (2007), believed that when vegetal destruction crossed the critical value or threshold value, soil erosion problems are manifested on Auchi Urban area in form of gullies. Areas in Auchi which were comparatively inadequately vegetated had correspondingly higher proportions of the various characteristics of environmental degradation. Thus areas that were poorly vegetated had larger gullies. In like manner, Eregha (2007), has opined that in Madagascar, human misuse of environmental resources has degraded the vegetation cover, perhaps by 70% of its surface. At a time, a greater part of Madagascar was under vegetation, but today only about 1/8 of the total area is under forest. It is relevant to point out that deforestation can have any of these three effects: over flooding, soil erosion or cause streams to dry up. The people suffer from degradation and depletion of natural resources and loss of means of livelihood.

CRITICAL AREAS OF ENVIRONMENTAL DEGRADATION

(A) WATER POLLUTION

Water is indispensable to life - for drinking, cooking; washing, domestic, industrial and agricultural use. Water is equally used for generating Hydro-Electric Power (HEP), navigation, fishing and sporting. The major problem has been the pollution of this all- important resource of the Earth's surface.

It is estimated that over 1,600 km of rivers in Britain are grossly polluted and several thousands more suffer from one form of pollution or the other. Other forms of water pollution result from advanced technology in industrial and transportation sectors. A number of modern oil vessels have sunk in some parts of different oceans- causing oil spillage that resulted in death of marine animals and plants. Industrial discharge into the rivers, in the form of lead, manganese, cyanides, sulphides and phosphoric acid, causes so much pollution which kills aquatic plants and animals. It equally endangers the lives of human beings who eat any of the contaminated foodstuffs such as fish.

Arvill has noted that on Lake Erie in U.S.A. six of the thirty-two public recreation and swimming areas have been closed by 1965, because the water was unsafe for human beings due to pollution. There is thus a need to protect our water from pollution.

(B) AIR POLLUTION

In the present day, atmospheric pollution has become a source of concern to many people and nations, because of the threat to mankind or human lives. Air pollution can be any of the followings: black soot-laden smoke, dust, ash, industrial gases, automobile exhaust fumes and radioactive fallout.

According to Arvill, in the city of Pittsburg (USA), over 7 million tons of coal dusts are poured into the atmosphere each year. Considering the large number of industries pouring smoke into the atmosphere, the number of cars and lorries pouring smoke into the streets, space travels by shuttles and rockets, and the numerous tests of Nuclear Weapons (Military), one can then imagine the threat posed by air pollution to man's existence. Many Governments have already enacted laws to keep the air free from pollution.

Finally, more severe cases of air pollution relate to fires, associated with pipe lines vandalization in Niger Delta of Nigeria. The Jesse fire incident caused by petrol explosion led to the death of many people

beside the heavy environmental (air, land and water) pollution in Niger Delta state. Nagasaki (Japan), where so many lives were lost during the 2nd world war had severe air pollution (radio active).

(C) MINING AND ENVIRONMENTAL DEGRADATION

Aside deforestation, water and air pollution mining is another area where man has been misusing and abusing the environment. Open cast mining and quarrying have left deep hollows and depressions on the surface of the Earth. It has been recorded that there are about 24,000 ha of holes in the ground in Britain. The story is equally true for some parts of Nigeria.

To forestall the possibility of the whole region where mining is done- being turned to "badland" or derelict area, some governments are already taking some conservatory steps, to protect the environment. In Jos, Plateau state, where mining of tin and columbite is carried out, the level of environmental degradation is unquantifiable.

CONCLUSION

For a conclusion, it is relevant to argue that modern development in science and technologies are mostly to blame for the ecological imbalance of the present century. Science and technology are powerful amplifiers of man's impact on the biosphere. For example, Nuclear power, motor transport, insecticide and fertilizers were all developed and used before their long term hazards were known hence, they constitute most serious threat to human wellbeing and to Ecological balance of the Biosphere. Man's vaunted technology is the greatest threat to the continued availability of the essential resources provided by the Biosphere. Environmental hazards such as deforestation, flooding, soil erosion, drought, desertification and global warming have devastating effects on our environment which calls for urgent solutions.

RECOMMENDATIONS

The following measures are suggested to tackle the identified problems:

1. Conservation and preservation of our environment are workable measures to stop environmental degradation and impending doom. Other preventive and curative measures include the implementation of Environmental Impact Assessment (EIA) for all technology-based major developmental projects in our environment and there should also be **environmental education** to sensitize the people in Nigeria and beyond on sound environmental practice. Finally, only technologies that are compatible with our environment (**eco friendly**, with recyclable by-products and **ozone friendly**) should be allowed in Nigeria. There should be government legislation on this. Out-dated electronics that emit **greenhouse gases** should be banned in Nigeria by the government.
2. As part of educational reforms in Nigeria, Environmental education should be included in our school curriculum, and should be made a compulsory subject or course in all schools from primary to the tertiary levels. These students will become change agents to train or educate illiterates in Nigeria on dangers of technologies that are inimical to the environment. We should all think globally and act locally.
3. Environmental Impact Assessment Agency should be set up by government to measure impacts of projects on the environment.
4. There should be a vigorous environmental educaiton and advocacy to enlighten people on the dangers of destroying their environment.
5. Oil companies and other companies operating in Nigeria should pay environmental tax to solve ecological problems.
6. Individuals and companies that violate environmental laws should be heavily sanctioned and punished.
7. Environmental restoration should be taken seriously by government.

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