

THE MANAGEMENT OF BUSINESS ACTIVITIES TOWARDS REDUCTION OF ENVIRONMENTAL DEGRADATION IN NIGERIA

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Abstract

Environmental degradation remains the major cause of environmental damage because the major constituents of the environment are affected as a result of business activities. Business activities like the oil and gas industries bring about deterioration of the soil, water and air in human and wildlife environment. This paper pointed out the major causes of environmental degradation in our environment, health and other impacts. The paper also recommended efforts to reduce environmental degradation and hence the need for environmental management education at all levels of education with the use

of wall chart awareness. The paper concluded that there is need for proper environmental impact assessment which is the first step in citing a business in order to reduce or eradicate environmental degradation in Nigeria which leads to optimum economic growth and development.

Environmental degradation simply refers to the deterioration of the environment through depletion of resources such as air, water and soil. It is defined as any change or disturbance to the environment perceived to be undesirable. As described by Nwachukwu (2014) Environmental degradation otherwise called environmental impact, is caused by the combination of an already very large and increasing activities, economic growth or per capita affluence (A), and the application of resource depleting and polluting technology (T).

Business activities/ventures are a major cause of environmental degradation in the sense that the factors of production like land, labour, capital and entrepreneur are all used by business Activities and which exposes the environment to a lot of degradations. Every business environment starts from the production process to the marketing/distribution up to the user/consumption both in goods and services. These stages of activities of business move from one environment to the other thereby causing environmental degradation.

The environmental degradation could be caused by the enterprise in the production process, or by the individual that market and distribute the goods and services. Also, the users and consumption rate can deteriorate the environment hence the issue of environmental degradation, causes, effort to curb it and the recommendations. Environmental degradation is a high level threat which is cautioned by United Nations. The United Nations International Strategy for Disaster reduction defines Environmental degradation as the reduction of the capacity of the environment to meet social and ecological objectives and needs.

Environmental degradation is of many types. When the business activities of a particular sector is deteriorated or tampered with, environment is said to be degraded due to the inability of the sector to handle the hygiene of their product and environment in other not to affect the surrounding wildlife and others.

As a result of these environmental problems arising from business activities efforts to counteract these problems which include environmental protection and environmental management. Different sectors also consider the surrounding environment before citing their organizations and enterprise.

The high level panel on threats, challenges and change of the United Nations, attended by former Prime Minister, former United States National Security, Advisor and several former heads of government and foreign ministers as members, produced in December 2004 a report on the threats to the future of humanity are.

- ✚ Poverty, infectious disease, Inter-state war, civil war, genocide
- ✚ Other atrocities (e.g. trade in women and children for sexual slavery or kidnapping for body parts).
- ✚ Weapons of mass destruction (nuclear proliferation, chemical weapon proliferation, biological weapon proliferation).
- ✚ Terrorism, transnational organized crime.
- ✚ Above all, environmental degradation which is as a result of deterioration of the environment.

According to greenliving.com (2014) environmental degradation also a result of socio-economical, technological and institutional activities. Degradation occurs when earth's natural resources are depleted due to human activities. These resources which are affected include.

- ✚ Water, air, soil.
- ✚ The degradation also have impact on our
- ✚ Wildlife, plants, animals
- ✚ Micro-organism (greenliving.com).

Environmental changes are based on many factors including urbanization, population growth, and economic growth, intensification of agriculture, increase in energy use, and increase in transportation. Cutting down massive forests impacts our biosphere.

Our land, water and soil are compromised when people exhaust resources or release harmful chemicals into the air. Deforestation, wasting resources and pollution all add to the demise of an environmentally sound and safe planet. For example, when trees in forests are cut down in large quantities, so that more homes can be built on the land, the birds and wildlife who lived in the forest must find a new place to live. The vegetation that once grew on the land is destroyed. Trees that absorbed carbon dioxide to help the biosphere are now unable to do so. If the wood from the trees is used to make products and those products (such as paper) are later recycled that is one hopeful aspect for the planet.

However, sometimes trees are just cut down and burned. This is what is known as slash and burn, a practice that only destroys forests and all that live in them.

Impacts of Environmental Degradation

When factories produce harmful chemicals and toxic waste into bodies of water, humans suffer. Pesticides and fertilizers can also get into a regions water system and pollute it. Drinking water is contaminated.

Some residing in third –world countries/Nigeria are highly affected by the degradation of our planet and these unhealthy practices cause the following Illnesses, Death in children, Death in adults (Ajugwo 2013).

Causes of Environmental Degradation

Environmental degradation and issues were not seriously considered in Nigeria officially, until the koko toxic waste – dumping episode of 1986. The Nigerian federal Environmental protection Agency (FEPA) now subsumed into the new Federal Ministry of Environment was created largely as a result of that unfortunate episode.(Akhionbare, 2013).

Most of the state governments have keyed into the FEPA by establishing their own Environmental agencies. Some of these states are Imo State Environmental Protection Agency (ISEPA), Rivers State Environmental Protection Agency (RISEPA), Delta State Environmental Protection Agency (DELSEPA) and other agencies like the Nigeria Conservation Foundation (NCF), the Environmental Rights Agenda (ERA) and the Niger Delta Environmental Survey (NDES).

The activities of these agencies are the provision of a healthy environment for the development of the quality of life of people in these areas. Outside Nigeria, environmental protection groups, have gone ahead to form political parties. The Green Peace Movement in Germany is in partnership with the social Democratic party government. The main objective of these groups is to protect the environment (Ovri and Ibe,1999). There are some environment factors in Nigeria that causes of oil spills in the Niger Delta of Nigeria. These oil spills have the following impacts on the environment:

- Pollution of air, surface and underground water, de-vegetation
- Soil degradation, fire outbreak resulting in facilities
- Impacts on aquatic life
- Loss of properties

These are some major causes of environmental degradation

- a. Oil spills b. Gas flaring

Oil spills

According to Akhionbare, (2013), oil spill arising from corrosion of pipelines and tankers (accounting for 50%of all spills), sabotage (28%) and oil production operations (21%), with 1% of the spills being accounted for by inadequate or non-functional production equipment.

Sabotage is performed primarily through what is known as “bunkering” whereby the saboteur attempts to tap the pipeline. In the process of extraction, sometimes the pipeline is damaged or destroyed. Sabotage and theft through oil siphoning have become a major issue in the Niger Delta states as well, contributing to further Environmental degradation.

Several factors such as corrosion (external and internal), production operations (equipment failure and production, human error, sabotage/theft and others) (engineering activities, drilling operations and natural disasters- rainfall, flooding, lightening etc) have been identified as the main causes of oil spills and corrosion is a main source of oil spills. About 810 incident of oil/gas pollution were recorded, spilling about 46,758 barrels (bbls) of oil into the Environment (Obobaifo et al, 1999).

Impact of oil spills:

✚ On the Environment

Crude oil, which is mainly the content of major spills in the oil and gas industry, is not biodegradable (i.e.) it cannot be decomposed by bacteria. When it is spilled, it contaminates a wide range of surface and sub-surface materials including soils, water, emission to the air, green house effects among others. The contamination of surface and underground waters affects the fertility of the soil thereby leading to low crop yields. The ingestion by biota often leads to the crude oil being introduced into the food chain (i.e.) animals and plants ingesting the crude oil and these plants and animals are eaten by higher animals (human).

Any oil dispersed into the Environment either in slick or dissolved and dispersed form could affect the marine life especially in shallow water. It kills fauna and floral especially fish and fish finger-lings in fish farm. Damages to mangroves vegetation and cultivated farms have been reported (Akhionbare, 2013).

✚ Emission to Air

The crude oil under pressure is a hazardous material and when it loses its containment either by corrosion or any of the causes mentioned several of the associated gases with the crude oil such as methane, ethane, propane, hydrogen sulphide, carbon-monoxide, carbon –dioxide, sulphur dioxide, nitrogen dioxide (nitrous oxide) and ammonia etc are released into the atmosphere thereby polluting the air. The ozone layer is adversely affected by the released green house gases.

The ozone layer is the blanket in the atmosphere that prevents the direct rays from the sun to the earth. The destruction of this layer is also linked to global warming (climate change) with the attendant increase in temperature rise and water level in the seas and oceans which is a major global environmental concern.

✚ Socio-economic Impact

The oil and gas industries are located within on/off shores, consequently the local inhabitants are mostly professional fishermen and farmers. The most oil spills due to corrosion by shell petroleum Development company of Nigeria Limited, Jones Creek around March 1998 and the Qua-Iboe terminal of Mobil producing Nigeria unlimited

have been reported. A number of states were affected including Edo, Rivers, Delta, Akwaibom, Bayelsa and Ondo States.

The livelihood 'portable' drinking water of the inhabitants was affected and their farm lands were also affected thereby reducing their yields and unemployment for the inhabitant. It was also reported that their fishing boats, nets and hooks etc were destroyed (Nwoko 1999 and Obobaifo 1999).

Health and Safety Impact

The presence of Ammonia (NH₃) and carbon monoxide (Co) affect the health and safety of the inhabitants while working in confined spaces. Gastro-intestinal disorders have been reported by the inhabitants as a result of spills due to corrosion. Respiratory problems due to the inhalation of spilled crude oil products have been reported, not yet verified.

Fire outbreak/loss of Properties

The Jesse fire disaster of the ruptured Nigerian National Petroleum co-operation (NNPC's) pipeline on 17th October, 1998 resulted in fire outbreak, several lives were lost and properties destroyed. The Odidi/Jones Creek fire outbreak of shell petroleum trunk line of 1998 in Delta State was accompanied with the destruction of assets, flora and Fauna, emission to air, discharges to surface and underground waters. The soil was also contaminated.

Management of Corrosion Wastes

The corrosion waste associated with the integrity management of pipe-lines has impacted negatively on the environment. Some of these wastes are generated by pipeline activities such pigging (routine), coating, excavation (use of natural resources), cathodic protection and corrosion descaling. Some of these wastes have associated water and the discharge/effluents to the environment have been found to be detrimental. Discharges to the environment above the allowable limits have been recorded by the regulatory bodies (FEPA, ISEPA etc). It should be noted that most oil producing companies have a well designed corrosion waste management plan in place.

Gas flaring- Also known as flare Stack

This involves the burning of natural gases by the refining industry. Natural gases like propane and butane on combustion yield carbon (iv) oxide and water vapour. A simple calculation of the annual mass of CO₂ emitted by combustion shows that the change in CO₂ concentrations in the atmosphere is due to combustion and represents about one half of the emitted fossil fuel CO₂.

Gas flaring is generally discouraged as it releases toxic components into the atmosphere and contributes to climate change. Nigeria flares more natural gas associated with oil extraction than any other country; with estimates suggesting that of the 3.5

billion cubic feet (100,000,000m³) of associated gas produced annually, 2.5 billion cubic feet (70,000,000M³) or about 70% is wasted via flaring (Friends of the Earth, 2004).

Impacts of Gas Flaring

Gas flares have potential harmful effects on the health and livelihood of the communities in their vicinity. It also causes acid rain which corrodes homes and other local structures, many of which have zinc- based roofing as they release a variety of poisonous chemical substances into the environment. Extensively the environmental implications are as follows.

✚ **Climate Change-** Gas flaring contributes to climate change, which has serious implications for both Nigeria and the rest of the world. The burning of fossil fuel mainly coal, oil, gas –green house gases – has led to warming up the world and is projected to get much. Climate change is particularly serious for developing countries and Africa as a continent is regarded as highly vulnerable with limited ability to adapt. Gas flaring contributes to climate change by emission of carbon dioxide, the main green house gas.

Venting of the gas without burning, a practice for which flaring seems often to be treated as a synonym, releases methane, the second main green house gas. Together and crudely, these gases make up about 80% of global warming to date. (Ajugwo, 2013)

✚ **Acid Rain-** It has been linked to the activities of gas flaring. Corrugated roofs in the Delta region have been corroded by the composition of the rain that falls as a result of flaring. The primary causes of acid rain are emissions of sulphur dioxide (SO₂) and Nitrogen oxides (NO) which combine with atmospheric moisture to form sulphuric acid and nitric acid respectively. Size and environmental philosophy in the industry have very strong positive impact on the gas –flaring related CO₂ emission. Acid rain acidifies lakes and streams and damages vegetation.

In addition, acid rain accelerates the decay of building materials and paints. Prior to falling to the earth, SO₂ and NO₂ gases and their particulate matter derivatives, sulphates and nitrates, contribute to visibility degradation and harm public health.

✚ **Agriculture:** The flares associated with gas flaring give rise to atmospheric contaminants. These include oxide of Nitrogen, carbon and sulphur (NO₂, CO₂, CO, SO₂), particulate matter, hydrocarbons and ash, photochemical oxidants and Hydrogen sulphide (H₂S).

These contaminants acidify the soil, hence depleting soil nutrient. Previous studies have shown that the nutritional value of crops within such vicinity are reduced. In some cases, there is no vegetation in the areas surrounding the flare due partly to the tremendous heat that is produced and acid nature of soil PH.

The effects of the changes in temperature on crops include stunted growth, scotched plants and such other effects as withered young crops. Reference concluded that the soils of the study area are fast losing their fertility and capacity for sustainable agriculture due to the acidification of the soils by the various pollutants associated with gas flaring in the area.

Health Implications

✚ **Adverse Effects-** The implication of gas flaring on human health are all related to the exposure of those hazardous air pollutants emitted during incomplete combustion of gas flare. These pollutants are associated with a variety of adverse health impacts including cancer, neurological, reproductive and developmental effects. Deformities in children, lung damage and skin problems have also been reported implications.

✚ **Hematological Effects:** Hydrocarbon compounds are known to cause some adverse changes in hematological parameters. These changes affect blood and blood- forming cells negatively and can give rise to anaemia, leukemia etc.

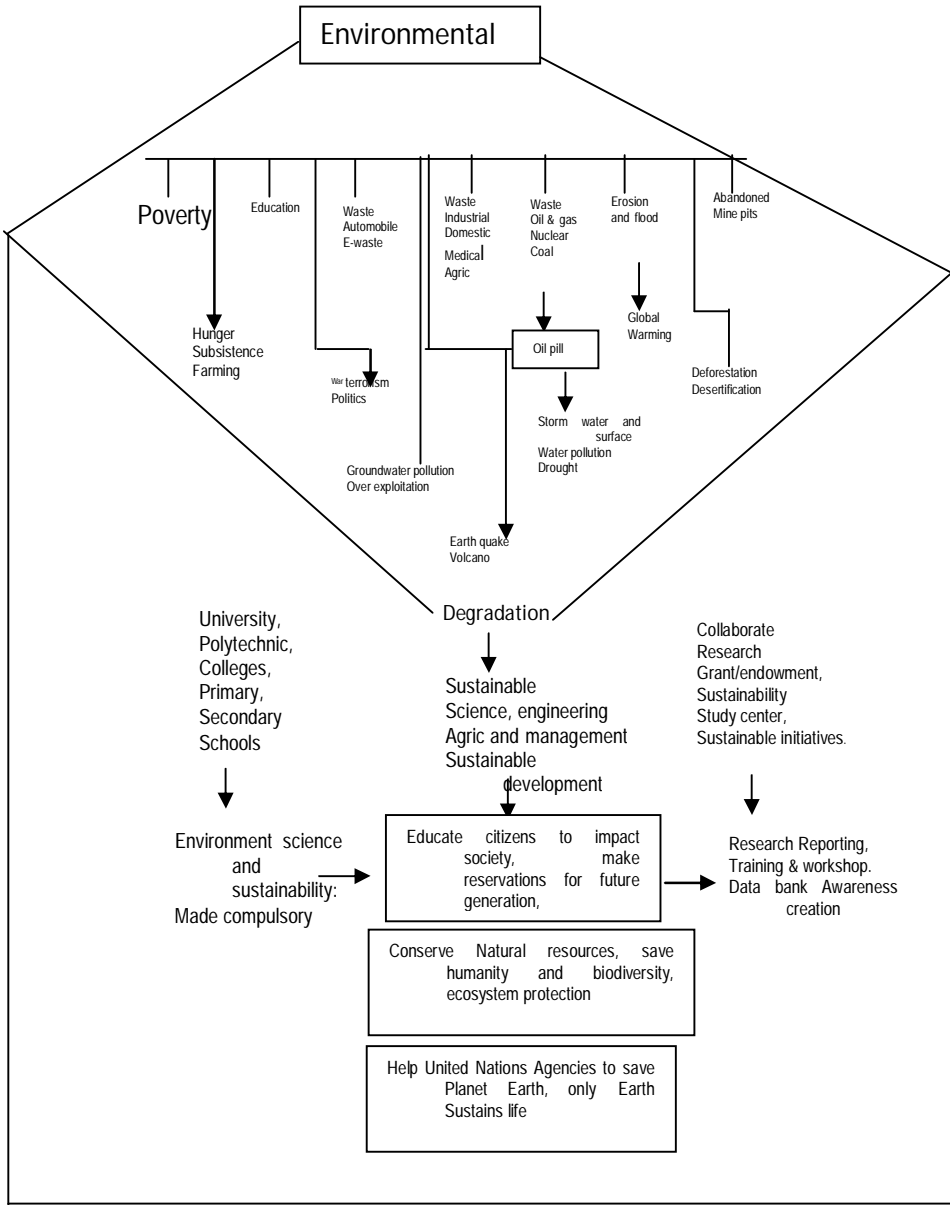
Other Effects

✚ **Economic Loss:** Aside from the health and environmental consequences of gas flaring, the nation also loses billions of dollars' worth of gas which is literally burnt off daily in the atmosphere.

✚ **Pollution:** Drilling mud and oil sometimes find their way to the streams, surface waters and land thus making them neither unfit for consumption nor habitable by man or animals.

Efforts to curb environmental degradation as a result of business activities

Environmental Awareness Wall Chart



The wall chart is a pictorial representation of activities of different business ventures and activities affecting the environment and thereby causing Environmental degradation. The manual of environmental education is a guide to individuals who have passed the stages of education as the case may be.

Environmental education Stakeholders in Alberta Canada defined Environmental education as the education that helps children and adults develop knowledge, values, skills and behaviours that help them meet present-day needs without compromising the well-being of future generation. Their definition saw environmental education as education for sustainable development.

In their second definition, they saw Environmental education as learning process that:

- ✚ Increase people's knowledge and awareness about the environment and associated challenges.

- ✚ Develops the necessary skills and expertise to address these challenges.

- ✚ Fosters attitudes, motivation and commitment to make informed decisions and take responsible action about business ventures and environment.

It is important that a holistic approach be used to teach environmental education to balance business activities which bring about environmental education in colleges, secondary and primary schools because of the late entry into the system of education. The staff of different business ventures needs to be informed on the essential needs of environmental education to help minimize or otherwise stop environmental degradation as a result of their activities on the environment.

How to use the wall chart

- ✚ **In public places** – The wall chart would be hung on the wall where it will be conspicuous with proper illumination. In the case of offices and business environments, place the manual on a stool or a table beside the wall chart. The manual would be a leaflet.

- ✚ **In primary Schools-** The wall chart shall be displayed at appropriate wall location in each classroom of the concerned grade/class.

- ✚ **In secondary schools** – It shall be introduced as environmental studies, education or science. At this level, the concepts of sustainability studies could be explained with respect to business, science and others.

- ✚ **In Higher institution** – The wall charts could be displayed in lecture theatres, hostels, offices, campus restaurants.

These wall charts and manuals of Environmental education creates awareness for individuals, business ventures and others involved in controlling their abuse of the environment with either goods or services which helps in curbing or alleviating entirely the issues and problems of environmental degradation. The process of Environmental

education would provide handy approach to Environmental protection for safety living for human, animal, land and air.

Conclusions

The idea of environmental technologists and business owners in this paper is to critically proffer solutions to the activities of business enterprise on goods and services which cause great damage on the environment otherwise called environmental degradation. It is said that cleanliness is next to godliness. Cleanliness here refers to the ability of business ventures to protect the environment from degrading and causing the loss of different body that exist in the environment like biodiversity, ecosystem, air, water, land (produce from the farm) and so on.






Environmental degradation is a major source of decay in the society. It is a threat to human life and other surrounding environment. The wall chart described gives awareness creation that a total destruction of the earth similar to the biblical great flood is imminent if the present rate of environmental degradation caused by different business activities is allowed to continue hence the introduction of environmental education.

There is need to control business activities that cause environmental degradation. On the other hand, thorough environmental impact assessment must be carried out in an environment before carrying out a project or business in the environment in order to reduce environmental degradation.

Recommendations

The different arms of government should be objective to matters concerning their environment and the activities of business enterprises, should be monitored and checked regularly to bring a balance in their activities.

These are the recommendations.

-  Thorough environmental impact assessment must be carried out on a proposed site before a project or business activity is allowed to take place.
-  The government must have a monitoring body set out to monitor the quality control and assurance section of every organization. This is done to reduce the production of products that would become waste as a result of not meeting the standard of production thereby causing environmental degradation.
-  Every business venture must make use of authorized methods of waste disposal to control environmental degradation.
-  Government should provide and fund environmental protection agencies to enhance the environmental protection of the environment.
-  Automobile repair works in different cities must be confined to mechanic villages. This will stop the habit of disposing spent automobile oil on the ground, which results in excessive trace metal pollution of topsoil and insecurity of food products in the affected areas.

- ✚ Government should promulgate laws to fight against issues of bunkering (sabotage) of oil pipelines which is major source of oil spills. Government should also see to it that those laws are adhered to strictly and culprits severely punished
- ✚ FEPA and other protection agency bodies should enforce the laws under their acts of implementation.
- ✚ Government should also use laws to monitor companies that are involved in the flaring of gas.

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