

## Prospects of Petroleum Exploration and Local Community Environmental Education in the Albertine Graben, Western Uganda

<sup>1</sup>Muhammod Nabalegwa and <sup>2</sup>Mukadasi Buyinza

<sup>1</sup>Department of Environmental Geography, Kyambogo University,  
P.O. Box 1 Kyambogo, Uganda

<sup>2</sup>Forestry and Nature Conservation, Makerere University,  
P.O. Box 7062 Kampala, Uganda

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**Abstract:** This study attempts to increase public awareness between environment and development and involve all concerned in an effort to check pollution caused by petroleum exploration. In order to make a good research, few hypotheses were formulated. Gas flaring has undoubtedly played a role in the degeneration of the environment. Plants and animals do not benefit from petroleum exploration due to spills and there is loss of petroleum nutrients, diminution of cultivable lands and low economic development despite petroleum exploration. The sample area consists of those communities in the Albertine rift where major petroleum activities take place. These are Hoima, Masindi and Arua. The data are collected through the use of questionnaire and such are analyzed using frequencies and percentages. From the data analysis, findings were made and conclusions drawn.

**Key words:** Environment education, petroleum exploration, plants and animals, communities, economic development, Uganda

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### INTRODUCTION

For thousands of years, man has lived in harmony with the environment and respecting the ecological laws of nature. The earth in turn offers man protection, survival and hope but with the scientific and technological breakthrough which followed the advances in knowledge, man invaded seas once believed to be inexhaustible and even reached out to the remotest part of the. The impenetrable tropical rainforest jungles for example bowed before him.

As technology and increased knowledge fell into man's hand, great arsenals for the exploitation of the natural resources and the eventual transformation of some into useful products, the natural laws of conserving the ecology became increasingly transgressed. Thus, blinded by the greed on one hand and compelled by population pressure on another, man began to exploit the environment beyond its carrying capacity.

What followed have been increase incidents of erosion, desertification and degradation of agricultural lands and pollution of air, land, rivers, seas and oceans. The relationship between environment, education and petroleum exploration in the society cannot be over emphasized. Environmental educational also entails

practice in decision-making and self-formation of a code of behavior about issues concerning environmental quality. It enlightens the members of the society about their immediate environment, a globe, eco-system, climatic condition, contaminating agents, natural resources of sustainability, preservation of the seas and forest, etc. and maintaining a balanced environment based on the principle of stability, conservation, recycling the concept of global inter-dependence and to preserve the environment for all future generation.

For the hazards of petroleum exploration they are man-made problems which exist today mainly as a result of the careless indifference of the petroleum companies. Environmental Education postulates the way to control the environmental pollution caused by petroleum exploration. That is why Kaaiba Declaration (1998)'s noted specifically that: the unbating damage done to the fragile natural environment and to the health of the people is due in the main to uncontrolled exploration and exploitation of crude petroleum and natural gas which has led to numerous petroleum spillages, uncontrolled gas flaring.

Despite assurances to the contrary, serious attention has not been given to the problem of petroleum spillages and gas flaring as a result of not teaching the people on how to cope with environmental hazards.

Many geographers, environmental scientist and educationists have taken time to study environmental problems in many petroleum communities in Nigeria and have suggested solution to the problems, non has made any effort to study that of petroleum exploration in Oguta and other petroleum communities have the same environmental problems and so should be expected to suffer the same geological and ecological disturbances.

In this study, the writer intends to identify that the problem of saving the environment of Oguta LGA from pollution and degradation is a serious one and therefore, needs great attention of both the government and the resident petroleum companies as this will investigate and ascertain the true position of the factors that cause environmental problems in petroleum exploration and how far these have affected the socio-economic status and the lives of the inhabitants. For effective investigation of this study, the following hypotheses are postulated:

- Gas flaring has not undoubtedly played a role in the degradation of the environment
- There is not low economic development in the areas of Oguta LGA despite petroleum exploration
- Terrestrial and aquatic lives do not benefit from petroleum exploration due to spills

## **MATERIALS AND METHODS**

The area is Oguta LGA of Imo State which is one of 27 LGA's in the state. It was created out from the pre-existing Ohaji/Egbema/Oguta LGA lies between Lat. 5.30° and 5.45° North and Longitude 6.45° and 6.50° East of the Greenwich Meridian. Remarkable features in Oguta LGA are lake which divides Oguta into 111 and the flood plains of the Urashi river where most of the petroleum exploration takes place. Some of the communities include Egbuoma, Egwe, Awa, Akabor, Agwa, Izombe, Ejemekuru and Orsu-Obodo, Ezi-orsu, Nkwesi, Nebukwu, etc. under geology and the areas lies within the quaternary period and coastal plain sands which is part of the Niger delta plain sands.

According to Ndwadiaro (1986), human activity and development whether social, economic, industrial or sometimes cultural must go in one or all the components categorized into air, land and water are tried to each other in a cycle. The physical, chemical and biological features in the Nigeria's lower Delta, pose a Herculean tasks to environmentalists who must acquire broad and multidisciplinary expertise to face the challenges.

**Education and environment:** The issue of environmental Education has become a wide one as the world is almost

flustered with a degraded ecosystem. It has become obvious that ignorance to consequence of the weight which human activities bear on the environment could be the undoing of the future generation.

The Stockholm Conference on the Human Environment mandated the organization of the United Nation System, especially UNESCO (United Nations Educational and Scientific Cultural Organization) to step out and establish an International programme in Environmental Education (IEED). Shortly after this, the Belgrade Charter on the global framework for Environmental Education was signed in 1975. The charter summarized the objectives of Environmental Education as a means to help individuals and social groups acquire awareness of response to the total environment and allied problems. With the tempo thus excited, issues on Environmental Education reverberated again at the world international conference held in Tbilisi in former USSR in 1977. There it was said that the goal of Environmental Education as adopted by the conference is to develop a citizenry that is aware of and concerned about the total environment and its associated problems which has the knowledge, attitudes, motivations, commitments and skills to research individually and collectively towards solutions of current problems and the prevention of new ones.

Obodo in his study summarized the guidelines for development of non-formal Environmental Education. He suggested the use of TV, radio, etc. to sensitize the general public to environmental issues, raise the level of environmental ethics while providing some entertainment. Oluwande (1997) defined pollution as the contamination of human and animal environment through discharge of sewage and other organic substance by industries and man. Robinson (1978) noted that man has modified and destroyed the natural ecosystem in many ways, one of which is the spillage of liquid materials for instance petroleum on the land resources such as crops, forests resources, water and air.

Odu contends that the various activities of petroleum industries have some effects on the environment including destruction of vegetation, continuous presence of light, heat, noise and in some cases soothing emission from flares, petroleum pollution of the environment through the accidental blow out of petroleum pipelines, leaks, etc.

News watch magazine agreed that the many towns and villages in the country have suffered adversely from all forms of pollution which resulted to a variety of water borne diseases and such pollution affects crops. Anidegbe (1992) said, petroleum-bearing areas are becoming very sensitive about environmental calamities

that they are exposed to such as the incidence of acid rain and depreciation in quality of aquatic and marine life. In addition, the spillage affected the socio-economic lives of the people such as loss of farmlands, cash crops, economic tress, fishing grounds and homes.

Having reviewed other people's ideas on petroleum exploration and its impact in degrading the environment, one can say that apart from petroleum spillage, there are damages inflicted on the petroleum producing areas. A number of farmlands have disappeared because of erosion resulting from drilling of petroleum from the petroleum bowels. Nwabuze, Director of GACK, summarized by nothing that the most objectionable of the afflictions suffered by the people of Niger Delta is environmental degradation coupled with feelings of mistrust and collaboration between the Nigerian state and the petroleum companies in degrading the environment.

## RESULTS

The hypotheses posed earlier in this study have to be analyzed based on the responses of the respondents in the questionnaire.

**Hypothesis 1:** Gas flaring has undoubtedly not played any role in the degradation of the environment. The responses indicated that 67% of the 100 questionnaires distributed believed that most of the health and environmental problems encountered in the study area due to gas being flared by the companies while 33% responded negatively (Table 1).

**Hypothesis II:** Terrestrial and aquatic lives do not benefit from petroleum exploration due to spills. Table 2 indicates that out of 100 questionnaires distributed, 55% of the subjects responded positively. Since, the inception of petroleum exploration in Oguta LGA there has been a decrease in the vegetal cover of the area and that most animals especially the wild ones have disappeared due to consistent noise and bush clearings. It is also observed that the absence of most aquatic lives is as a result of spills in the rivers and lake.

**Hypothesis III:** The socio-economic development is not low despite the petroleum exploration. Table 3 shows that though there is provision of social amenities in Oguta LGA. They are not properly maintained as they are supposed to be in petroleum producing areas. The 52% of the subjects responded positively while 48% responded negatively.

Table 1: How gas flaring degrades the environment

Alternatives	Responses	Percentage
Yes	67	67
No	33	33
Total	100	100

Table 2: Plants and animal lives in relation to petroleum exploration

Alternatives	Responses	Percentage
Yes	55	55
No	45	45
Total	100	100

Table 3: Socio-economic development and petroleum exploration

Alternative	Responses	Percentage
Yes	52	52
No	48	48
Total	100	100

## DISCUSSION

The crisis which have bedeviled the petroleum producing communities of the Niger Delta have almost obscured some all-pervasive problems which are likely to become major issues militating against future development in the area. Environment problems have become so overwhelming in the area that the Federal Government Agencies, state governments and major petroleum companies, operating in the area appear to be reluctant to face up the task of dealing with them.

The quality of life in the petroleum producing areas has deteriorated and almost destroyed, especially in the marine communities by the unhealthy and virulent increase in pollution caused by the petroleum industry.

From the tables, it is discovered that the greater percentage of the people of Oguta LGA responded positively that gas flaring is associated with different problems like health, settlement, pollution, etc. The population is sparse due to the emission of the dangerous gases like carbon monoxide, sulphur dioxide, methane and other hydrocarbons in the atmosphere. The smoke from these gases cause atmospheric pollution, deplete the ozone layer and corrodes iron materials. The use of polluted and acidified water causes skin babies, eye cataracts an even miscarriage.

Petroleum spillage has led to the reduction in the biomass and diversity of the main fauna and flora of the area. It is discovered that most of the rivers and swamps in the area have been totally condemned for use as result of constant spills which blankets the surface thereby choking fishes and other aquatic lives to death.

The once evergreen and tropical rainforest has witnessed great massacre from clearings, cuttings, diggings and other exploitative activities by petroleum companies and these have given rise to derived Savanna

in the tropical rainforest region. The land is now prone to landslides, erosion, floods etc. This is why Odu in his research lamented that various activities of petroleum industries have some effects on the environment such as destruction of vegetation, continuous presence of light, heat, noise from flares, petroleum pollution through accidental blow out of petroleum pipelines, leaks, etc.

Many traditional customs and habits in Oguta LGA have been rendered impotent because of the high petroleum waste in the water upon which they depend on. Such customs include occupations like fishing, farming, children's games, the ceremonies of older age groups, river god's worships, riverside bathing especially for the women folk. The noisy machinery employed in petroleum exploration coupled with external fire resulting from the burning of gas which external fire resulting from the burning of gas which illuminates the forests day and night scare animals and they relocate.

In the area of socio-economic development of Oguta LGA, the petroleum companies in Oguta are not making any impact in the development of the area. They have neither built new schools nor renovated the existing ones. In the areas of employment and job opportunities, the people are not treated fairly as they supposed to. Majorities of the semi-skilled workers who are the indigenes are employed as gatemen, cleaners and drivers or in other menial jobs that are available.

In the area of social amenities they are not adequate. While some communities have water, electricity, schools, hospitals, etc., others do not have and those provided are not maintained.

### **CONCLUSION**

From the findings it is evident that with Environmental Education to the indigenes of Oguta LGA

the people will have adequate knowledge of their surroundings and be better equipped to handle their problems. The petroleum companies and people will be able to manage, preserve and conserve the environment properly because a proper management of environment is the catalyst needed for the take-off of development in any nation, state and community.

### **RECOMMENDATIONS**

The petroleum companies in Oguta should minimize the burning/flaring of natural gas and device alternative use of the flared gas for industrial and domestic purposes. The government should embark on Environmental Impact Assessment (EIA) program to check the exploitative tendencies of the petroleum companies. This will help to monitor them and curtail spills and excessive flaring and excessive degradation of the rainforest.

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