
THE STUDY OF ENVIRONMENTAL SCIENCES TOWARDS DEVELOPING THE ECONOMY OF NIGERIA

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Abstract: Our environment is our surroundings and we have a common duty to protect it. As we have quest to develop our society economically, the environment may face severe threat. This paper reveals the significance of environmental studies to economic development. The harmful aspect of it and possible solutions were observed.

Keywords: Environment, Economic Development, Degradation, Ozone Layer.

INTRODUCION

The concern of every education is on good innovation to the development of man. Environmental study is not an exemption. Environment is simply the surroundings of man which includes the list of trees, animals, birds and other living objects. The surrounding influences the growth and development of people in one way or the other. Environmental science is the study of branches of sciences which includes the study of physics, geology, chemistry, biology, agriculture, etc. Its scope is being increased by passage of time. Man has been able to extend his environment through his social, economic and political functions. According to Boring, a person's environment consists of the sum total of the stimulation which he receives from his conception until his death. It can be asserted from here that it comprises different kinds of factors which include; physical, intellectual, political, economic, cultural, moral, emotional and social values. It is simply implied to be the sum total of all the influences and conditions of external and internal forces that affect life behavioural pattern, nature, growth and development of living organisms.

The environment we live can be grouped into four segments. The first is the atmosphere. It consists of air which is the composition of hydrogen, oxygen, water vapour and noble gases in different proportions. It sustains life in our environment and saves it from toxic radiations such as cosmic rays from the outer space. The second is the hydrosphere. This is the world of water at different levels. Aquatic life is possible here and is also useful for human consumption and domestic uses. The third is the lithosphere. This is recognized as the outer mantle of solid earth and consists of minerals. The last is the biosphere which is the world of living organisms and their relationship with their environment.

The elements of the environment are capable of existing separately and collectively. The physical elements include space, landforms, water bodies, etc. The biological elements include man, plants and other species of animals. The cultural elements are economic, social, etc. Economic development is very vital to the growth and expansion of a country. Man's quest to develop his habitat is not without countable demerits of different magnitudes. Man derives and utilizes his natural endowment from his own environment through skills and technologies at different levels. The exploitation of the environment in search of quality life is sometimes in harmony with the natural environment. But if the critical limit is exceeded by greed, it turns out hazardous to the environment of man.

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Economic development could be referred to as the quantitative and qualitative positive changes in the economy of a state which improves the standard of living of the habitats. This development can influence areas such as human capital, infrastructure, environmental stability, literacy, health and other innovative initiatives. The policy intervention of economic development aims at improving and sustaining the social well being and economic status of people in a geographical region (Michael and Stephen 2011, Jayati, 2013).

The Relevance of Environmental Studies to Economic Development

Economic growth is always the primary interest of any nation. As the quest for economic growth of a country increases, the more opportunities for a sustainable and stable economic status; the economic growth impacts the protecting environment and the protecting environment impacts the economic development. Economic development enhances the integration of national power and improves the quality of life of the people just as it causes a number of severe environmental problems such as water and air pollution, etc.

Environmental Sanitation

Keeping our environment neat is a good aspect of environmental management that can develop our economy. According to Nigeria National Policy on Environmental Sanitation (2005), Environmental Sanitation is defined as the principles and practice of effecting healthful and hygienic conditions in the environment to promote public health and welfare, improve quality of life and ensure a sustainable environment. This is an environment that is hazard free to living organisms. Environmental sanitation is a sure way of keeping or maintaining a balance in an environment. This feature goes a long way to maintain population growth and increase labour force of a state. Increased man power is signatory to economic development of a state and is achievable by proper sanitation. The essential components of new policy on waste management or environmental sanitation includes solid waste management, medical waste disposal, excreta and sewage management, food sanitation, sanitary inspection of premises, adequate potable water supply, pest and insect control, management of urban drainage, controlled burning of bushes and exhaust fumes, Hygiene education and promotion, etc. There is a direct link connecting the quantity of refuse recklessly dumped in an environment and the incidence and prevalence of both infectious and chronic diseases that afflict the habitat animals (man). Indiscriminate dumping of refuse causes serious harmful effect to animals. The larger the refuse dump in an area, the higher the risk of disease it causes to people in that area. Waste generated in and out of our homes should be properly disposed to sanitize our God given environment and conserve it for future and continual usage and existence. Large putrefying pests always surround refuse. Waste generated around the environment harbor disease causing organisms and chemical that can enter the human body by direct contact with the waste or through the pest. Uncovered food around or near a refuse dump can be infected with germs that can cause cholera, typhoid fever, etc. Any such disease weakens the patient and equally reduces productivity or cause death, hence reduce work force. The primary role of environmental sanitation is to maintain balance in the environment. This will reduce disease infection and as well increase work force for greater productivity to build economic power. It will keep our food free from micro-organisms that cause diseases. Washing of hands with soap after toilet, shake hands, sneeze and drinking of clean and safe guaranteed water, etc can go a long way in keeping clean environment. These factors depend wholly on human activities in and around the environment (The Medical Board of PCN, 2013).

Agricultural Practice is Another Sure Way of Developing the Nation's Economy

The cultivation of crops of many kinds and rearing of animals of different species is agriculture. The people must also be properly educated on the agricultural practice so as to limit its negative effects to the environment. High yielding varieties of crops may increase soil salinity and affects soil structure. The study of agriculture has promoted the economy of some countries such as China to a great level. Nigeria is not an exception here. Before the discovery of petroleum, Nigeria was already known with the production of cocoa from west, groundnut and rearing of cattle from North and cultivation of palm oil including the Abakaliki rice from east. The farm produce can be exported to other countries and be sold in international market. Agriculture is very important to the sustenance of man. Live is completely dependent on green plants. Green plants are primary producers. This is because they manufacture their own food in the presence of carbon (IV) oxide (CO_2), chlorophyll, water and other nutrients through the process called photosynthesis. The absorption of CO_2 from the atmosphere also helps to purify the environment. The process of photosynthesis also gives out oxygen (O_2) as the end product. Drainage or irrigation systems are necessary part of agriculture that supports economic growth. Afforestation is used to create forest zone, check erosion, as tourist centre, economic benefit, etc. for the benefit of man as well as to improve the economy.

THE STUDY OF GEOLOGY AND GEOPHYSICS

The study of geology and geophysics has helped tremendously in the economic development of our country Nigeria. Hydrocarbon is a chemical that contains hydrogen and carbon as its own elements which are found in raw materials such as petroleum. This natural resource can be harnessed by geophysical exploration method. All other mineral ores are all discovered and collected by geophysical exploration methods. The discovery of special stone called magnet is equally based on this magnetic method of exploration.

Magnet has gone up to unimaginable level to develop the world at large economically and in power, construction of aeroplanes, cars, handsets, television, etc. are possible by the use of magnet. These in turn, boost the economy of the world and made the world a global village. Making of warfare equipment is possible as well. Guns of different category, bombs and war jets are all made useful by the application of magnet.

Nigeria and many other countries across the world have become financially buoyant because they manufacture fuel and other constituents of petroleum in their country. Rivers, Bayelsa, cross river, delta and Akwa-Ibom states receive highest allocations from the federal government because the government milks their natural resource (petroleum). They are numerous other exploration of environment that brings about economic development in diverse ways but not without challenges.

Developing Economy Brings Some Environmental Hazards

The world may not be able to sustain economic stability without constraints. The setback may be from resource constraint or its negative influence to the environment. The quest for rapid economic development may lead to indiscriminate extraction of natural resources and accumulation of waste. If it over shadows the biosphere, it causes environmental degradation and decline in human welfare. Environmental degradation is a serious threat to developing countries. When it occurs both the terrestrial and aquatic animals are affected

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Unsecured Environment Can Cause Unrest to Man

Inability to manage our environment makes it hazardous to man. Indiscriminate dumping of refuse and untreated chemicals from industries can cause food and water poisons. A hazard is anything that has the ability of causing harm. It can be seen as contamination of food and water that make them unhygienic for human consumption. A hazard may fall into physical hazard, chemical hazard and biological hazard.

Biological diseases are by far most common occurrence of food born disease. It is caused by large number of pathogenic and micro-organisms, including viruses, bacteria, protozoa, parasite and fungi. Non-virus (virus) and Salmonella (bacteria) are known to commonly cause food born illness. Chemical illness arises from chemical substances such as pesticides, cleaners and bleach. The chemicals can contaminate the food through carelessness or malicious intent or contact with the food. Paralytic shellfish poison, toxin in muscles, etc are all chemicals that can cause disease to man. Physical food born diseases such as physical inflicted injury can be caused by foreign objects in food like wood splinters, glasses, metal fragments, bone fragments, etc. When the fragments are carelessly mixed with the food, it will cause food born diseases as well as causing water born diseases.

Effects from Agricultural Practices

Agriculture is dependent on available soil moisture, which is directly affected by climate dynamics, with precipitation being the input in this system and various processes being the output, such as evapotranspiration, surface runoff drainage, and percolation into groundwater. Changes in climate, especially the changes in precipitation and evapotranspiration predicted by climate models, will directly affect soil moisture, surface runoff, and groundwater recharge.

In areas with decreasing precipitation as predicted by the climate models, soil moisture may be substantially reduced (Ragab and Christel, 2002). With this in mind, agriculture in most areas needs irrigation already, which depletes fresh water supplies both by the physical use of the water and the degradation agriculture causes to the water. Irrigation increases salt and nutrient content in areas that wouldn't normally be affected, and damages streams and rivers from damming and removal of water. Fertilizer enters both human and livestock waste streams that eventually enter groundwater, while nitrogen, phosphorus, and other chemicals from fertilizer can acidify both soils and water. Certain agricultural demands may increase more than others with an increasingly wealthier global population, and meat is one commodity expected to double global food demand by 2050, (Tilman *et al.*, 2011) which directly affects the global supply of fresh water. Water is needed in processing of the meat, and also in the production of feed for the livestock.

The transfer of water from agricultural to urban and suburban use raises concerns about agricultural sustainability, rural socio-economic decline, food security, an increased carbon footprint from imported food, and decreased foreign trade balance (MacDonald, 2010). Agricultural surpluses and deficits from the availability of water induce trade problems and economies of certain areas (Raleigh *et al.*, 2007). Climate change is an important cause of involuntary migration and forced displacement (Bogumil, 2012).

Environmental Pollution in Niger-Delta

It is no longer news that South-South of Nigeria that bears the bulk of the nation's oil wealth has long faced serious environmental pollution. These result from oil spillage, gas flaring and other negative practices in the environment as a result of the activities of oil multinationals

operating in the area. These pollutions put the lives of people living in that region in danger. Despite the facts that this region produces the bulk of the country's oil wealth, its people still live in abject poverty and squalor. The Niger-Delta is acclaimed to be the second largest wetland in the world after Mississippi and is the largest in Africa (Nseabasi, 2005). Due to severe neglect to environment that characterized oil spillage in Nigeria, the fragile ecology of the Niger-Delta has been seriously disrupted. According to Osuoka, (2003), all stages of oil activity from exploration and drilling to transportation, result in the destruction of natural environment and the livelihood of the inhabitants who depend on the land and Creeks of the delta for their survival.

From past to present, the history of social existence of people in the Niger-Delta has been one of misery, deprivation and poverty because of bad government. Friedman (1996) sees poverty as a form of disempowerment that can be viewed from three dimensions: socio-economic, political and psychological. This means lack of recourses essential to life, lack of clear political agenda and voice, and sense of worthlessness and passive submission to authority. Lack of gainful employment has as well contributed to untold hunger in Niger-Delta (Saliu *et al.*, 2007).

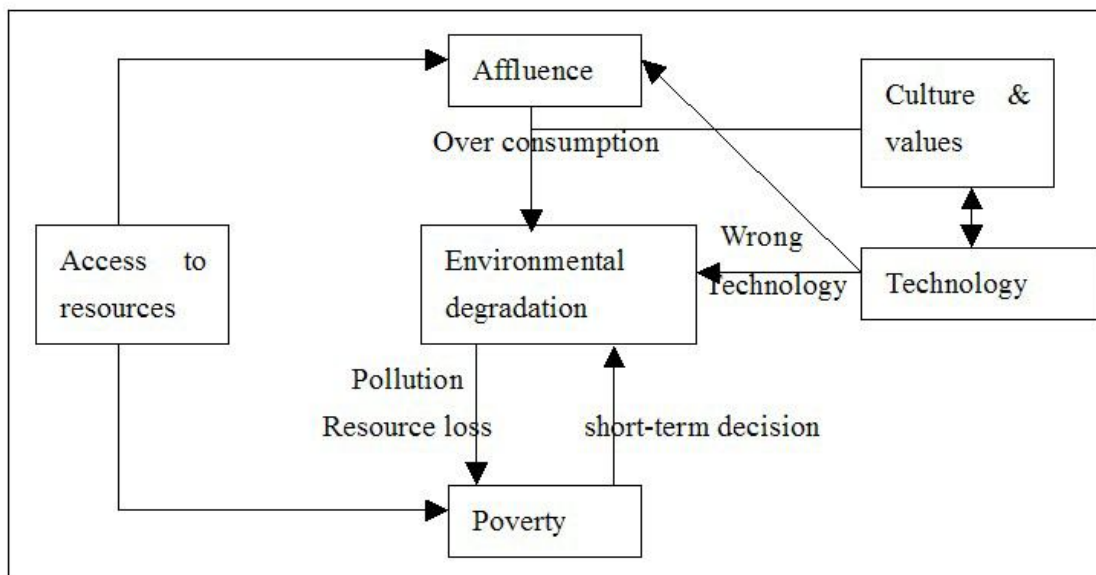


Figure 1: A Realistic Representation of the Poverty and Environmental Degradation (Longlong and Hangbo, 2008)

Depletion of Ozone Layer

Ozone layer is the umbrella covering the earth environment from the sun's hazard activities such as radiation of ultra violet (UV) rays, etc. The ozone can be destroyed by ozone-depleting substances such as chlorofluorocarbon (CFC), carbon (IV) oxide (CO₂), trichloroethane and a lot of other toxic gasses. When these gases are released into the atmosphere, the ozone thickness is being reduced by persistent release of the gases. This paves way for the UV rays to reach the earth environment directly without being waged. The effect of this can be skin cancer, cataracts, green house effect, etc. This can also cause water and air pollution as the gases move to the atmosphere and hang there. Whenever there is first rain of the year, the rain combines with the toxic gases up there to form acid rain as it pour down to the atmosphere (Robson, 2005).

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The impact of transport affects the global, regional, and local environment. It is at each of these levels that action needs to be focused in order to reduce and mitigate the impact on the environment (David, 2003). The gases like CO₂, SO₂, NO₂ from the transport directly impact the climate with rising temperature resulting to global warming (John, 1996). Economic development, through its indirect impact on social and cultural factors lowers fertility rates. A concern for population growth must be a part of a broader concern for a more rapid rate of economic and social development.

BUILDING CAPACITY FOR ENVIRONMENT PROTECTION

What is capacity for environmental protection? This means the society's ability to identify and solve environmental problem. The main implication for the debate on sustainable development is that long term strategies must include concepts for improving the conditions of environmental capacity building" (John, 1986a). The public participation is like individuals, student groups, social groups, and semi-governmental organization. Particularly in the recent years, various public media has been increasing, such as television, internet, environment newspaper, many major newspapers, journal and magazines. Through adsorbing public opinions, spreading the public participation and increasing the performance of the law and regulation, government can reevaluate and revise the policies in order to carry out the environmental impact assessment for the all kinds of pollution enterprises. To build the capacity for environmental protection, getting some different voices from the non-governmental proponents is very necessary. There are three important groups of environmental protection; all of them are able to influence polluters directly. These include: Environmental organizations, the media and Ecological innovative firms. They are the factors in environmental improvements within industry (John, 1986b). Government should enact laws that will stop indiscriminate cutting down of trees and a public awareness is necessary to stop this menace.

Conclusion

Our environment is a heritage from God. It is our responsibility to use it for our benefit and protect it as well. The study of the environment must be capitalized on the interest of increasing our economic value. This will automatically change the standard of leaving of the people for better. This is vital but its side effect is hazardous. Good environmental management can bring economic development with less environmental pollution.

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