

EFFECTS OF CLIMATE CHANGE AND GLOBAL WARMING ON SUSTAINABLE DEVELOPMENT AND SOCIO-ECONOMIC LIFE OF IJEBU-ODE INDIGENES OF NIGERIA.

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ABSTRACT

This study examined the effects of climate change and global warming on sustainable development and socio-economic life of Ijebu-Ode indigenes of Nigeria. Descriptive research design was used for the study. Simple random sampling technique was adopted in selecting one hundred 100 indigenes in five (5) selected streets in Ijebu-Ode metropolis, Ogun-State, Nigeria. The instrument used in gathering data from the respondents was a self-designed and close ended questionnaire. The data gathered from the respondents was arranged and analyzed using simple percentage. Findings revealed that climate change and global warming leads to soil erosion/ flooding, desert encroachment and drought, environmental imbalance and poses serious threat to human's sustainable development and socio-economic life of Ijebu-Ode indigenes, that climate change and global warming hindered high level of productivity in agriculture and as a result reduce the opportunity for occupational sustainability and sustainable development; findings also revealed that climate change and global warming poses threats to sustainable development in agriculture, food production and health sustainability of the people.

Keywords: Climate Change, Global Warming, Sustainable Development, Indigenes, Chlorofluorocarbons, Ozone, Socio-Economic Life.

INTRODUCTION:

The effect of climate change and global warming across the globe cannot be over emphasized or underestimated. As a matter of fact, it has been threatening the basic elements of life such as water, air, land, food, health etc. consequently, affecting the sustainable development and sustainability of human environment. Mishra (2017), asserts that climate change and global warming is a great and serious burden on the socioeconomic life of developing country like Nigeria. Abdulkadir, Lawal and Muhammed (2017), describe climate change as the observable changes in the climate system that are attributable to human activities. Climate change according to Boutkhil (2018) is seen as one of the most critical threats and obstacles to the sustainable development and progress in Nigeria with a large proportion of the total gas emissions which cause global warming. Edeh, Leo and Eme (2014), opine that global warming originates from the release of CO² carbon-dioxide into the atmosphere as a result of increasing human activities from traditional agriculture practice to industrial activities producing carbon-dioxides(CO), products of aerosols and chlorofluorocarbons(CFCs) from refrigerants and coolants.

All human anthropogenic activities together with the green house gases warm the atmosphere and deplete the ozone layer (O₃) covering of the earth's atmosphere which allows the radiation from the sun to penetrate the atmosphere causing a geometric increase in temperature and also have negative effect on sustainable development of human environment. However, the increase in the heat causes desertification, erosion, hunger, migration, poverty and conflict for the earth's limited resources. Mishra (2017) argues further that the consequences and effects of climate change on human health can be categorized as asthma, respiratory allergies and airway disease and stroke, food-borne disease and nutrition, heat-related morbidity and mortality. Nonetheless, no study has been raised on the effects of climate change and global warming on the socioeconomic life and sustainable development of Ijebu-Ode. In other words, some indigenes are aware of it and express concerns about climate change and global warming but very few of them actually are acting on these concerns and taking steps to change their socioeconomic life to support sustainable development and sustainability of human environment. In the light of the above background, only few researches has been done on the effect of climate change and global warming on socioeconomic life and sustainable development and this is the gap that should be filled in environmental studies. Therefore, to cover this gap, this study tends to examine the effects of climate change and global warming on the sustainable development and socioeconomic life of Ijebu-Ode indigenes of Nigeria.

REVIEW OF LITERATURE:

The United Nation's Bruntland commission's report submitted in 1987 defined sustainable development as activities that meet the needs of the present generation without adversely affecting the ability of the future generation to meet their own needs. The commission identified a number of "common challenges" which revolve around population and resources, food security, biological species and ecosystem, energy, industrial development, and urbanization (Davis 2006).

The United Nations conference on Environment and Development (UNCED) was held in 1992 at Rio de Janeiro, Brazil. The conference which was also known as Rio summit considered and adopted treaties on climate change and bio diversity and a non-binding statement of forest principles. Other issues in the Rio document include declaration on environment and development, statement of principles to guide the management, conservation and sustainable development of all types of forest by the United Nations framework convention on climate change and convention on the biological diversity (United Nations Department of Economic and Social Affairs, 2004).

Climate change and global warming is the increase in the average temperature of the earth's near-surface air and the ocean since the mid-twentieth century (Olaniyi Funmilayo and Olutimlehin, 2014). According to Danjuma, (2017) climate change has the potential to affect all natural systems, thereby becoming a threat to human development and survival socially, politically and economically. Usman and Dije(2013) refers to the climate change as the change in the state of climate that can be identified by changes in mean or variability of its properties and that persists for extended periods, typically decades or longer. Edeh, Leo and Eme (2014) describe global warming as the palpable increase in the global temperature that causes the atmosphere to be warmer. The earth is getting warmer principally because of human activities which release into the atmosphere certain gasses, mainly carbon-dioxide, CO². As large quantities of these gasses concentrate in the atmosphere, thereby raising the temperature of the earth, this is what is referred to as the greenhouse effect. Some of the major effects of global warming include rising of sea level, more frequent violent and catastrophic storms, hurricane, flooding, erosion e.t.c. The direct effect of global warming is climate change which means the disruption of climate pattern, with consequent negative impact on the environment and human life. Giddens (2006), opine that global warming is the gradual rise in the earth's average temperature due to change in the chemical composition of the atmosphere. Global warming is believed to be caused in part by humans because the gases that have built up and altered the earth's atmosphere are the ones produced in large quantities by human activities. Global warming is also said to be closely related to the ideas of greenhouse effect. This is the build-up of heat trapping greenhouse gases within the earth's atmosphere. While some greenhouse gases occur naturally in the atmosphere, others are as a results of human activities. Aiyelokun and Odekoya (2016) investigated the annual average trend and variability of atmosphere temperature in Ijebu-Ode, south west Nigeria. Secondary data of atmospheric air temperature was obtained from the Nigeria Meteorological agency (NIMET) Ijebu-Ode, Ogun State station, which cover thirty-one (31) years. The analysis of result revealed that temporal air temperature trend has remained generally on the increase since 1983. The increase was gradual between 1991 and 2013, which increases gradually till date. Ayanda, Oyeyinka, Salau and Ojo (2013), examined the perceived effect of climate change on grazing land, herd's performance and the coping strategies of the pastorates to climate change. The results revealed that 67.5% of the pastorates strongly agreed that the pattern of rainfall in recent time affects pasture availability. Consequently 47.5% and 52.5% of them reported a decrease in milk production and increase in herd's mortality rate respectively due to the effects of climate change. Apantaku, Seriki, Aromolaran and Adebawo (2013), investigated the effects of climate change on health of rural households. The findings showed that the major health problems reported as a result of climate change and global warming include common cold, cough, malaria and fever.

METHOD:

This study adopted descriptive research design to obtain firsthand information. Three research questions were raised to guide the study. They are:

- What is the effect of climate change and global warming on the sustainable development of Ijebu-Ode environment?
- How do climate change and global warming affects the occupational sustainability of Ijebu-Ode Indigene?
- To what level does climate change and global warming impact sustainable development in agriculture and health sustainability of Ijebu-Ode indigenes?

The target population for the study consisted of all indigenes in Ijebu-Ode local government area of Ogun State. Simple random sampling technique was used to select twenty (20) respondents each from five (5) streets in Ijebu-ode metropolis,

Ogun State, making a hundred (100) of indigenes that were captured for this study. The instrument used in gathering data from the respondents was a self-designed and close-ended questionnaire which contained two main sections (A&B). Section A comprises of the demographic data of the respondents while section B comprises of relevant questions relating to the study, which were answered by the respondents. The instrument was validated by the researcher to ensure face and content validity.

The split-half statistics method was used to determine the reliability of the research instrument. A pilot test was conducted using some copies of the questionnaire on a sampled of respondents who were not involved in the main study. The reliability coefficient obtained through crombach Alpha was used to determine whether the instrument was reliable or not. The researcher personally went to all the selected streets to administer the questionnaire. The data gathered from the respondent was arranged and analyzed using descriptive statistics such as frequency counts and percentages.

RQ 1: What is the effect of climate change and global warming on the sustainable development of Ijebu-Ode environment?

Table 1: Analysis of Research Question 1:

S/N	Items Raised	SA		A		D		SD	
		F	%	F	%	F	%	F	%
1	Climate change and global warming leads to soil erosion/flooding which affects the environmental sustainability	66	66	20	20	8	8	6	6
2	Climate change and global warming leads to desert encroachment and drought.	52	52	27	27	12	12	9	9
3	Climate change and global warming is a function of environmental and imbalance in the ecosystem.	40	40	54	54	4	4	2	2
4	The direct effect of global warming is climate change, which means the disruption of climate pattern, and negative consequent on sustainable development of the environment.	36	36	50	50	6	6	8	8
5	Climate change is a serious threat to humans' well-being and environmental sustainability	45	45	39	39	8	8	8	8

The above table presents the respondents' responses on the research question one. Participants' responses with regards to the statement one on the table above shows that 66% of the participants indicated their responses for Strongly Agreed, 20% for Agreed, 8% for Disagreed and 6% for Strongly Disagreed. Participants' responses with regards to the statement two on the table above shows that 52% of the respondents indicated their responses for Strongly Agreed, 27% for Agreed, 12% for Disagreed, 9% for Strongly Disagreed. Participants' responses with regards to the statement three on the above table shows that 40% of the respondents indicated their responses for Strongly Agreed, 54% for Agreed, 4% for Disagreed and 2% for Strongly Disagreed. Moreover, participants' responses with regards to the statement four on the table shows that 36% of the respondents indicated their responses for Strongly Agreed, 50% for Agreed, 6% for Disagreed and 8% for

Strongly Disagreed. Participants' responses with regards to the statement five on the table above shows that 45% of the respondents indicated their responses for Strongly Agreed, 39% for Agreed, 8% for Disagreed, 8% for Strongly Disagreed. Hence, based on higher percentage of Strongly Agreed (SA) and Agreed in table 1 as regard the question which says what is the effect of climate change and global warming on the sustainability of Ijebu-Ode environment. It was noted that climate change and global warming leads to soil erosion/flooding, desert encroachment and drought, environmental imbalance, disruption of climate pattern and poses serious threat to humans' socio-economic life and sustainability of the environment.

RQ 2: How do climate change and global warming affects the occupational sustainability of Ijebu-Ode Indigene?

Table 2: Analysis of research question 2

S/N	Items Raised	SA		A		D		SD	
		F	%	F	%	F	%	F	%
1	The level of climate change and global warming determines occupational sustainability of every citizens.	31	31	54	54	10	10	5	5
2	Climate change and global warming affects high level of productivity in agriculture and opens opportunities for occupational sustainability in field.	43	43	46	46	2	2	9	9
3	Climate change and global warming affects livestock production due to reduction in the available pasture land and as a result reduce the opportunities for occupational sustainability and sustainable development.	35	35	50	50	9	9	6	6
4	Climate change and global warming leads to reduction in surface water resources for animals and as a result reduce the opportunities for occupational sustainability and sustainable development.	47	47	28	28	15	15	10	10
5	Climate change and global warming increase salinity of water resources for animals and as a result reduce the opportunities for occupational sustainabilities.	50	50	17	17	14	14	19	19

The table two (2) above presents participants responses on the research question two. Participant's responses with regards to the statement one on the table above shows 31% of the respondents indicated their responses for Strongly Agreed, 54% for Agreed 10% for Disagreed and 5% for Strongly Disagreed. Participant's responses with regards to statement two on the table above shows that 43% of the respondents indicated their responses for Strongly Agreed, 46% for Agreed, 2% for Disagreed and 9% for Strongly Disagreed. Participant's responses with regards to the statement three on the above table shows that 35% of the respondents indicated their responses for

Strongly Agreed, 50% for Agreed, 9% of the respondent indicated their responses for Disagreed and 6% for Strongly Disagreed. Moreover, participants responses with regards to the statements four on the table above shows that 47% of the respondents indicated their responses for Strongly Agreed, 28% for Agreed, 15% for Disagreed and 10% for Strongly Disagreed. Participants' responses with regards to the statement five on the table above shows that 50% of the respondents indicated their responses for Strongly Agreed, 17% for Agreed, 14% for Disagreed and 19% for Strongly Disagreed. Hence, based on the research question two (2) which says how do climate change and global warming affects the occupation of Ijebu-Ode indigenes. It was revealed that climate change and global warming affects the occupation, it was also noted that climate change and global warming reduce high level of productivity in agriculture, affects livestock production due to reduction the available pasture land, leads to reduction in surface water resources for animals, and increase salinity of water resources for animals and as a result reduce the opportunities for occupational sustainability and sustainable development.

RQ 3: To what level does climate change and global warming impact sustainable development in agriculture and health sustainability of Ijebu-Ode indigenes?

Table 3: Analysis of Research Question 3

S/N	Items Raised	SA		A		D		SD	
		F	%	F	%	F	%	F	%
1	Climate change and global warming poses threats to sustainable development in agriculture and health sustainability of the people.	30	30	31	31	24	24	15	15
2	Climate change and global warming leads to reduction in forestry produce and low income, as well as an increase in the costs of building furniture materials.	46	46	45	45	3	3	6	6
3	Urban floods experienced by people can make them suffer mental disorders and spread diseases.	20	20	60	60	10	10	10	10
4	Increasing temperatures, rising sea levels and increasing storm frequencies have great implication on sustainability of the environment.	54	54	40	40	4	4	2	2
5	Temperature and rainfall dynamics may increase the distribution of disease vectors such as dengue, malaria, incidence of diarrhea diseases and health sustainability of the people.	59	59	35	35	4	4	2	2

The table three (3) above presents participants' responses on the research question three. Participants responses with regards to the statement one on the table above shows that 30% of the respondents indicated their responses for Strongly Agreed, 31% for Agreed, 24% for Disagreed and 15% for Strongly Disagreed. Participant's responses with regards to

statement two on the table above shows that 46% of the respondents indicated their responses for Strongly Agreed, 45% for Agreed, 3% for Disagreed and 6% for Strongly Disagreed. Participant's responses with regards to statement three on the table above shows that 20% of the respondents indicated their responses for Strongly Agreed, 60% for Agreed, 10% for Disagreed and 10% for Strongly Disagreed. Moreover, participants' responses with regards to the statement four on the table above shows that 54% of the respondents indicated their responses for Strongly Agreed 40% for Agreed, 4% for Disagreed and 2% for Strongly Disagreed. Participants' responses with regards to the statement five on the table above shows that 59% of the respondents indicated their responses for Strongly Agreed, 35% for Agreed, 4% for Disagreed and 2% for Strongly Disagreed. Hence, based on the research question which says to what level does climate change and global warming impact sustainable development in agriculture and health sustainability of Ijebu-Ode indigenes, it was noted that climate change and global warming poses threats to food security; leads to reduction in forestry produce and low income; makes people suffer mental disorders and spread diseases; increases temperatures, sea levels and storm frequencies; increases the distribution of disease vectors such as dengue, malaria and incidence of diarrhea diseases. Thus poses threats to sustainable development in agriculture, food production and health sustainability of the people.

DISCUSSION:

The findings based on the research question one (1) showed that climate change and global warming leads to soil erosion/flooding, desert encroachment and drought, environmental imbalance and poses serious threat to human's socio-economic life and sustainable development of the environment. This result is consistent with the study of Abdulkadir Maryam and Muhammad (2017) who noted that environment is a system within which living organism interact with physical elements. Nigeria is one of the African countries that are vulnerable to the adverse consequence of climate change.

Research question two (2) revealed that climate change and global warming hindered high level of productivity in agriculture and opportunities for occupation in the field, affects livestock production due to reduction in the available pasture land, leads to reduction in surface water resources for animals; increase salinity of water resources for animals, and as a result reduce the opportunity for occupational sustainability and sustainable development. This is in line with the study of Ogbuabor and Egwechukwu (2017) who observed that climate change also affects livestock production due to reduction in available pasture land, reduction in surface water resources for animals, increase in salinity of water resources for animals due to increased temperature and evaporation in the face of reduced rainfall.

Moreover, research questions three (3) showed that climate change and global warming poses threats to food security, lead to reduction in forestry produce and low income; makes people suffer mental disorders and spread diseases, increase temperatures, increase the distribution of disease vectors such as dengue, malaria and incidences of diarrhea diseases. Thus poses threats to sustainable development in agriculture, food production and health sustainability of the people. This result is in tandem with study of Usman & Dije (2013) who found out that many sectors of the Nigerian economy appears to be directly vulnerable to the impacts of climate change such as manufacturing, insurance, transportation, other vulnerable sectors are those dependent on climate sensitive resources like agriculture, fishing, forestry, renewable energy and Eco-tourism.

CONCLUSION:

Based on the findings of this study, it was concluded that climate change and global warming leads to soil erosion/flooding, environmental imbalance and poses serious problem to human socio-economic life and sustainable development of the

environment. Climate change and global warming also reduce level of productivity in agriculture, affect livestock production and leads to reduction in surface water resources for animals. As a result, reduce opportunities for occupational sustainability and sustainable development. Moreover, climate change and global warming poses threats to food security, leads to reduction in forestry produce and also increase vectors such as developing malaria and diseases. Thus, poses serious challenge to sustainable development in agriculture, food production, and sustainability of human health. Therefore, the promotion of sustainable development and environmental sustainability is highly needed for addressing the enormous problems of environment such as climate change and global warming that may affect socio-economic life of people in Nigeria. This also calls for public understanding of principles behind environmental sustainability and the social process that needs to be mainstreamed into all sectors including business, agriculture tourism, national resources management, local government and mass media etc. According to UNESCO(2007), education for sustainable development is expected to contribute to preparing citizens to face environmental challenges (e.g. climate change and global warming) of the present and the future, and decision-makers who will act responsibly to create a viable world. Five kinds of fundamental learning are to be enhanced, learning to know, learning to do, learning to be, learning to live together and learning to transform oneself and society.

RECOMMENDATION:

Based on the findings its was recommended that:

- Human being should limit its intervention on the natural ecosystem in their quest for comfortabilty in the environment.
- Waste substances and pollutants into water bodies should be reduced to the barest minimal.
- The campaign on tree planting, parks and greener lands, urban/marketing garden and afforestation in human’s habitats should be encouraged.
- Nigeria government should pay serious attention to the issue of climate change and global warming through different environmental policies and legislation over the next years.
- The government should announce voluntary mitigation to reduce emission of greenhouse gases to protect
- the environment and strengthen their climate change adaptation in development planning.

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