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Climate Change and Coping Strategies in the Niger Delta

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Abstract:- This paper examined climate change and coping strategies in the Niger Delta, acknowledging that the Niger Delta is associated with carbon emissions arising from oil and gas activities. The paper adopted the Marxist theory of ecology as the theory guiding the study. Data for this study were generated primarily using Focus Group Discussion (FGD) and Key Informant Interview, whereas, the secondary data were generated from journal articles, books and book chapters and other relevant documentary evidences. The generated data was analyzed qualitatively. The paper found that there exist some measures of coping (like crop diversification) with the manifestations of climate change in the region. The paper therefore, recommends among other things that, the state should support and train local farmers in region with the right (modern) tools (local and international) and technology to cope with the challenge.

Keyword:- *Climate Change, Coping Strategies, Food Security, Niger Delta.*

I. INTRODUCTION

The world has in recent times beam her focus on the issue of climate change which have continued to ravage the regions of the world in verying ways. Its manifestation is such that the nations that emit more greenhouse gases into the atmosphere are not the ones who suffer the consequences most on the earth. Scholars have poisited that the African continent which is arguably one of the least emitting continents on the planet, is quite vulnerable to the manifestation of climate change (kifle, 2008; Tadasse, 2010).

The Niger Delta as a region is associated with carbon and carbon emissions as industrial activities, particularly as it concerns oil and gas exploration and exploitation and other associated activities which the region is known for takes place on a daily basis in the region. Formally, gases are flared unhindered in the delta as multinationals and other players in the oil and gas sector flare gas into the atmosphere, therefore contributing to climate change. Also, the region, post-amnesty, has remained a den of environmental terrorism as informal (illegal) artisonal refining activities have continued to thrive; hence, from this sector, carbon is burnt seriously and this contribute to the physical degradation of the natural environment,but also contrbutes to climate change.

As the climate changes globally and in the Niger Delta, the impact extends to every aspect of society, however, the impact ofclimate change on food secuirty is more as the region has been prone to unpredictable rainfalls, incessant floods due to rise in sea levels, and poor agricultural productivity. So whereas, as is the case in every society, the region is composed of both the rich and the poor and as such the impacts arising from climate change and food security do have varying implications on those of these two oppossing classes of the Niger Deltan society.

The existing planetary reality, particularly in Africa, shows the living state of the ordinary African as susceptible to the predicament of ecological changes. The livelihoods of most Africans have been interrupted, as the environment has since shown significant alteration from the usual. For instance, those in coastal vicinities whose livelihood rests on the aquatic lives around them are forced into looking for other basis of livelihood as the ascension in sea levels have had quite a negative consequence on the accessibility of sea foods.

II. THEORETICAL FRAMEWORK

This study adopts the Marxist theory of ecology as its guiding theory. The theory is a combination the ideas of Marxism and ecology, thus, a marriage of class relations, man and his environment. It is in opposition of the environment (nature) being treated as a ‘resource heaven’ dominated for personal and private profit in the world’s capitalist system.

Marx argued truly that man is a product of his environment; therefore, whatever the environment produces for man is a result of how it is managed by man (Foster, 2000). The Eco-Marxist theory is against the exploitation of the natural environment, rather its proponents insist on its respect and care.

It is an environmental critique of capitalism, a criticism of capitalist exploitation of the environment. They argue that, whereas, some form of growth is traceable to capitalism, the ecological unit and this growth are at opposite ends (Aswathy, et al., 2018). The theory draws from traditional ideas of

Marxism. Marx's idea of ecological crisis also known as the metabolic rift forms the foundation of this theory. The leading believers of this theory are Foster, O'Connor and Clark, among others.

The theory blames capitalism and the capitalist world for the global ecological challenges, therefore, arguing that capitalism lacks the capacity to be reformed along ecological lines (Konak, 2008). Like other theories of Marxism, the Marxist theory of ecology presents an alternative pathway to development.

The assertion by Marx on the expensive state of fresh air is the Niger Delta reality, as industries in the region terrorize the environment and people in a manner unknown to other parts of the world. The continuous emission of GHGs has created 'enmity' among man and nature. So, as the climate crisis continue to ravage, the Niger Delta is positioned on the 'victim's seat' because agriculture (the main occupation and basis of living to the populace) is threatened severely, thus, they are left to cope amidst the sad reality that not much is done to halt the continuous mess on the environment nor to ameliorate their plight.

III. REVIEW OF CLIMATE CHANGE

Whereas, science has established that the global climate is changing, world leaders, scientists, social movements and scholars tend to agree on its authenticity, as well as its enormous associated troubles. The subject-matter despite having attracted various positions from scholars and international organizations is bereft of a universally agreed definition, like various subjects, particularly contentious ones. For instance, three global organizations sees it differently, however with some level of similarities; they in summary see it as "(i) long-term changes in the average weather conditions (World Meteorological Organization usage); (ii) all changes in the climate system, including the drivers of change, the changes themselves and their effects (GCOS usage); or (iii) only human-induced changes in the climate system (UNFCCC usage)" (FAO, 2008, p. 8). The above shows how the subject has been portrayed with confusion and misunderstanding. Whereas, some scholars have a conglomeration of the above, these global organizations tend to stick to and adopt a segment of the focus. The biggest dilemma with it is that it does not respect who contributes what, because it does not ravage a nation based on the contributions or not of a people (Ibaba, 2012).

The summary of why changes in climatic condition have become prominent in academic discourses across disciplines and why global leaders are taking steps towards collectively managing the issue is because its consequences are weighty. Whereas, the cost of the subject is already the actuality of Africa, the projection of these worsening explains the limitation of Africa, Nigeria and indeed the Niger Delta.

Olaniyi, et al. (2014) simply looked at it as the augmentation in planetary temperature. They view that rise occurs via bio-geographical and anthropogenic actions. The UNFCCC however, discusses it much more from anthropogenic factors, because man's activities alters the global atmospheric make up (UNFCCC, 1992). Inherent in this position is the reality that despite the central role of man as the sole or major explanation for the internationally changing climate, the changes observed in the environment do not qualify as climate change except it is historical. Thus, not every environmental concern deserves to be attributed to climate change. An issue qualifies to, when it has howbeit been observed over a few decades. Two factors are liable for it; bio-geographical (natural) and anthropogenic (man-induced) factors (Okoye, 2014). However, this work will treat climate change mainly from the anthropogenic view.

The National Research Council (2012) observes that anthropogenic factors are the foremost causes of these changes, following secretion from the ignition of fossil fuel. Despite natural procedure for producing and consuming CO_2, mankind increased its emission into the air; mainly from exploiting various carbons like coal and oil, and burning them for energy, among various activities of man these are answerable for the rising trend of CO_2 release. Other greenhouse gases like methane have also been discharged into the ambiance.

IV. METHODS

Study Area

The study area is the Niger Delta. It is situated in Southern Nigeria's Atlantic Coast, where the River Niger partitions into tributaries. A landmass of 112,110 kilometers is occupied by the region, making it one of the largest deltas on the earth (Ibaba, 2012, 2017). Over 2,370 square kilometers of its landmass consists of creeks and rivers among others (Ibaba, 2017; Uyigue & Agho, 2007). It falls in the tropical rain forest.

The region encompasses nine states: Abia; Akwa Ibom; Bayelsa; Cross River, Delta; Edo; Imo; Ondo; and, Rivers States (Ibaba, 2012, 2017) and is quite sensitive ecologically and is an economic base of Nigeria, predominantly, the energy sector (Uyigue & Agho, 2007). The ethnic nations in the region among others are the Ijaw, Ogoni, Ikwerre, Ibibio, Annang, Ekpeye, Urhobo, Itshekiri, Isoko. The inhabitants of the Niger Delta based on the 2016 population projections by the National Population Commission (NPC) is 42,637,086 (NBS, 2018).

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Figure 3.1: Map of the Niger Delta
Source:https://www.google.com/search?q=map+of+south+south+Nigeria

Population of the Study

The entire inhabitants of the Niger Delta constitute the population of this study. The region is chosen because of the industrial activities that exacerbate climatic variations and flooding incidence. Also, most Niger Deltans are reside in villages and are occupied in agriculture, either as crop producers or as fish farmers. And the expressions of climate change affect their activities and source of revenue, and by extension threaten food security. According to the 2016 projections of the NPC, the people of the regions are 42,637,086 (NBS, 2018). The breakdown of each state's population is as shown in the table below:

Table 1: Population of the Niger Delta

S/No.	State	Population
1	Abia	3,727,347
2	Akwa Ibom	5,482,177
3	Bayelsa	2,277,961
4	Cross River	3,866,269
5	Delta	5,663,362
6	Edo	4,235,595
7	Imo	5,408,756
8	Ondo	4,671,695
9	Rivers	7,303,924
	Total	42,637,086

Source: NBS (2018).

Sample and Sampling Techniques

Out of the nine (9) Niger Delta states, two (2) states of Rivers and Bayelsa made up the sample of this study. The population of these states from the 2016 projections by NPC is 7,303,924 and 2,277,961 respectively (NBS, 2018). Adding the figure of these states brings the sample population to 9,581,320. Furthermore, the sampling techniques accepted for this study was the purposive sampling techniques. It was utilized for the Focus Group Discussion (FGD) and Key Informant Interview (KII). For the FGDs, Community Development Committee (CDC) members, youth leaders, women leaders, civil society members and peasant farmers for the FGD were purposively chosen. For the KII, an official from the Federal Ministry of Environment and two environmental right activists were chosen purposively for interviews. Two FGD sessions were held, one in each of the two states. Each session had twelve (12) participants chosen from the sample area. Whereas, the researcher purposively selected an interviewee from the Federal Ministry of Environment and two interviewees who are Environmental Right Activists.

Data collection and analysis

The study generated data primarily and secondarily. Primarily, data were sourced from FGD and KII. The secondary sources were journal articles, textbooks and book chapters and other relevant documentary sources. The generated data was analyzed qualitatively.

V. CLIMATE CHANGE AND COPING STRATEGIES IN THE NIGER DELTA

Climate change manifestations are real in the Niger Delta, as industrial activities and other anthropogenic factors like bush burning deforestation and poor waste management practices stands tall amongst its contributors. The region's environment is predominantly coastal and most of the inhabitants are rural dwellers, with farming as their major occupation, the people and the region's environment are not unaware of certain forms of changes in the farming sector and their overall environment. As a result, the people of the Niger Delta had taken steps towards the coping with the challenges associated with climate change.

The major and common problems of the people traceable to climate change connects with the unpredictable patterns in which rainfall had since assumed and rise in sea levels which is responsible for the continuous issues of flood that had since been associated with the region. In order to combat the above and other associated risks from climate change, indigenous communities in the Niger Delta have over the years attempted to build resilience against the challenge of these changes in the environment. Rudin and Garris (2012) hold that resilience is the capacity to pull through, yet boosting the capability of the community to survive potential stresses (Vincent-Akpu, 2020).

The people of the Niger Delta have been able to build some form of resilience against the ravaging challenges of climate change. Whilst the strength and sustainability of the coping strategies might be arguable, the reality of these existing strategies cannot be denied. Babatolu and Akinnubi (2016) argue that the following are some of the existing coping strategies in the Niger Delta:

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Dispersal Farming: rural farmers tend to farm in several farming locations rather than one. This is informed by the reality that rainfall might not be distributed evenly over an area. This option gives the farmer the probability of not losing all the crops should the rain fail in some areas

Intercropping: through this method, rural farmers in the Niger Delta could plant several crops on the same farmland, at the same or different times. This method is very common in the delta, as farmers in most cases could plant yam, whereas maize and pumpkin are planted as well.

Multi-cropping: this is a common practice in the region, as it involves the cultivation of several crops on the same piece of land, for instance, a farmer could cultivate yam, melon, pepper, okra, among other at different intervals appropriate for each crop.

Use of improved crop varieties: some farmers who are privilege to accessing improved varieties make use of such in improved varieties that guarantee early maturity and high yields.

On their part, the FGD participants observed that whereas the rural dwellers and farmers in their domain may not know exactly what climate change is, they acknowledge that certain changes have been happening around their farming activity overtime. They observed that local coping strategies exists and are employed by the people to withstand the threat posed to their farming occupation and by extension, food security. For instance, they stated because of flood, the rural farmers have resorted to planting and harvesting before the usual planting and harvesting seasons; as some tend to plant immediately the flood subsides and harvest before the flood resumes and some resort to planting mainly crops less impacted in the negative by the atmospheric issues connected to climate change.

Similarly, Ogon argues that forestation has remained a major coping strategy of local societies in the Niger Delta, as several communities tend to have returned to bush fallowing, but it (bush fallowing) is endangered by the upsurge in population and land grabbing; also, those in the coastal communities (which are flood prone) had developed a planting model in which they plant immediately the flood subsides, therefore, benefiting from the rich nutrients inherent in the surface clay. In this light, he observed that "this helps the people grow their crops on natural nutrients as certain chemicals used for crop production are alien to the indigenous people of the region". Bassey observed that "the local people of the region had developed resilience to environmental changes" (KII, 2020). Etim and Etim (2019) identified crop diversification, conservation agriculture and modification of planting season as some of the home-grown coping strategies. Similarly, Weli and Bajie (2017) identified crop diversification, growing of early budding crops, modification in planting season and change of farming locations.

VI. CONCLUSION AND RECOMMENDATIONS

This paper revealed the existence of coping strategies by the people of the Niger Delta to climate change and its associated risks in the region. Among the existing strategies are crop diversification, modification in planting season, growing of early budding crops and change of farming locations. However, the above are mostly adopted by the local peasant farmers, and because of the height in which the region's environment is impacted by climatic changes, these strategies despite the little gains from their application, are weak (in the long term) to withstand the enormous risk climatic change poses on farming. Those who control the means of production, among other things, seek alternatives as these changes manifests in the Niger Delta. Consequently, the paper recommends that:

1. The state should support and train local farmers in region with the right (modern) tools (local and international) and technology to cope with the challenge.
2. The state and Niger Deltans should deliberately undertake a massive reforestation drive in the region.
3. The state commits to ending gas flaring or reducing it to a bearable minimum in the Niger Delta.

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