

THE POLITICO-SOCIO-ECONOMIC CONSEQUENCES OF CLIMATE CHANGE IN NIGERIA

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Abstract

The political, social and economic wellbeing of Nigerians have reached a tipping point because of the vicissitudes of climate change, the falling value of the Naira and the low price of oil in the international market. The negative consequences of climate change in Nigeria which includes low food and livestock production, drought, rise in temperature to mention but a few seem to be the challenges that will finally bring the country to her knees if not contained promptly and effectively now. This paper seeks to identify the politico-socio-economic consequences of climate change in Nigeria by using the methodology of content analysis. The study anchors on the reflective modernization theory which will be used to explain the information gathered from the Ministries of Environment and Agriculture as well as other secondary sources. Important findings from the research showed that climate change is a global phenomenon with Nigeria contributing a negligible fraction of toxic carbon emissions which contributes to flooding, loss of lives and properties and political instability. This paper recommends that the Nigerian government should make budgetary allocations which would help combat climate change challenges and should develop the political will to join other countries which have acknowledged the catastrophic effects of climate change to force the industrialized world to cut down emissions of greenhouse gases. If the above recommendations are not taken seriously by all and sundry, the negative consequences will affect Nigeria's social and economic fabric which can lead finally to political decay.

Keywords: *Climate change, Political will, Negative consequences, Industrialised world, Nigeria, Crude oil.*

INTRODUCTION

The incidence of the climate change catastrophe like that of HIV/AIDS and other world bubonic plagues and the idea that the continent will suffer more as a result of climate variations is often attributed to the 'dark continent' of Africa (Sharp & Hahn, 2011; Fisher & Madden, 2011). The truth is that, the continent in general and Nigeria in particular, contributes less than one percent of emissions to the global phenomenon (Ferris, Pets & Stark, 2013). Scholars like Professor Beck (1992) and Beck, Giddens and Lash (1994) reluctantly explained the fact that the industrialized world are victims of the climate change problems which were created by industrialization.

Assibong et al.

Similarly, Garret Hardin’s (1968) article: *The Tragedy of the Commons* used the African herds men as those struggling to use the ‘common’ grazing land belonging to all for their selfish reasons. Hardin can be accused of ethnocentrism here by implication because between Europe and Africa, it is only Africa which still have the ‘common land which must not be sold’ (Assibong, 2015). Europe in general and Britain in particular adopted the enclosure system where the rich bourgeoisie class bought most of the land from small holders and enclosed many acres in the famous ‘enclosure system’ around the 1800’s

Hence, scholars who are conversant with ancient and modern European political and economic history, were not surprise when Europe traced the origin of HIV/AIDS to the monkeys in the Congo Basin. Neither are we surprise when European scholars are now ‘frightening’ Africans about the dire political, social and economic consequences of climate change within the African continent when it is clear that that Europe has suffered more calamities precipitated by the adverse effects of climate change like tsunamis and hurricanes which are vividly presented in table 1 below.

Table 1: Average Effects of Disasters by Region and Income, 1950-2014

Average Effects of Disasters by Region and Income, 1950-2014						
Region	Damage (US\$)1/		Damages/GDP (%)		Affected /Pop (%)	
	Non-SS	SS	Non-SS	SS	Non-SS	SS
Latin America	429	118	2.5	16.1	1.0	10.8
North America	1,978		0.1		0.0	
Europe & Central Asia	753		0.6		0.7	0.4
Middle East & North Africa	532	4	0.8	0.3	0.5	15.6
Sub-Sahara Africa	91	91	1.1	5.2	2.3	10.3
South Asia	591	148	0.6	13.9	1.0	3.4
East Asia & Pacific	871	45	0.3	11.9	0.7	9.0
Income						
Low income	381	16	2.9	6.3	1.9	5.6
Lower middle income	275	55	0.9	12.7	1.2	11.1
Upper middle income	762	112	0.4	18.3	0.8	10.3
High income: non OECD	379	165	0.5	2.6	0.4	0.8
Total	846	87	0.7	12.9	1.1	9.8

Source: International Monetary Fund IMF. (2016, P.9)

The above display of ethnocentrism notwithstanding, the paper has to let the general reader know that since Nigeria contributes less than one percent to be more precise, about 0.5 CO² tonnes per capital to the world total carbon emissions, the challenges are also not so grave as in the developed world (Coller, Cornway & Venables, 2008). This paper is engaged in identifying and analysing the politico-socio-economic consequences of climate change because we believe in the dictum that says ‘a stich in time saves nine’. That is, Nigeria cannot wait until her carbon emissions are comparable to those of US or wait until the country is hit by another ‘Hurricane katarina’ before taking pre-emptive measures which this paper will recommend at the later part (Guha- Sapir, Haigitt & Hoyis, 2004).



Assibong et al.

The country Nigeria has witnessed so many political crises which have often had adverse spill over consequences on the social and economic frontiers of the citizenry. Starting from the 1953 self-rule Kano riots, through the 1962/63 census crisis, 1964 Federal Elections Crisis, the 1967-70 Civil War, 1979 and 1983 General Election crisis and the Balarabe Musa Kaduna State Executive and Legislative crisis, the country has always managed to be one indivisible unit despite all these national crises (Assibong, 2017). What concerns us here however, is to work on the scares of these crises including that which has been imposed on the country now by corporate interests like the present recession, so as to be in a better place to proffer lasting solutions to the politico-socio-economic consequences of climate change challenges in Nigeria.

Theoretical Underpinning

The theoretical frameworks political scientists can use as an anchor for this paper include the systems theory, structural functionalism, dialectical materialism, dependency theory (centre-periphery relation), political economy approach and modernization theory to mention but a few, the researchers decided to select a variant of the modernization theory known as 'reflexive modernization theory' because that is the only theoretical tool which can help best understand the political, social and economic implications of climate change challenges in Nigeria (Parson, 1937; Easton, 1965; Frank, 1970; Ake, 1981; Krapivin, 1985).

The reflexive modernization theoretical tool developed by Beck et al., (1994) argues essentially that all countries that are striving to be industrialized should be prepared to bear the unintended catastrophic consequences of ecological disasters which are precipitated by toxic gases emitted into the atmosphere. He argued that some of the highly industrialised nations are already experiencing the effects of climate change (floods, hurricanes and high temperatures). So this paper is to enable Nigerians know about climate change realities, how it impinges on the political, economic and social wellbeing of the people and how to cope with ecological disasters orchestrated by global climate change.

RESEARCH METHODOLOGY

To identify the political, social and economic consequences of climate change in Nigeria, this paper shall use secondary data gathered through the content analysis methodology. The reflective modernization construct which is a variant of the modernization theoretical direction, will be used here because as Beck, Giddens and Lash (1994) have pointed out earlier, nations should be aware of the potential ecological disasters like floods, drought and heat waves that normally accompany uncontrollable industrialization (Beck, Giddens & Lash, 1994).

Effects of Climate Change in Nigeria

In the words of Memon (2012, p. 8) "climate change is a lurking threat for the planet" pointing out that climate issues and global warming is a global phenomenon and ought to be a global concern as well. Although the underlying factor points to the fact that nations are at risk of climate change eventualities, Tyagi (2007) states that the degree of susceptibility and hazards may differ from one country to the other based on the geographic and regional outlook (Tyagi, 2007; Memon, 2012).



Assibong et al.

Nigeria is not insulated from global warming and the numerous effects of climate change. Its geographic location along the equator (latitude 4⁰N and 14⁰N, longitude 2⁰E and 14⁰E) serves as a factor that has increased her susceptibility to the negative impacts of climate variations (Yahaya, Salami & Bamigbade, 2011; Ekpoh, 2014). Nigeria's First Communication on Climate Change presented in 2003 under the United Nations Framework Convention on Climate Change clearly outlines the negative impacts of climate change on Nigeria's water resources, health, mining sector, and agriculture (Aaron, 2011; Olatunde, 2013; Ekpoh, 2014).

Socio-economic Consequences

The impact of climate change in Nigeria is enormous ranging from the rise in atmospheric temperature to scarcity of vital resources like water and food. The experiences of intensive atmospheric temperature during the day and episodes of heat waves have reached its zenith. According to Building Nigeria's Response on Climate Change (BNRCC) report of 2011, the country has continued to suffer from increasing temperatures from 1.4°C to 1.9°C particularly in the northwest and southwest and the heat is predicted to be on the rise annually climaxing to 38°C by 2046 - 2065. Similarly, Niger State has continually and with increasing momentum, experienced heat waves over the past twenty years. Olatunde (2013) recaps the 2008 heat wave episode in Zuba community which lasted three weeks at the expense of human lives.

Also, the country's precipitation cycle has been characterized by shifts and irregularities such as delay in rainfall and cutback in rain days by about thirty percent leading to overall shortage in annual rainfall (Ekpoh, 2014). Regions like Sokoto and Kastina are experiencing a decline of about eight percent. However, other regions like Port Harcourt experiences higher rainfall of about eight millimeters. Generally speaking, reduction in rainfall amounting to eighty-one millimeters has been observed throughout the country (Odjugo, 2009).

Constant rainfall and the effect of high temperature causing the melting of frozen water surfaces have influenced the rise in sea levels throughout the world. The International Panel on Climate Change (2013) projects that the rise in weather temperature will foster the rise in sea level by about fifty-nine centimeters by the end of this century. Akpodiogaga and Odjugo (2010) also add that the estimated sea level rise which is less than one meter is anticipated to peak to over one meter by the year 2100. Sea rise has already begun to have its effect as 3400Km² landmass has been submerged in water and upon the attainment of the projected one-meter rise in sea level, 18,400Km² is likely to be submerged in water. Susceptible regions like Lagos, Bonny, Forcados, Warri, Port Harcourt, Calabar are threatened by more frequent and sever events of inundation due to rise in sea level (Akpodiogaga & Odjugo, 2010; Aliyu, 2010; Ekpoh, 2014).

Episodes of floods have also become more rampant across Nigerian cities leading to loss of lives and properties. Government report maintains that over a period of ten years, 1,600 Nigerians died in 20,000 flood episodes. In 2010, Sokoto State recorded a major flooding incident that washed away 20 villages which led to the death of six people and displacement of about 130,000 persons (Abu, 2007). Ekpoh (2014) reports that in 2012 alone, flooding events



Assibong et al.

killed 363 and adversely affected more than seven million people. Amosu, Bashorun, Babalola, Olowu and Togunde (2012) also confirm the growing rate of erosion and flooding in Lagos and Calabar. Abu (2007) recounts that towns like Awori, Enugu, Isekiri, Ibeno, Andoni, Mbo, Ikang and Nembe have been badly affected by floods which has necessitated displacement from the affected area (Abu, 2007; Aaron, 2011).

Hence, periods of prolonged heat plus less rainfall will result to change in drought cycle. Drought patterns in the north of Nigeria have become highly unpredictable as northern fertile lands for agricultural practices are being overtaken by drought and the encroachment of the Sahara Desert. In 2008, the Federal Ministry of Environment indicated that drought and desertification is fast catching up with Zamfara, Bauchi, Kano, Gombe, Jigawa, Katsina, Kebbi, Kaduna, Sokoto, Yobe, and Borno states. Drought and desertification process has also reduced pastoral lands in these regions (Yaqub, 2007; Odjugo, 2009).

Yaqub (2007) notes the shrinking of several rivers particularly in the north as well as Lake Chad Basin's reduction in size. The catastrophic consequences of this is evident in the shortage of water and the loss of the means of livelihoods not only for Nigerians but also for people from Chad and Cameroon. Also, the quantity of ground water in the north is said to have drastically reduced. However, events of drought and desertification have the ability to engender forceful emigration, displacement and resettlement to areas less prone to such natural disasters (Yugunda, 2002; Yaqub, 2007; Federal Ministry of Environment, 2008; Akpodiogaga & Odjugo, 2010).

More importantly, flooding and drought will also jeopardize the future of the countries agricultural yield. Most crops grown in the country are rain fed therefore shortage of rainfall equals poor farm harvest (Folarin, Ogundeji & Yartey, 2012; Onuoha & Ezirim, 2010). Farmers in the north have been forced to change the in the type of crops they grow. Odjugo (2009) explains that northern farmers who previously grew grains like guinea corn, groundnuts and maize, had to change their cultivation patterns and rather cultivate millet and beans in place of guinea corn and groundnuts. These adaptive measures were adopted due to insufficient rainfall to support certain food crop production. Conversely, excess flooding has been responsible for washing away of crop harvest and therefore leading to food scarcity. In 2007, Gombe State suffered severe erosion that washed away major farm produce like maize, beans, millet and sorghum leading to hike in market price (Onuoha & Ezirim, 2010). About 2032 of crop species out of 5081 types are threatened as well as 484 medicinal and fruit plants are at the verge of extinction (Aliyu, 2010).

Low agricultural output will be further exacerbated due to decrease in arable land for cultivation, flooding and drought, thereby placing the country at risk of food shortage. According to Amosu *et al.* (2012) predictions, crop yield is expected to decline from ten percent to twenty percent by the year 2050 (Amosu *et al.*, 2012; Folarin *et al.*, 2012; Onuoha & Ezirim, 2010; Odjugo, 2009). Drastic reduction in livestock production is also anticipated. Building Nigeria's Response on Climate Change (BNRCC) reports confirms that the effect of drought will reduce grazing land for livestock. This situation may in future confirm Hardin's theory of the commons because the quest for grazing land will breed conflict (Hardin, 1968).

Assibong et al.

Moreso, the preservation of food, dairies and meat may be more challenging due to the rise in temperature. Furthermore, aquatic life will also be negatively affected as the pollution and shrinkage of aquatic habitat will result in reduction of fishes and other aquatic life. In recent times animals like giraffe, cheetah, hippopotamus, black rhinoceros and giant cats have been recorded to have disappeared from their natural habitats. Unaddressed cases of food and water shortages will therefore heighten hunger (Aliyu, 2010; BNRCC, 2011). Consequently, environmental disasters engendered by climate change will lead to more displacement of the population. Cases of internally displaced persons (IDP) is already obtainable in coastal regions like Eket and Nembe as well as loss of life and property. Such happenings are rightly predicted to multiply as a result of flooding episodes (Odjugo, 2009). The homes of over nine million Nigerians could be vulnerable to rising sea levels by 2050 and existing figures show a serious IDP problem as conflict alone displaced three million people between 1999 and 2006 leaving at least 80,000 homeless and property worth \$87 billion have also been lost to flood (Akpodigaga & Odjugo, 2010).

Emigration which is often times to the urban city culminates in social effects and societal stress as the added population adds to the already pressured urbanization struggles. The end product of these mass movements towards the cities breed prostitution, drug addiction and crimes. This is why Nigerian cities like Lagos, Port Harcourt, Calabar, Ibadan and Enugu but to mention but a few have gone riot.

Furthermore, low economic growth which is also feasible due to climate change problems will engender socio-economic stress. Ogbo, Ndubuisi and Ukpere (2013) posits that Nigeria depends so much on climate sensitive occupations like farming and fishing which engages seventy percent of the population, thus, climate change realities threatens the occupational status of a large portion of the country's working population. Economic decline will further compound the issue of poverty making it more difficult to manage poverty within the country and attain the Millennium Development Goals (MDGs) (Folarin et al., 2012; Ebele & Emodi, 2016).

Hence, climate change challenges hold financial implications for the economy. The nation's socio-economic development will also be exacted upon by climate variations. Various studies and statistics have proven that it will cost the country more to adapt to climate change dynamics. The reports from BNRCC of 2011 reveals that lack of prompt and adequate climate change adaptation measures will put more strain on the national Gross Domestic Product (GDP) resulting in loss of between two percent to eleven percent by the year 2020. A publication by Onuha & Ezirim (2010) recounts Late President Yar'Adua assertion that Nigeria loses no less than \$5.1 billion yearly to environmental challenges. The Department for International Development (2006) confirms extra national expenditure and highlights the overall cost implication of climate change on the Nigerian economy as summing up to about N69 trillion (Ebele & Emodi, 2016).



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Assibong et al.

Furthermore, the social as well as the physical wellbeing of the Nigerian population will be exposed to more hazards due to environmental variability. As at 2009, a total of 17,500 cases of meningitis leading to the death of about 960 persons across the northern states of Bauchi, Gombe, Zamfara, Taraba and Yobe was recorded (Onuoha & Ezirim, 2010). Air pollution and heat wave will facilitate stress on the immune system leading to occurrences of cerebro-spinal meningitis, skin rashes, heat exhaustion and respiratory tract diseases like cough and asthma. Cases of dehydration and malnutrition will be multiplied (Ekpoh, 2014).

Water shortage along with the contamination of water sources as a result of heavy floods will increase the outbreak of waterborne diseases like giardia, typhoid, hepatitis A, cryptosporidium, river blindness, cholera and shigellosis. Likewise, the rise in temperature will further promote the spread of disease by disease carrying insects like mosquitoes leading to outbreak of dengue, yellow and malaria fever thus leading to increased occurrence of ill health and mortality within the population (BNRCC, 2011; Akodiogaga & Odjugo, 2010; Amosu *et al.*, 2012).

By affecting man, animals and plants, climate change dynamics and impacts will go full circle from rise in temperature to decreased rainfall, increase in drought and flooding experiences, and adversely affecting agriculture and the health sector. These catastrophes, portends tragedies for Nigeria's socio-economic frontiers and will in turn impact on the political terrain of the country.

Political Dimension

Tol and Wagner (2010) argue that the political dimension of climate change subsists as it has the ability to upset the political land scape and serenity of a country. Scholars (Tol & Wanger, 2010; Hendrix & Salehyan, 2012) have adopted statistical methods to point out the correlation between climate change and conflicts. Moreso, they have consented to the possible influence of climate issues in the outbreak of societal crises. This is because scarcity of resources will affect the functionality of the system as a whole. The examples of Indonesia and Pakistan crisis remain tenable points buttressing the fact that the political environment is pressured by happenings of the physical environment (Tol & Wagner, 2010; Hendrix & Salehyan, 2012).

Although climate issues play crucial roles in precipitating the outbreak of crisis, Sachs (2011) adds that the genesis of a political crisis is predicated on developmental crisis. The lack of essential amenities and life basic necessities such as food, water and shelter is a potential source for frustration which can breed aggression and conflicts. Moreover, it is difficult to estimate how far man can go in the quest to satisfy his thirst and hunger. This could result into diverse forms of internal and external crisis and episodes of forced migrations. The movement of people across borders also holds the possibility for issues of border conflict, the poor management of which may result in the outbreak of war (Hesiang, Meng & Cane, 2011).

Different schools of thought have come up with different narratives in a bid to investigate and locate the actual basis of the Fulani herds men / host community conflicts across the country. For some scholars, the conflicts lie along racial and ethnic divides between the Fulani's and

Assibong et al.

the native settlers. For others, it is the struggle between the pastoralists and farmers for scarce grazing land. The frequency of such conflict situations orchestrated by the Fulani nomads and farmers is almost at its apex. Odoh and Chigozie (2012) stated that:

Unfortunately, increased competition of pastoralists for a dwindling 'stock' of grazing land has pitched them (Fulani herders) against farmers. Conflict between farmers and Fulani herdsmen has become so rampant. For instance, violence erupted on 18 December, 2009, between these two groups when pastoralists attacked the farming village of Udeni Gida - two weeks after a clash with farmers on 6 December, when herdsman led their cattle into rice fields resulting in the death of a farmer. Clashes between these two, made local authorities in Borno and Plateau state to expel 700 pastoralists from Borno state in the northeast in May 2009, and some 2,000 from Plateau in April 2009, respectively. In recent time, armed conflict between herdsmen and their host communities had been reported to have taken place in over 20 villages in Nigeria... However, this conflict is usually attributed to environmental resource scarcity. (p. 113)

To buttress the above claim, Yugunda (2002) and Yaqub (2007) have linked forced emigration within the country to present communal conflicts among herdsmen and farmers, stating that such migratory acts between 1998-2006, engendered clashes and recorded death casualties of over 186 persons in northern Nigeria. However, this has been a recurring trend presently in the country with several incidents of communal clashes with the Fulani herdsmen (Yugunda, 2002; Yaqub, 2007). However, the end product of such conflagrations is that, it will further exacerbate crime and poverty as the means to livelihoods will be constrained. Limiting factors may be compulsively imposed such as curfews, closing trade routes and restricting access to land by the political class.

The mix of other variables such as demographic expansion, injustice, trans-border conflicts, violence, poor governance, weak government policies, vulnerability, lack of alternative means of livelihood and inability to stabilize the economic and political environment create powerful forces that can push people into developing unorthodox means of survival that can precipitate conflicts and political unrest. Okunola and Ikuomola (2010) pointed out that:

Over the years the Nigerian police have been complaining of the in-migration of *Nigerians* into the country through these borders; so also is the case by Nigerian Gendarmes. A security officer in Borno made us to know that since agricultural activities are declining, many individuals especially among youths and middle aged men in Borno, intensified their effort in cross-border trade, and involvement in smuggling activities. Such smuggled items range from sugar, can beef, alcohol and spirit; vegetable oil, soaps, drugs, textile materials and small arms. (p. 94)

In spite of these political shortcomings, the institutionalization of concrete adaptation policies and the manufacturing of the political will would go a long way to mitigate defenselessness and reduce the chances of conflicts. Although, conflicts are created and maintained because there are victors as well as victims, yet such situations can only be abated and avoided by the instrumentality of effective government policies regarding resource management and climate



Assibong et al.

change (Brown, Hammill & Mcleman, 2007; Ajibade, Armah, Kurire, Luginaah & McBean, 2014). Government must always intervene in the smooth functioning of any society in order to provide a level playing ground for the citizens.

Adapting to climate change requires taking the right methods to lessen the destructive effects of climate change by making the appropriate modifications, either to explore new avenues or adopt already existing positive ones as various options and opportunities for acclimatization and adjustment exist. Acclimatization measures ranges from technological options such as sea barricades, to flood-proof houses on supporting pillars, and change in behavioural patterns at the individual level. Other actions such as minimizing the use of water in times of drought, building efficient drainage systems and avoiding drainage blockage, adopting the use of treated mosquito nets particularly for mothers and babies. Ensuring early warnings against extreme weather events, enhanced water management systems, risk management, various insurance possibilities and biodiversity preservation are other ways Nigeria can use to adapt with the negative and destructive effects of climate change (Aaron, 2011; Oladipo, 2011; Mubari, 2015)

The dynamic nature of climate change affairs has necessitated policy maker's involvement in climate adaptation measures, since vulnerability and scarcity of resources remain common denominators peculiar to the subject of climate change crisis. Thus, adaptation is a non-negotiable option. More than ever before, the need to embrace adaptation mechanisms is paramount. This responsibility lies at various levels; from the lifestyles of the Nigerian citizenry to the policies of regulatory institutions set by government (Olaniyi, Fummilayo, Olutimehin, 2014).

Again, the fundamental duty of government and authorized institutions is to step into resource management and build up suitable modes for adaptation to the situation at hand. There is no doubt that climate change creates challenges which also creates an alternative path to scarcity and poverty which can lead to the collapse of the Nigerian State. Therefore, the need for adaptive as well as preventive measures is crucial as the adverse effect of climate change would only be less impactful based on the preparation measures on ground (Oladipo, 2011; Isma'il, 2014).

CONCLUSION AND RECOMMENDATIONS

Scholars and analysts have established that the contribution of Nigeria to carbon emission remains minute, less than one percent of total world emissions, yet Nigeria is at greater risk of the dangerous effects and remain least prepared for such dangers (Brown et al., 2007). Several scholars have maintained that Nigeria as a nation has done little in terms of her efforts towards building up adaptation and mitigation strategies. The fact that many Nigerians are now aware that most ecological disasters in Nigeria and the world today are orchestrated by global climate change vicissitudes and that all countries on earth are not insulated from the adverse effects of climate change like floods, hurricanes, drought encroachment, rise in temperatures and poverty to mention but a few, the government and the people of the country are already in good stead to face climate change challenges. This paper takes the claim by European scholars that the African continent of which Nigeria is a part will suffer more as a result of ecological disaster



Assibong et al.

occasioned by adverse weather variations with a pinch of salt. If they posited instead that African countries including Nigeria may not be ready to cope with the aftermath of ecological upheavals, they would have been right.

Hence, the Federal Government of Nigeria should institutionalize policies tailored at coping with any ecological disruptions which must be enforced by an appropriate agency. The Ministry of Environment in collaboration with that of Science and Technology should as a matter of urgency adopt new technology that promotes clean energy. The management of industrial waste and natural resources like the forest, land, mineral and water should be consummated with the view of emitting minimal amount of toxic gases which will in turn help Nigeria have a safe environment for posterity.

There is the need to promote the role of science and technology in studying all aspects of climate change and to localize climate research within the context of Nigeria's economic, social, geographical, environmental and political peculiarities. This will help in tracking suitable indigenous technological innovations in the country. Budgetary allocations should make provisions for the study of climate change issues which should focus on adaptation, mitigation and efficient environmental management. There is the need to educate young Nigerians in schools to know the causes, adverse effects and mitigation of climate change because this will help the country cope easily with the political, social and economic consequences of global climate change. And finally, Nigeria should develop the political will to join other countries which have acknowledged the devastating, ruinous and catastrophic effects of global climate change to pressurise the industrialized nations to cut down emissions of toxic greenhouse gases in order to make the world a better place for humanity.

REFERENCES

- Aaron, S. (2011). *Climate change adaptation and conflict in Nigeria*. Special Reports by United States Institute of Peace. Retrieved from www.usip.org Retrieved on 16 April, 2017.
- Abu, B. (2007). Sea level rise and Niger- Delta of Nigeria. *Journal of Wetland*, 3(1), 44-52.
- Ajibade, I., Armah, F., Kurire, V., Luginaah, I., & McBean, G. (2014). Self-reported experiences of climate change in Nigeria: The role of personal and Socio-environmental factors. *Climate*, 3(1), 16-41.
- Ake, C. (1981). *A political economy of Africa*. Lagos: Longman Publishers.
- Akpodiogaga, P., & Odjugo, O. (2010). General overview of climate change impact in Nigeria. *Journal of Human Ecology*, 29(1), 45-55.
- Aliyu, A. (2010). *Nigeria: The Path to national rebirth*. Ibadan: Aboki Publishers.
- Amosu, O., Bashorun, W., Babalola, O., Olowu, A., & Togunde, A. (2012). Impacts of climate change and anthropogenic activities on renewal costal resources and biodiversity in Nigeria. *Journal of Ecology and the Natural Environment*, 4(8), 201-211.
- Assibong, P. (2015). *Introduction to political science*. Calabar: University Calabar Press.
- Assibong, P. (2017). *Political science for Africa*. Calabar: University of Calabar Press.
- Beck, U. (1992). *Risk Society: Towards a new modernity*. London: Sage Publications Ltd.



Assibong et al.

- Beck, U., Giddens, A., & Lash, S. (1994). *Reflexive modernization*. California: Stanford University Press.
- Brown, O., Hammill, A., & McLeman, R. (2007). Climate change as the new security threat: Implications for Africa. *Royal Institute of International Affairs*, 83(6), 1141-1154.
- Building Nigeria's Response to Climate Change (BNRCC), (2011). *National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN): Draft for stakeholder review*. prepared by (BNRCC) project. Doi:10.1.1.367.6707 Retrieved from www.nigeriaclimatechange.org
- Collier, P., Conway G., & Venables, T. (2008). Climate change and Africa. *Oxford Review of Economic Policy*, 24(2), 337-353.
- Easton, D. (1965). *A system analysis of political life*. New York: John Wiley & Sons.
- Ebele, N., & Emodi, V. (2016). Climate change and its impact in Nigerian economy. *Journal of Scientific Research & Reports*, 10(6): 1-13. doi:10.9734/JSRR/2016/25162
- Ekpoh, I. (2014). Slow response to climate change in Nigeria: Need for urgent and comprehensive action. *Studies in Social Sciences and Humanities*, 1(1). 19-29.
- Federal Ministry of Environment, (2008). *Federal Ministry of Environmental Report on Nigeria and Climate Change Situation*. Retrieved from <https://mail-attachment.googleusercontent.com/>
- Ferris, E., Pets, E., & stark, C. (2013). *The year of recurring disasters: A review of natural disasters in 2012*. The Brookings Institution-London School of Economics. Retrieved from https://www.brookings.edu/.../Brookings_Review_Natural_Disasters_20
- Fisher, A. & Madden, D. (2011). The origins and Evolution of HIV. Retrieved from www.dnadarwin.org/casestudies/7/FILES/HIVTG1.3pdf Retrieved on 13 April, 2017.
- Folarin, S., Ogundeji, B., & Yartey, A. (2012). Interrogating Nigeria's international role conceptions in an age of global climate change. *African Journal of Social Policy and Administration*, 5(1), 178-189.
- Frank, A. (1970). *Latin America: Underdevelopment and revolution*. London Monthly Press.
- Guha-Sapir, D., Haigitt, D., & Hoyis, P. (2004). *The thirty years of natural disaster 1974-2003*. Belgium: Jacoffset Printers –Louvain-La – Neuve.
- Hardin, G. (1968). The tragedy of the commons. *Science*, 162, 1243-1248.
- Hendrix, C., & Salehyan, I. (2012). Climate change, rainfall, and social conflict in Africa. *Journal of Peace Research*, 49 (1), 35-50, 185.
- Hsiang, M., Meng, K. & Cane, M. (2011). Civil conflicts are associated with the global. *Nature*, 476 (7361).
- Hsiang, M., Meng, K., & Cane, M. (2011). Civil conflicts are associated with the global. *Nature*, 476 (7361).
- Intergovernmental Panel on Climate (IPCC), (2013). *Climate Change 2013: The Physical Science Basis (Fifth Assessment Report (AR5), Working Group 1)*. Retrieved from www.ipcc.ch/report/ar5/
- International Monetary Fund IMF (2016). *Small states' resilience to natural disasters and climate change*. IMF Policy Paper. Retrieved from www.imf.org/external/pp/ppindex.aspx. Retrieved on 4 November, 2016



Assibong et al.

- Isma'il, M., Musa, I., Ibrahim, A., Kibbon, U., Abbas, S., & Kim, I. (2014). Energy and climate change policy for Nigeria. *Current Advances in Environmental Science (CAES)*, 2(1), 38-45.
- Isma'il, M., Musa, I., Ibrahim, A., Kibbon, U., Abbas, S., & Kim, I. (2014). "Energy and Climate Change Policy for Nigeria". *Current Advances in Environmental Science (CAES)*, 2(1), 38-45.
- Krapivin, V. (1985). *What is dialectical materialism*. Moscow: Progress Publishers.
- Levine, S., Peters, K., & Fnn, L. (2014). *Conflict, Climate Change and Politics: Why a Techno-centric Approach Fail the Resilience Challenge*. Humanitarian Policy Group (HPG) Working Paper.
- Mburia, R. (2015). *Africa climate change policy: An adaptation and development challenge in a dangerous world*. Climate Emergency Institute. Retrieved from: <http://www.climdev-africa.org/content/africa-post-2015-climate-change-agre>
- Memon, N. (2012). *Disaster in South Asia: A regional perspective*. Pakistan: Print Vision.
- Odjugo, O. (2009). Quantifying the cost of climate change impact in Nigeria: emphasis on wind and rainstorms. *Journal of Human Ecology*, 28(2), 93-101.
- Odoh, S., & Chigozie F. (2012). Climate change and conflict in Nigeria: A theoretical and empirical examination of the worsening incidence of conflict between Fulani herdsmen and farmers in northern Nigeria. *Arabian Journal of Business and Management Review*, 2(1), 110-124.
- Ogbo, A., Ndubuisi, L., & Ukpere, W. (2013). Risk management and challenges of climate change in Nigeria. *Journal of Human Ecology*, 41(3), 221-235.
- Okunola, R., & Ikuomola, A. (2012). The socio-economic implication of climatic change, desert encroachment and communal conflicts in Northern Nigeria. *American Journal of Social and Management Sciences*, 88-101. doi:10.5251/ajsms.2010.1.2.88.101
- Oladipo, E. (2011). *Towards enhancing the adaptive capacity of Nigeria: a review of the country's state of preparedness for Climate Change Adaptation*. Report Commissioned by the Heinrich Boll Foundation, Nigeria. Retrieved from www.boellnigeria.org/web/113-227.html
- Olaniyi, O., Funmilayo, O., & Olutimehin, I. (2014). Review of climate change and its effect on Nigeria ecosystem. *International Journal of Environment and Pollution Research*, 2(3), 70-81.
- Olatunde, S. (2013). Climate change: The impacts and potential benefits for the developing countries. *International Journal of Agricultural Research and Review*, 1, 02-10.
- Onuoha, F., & Ezirim, G. (2010). Climatic change and national security: the conceptual and empirical connections in Nigeria. *Journal of Sustainable Development in Africa*, 12(4), 255-269.
- Parson, T. (1937). *The structure of social action*. New York: Free Press.
- Sachs, J. (2011). *The End of Poverty*. London: Penguin Books Ltd.
- Sharp, P. & Hahn, B. (2011). Origin of HIV and the AID's Pandemic. *Cold Spring Herb Perspective Med*. Retrieved from <http://perspectivesinmedicine.cshlp.org/cgi/collection>. Retrieved on 4 November, 2016.



Assibong et al.

- Stein, L. (1979). Dependency theories and underdevelopment. *Journal of Economic Studies*, 6(1), 64-85.
- Tol, R., & Wagner, S. (2010). Climate change and violent topic in Europe over the last millennium. *Climate Change*, 99(1-2), 65-76.
- Tyagi, A. (2007). Global and national scenario of natural disasters: with special emphasis on floods. *The Indian Journal of Political Science*, 68(4) 791-808.
- Yahaya, K., Salami, O., & Bamigbada, D. (2011). Economic implications of climate change and the imperative of re-directing financial resources in Nigeria. *British Journal of Humanities and Social Sciences*, 2(2), 10-18.
- Yaqub, J. (2007). Desert environment in Africa: extent causes and impacts. *Journal of Arid Environment*, 4(1), 14-20.
- Yugunda, S. (2002). Socio-economic and cultural impacts of desert encroachment in Nigeria. *Journal of Environmental Dynamics*, 5(2), 19-30.



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