IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 22, Issue 11, Ver. 9 (November. 2017) PP 63-71
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

The Impact of Climate Change on The Political Economy of Food Production: A Study of Nassarawa Eggon LGA of Nasarawa State, Nigeria.

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Abstract: It is useful to know that the first victim of climate change is agriculture, this is because is one of the sector that depends on climatic condition for growing of crops; therefore, any change in climate will had advert effect on food production in Nassarawa Eggon. Must often that farmer in Nassarawa Eggon LG depend solely on rain-fed to grow crops. Consequently, erratic rainfall and increased in temperature will have negative consequences on food production in the study area. This is because it will lead to flooding, drought, pest and disease and increase in weed which may affect crops yield at harvests time which in turn affect income of peasant farmers. The study aim at examine the effects of climate change on food production in Nassarawa Eggon LGA as well as explored ways to mitigate/adapt to climate change in the study area. The method of the study is qualitative and exploratory. The primary data were generated through in-depth interview. Thus, quota sampling was adopted in the study to select 28 participants drawn from farmers and herdsmen from 14 electoral wards in Nassarawa Eggon LG. Quantitative data collected from the field work were analyzed using SPSS. Finding revealed that climate change affect food production through erratic rainfall and increase in temperature which result to reduction in crops yield. Therefore, it was recommended that government should carry out aggressive campaign so as to cushion the effect of climate change in the study area.

Keyword: climate change, political economy ,food production.

Date of Submission: 09-10-2017 Date of acceptance: 23-11-2017

I. INTRODUCTION

Nassarawa Eggon Local government have tropical savannah climate with two clearly marked seasons, wet and dry that is suitable for cultivation of different varieties of crops. It has a mean temperature of 15.6^0c and 26.7^0c with an annual rainfall between 1317mm and 1450mm. it rains April to October. Thus, any alteration on this climate will certainly have negative impact on food production within the area studied. Climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use. However, the monograph seeks to answer the following research questions; what causes climate change? Does climate change affect food production? Are farmers aware of climate change? Thus the study seeks to investigate whether or not climate change affects food production in the studies area. Apparently, Nassarawa Eggon LGA is not exempted from the colossal effect of climate change on the political economy of food production, as it had adversely result to a reduction in food production in the study area. However, the study notice that modernization of agriculture is the major cause of climate change in the study area, hence suggest the resurgent of local farming method as the panacea to the effect of climate change within the locality.

II. LITERATURE REVIEW

The literature on climate change tends to divide into several categories. There are many books written by scientists and others about the phenomenon of climate change and the peril it poses. A substantial literature also exists on technologies while other on political economy of climate changes. Many writers on climate change have their favorite technology, most likely in their view to help resolve the problems we face. For some it is solar power, for others nuclear fission and fusion, hydrogen, thermal energy, "clean coal" technology and so on for most, a mixture of several or all of these. There are also numerous books and articles on attempts to construct international agreements about limiting the greenhouse gases responsible for global warming most especially those developed by the international community at Kyoto, Bali and, recently, France, plus those

worked out within the European Union. Where books and articles have been written about the "politics of climate change.

Rosenzweig and Parry (1994) plausible climate change scenarios project both higher temperatures and increased precipitation. Temperature increases can have both positive and negative effects on crop yields. Clearly the cool northern parts of the country could benefit from long growing seasons and warmer temperatures, which would allow these areas to grow high yielding crops and crops varieties consistent with soil resources. In addition, a reduced incidence of killing frosts could benefit southern regions growing heat tolerant crops such as citrus. But high temperatures, particularly during critical crop growth periods, can speed plant development and reduce yields. Increases in precipitation level, timing, and variability may benefit semi-arid and other water-short areas by increasing soil moisture, but could aggravate problems in regions with excess water, whereas a reduction in rainfall could exacerbate water shortage and droughts. However, this study was conducted in advanced country where they use capital intensive method of farming; more so, the level of literacy on agricultural technology there is high. But this research would be conducted in a developing country (Nigeria) Nassarawa Eggon local government of Nasarawa state where labour intensive methods of farming were used. Besides, most of the farmers are illiterate and very difficult to adopt modern farming methods. Therefore, this would examine the impact of the rate of poverty in Nassarawa Eggon LGA on farmers in their attempt to procure modern farming equipment and the level of literacy to operate such equipment.

FAO, (2007) stated that rising atmospheric Carbon oxide concentration, higher temperatures, changes in annual and seasonal precipitation patterns and in the frequency of extreme events will affect the volume, quality, quantity, stability of food production and the natural environment in which agriculture takes place. Climatic variations would have consequences for the availability of water resources, frequency of pest and diseases and soil quality, leading to significant changes in the conditions for agriculture and livestock production. In extreme cases, according to FAO (2007), the degradation of agricultural ecosystems could mean desertification, resulting in a total loss of the productive capacity of the land in question. This is likely to increase the dependence on food importation and the number of people at risk of famine.FAO study on impact of agriculture is significant to this work though FAO conducted a global scale analysis and relied on survey method in the data collection however, this study intends to carry out a study in a Local Government Area using quantitative method alone in the collection of data.

However, many studies indicate that the increased intensity and frequency of storms, drought and flooding certainly have implications on agricultural production, particularly food. Tobey (1992) indicated that climate change impacts on agriculture can be roughly divided into two groups: biophysical and socio-economic impacts. Emerging studies has focused on regional and national assessments of the potential effects of climate change on agriculture. Sensitivity studies of world agriculture to potential climate changes have indicated that the effect of moderate climate change on world and domestic economies may be small, as reduced production in some areas is balanced by gains in others (Tobey, 1992). However, there has to be integrated (combined biophysical and economic) assessment of the potential effects of climate change on world agriculture. From the foregoing, studies discussed above, it has shown that the climate change result in the reduction of food production in most rural areas in Nigeria. Therefore, this study intends to find out empirically the impact of climate change in the area under study to see whether food production has increased or otherwise in the review years.

The Fourth Assessment Report, AR4, issued in installments by the Intergovernmental Panel on Climate Change, IPCC, from February to November, 2007, noted that if greenhouse gases continue to be emitted unchecked, the climate system will change significantly in the 21th century and that extreme climate phenomena and increasing sea levels will have adverse effects on natural and human systems. Incidences of climate change include changes in soil moisture, soil quality, crop resilience, timing/length of growing seasons, yield of crops and animals, atmospheric temperatures, weed insurgence, flooding, unprecedented droughts, sea level rises and many more.

In conclusion, climate change evident and constitutes a threat to not only to domestic food production but also to global food production as well. Hence, it is one of the objectives of this research to explore the phenomenon and proffer solutions to cushion effects of climate change on food production.

III. MARXIST POLITICAL ECONOMY APPROACH

Marxist political economy just like Marxism in general came into being with the writings of Karl Marx. Marx who witnessed the appalling and despicable living condition visited on the working class by capitalism debunked the essential postulates of bourgeois political economy. For Marx laissez faire espoused by bourgeois political economists creates nothing but extremes wealth for capitalists and poverty for workers. Marx also believes that classes are the dominant actor in political economy. These classes are the dominant class and the

dominated class.(frieden and lake 1995). In this regard, the ruling class, in their desperate to accumulate wealth they engage capitalist farming thereby pollute the environment for the peasant farmers.

However, we shall base our analysis on the global political economy perspective. i.e. the relationship between developed and underdeveloped countries in the global arena. It is pertinent to know that, the developed countries are the major players that contribute to climate change in the world. In their desperation to exploits the resource of third world countries, they introduce mechanize farming into third world countries because of primitive accumulation of wealth without consider the effect of the technologies on the political economy of developing countries. The indiscriminate use of modern farming technique in developing nations by the so called developed nations of the world had causes more harm than good to developing countries. Theodore H.C (2012)

States economies exhibit different degrees of complexity which affects their vulnerability to climate change impacts. Most developed countries have complex economies which offer many sources of income and are which more resilient during periods of stress. Economies of many developing countries depend on primary production and are exposed to substantial climatic and economic risks. Because of underdeveloped financial and insurance sectors in most developing countries, people cannot insure their assets and stand to lose them when disasters occur (Paavola & Adger 2006; Paavola 2008a). In developed countries, income is not sensitive to extreme weather events such as the European heat wave of 2003 although it caused substantial asset losses. In contrast, extreme weather events such as hurricanes can tax over 10 percent of the GDP of a low-income country (Linnerooth-Bayer 2005). The differences in vulnerability are even more significant in terms of loss of life. For example, hurricane Andrew killed 23 people in Florida in 1992 while a comparable typhoon killed over 100,000 people in Bangladesh the year earlier (Adger 2005). Brooks (2005)

Heterogeneities in the global community such as the ones discussed above make it difficult to agree on how to govern the use of atmospheric sinks for GHGs. Developed countries have invested in energy-intensive lifestyles, technologies, and infrastructure, which make GHG reductions time-consuming and expensive. At the same time, developed countries have capacity to avoid adverse consequences of climate change, as well as to recover from them. Furthermore, they form a relatively homogeneous and powerful negotiation block, which has experience from collective action in other contexts. Developing countries particularly the least developed countries – have contributed little to climate change because of their limited energy use and reliance of renewable sources of energy. But their economic development requires increasing energy use and GHG emissions. At the same time, developing countries are highly vulnerable to adverse climate change impacts. Finally, developing countries form a large and heterogeneous negotiation block, with members from oil producing countries to small island states that are threatened with inundation by the rising sea levels. Jouni Paavola (2011)

More importantly, on the face of it, the climate crisis lends itself to a Marxist analysis, and Koch duly interprets it as a stage in the development of capitalism. We see burgeoning greenhouse gas emissions due to relentless accumulation of capital, a powerful lobby protecting its interests at home and exporting its dirty business to poor countries, and governments placing the interests of corporations before those of the vulnerable and powerless. Above all, around the world the response to the existential threat posed by a warming globe has always been to give priority to economic growth, the condition sine qua non for continued capital accumulation. The natural environment becomes no more than the means to the end of capital accumulation. The increased industrialization in the developed nations has led to the introduction of large quantities of greenhouse gases (GHGs), including carbon oxide, methane, and nitrous oxide into the atmosphere. These GHGs are the primary causes of global warming. The global increases in Carbon oxide concentration are due primarily to fossil fuel use and land use change, while those of methane and nitrous oxide are primarily due to agriculture. Max kock (2012)

The massive industrializations of agriculture with replacement of a multitude of indigenous crops with a few high- yielding varieties that require expensive investments of chemicals, fertilizer and machinery. The mechanization of food production in third world countries, which have a large surplus labor pool, has led to soil desertification, and erosion, increasing the occurrence of famines. While the massive industrializations of agriculture had done more harm than good to Nigeria, western chemical corporations such as Monsanto, dow and dupont fared very well, cashing in high profit and increasing their control over food production in third world countries. The industrialized countries pollute our environment by making more money. They promote the use of genetically modified seeds in the third world countries and works with the government to solidify patent laws which would grant Biotech Corporation like Monsanto unprecedented control over food production.

In short, Marx suggests a break from capitalist mode of production as the solution to climate crisis.

Research Method: The method of the study is quantitative and exploratory. Data were generated from primary and secondary sources. The primary data would be collected through close ended questionnaire, while secondary data would comprise of textbook, journal, magazines, internet etc.

Research Design: This is a cross-sectional study that would adopt quantitative techniques. It intends to use close ended questionnaire to elicit information from the targeted population in the study area.

Sample Size And Sample Technique: Even if it were possible, it is not necessary to collect data from everyone in a local government in order to get valid findings. However, in qualitative research only a sample (that is subset) of a population is selected for any given study. Therefore quota sampling would be adopted in the study to select 28 participants drawn from farmers and herdsmen from 14 electoral wards as provided in the table below.

S/N	Wards	No of sample
1.	NassarawaEggon/Alizaga	2
2.	Alogani	2
3.	Agunji	2
4.	Madan Station	2
5.	Lambuga/Arikpa	2
6.	Ekkah/Wagibi	2
7.	Umme	2
8.	Wakama	2
9.	Iggah/ Burum-Burum	2
10.	Endeh	2
11.	Ogba/Ubben	2
12	Alushi	2
13	Lizzin/ Enzen	2
14.	kagbu	2
Total	14	28

Field data 2016

Instrument Of Data Collection: The instrument that would be used in the collection of data for the study is close ended questionnaire an average of 28 people would be administer questionnaires to collect data from them. The questionnaire would seek information on the demographic characteristics of farmers as well as their awareness on effects of climate change on food production in their locality.

Method Of Data Analysis: In analyzing the raw collected data, the researcher will be guided by the objectives of the study and the research questions. Therefore, Quantitative data collected in the field would be analyzed using SPSS and descriptive statistics such as tables and charts to enable view information in pictorial form.

Effect Of Climate Change On The Food Production

This chapter will focus on presentation and analysis of data collected from both primary and secondary sources. Thus, it's pertinent to know that 14 farmers and 14 Fulani herdsmen were successfully administer questionnaires and result show below.

2.1 Table 1. Demography Data Of Respondents

No of respondents	**Sex**	**Aged**	**Marital status**	**Educational qualifications**	**Occupation**	**Years of farming/ cattle rearing**
1	Male	50	married	primary	farming	25
2	Female	35	married	primary	farming	13
3	Female	40	Married	No	farming	19
4	Male	50	Married	No	farming	31
5	male	73	married	Arabic	farming	51
6	male	67	married	Arabic	farming	48
7	Male	61	Married	Arabic	farmer	44
8	Male	77	Married	Arabic	farming	51
9	male	56	married	No	farming	29
10	Male	67	Married	Nomadic	farming	48
11	female	45	Married	No	farming	33
12	Male	38	Married	Bsc	farming	21

13	Male	50	Married	Bsc	farming	34
14	Male	45	Married	NCE	farming	19
15	Male	42	Married	Bsc	farming	29
16	Male	47	Married	HND	farming	21
17	Male	69	Married	Nomadic	farming	48
18	Male	34	Married	Secondary	farming	14
19	Female	56	Window	No	farming	44
20	Male	55	Married	Arabic	farming	32
21	Male	40	Married	NCE	farming	19
22	Male	47	Married	No	farming	26
23	Male	60	Married	Nomadic	farming	41
24	Male	30	Married	Qurani	farming	19
25	Male	69	Married	No	Farming	53
26	Female	28	Single	Secondary	farming	11
27	Male	48	Married	No	Cattle rearing	22
28	Male	37	Married	Qurani	Cattle rearing	26
Total						

Source: field data 2016

From table 2, 50% of the respondents are farmers while 50% are Fulani herdsmen. This is paramount because both are critical actors in food production in Nassarawa Eggon LGA. However, 82.1% of the respondents are male, while 17.9% are female. This implies that male dominate farming activities in Nassarawa Eggon LGA despite the agitation by feminist political economy scholars on gender equality. A greater proportion 53.6% of the respondents had no formal education, 10.8% had nomadic education,7.2% had primary, 7.2% had secondary education, 7.2% had NCE/Diploma while 14.3% are graduate. This shows that farmers in Nassarawa Eggon were mostly illiterates. This has been the reason most of the farmers are ignorance about the effect of climate change on the political economy of food production.

Also, Table 2, show 28.6% of respondents were between the ages of 30-40 years, 32.2% were between 41-50 years, 14.3% were between 51-60 years, 17.9% were between 61-70 years 17.9, and 7.2% were above 70 years. This implies that the respondent can vividly give account on the effect of climate change in their area. However, this concurred with the study of osabo, Agwale Zaknayiba & Sunday (2014) which shows that the respondents had reliable age to appreciate change in weather condition.

Equally important, Table 2 captures marital status of respondents as follow: single 3.6%, window 3.6% and married 92.9%. This implies that farming activities is the only means of livelihood of the inhabitant of Nassarawa Eggon LGA. Farming/ cattle breeding experiences: 28.6% had 10-20 years farming/cattle breeding experiences, 28.6% had 21-30 years farming/cattle breeding experience, 14.3% had 31-40 years farming/cattle breeding experiences, 17.9% had 41-50 years farming/cattle breeding experiences and 10.8% had over 50 years farming/cattle breeding experiences. This entails that the information give by 14.3%, 17.9% and 17.9% of respondent will be reliable since they have reasonable experience than the other respondents with little years of experiences in farming/ cattle breeding. They can be able to tell us whether or not food production have increase or decrease in recent time.

Table 3, showed effects of climate change on food production

S/N	No. of respondent	Effect of climate change on agriculture	Percentage
1	9	Erratic rainfall	32.2%
2	2	High temperature	7.2%
3	2	Shrinking lake	7.2%
4	8	Pest and disease	28.5%
5	1	Loss of soil fertility	3.5%
6	6	Farmers/ herdsmen conflict	21.4%
Total	28		100%

Source: field data 2016.

Table 3 above illustrate 32.2% of respondents are of the view that climate change affect food production through erratic rainfall. The predominant of the farmers in Nassarawa Eggon LGA depend on rainfall to cultivate farmland. These nine respondents represent 32.2% that maintain that climate change result to erratic rainfall. This erratic rainfall affects growth pattern of rain-fed crops such as maize, millet, guinea corn, grand nut, yam, rice etc. this makes the crops to start drying crops which affects yield in the harvest period. Late rainfall affect agriculture as it creates or brings about drought and pest on crops which affect farm yield at the

end of the farming season. Change in rainfall had adversely led to reduction in food production in recent time in Nassarawa Eggon LGA. Experiences show that crops especially beans and guinea corn suffered premature harvest. They dry before getting matured due to shorter raining period than normal. We start our farming activities letter than normal period due to droughts in the beginning of seasons. Heavy rainfall causes flooding in Nassarawa Eggon and destroyed farm products. Low or high temperature affects grazing in Nassarawa Eggon. Excessive rainfall leads to leaching of nutrient and causes soil erosion. And low humidity causes aridity or dryness. Farmland loose fertility, the yield had reduced. From this we can figure out that climate change had adversely undermined food production in recent time in Nassarawa Eggon LGA, Shortage of food product in the market which trigger high price of food stuffs. Also, flooding wash away farmland of farmers which adversely affect food production within the locality.

Table 3 also shows 7.2% respondents maintain that climate change affect agriculture through high temperature. It is important to know that the most influential factors in the climate are temperature and moisture. Crops can grow only within certain limit of temperature. Therefore, lower or higher temperature affects food production in a particular area. Temperature greatly influences germination of seeds. For survival each plant has a minimum, optimum and maximum temperature which is called cardinal temperature. Very high and very low temperatures affect the photosynthetic rate adversely. Also crops growth is influenced by temperature as every plant has its specific degree day. A degree day or heat unit is the departure from the mean daily temperature above the minimum threshold is the temperature. The minimum threshold is the temperature below which no growths take place. The indices of climate change stated by the respondents are in line with other researchers in Nigeria who revealed that temperature is increasing with frequency and intensity of unusual and extreme weather event such as erratic rainfall pattern., floods and drought (Molega; 2006. Umoh, 2007, Odjugo 2010, Uguru, 2011)

Table 3 shows 7.2% of respondents maintain that Climate change affects us through shrinking of lake which results to shortage of water for our cattle, most especially during dry season. We want government to build dam for us. My cattle are no longer getting water to drink; sometime we go to neighboring state Benue to feel my cattle. Climate change adversely affects our cattle. We don't get grass, my animal die as a result of the effect of climate change. In some place the government build dam, borehole. Here in Nassarawa Eggon there is no dam. Before we have "Aluku" dam and "Ashamaga" dam in Nassarawa Eggon where we get water and grass for our cattle, but now the two dam dry up completely. I came to Nassarawa Eggon in 1959 then there is "Fadama" but it dry up now. Where to rearing my animals is not enough. Because farmers farm everywhere, they block the ranch that we pass. Flooding wash farmland. Aridity of bush for animal grazing because of inadequate rain fall and it affect the health of my cattle's.

Table 3 shows 28.5% respondents maintain that Pest and disease attacks the crops. Pest and disease occur due to high temperature. Pest such as insect cut the leaves of crops at it early stage of growth, some time they eat the seed of crops at the final stage of growth. This has been the reason for influx of insect pest in recent time in Nassarawa Eggon LGA. This insect pest cause a colossal damaged to crops which reduce crops yield. Also crop disease affect crops by killed the crops premature.

Table 3 show 3.6% respondent maintain that in those days some parts of the Nassarawa Eggon farmland are naturally fertile while the majority has lost its nutrients due to longtime cultivation for over decades. These made the farm products differ base on its suitability and compatibility to the land of its cultivation. Government can assist in address climate change. From this respondent we can figure out that the instrument of labour lost it fertility because of frequent cultivations by farmers for decades. The liberal political economist will called it diminish return while the Marxist political economist will link it the impact of capitalism on agricultural activities.

Table 3 illustrate 21.4% of respondents are of the view that climate change cause conflict between herdsmen and farmers in which food product are destroyed. Fulani herdsmen destroy crops where they do not get grass to feel their cattle. From this respond we can deduce, that the incessant crisis between herdsmen and farmers in Nassarawa Eggon LGA could be attribute to climate change. This friction lead to not only destruction of crops but lost of live as well.

DISCUSSION OF MAJOR FINDING

1. Finding revealed that predominant populations of Nassarawa Eggon people are peasants' farmers. They engaged in food production for domestic use, while surplus are sale to meet other needs. Finding agreed with the study done by Akinbamowo (2013) title review of government policy on agricultural mechanization in Nigeria maintain peasant farmers using primitive tools still constitute the bulk of producers of the food crops consumed in the country.
2. Equally our finding revealed that government policies on agriculture are meant to serve the rich farmers who engage in production for export as against the peasants' farmers who produce for domestic use. It is important to know that as you produce for export you're given out job opportunity to other countries against

your economy. More so it will promote dependent relation in the global political economy. This concur with Idachaba (2004) what has turned out to be food insecurity problem in Nigeria in the recent time is a consequence of the persistent neglect of the peasant farmers and of the food crop sub-sector, Nigeria possesses the capacity to be food secured if the enabling environment is created for the peasant farmers to operate in their farming activities.

3. Finding revealed that the major cause of climate change is modernization of agriculture. That's a shift from use of crude tools to modern farm tools such as tractor, herbicide, improve seeds etc. this is hazardous to our environment. This was supported by Suleiman I.L (2014) shows that human activities are largely responsible for climate change experience in different parts of the globe today. These activities have led to increased concentration of green house gases into the atmosphere and they are associated with the industrialized countries and some emerging nations. Agriculture in Nigeria is entirely dependent on climate and change in climate is bound to affect it.
4. Findings revealed that there is erratic rainfall in Nassarawa Eggon LGA which had adversely affect food production in the local government. This is because all the farmers in the local government depend on rain fed to cultivate farm land. Olaniran (1990) investigated climate change in Nigeria, variation in rainfall receipt per rain-day and observed there has been a progressive early retreat of rainfall over the whole country, and consistent with this pattern, report a significant decline of rainfall frequency in September and October which, respectively coincide with the end rainy season in the northern and north central part of Nigeria. Climate variability has been noted to arise as a result of changing rainfall pattern, some regions have experienced marked decline in rainfall patterns depending on the location. For state whose economy largely depends on efficient and productive rain-fed agriculture, rainfall patterns and trends are often quoted as one of the major causes of several socio-economic problems like food insecurity in the state. (Ekwe ,2014).
5. Finding reveal that climate change had adversely affect food production in recent time in Nassarawa Eggon LGA. Food production has drastically reduced which lead to a reduction in farmers' income.

IV. RECOMMENDATIONS

Based on the findings of the study and taking cognizance of the importance of the subject matter under review, the researcher is inclined to make the following recommendations:

1. Government should carry out aggressive campaign against the effect of climate change across to rural area where majority of the farmers are resident. This shall be done on mass media preferable radio and should be done in local language. Climate change "cangin yanayi" should be adequately explained to the peasant farmers. Also, the extension workers had a lot to do. They should make personal contact with the peasants' farmers and sensitized them on the effect of climate change and way to cushion it.
2. Also adequate assessment on social economic and environmental impact analysis of agricultural policies should be carried out before formulation. This will help in providing pragmatic solutions to the problems of climate change in the study area. This is because most of the government policies on agriculture are responsible for climate change in the country.
3. Government should build dam that will provide artificial water to farmers in the area. This is important because the farmers depend on rainfall to plant crops. This is paramount because erratic rainfall seriously affects food production in Nassarawa Eggon LGA.
4. The lingering conflict between farmers and herdsmen need to be address. It had affect food production in the country. The clashed result to destruction of food production as well as lost of live and property.

V. CONCLUSION

From the foregoing study, it has shows that climate change is real and adversely affects food production in the country. This is because agriculture depends solely on climate; therefore any change in climate will have negative impact on food production. Climate change affect food production in several ways ranging from directs on crop production, change in rainfall leading to drought or flooding, warmer or cooler temperature which leads to changes in the length of season, change in food price and food supply in the market. As we experience inflation in the price of food items now. Climate change also exacerbate food dependency between developed and under developed country at the global political economy relation. For example the embargo import on the importation of rice through the Borden area triggers increase in rice in the country. Equally, finding revealed that haphazard formulations and implementation of government policies on agriculture exacerbate climate change in the study area. It's regrettable that, the beneficiaries (rich farmers) of these policies are not affect by climate change, but the peasant farmers who are in the receiving end of this impact. Hence the study suggest reviews of government policies on food production in the country.

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Aliyu Abdullahi The Impact of Climate Change on The Political Economy of Food Production: A Study of Nassarawa Eggon LGA of Nasarawa State, Nigeria..” IOSR Journal Of Humanities And Social Science (IOSR-JHSS), vol. 22, no. 11, 2017, pp. 63-71.