



Climate Change and Economic Growth in Niger Delta Region.

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Abstract

In this study, the impact of climate change and economic growth in the Niger Delta region. The specific objectives focused on the effects of crude oil, gas exploration and production, illegal refining of crude oil and negatively impact on the livelihood and environmental pollution in the area. The data required for the study were sourced using sampling technique through the use of a structured questionnaire to source for primary data from respondents in some area with Port Harcourt and Obio Apkor local government area. Likert's scale attitudinal techniques were used to analyzed the data collected which agrees with 3.0 as the acceptance value. From the result is shows that crude oil exploration and production is responsible for the climate change in the Niger Delta and also legal, illegal buking and refining of crude oil is the major cause of low economic growth in the Niger Delta region. Therefore, the study recommend that the entire farm lands of the Niger delta region should be total clean up, zero gas flaring should be enforced by the Nigeria Government and monetary compensation should be paid to the Niger Delta people.

Keyword: Climate Change, economic growth, exploration, crude oil, environmental pollution.

Introduction

A thought about the oil and gas industry in Nigeria bring to mind how the sector emerged as the mainstay of the nation's economy after its discovery at Oloibiri in 1959. Since then the industry has graduated from just being an alternative to become the main source of revenue generation for the nation after relegating other renewable agricultural produce to the background. Obviously, this is owing to the fact that the industry engages in the exploration, extraction, refining, transportation and marketing of petroleum products. The largest volume of this industry is fuel oil and gasoline. The petroleum (oil) is also the raw materials for many chemical products, including pharmaceuticals, solvents, fertilizers, pesticides, synthetic fragrances and plastic (Faycal & Huettner, 2000). The extreme monetary value of the oil and its products has earned it a nickname as "black gold" and the industry is usually divided into three major components: upstream, midstream and the downstream. Primarily, before the era of oil exploration and production in Nigeria, the economic mainstay of the people was agriculture. Every region in Nigeria was associated with different farm produce such as, groundnut and yam in northern area, cocoa in the west, rice in the east, cassava farming and fishing in the south. The Niger delta area is located along the coastal part of the country and it is often referred to as the south, south region. It includes, Edo, Delta, Bayelsa, Rivers, Akwa Ibom, Ondo and Calabar states. It covers approximately 36,000 square kilometres. In the cause of these crude oil exploration, farming and fishing activities, has been relegated, the environment generally was directly impacted upon through spills and other forms of contamination of the soil, atmosphere and water. Also, cutting down trees, bush burning, tilling of soil and fishing with chemical

impacted on the environment. All these human interactions with the environment exposes the atmospheric conditions. This has negatively impacted on the climate over time, however, the farming and fishing activities by the local farmers and fishermen has insignificant impact on the environment as compared to the industrial activities especially the oil and gas exploration and production in the area. According to Wikimedia, Agriculture contributes towards climate change through anthropogenic greenhouse gas emissions and by the conversion of non-agricultural land such as forest into agricultural land (Luck, Spackman, Freeman, Trebicki, Griffiths, Finlay & Chakraborty, 2011). In 2010, agriculture, forestry and land-use change were estimated to contribute 20–25% of global annual emissions. In 2020, the [European Union's Scientific Advice Mechanism](#) estimated that the food system as a whole contributed 37% of total greenhouse gas emissions, and that this figure was on course to increase by 30–40% by 2050 due to population growth and dietary change (Luck, et al, 2011). Unfortunately, in recent times the prevalent cause of atmospheric pollution around the Niger Delta is the illegal crude oil bulking and refining activities (popularly known as kpo-fire). This has become one of most hazardous activities in the Niger Delta area which is causing soot harming the environment and causing various sickness to the people of the area. Also, illegal dumping of hazardous and chemical waste generated from the oil and gas exploration and production companies into the area. Crude oil exploration in the Niger delta, is the major industrial activities in the Niger delta states and it is also the major contributor to the Nigeria economy which contributes over 90% of the total Nigeria revenue.

Consequently, the Niger Delta area now suffers environmental degradation, loss of aquatic life, loss of farm plantations. As a result of this environmental challenges, the area is characterized by poverty, unemployment, and low economic growth (Obeta, 2014). This prompted the need for a study of this nature to ascertain the nexus between environmental pollution and climate change using the prevailing environmental challenges faced in the Niger Delta. Therefore, these study objectives are as follows:

- i. To examine the effects of crude oil exploration activities in Niger Delta
- ii. To determine the effects of environmental pollution on the economic growth in the Niger Delta
- iii. To examine the effects of illegal crude oil bulking on the economic livelihood in the Niger Delta.

Literature Review

Theoretical Framework

Environmental Impact Assessment (EIA) is a tool used for decision making in projects, developments and programmes (Nwafor, 2007). It may be defined as a formal process used to predict the environmental consequences of any development project (Njoku, 2006). EIA tries to ensure that potential problems are foreseen and addressed at an early stage in the project's planning and design. EIA is also intended to identify the environmental, social and economic impacts of a proposed development prior to final decision making (McGuigan, Reynolds & Wiedmer, 2002).

Historical background of EIA worldwide

EIA systems have been developing globally since the late 1960s when EIA was first given legal status through the 1969 United States National Environmental Policy Act (NEPA) (Ozor, 2009). NEPA requires EIA for federally funded or supported projects in the US that were likely to have environmental effects, and has become an important model for other EIA systems internationally. Since then many countries have also adopted formal EIA beginning with Canada (1973), Australia (1974), West Germany

(1975), and France (1976) (Odjogo, 2005). The Federal Government of Nigeria enacted the Environmental Impact Assessment (EIA) Act No. 86 of 1992 as a demonstration of their commitment to the Rio Declaration. Prior to the enactment of the EIA Act in Nigeria, project appraisals were limited predominantly to feasibility studies and economic-cost-benefit analysis. Most of these appraisals did not take environmental costs, public opinion, and social and environmental impacts of development projects into consideration (Mendelson, Dinar, Hasan & Kurukulasuriya, 2009).

Nature and scope of EIA in Nigeria

The Niger Delta of Nigeria is the richest part of the country in terms of natural resources; however, the environment is not well studied or understood as pointed out by numerous researchers such as Onuoha (2008). In spite of the Delta's riches, and its immense potential for economic growth and sustainable development, the region is, and continues to remain, an unstable state. It is under increasing threat from rapidly deteriorating economic conditions and social tensions, which have remained largely unaddressed by current and past policies.

Conceptual Framework

Onuoha (2009) examined the threats posed by climate change across the globe with particular reference to developing countries, where agriculture is a dominant sector and in turn depends on weather and climate.

Methodology

This research tends to look at the effects associated with the climate change on the economic growth in the Niger delta states. This chapter is aimed at discussing the process of arriving at solutions to these studies through a systematic way of data collection and analysis procedure. The population of the study, sampling techniques and size will be categorized (in order to obtain faster results than a complete coverage of the population). As well as the data collection instruments used for this research work. The Population of the study comprises of any adult citizen living in any of the Niger Delta state and any adult non-citizen residence in the Niger delta state. A total of seventy (70) respondents were randomly selected within Port Harcourt and its environs were used for the research. To arrive at the study samples the cluster probability sampling technique was used to select the respondents. Port Harcourt was divided into two zones i.e. old Port Harcourt town area (Which includes Aggry road and borokiri) and the second part of Port Harcourt (which includes Rumuobiokani, Rumuomasi, and woji). In each of the town, fourteen (14) respondents were selected. A structured 5 point Likert scale questionnaire was used to collect primary data for this study. The responses options are weighted i.e. Strong agree (5points) agree (4point) undecided (3point) disagree (2point) strongly disagree (1point). The mean and median of the likert's scale was be used to evaluate the responses of the individual to the questions. A mean score was being chosen; any score below mean score or mark was being unaccepted. This model was chosen for simple interpretation and analysis of data under normative approach.

Data Analysis

Table 4.1: Activities of the crude oil production is responsible for climate change in the Niger Delta?

Scale	Frequency (<i>f</i>)	<i>fx</i>
5	43	215
4	21	84
3	2	6
2	1	2
1	3	3
Total		310

$$\begin{aligned}\sum fx &= 310 \\ N &= 70 \\ \mu &= 310/70 = 4.42\end{aligned}$$

The mean score is above the cut-off point which is 3.0 this means it acceptable that crude exploration and production is responsible for the climate change in the Niger Delta.

Table 4.2: operation of the Illegal crude oil Bulking and refining is responsible air, soil and water pollution in the Niger delta?

Scale	Frequency (<i>f</i>)	<i>fx</i>
5	40	200
4	25	100
3	5	24
2	0	0
1	0	0
Total		324

$$\begin{aligned}\sum fx &= 324 \\ N &= 70 \\ \mu &= 324/70 = 4.62\end{aligned}$$

This means that illegal crude oil bulking and refining causes water, oil and air pollution in Niger delta.

Table 4.3: crude oil production legal/illegal is responsible for low economic growth in the Niger delta?

Scale	Frequency (f)	fx
5	60	300
4	8	32
3	1	3
2	1	2
1	0	0
Total		335

$$\begin{aligned}\sum fx &= 335 \\ N &= 70 \\ \mu &= 335/70 = 4.78\end{aligned}$$

This indicates that crude oil activities legal and illegal are the reason for low economic growth in the Niger delta.

Table 4.4: Burning of bushes and tilling of soil for farm cultivation contribute to climate change?

Scale	Frequency (f)	fx
5	5	25
4	5	20
3	10	30
2	20	40
1	30	30
Total		145

$$\begin{aligned}\sum fx &= 145 \\ N &= 70 \\ \mu &= 145/70 = 2.07\end{aligned}$$

This shows that the local farming does not contribute to the climate change.

Table 4.5: economic growth in Niger delta has a positive economic growth

scale	Frequency (<i>f</i>)	<i>fx</i>
5	10	50
4	22	88
3	5	15
2	13	26
1	20	20
Total		199

$$\sum fx = 199$$

$$N = 70$$

$$\mu = 199/70 = 2.8$$

This shows under economic growth in the Niger delta.

A total of 70 questionnaires was sampled to different responders with the city of Port Harcourt to represent the entire Niger Delta which comprises of Rivers, Delta, Bayelsa, Cross Rivers, Edo and Akwaibom states. However, for the purpose of this research, Imo, Abia and Ondo state which are Parts of the oil producing states were not considered. Liker's scale was used for the analysis of the data which was generated through the administration of questionnaire. The null hypothesis H_0 was set at 3.0 and above while the H_1 is 2.9 and below. Table 4.1 shows that the climate change in the Niger delta is as a result of the crude oil and gas exploration, production and refining. So also table 4.2 agree that illegal crude bulking, is the major cause of water, soil and air pollution. This is due to the inability to control their operation in more conducive ways. In table shows that the under economic growth in the Niger delta, it is due to the effects of the crude oil exploration and extraction whereby, the farm lands and rivers which are the mainstay of the region have been destroyed. Therefore, the lands are no longer good for farming, the fishes in the rivers are been killed with toxic pollution. In table 4.4 shows that bush burning, tilling of soil does not significantly affect the ozone layer, therefore, does not affect the climate change. The reason is that they are local farmer and local fishermen.

Conclusion and Recommendations The study indicates that the crude oil exploration, production and refining which contribute 90 percent of the Nigeria revenue, it also a source of under economic growth in the Niger Delta region. The industrial activities of the crude oil have also cause other infects like excess flooding and excess weather temperature. This also contribute to the under economic growth of the people and the recommendation proposed through this study are:

1. The entire farm lands of the Niger delta region should be total clean up.
2. Zero gas flaring should be enforced by the Nigeria Government.
3. Monetary compensation should be paid to the Niger Delta people.

References

- Fayçal, O. & Huettner, D. (2000). Opec and other commodity cartels: a comparison. *Energy Policy*, 28(15), 1151–1164.
- Luck, J., Spackman, M., Freeman, A., Trebicki, P., Griffiths, W., Finlay, K., & Chakraborty, S. (2011). Climate change and diseases of food crops. *Plant Pathology British Society for Plant Pathology (Wiley-Blackwell)*, 60 (1), 113–121.
- Mcguigan, C., Reynolds, R. & Wiedmer, D. (2002). *Poverty and climate change: Assessing impacts in developing countries and the initiatives of the international community*. London: School of Economics Consultancy Project for the Overseas Development Institute.
- Mendelsohn, S. N., Dinar, R., Hassan, A. & Kurukulasuriya, P. (2009). A Ricardian analysis of the distribution of climate change impacts on agriculture across agro-ecological zones in Africa. *Environmental and Resource Economics*, 43, 313-332.
- Nwafor, J. C. (2007). *Global climate change: The driver of multiple causes of food insecurity in Sub Saharan Africa*. Awka: Nnamdi Azikiwe University.
- Njoku, J. D. (2006). Analysis of the effect of global warming on forests of southeastern Nigeria using remotely-sensed data. Unpublished PhD Dissertation, Department of Geography and Environmental Management. Owerri: Imo State University.
- Nwafor, J. C. (2007). Global climate change: The driver of multiple causes of food insecurity in Sub Saharan Africa. Paper Presented at the International Conference on Climate Change and Economic Sustainability.
- Obeta, M. C. (2014). Review of studies on global warming and climate change in Nigeria. *IOSR Journal of Engineering*, 4(10): 19-27.
- Odjugo, P. A. O. (2005). An analysis of rainfall pattern in Nigeria. *Global Journal of Environmental Science*. 4(2), 139-145.
- Onuoha, C. M. (2008). Understanding climate change in Africa economies. *The Green Economist-International Journal of the Green Economics*, 3(2).
- Onuoha, C. M. (2009). Climate change and sustainable development in Nigeria: The mitigating role of green wall Sahara Nigeria programme. African Institute for Applied Economics (AIAE), Enugu Forum Policy Paper 10.
- Ozor, N. (2009), Implications of Climate Change for National Development - The Way Forward, African Institute for Applied Economics (AIAE), Enugu Forum Policy Paper 10. Seo,