

## **Effect of Climate Change and Global Warming on Management of Business in Nigeria**

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### **ABSTRACT**

The focus of this study was on the Effect of Climate change and Global warming on Management of Business in Nigeria. Global warming due to increasing concentrations of greenhouse gases (GHGs) poses threats to human society by changing the living and working environment to which society has adapted over the generations. On the global scale, the rate and magnitude of predicted changes in climate are unprecedented in historical times. The broad objective of the study is to examine the relationship between Climate change and Global warming and Management of Business in Nigeria. Cross-sectional survey design was adopted in this study. A sample of 120 individuals selected from National Emergency Management Agency (NEMA) located in Enugu state, Federal Ministry of Environment located in Enugu too, as well as Centre for Environmental Management and Control (CEMAC) located in University of Nigeria Enugu Campus were used for the study. A structured questionnaire was designed to elicit data from the respondents. Using Spearman's rank correlation approach, the reliability of the instrument was ascertained and it gave value of 0.98. The validity of the research instrument was also ascertained. Among others, the findings of the research revealed that the root causes of climate change and global warming include astronomical variations, Milankovitch variations and human activities such as deforestation and bush burning, industrial and transportation emissions. It was concluded that climate change and global warming impact heavily on management of business in Nigeria. It was recommended that Government and Nigeria citizens should embark on the reduction of the transaction of emissions-intensive goods and services, increasing efficiency gains, increasing use and development of low-carbon technologies, and reducing fossil fuel emissions which can be achieved through the alternative source of Energy such as solar energy, geothermal, bio-fuel, and wind Energy.

Keywords: Global warming, wind, energy, climate, change and global warming.

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### **INTRODUCTION**

Climate change and Global warming are global environmental problems with serious local consequences, which pose significant potential threat to present and

future business activities. Developing countries like African countries contribute a small percentage to the global greenhouse gases (GHG) emissions and there is so far no obligation on them

to reduce their GHG emissions. Yet they need to do so to ensure favourable environment for effective management of their businesses. Indeed, national priorities could be met simultaneously with climate change and global warming management. The reason is that GHG mitigation can have a positive impact on the economy through developing a clean pathway which will help reduce the growth of emissions. Against the backdrop of growing environmental awareness of the interactions between business activities and their consequences, Climate change and Global warming represent part of other initiatives to raise awareness of all business stakeholders, policy and decision makers, physical, biological, social and environmental scientists about climate change and Global warming concerns [1].

For developing countries, including Nigeria, building Climate change and Global warming issues into business programmes and policies provide opportunity to heighten awareness of business activities. This is especially so because action depends on awareness. Coping with climate change and Global warming (i.e. adaptation) will involve new approaches to business planning. Both Climate change and Global warming require the adoption of long-term and comprehensive approaches to planning,

development and management of business [2].

The Climate change and Global warming issues are key elements in ensuring sustainable business activities. So, considerations of climate change and global warming in addition to sustainability and equity concerns into business places environmental management, climate change and Global warming management and reduction in a broader context. Such considerations not only has the potential of significantly enhancing the capability of business planning but also, offer opportunity for business activities to be carried out in a more effective and convenient way. Therefore, business managers at the initial stage should take into account Climate change and Global warming concerns. Business Managers require Climate change and Global warming assessment to provide them with the necessary scientific information for business decisions [3].

Processes and products of Climate change and Global warming decision making cover a wide spectrum, from the global negotiations and agreements to the micro level of firms and households. Arising from the above, therefore, this study investigated the effect of climate change and global warning on management of business in Nigeria.

### **Statement of the Problem**

Global warming due to increasing concentrations of greenhouse gases (GHGs) poses threats to human society by changing the living and working environment to which society has adapted over the generations. On the global scale, the rate and magnitude of predicted changes in climate are unprecedented in historical times. This therefore raises questions about their likely effects on business activities, physical resources, natural ecosystems and human activities especially with reference to future developments.

Climate change and Global warming issues are of worldwide significance. The projected changes are predicted to have adverse consequences for many regions of the world, impacting on business activities, water resources, agricultural productivity; and natural marine and terrestrial systems, coastal zones, human settlements and human health, infrastructure and industry, etc. However, it has been observed with dismay that developing countries including Nigeria, are particularly vulnerable to climate change impacts which are occurring when these countries have little adaptive capacity. It has been suggested by some writers that lack of scientific, technical, financial and, institutional capacity to evaluate the impact of climate change are among the reasons for the limited

adaptive capacity. These constraining factors may further frustrate the implementation of adaptive measures. The net effect of all these to a country in general and to business firm in particular are increased unemployment, low productivity, low capital accumulation, low economic growth and development, among others.

It was based on the above impact, consequences and problems associated with Climate change and Global warming that the researcher has decided to investigate on the Effect of Climate Change and Global warming on Management of Business in Nigeria.

### **Objectives of the Study**

The broad objective of the study is to examine the relationship between Climate Change and Global Warming and Management of Business in Nigeria.

The specific objectives of this study are to:

- Identify the root causes of Climate change and Global warming in Nigeria.
- Examine the effects of Climate change and Global warming on Management of Business in Nigeria.
- Ascertain the strategies to address the challenges of global warming and climate change on Management of Business in Nigeria.

### **Research Questions**

Based on the above stated objectives, the following research questions were drawn;

What are the root causes and of Climate change and Global warming in Nigeria?

How do climate change and Global warming affect Management of Business in Nigeria?

What are strategies to address the challenges of global warming and climate change on Management of Business in Nigeria?

### **Scope of the Study**

The study is on the Effect of Climate Change and Global Warming on Management of Business in Nigeria. It was carried out between December, 2015 and February, 2016.

### **Significance of the Study**

#### **Conceptual Framework of Study**

In defining climate change, three key concepts are involved, namely climate, climate variability and climate change. While the definition of climate has been long established, not so are the definitions of climate change which is a product of scientific efforts in the last decade of the 20th century to grapple with global warming and climate change [4].

Climate can be defined in a narrow as well as in a wider sense. Climate in a narrow sense is usually defined as the average

The study is significant because it will help the researcher to identify the root causes of Climate change and Global warming in Nigeria, examine the effects of Climate change and Global warming and ascertain the strategies to address the challenges of global warming and climate change on Management of Business in Nigeria. The study will be useful to government and other policy makers in making and carrying out policies and decisions on issues bordering on Climate Change and Global Warming. It will also be useful to Nigerian businessmen and women in their day to day business decisions. The study will help other researchers carrying out study in the relevant field.

weather or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands of years. The classical period is three decades, as defined by the World Meteorological Organization (WMO). These quantities are most often surface variables such as temperature, precipitation and wind. Climate in a wider sense is the state, including a statistical description, of the climate system [5].

Climate change on the other hand, refers to a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period typically for decades or longer. Climate change may be due to natural processes or extended forces, or due to persistent anthropogenic changes in the composition of the atmosphere or in land use.

The United Nations Framework Convention on Climate Change (UNFCCC) in its Article 1 defines climate change as a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods [6].

The UNFCCC makes a distinction between climate change attributable to human activities altering the atmospheric composition, and climate variability attributable to natural causes. The human-induced changes in the global environment due to increases in emissions of GHGs are qualitatively different from those seen before, when climate varied naturally and slowly on many time scales.

Climate change as used by Intergovernmental Panel on Climate Change (IPCC) refers to any change in climate over time, whether due to natural

variability or as a result of human activity [7].

Climate change can be defined as any change in climate directly or indirectly attributable to human activities, earth-based causes and astronomic causes. It can also be defined as a significant and lasting change in the statistical distribution of weather patterns over periods ranging from decades to millions of years. It may be a change in average weather conditions or the distribution of events around that average (e.g. more or fewer extreme weather events, such as excess rain, insufficient rainfall, and increase in temperature). Climate change may be limited to specific region or may occur across the whole Earth [8].

Climate change is a periodic modification of Earth's climate brought about as a result of changes in the atmosphere as well as interactions between the atmosphere and various other geological, chemical, biological and geographical factors within the Earth system [9].

Global Climate Change in simple language refers to any significant change in world climate over time. Such a significant change may include any or all of the following among others; unpredictable rainfall patterns; rising temperatures and drought; increased likelihood of hazards such as floods, landslides and severe

cycloids which may result in hurricanes and typhoons [10].

Management is defined as a process of combination and utilization of organizational resources namely: men, materials and money, for the achievement of organizational objectives or goals. It also refers to those people in organization that take corporate decisions. Besides, management refers to those people in organization that work with and through people for the achievement of the organizational objectives or goals [11]. Managers on the other hand are those who get things done by, through and with others. In other words, they supervise the operatives [12].

Business Management then takes into account, the activity which determines the goals or objectives of business, designs the means by which the goals can be reached, and executes the programs which actually fulfill the objectives. The function of management include; planning, organizing, staffing, directing, control and co— ordination [2].

Business refers to the organized production and exchange of goods and services undertaken with the aim to earn profits, or mutual gain or benefit. It is an approach used by individuals for the purpose of providing goods and services to mankind. Accordingly, the term business refers to the “whole complete

field of commerce and industry, the basic industries, manufacturing industries and the network of distribution, banking, insurance and transport. The term business includes all activities from production to distribution of goods and services. It embraces industry, trade and other activities like banking, transport, insurance and [3].

### **Climate Change Mitigation Strategies**

Climate change mitigation is action to decrease the intensity of radiative forces in order to reduce the potential effects of global warming. Mitigation is distinguished from adaptation to global warming, which involves acting to tolerate the effects of global warming. Most often, climate change mitigation scenarios involve reductions in the concentrations for greenhouse gases, either by reducing their sources or by increasing their sinks [5].

The IJN defines mitigation in the context of climate change, as a human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to renewable energy (solar energy, wind power).

Scientific consensus on global warming, together with the precautionary principle and the fear of abrupt climate change is

leading to increased effort to develop new technologies and sciences and carefully manage others in an attempt to mitigate global warming. Most means of mitigation appear effective only for preventing further warming, not at reversing existing warming. Ways of mitigating climate change include reducing demand for emissions-intensive goods and services, increasing efficiency gains, increasing use and development of low-carbon technologies, and reducing fossil fuel emissions.

### **Theoretical Framework**

This study is guided by three set of theories namely:

1. The Tragedy of the Commons Theory by Garret Hardin;
2. Theory of Global Warming by Svante Arthenius and
3. Theory of Planetary Motion by Milutin Milankovitch.

### **Tragedy of the Commons Theory by Garret Hardin (1968 — 1998).**

[7] described climate change as “The Tragedy of the Commons”. In his theory of climate change, he said that “Commons” is a plot of land open for common usage and that problem occurs when there is unrestricted access to a “Commons” which leads to over exploitation and brings ruin to all.

Hardin suggested that “Commons” needs to be managed to make its use sustainable. He said that Air- pollution threatens the “atmospheric Commons and that the risk has a global reach and requires global solutions. He is of the view that atmosphere cannot be closed like a pasture of land.

### **Theory of Global Warming by Svante Arthenius (1859 - 1927)**

[5], a Nobel Prize winner in chemistry, 1903, and first to understand the importance of carbon dioxide ( CO) for climate in (1896): in his theory of global warming, realized that Co<sub>2</sub> was increasing and predicted that doubling of Co<sub>2</sub> would make Earth several degrees warmer. Arthenius said that “green-house” effect is a welcome natural phenomenon and without it, the surface of the Earth would be 60°f colder. He said that “green house” effect anthropogenic amplification is called global warming and the consequence is climate change. Arthenius identified water (H<sub>2</sub>O) and CO<sub>2</sub> as the most important green house gases.

### **Theory of Planetary Motion**

This theory contends that most or all of the warming of the latter part of the twentieth century can be explained by natural gravitational and magnetic oscillations of the solar system induced by the planet’s movement through space. These oscillations modulate solar

variations and/or other extraterrestrial influences of Earth, which then drive climate change. An extraterrestrial influence on climate on a multi-millennial timescale associated with planetary motion was first suggested by a Serbian astrophysicist, Milutin Milankovitch, and published in 1941. More recent discoveries have enabled scientists to accurately measure these effects on climate.

### **Empirical Review**

#### **The Root Causes and consequences of Climate change and Global warming in Nigeria**

[4], carried a study on the causes of climate change and global warming in Nigeria and discovered, among others, that the root causes of climate change and global warming include astronomical variations agents outside the earth's climate system, solar stop cycle, Meteorites.

#### **The effects of Climate change and Global warming on the management of business in Nigeria**

[6], carried out a research on climate change and global warming and discovered that to a very large extent these climate issues affect businesses in Nigeria. In his research on Nigerian Assembled cars and Building material he discovered the nature of sun-rays due to

ozone layer depletion that necessitated climate change and global warming seriously affect Nigeria assembled car paints. For example, the paints applied on the cars fade easily because of the nature of sun-rays that reflects on them. This rapid fading of Nigeria Assembled car paints make patronizers of the business lose confidence in purchasing the product and at the same time discourage those who have the intention to do so. The net effect is that majority of Nigerian patronizers prefer buying imported cars as a viable alternative.

#### **Strategies to address the challenges of global warming and climate change on management of business in Nigeria**

In her research on strategies to address the challenges of global warming and climate change in Nigeria include the Federal Ministry of Environment (FMENV) identified some of the strategies to include: Establishment of necessary legal and institutional framework, including the inauguration of the Federal Ministry of Environment (FMENV); Capacity Building and Institutional Strengthening through a number of initiatives including awareness creation and enhancement of the activities of NGOs; Collaboration with International Organizations towards the development of mutually beneficial policies, legislation, action plan and programmes at regional and international levels; Provision of necessary finding to

back up the country's participation in various originations and conventions ;and Creation of the Ecological Fund to address ecological disasters is one way of raising the necessary funds; etc.

These strategies appear plausible, but they will require ample political will and the dogged commitment of all concerned to translate them into reality. For instance, the matter of gas flaring has been with us for many decades. All kinds of threats and deadlines have been issued oil companies, but none seems to have worked in the desired direction. Recently, we hear about the emergence of a Pan Ocean Company which is expected to build plants that would convert hitherto flared gases to utilizable (liquid) gas and thus bring about "Carbon Credit". Again, the Ecological Disaster Fund needs to be, properly applied to its purpose and intents.

#### **Reasons for Integrating Climate Change and Global Warming on Management of Business in Nigeria**

There are four major reasons why efforts should be made to integrate global warming and climate change issues on management of business particularly in developing countries and with special reference to Nigeria. The first is that managing business involves planning and decision making therefore, climate change and global warming issues need to be incorporated into the procedure. The

second is the evolutionary trend of managing business (characterized by continuous improvements in scope and methodology which have led to the strengthening of business activities and the emergence of proactive strategic management that involves planning, policy and decision making for sustainable development and improvement in business activities. The usefulness and quality of contemporarily business management have been significantly enhanced by the incorporation of global warming and climate change issues on management of business particularly in developing country like Nigeria,

The incorporation of the climate change and global warming concerns into 21st century business management should proceed in parallel with the incorporation of business development, sustainability and equity into climate change and global warming assessment. This will further reinforce the role of business manager as a decision maker.

The third reason has to do with future exposure of the human ingenuity in business planning and resources management toward future business development, management and expansion in the face of climate variation and global warming. The rate and character of business development, management and expansion determines the level of climate

change and global warming pressures acting on business activities. The rate and character of business development, management and expansion will also determine adaptive capacity of business activities by shaping the nature and use of resources, information, technology and skills that can aid adaptation and management of business in the face of climate change and global warming [4].

The fourth is that for business manager to be able to make informed decisions that would be necessary to understand in advance, the possible range of the impacts of such changes on business activities and welfare and the ability of business manager to deal with those impacts should be known. The foregoing discussion underscores a critical factor in incorporating climate change and global warming into management of business. The efforts of international research projects and the assessment of scientific, technical and socio-economic information on human-induced climate change are scientific information that climate change and global warming are likely now available for the first time in history. Until recently climate changes and global warming were phenomenon recognized after the fact IPCC (1995).

### **The Impacts of Climate Change and Global Warming in Nigeria**

Although constant variabilities in the climate change and Global warming regime make it rather difficult to establish unequivocal forecasting, nonetheless, one can at least adopt IPCCs projections with regard to the impact (likely or real) of climate change on rainfall, ecology, flooding and agriculture among other features. According to IPCC projections (Federal Republic of Nigeria, 2003) rainfall in the very humid regions of southern Nigeria is expected to increase. This may be accompanied by increase in cloudiness and rainfall intensity, particularly during severe storms. It could also result in shifts in geographical patterns of precipitation and changes in the sustainability of the environment and management of resources. With regard to ecology and ecosystems, the severity of climate impacts on the ecosystems would depend to a large extent, on the status of the flora and fauna.

While details are still lacking, it is expected that the effects of any significant change in climate would shift the boundaries of major ecological zones of the country as well as have tremendous impact on the wildlife they support. In particular, the forest ecology and the ecosystems that are already under significant human pressure would be

adversely affected, significant climate change and sea level rise would result in loss of biodiversity, rapid deterioration in land cover and depletion of water availability through destruction of catchments and aquifers. Although specifics of the changes are yet to be properly analyzed, there would be changes in forest and land cover, species distribution, composition and migration patterns and biome distribution for the worse. Persistent flooding and water logging due to accelerated sea level rise or extreme weather events could render forest regeneration more difficult [7].

Many of the organisms in the forest ecosystem of Nigeria are already near their tolerance limits, and some are not able to adapt under a change in the ecological conditions. Flooding in Nigeria has already become a menace to human habitation and progress. A recent report credited to the Chief Executive Officer, Nigerian Environmental Study Action Team states that “in 2010 alone, 23 states were affected by flood disasters with serious consequences on the socio-economic well-being of the affected communities” (The Punch, September 26, 2011). Similar reports in the print and electronic media have highlighted disastrous flooding incidences in various parts of Nigeria. The impacts of climate change are already here with us.

The savanna biome of northern Nigeria would be very vulnerable to any climate-change-related dramatic reduction in rainfall in the region. This could result in wide spread degradation of habitats. In addition, changes in the ecological conditions less favourable to the existing ecosystems could result in new ecosystems in neighbouring areas where the climate is more favourable. Thus, climate change and sea level rise could affect the boundaries of the ecosystems and the mix of the species that compose them, such that the distribution of new patterns of plant and animal communities would be a reflection of how the different ecosystems have been able to adapt to the expected climates [4].

As a consequence of climate change, some areas in Nigeria have already started receiving heavier and steadier rainfall and such areas have inevitably begun to experience increased rainfall-induced erosion. As a corollary, in the arid northern parts of Nigeria, higher temperatures will contribute to dry conditions which underlie accelerated wind erosion. These are extremely serious situations given the fact that soil erosion is already of catastrophic proportions in Nigeria (whether viewed as gully or sheet erosion), while floods annually ravage many parts of the country during the rainy season. For example, it is estimated that in Abia, Anambra and Imo States

located in the south-eastern part of Nigeria, there are no fewer than 600 gully erosion sites [5].

As a result of widespread reduction in vegetation cover, all parts of the country are vulnerable to soil erosion resulting from climate change either in terms of removal of soil by wind and rain or deposition of same in low-lying and downwind locations. However, some parts of the country such as in the south-eastern areas are much more vulnerable to rain-induced erosion while the northern most parts are similarly vulnerable to wind-induced soil erosion.

Regarding agriculture, climate change in Nigeria is projected to be accompanied by greater variability in rainfall and temperature. Temperature increases will have detrimental effects on agriculture because of an increase in the number of extremely hot days, a reduction in rainfall and soil moisture, and an acceleration of crop development that would lead to premature ripening and lower yields in crops such as cereals. In particular, increased temperatures, which would increase evaporation, would reduce the effectiveness of any increase in precipitation and cause crop yield to be lowered. Increased rainfall variability would result in more frequent floods and droughts and larger runs of wet and dry years to give rise to frequent changes in agro climatic characteristics, and

increased variability in yields of crops in the different ecological zones [5].

Heavier than normal rainfall in the southern part of the country would lead to destruction of crops in the field, greater post-harvest losses, loss of arable land and increased growth of weeds. Significant reduction of rainfall in the Sudan-Sahel belt would make the region drier with consequent reduction in crop productivity. Decreased rainfall in the region would also reduce the primary productivity of the grassland areas in which livestock production is currently important. It would also have significant effects on the ecosystems; new ecoclimatic environment for livestock would emerge, possibly shifting towards the coast in many parts of the country.

Indirect effects of climate change on agriculture include the effects on pests and diseases and the impacts of these on agricultural production, health and agro-related socio-economic activities. Various pests, including the tobacco cutworm, rice stink bug, rice weevil and soybean pod borer would probably expand their distribution areas in the event of climate change. Also, an increase in the frequency of extreme events such as prolonged drought or intense flooding could create conditions that could be conducive to diseases or pest outbreaks, and severely disrupt the predator-prey relationships that normally restrict the proliferation of

pests. Warmer and more humid conditions would enhance the growth of bacteria and mould on many types of stored food, and this would increase food spoilage and create some specific toxicological health hazards. The sea level rise would lead to submergence of the lowlands along the coast, and much of the land currently used for agriculture would be lost leading to socio-economic and socio-cultural problems. There would be mass migration out of submerged agricultural areas and substantial losses of income, as well as great financial stress and unemployment would result. In the final analysis, the various impacts of climate change on crop and livestock could have tremendous impact on income, employment, food production and even exports. There would also be significant impacts on the characteristics of labour, employment and population processes and their characteristics [8].

The livestock production systems in Nigeria would also be vulnerable to climate change in respect of:

1. Anticipated decrease in rainfall in the Sudan Sahelian zone and consequent reduction in the available pastureland
2. Declining availability of surface water resources for animals and
3. Possible increases in salinity at watering points due to increased temperature and evaporation in the face of reduced rainfall.

To the extent that climate change leads to decrease in livestock production, it will impair the availability of animal protein including meat, egg and milk and animal products such as hides and skins. It will also adversely affect employment in the livestock sector. In the case of fisheries, both inland (e.g. around Lake Chad) and ocean fisheries are very sensitive in varying degrees to climate fluctuations. In particular, increased ocean temperatures may affect upwelling along the Gulf of Guinea which could make the ocean water become unsuitable for fisheries, causing a reduction in and possible collapse of fishing activities. An expected rise in temperature would cause a change in the characteristics of the ocean waters and consequently adversely affect fish habitat in the coastal zone of Nigeria. In addition, wetland loss and increased salinity would reduce estuarine fishing. On the other hand; increase in the depth of the present coastal water could lead to increased deep sea fishing and ocean fisheries closer to the shore. Any significant reduction in the fish catch would obviously upset both the economy and the culture of Nigeria [6].

These strategies appear plausible, but they will require ample political will and the dogged commitment of all concerned to translate them into reality. For instance, the matter of gas flaring has been with us for many decades. All kinds of threats and deadlines have been issued

oil companies, but none seems to have worked in the desired direction. Recently, we hear about the emergence of a Pan Ocean Company which is expected to build plants that would convert hitherto

flared gases to utilizable (liquid) gas and thus bring about “Carbon Credit”. Again, the Ecological Disaster Fund needs to be, properly applied to its purpose and intents.

### RESEARCH METHODOLOGY

#### Research Design

Survey design was adopted in this study.

#### Sources of Data

Data for this study were collected from both primary and secondary sources. The primary data were collected from systematically planned questionnaire administered to the members of the sample.

The secondary data were obtained basically from journals, newspapers as well as texts and periodicals. The secondary data were adjudged to be reliable because they were published by renowned authors and authorities.

#### Population of the Study

The population size for this research is 171 people which are the total number of the staff in the selected organizations of study namely, National Emergency Management Agency (NEMA) located in Enugu, Federal Ministry of Environment located in Enugu too, as well as Centre for Environmental Management and Control (CEMAC) located in University of Nigeria, Enugu Campus. The various organizations and their corresponding staff strength are:

NEMA	84
Federal Ministry of Environment	69
CEMAC, University of Nig Enugu Campus	18
Total	171

#### Sample Size Determination

Using Taro Yamane’s formula at 5% error (as shown), we obtain the sample size to be 120.

$$\begin{aligned}
 \text{Sample size } n &= \frac{N}{1+N(e)^2} = \frac{171}{1+171(0.05)^2} = \frac{171}{1+171(0.0025)} \\
 &= 119.8 \text{ approximately } 120.
 \end{aligned}$$

### Sampling Technique

The 120 members were selected through proportionate stratified random sampling technique.

### Research Instrument

A structured questionnaire was designed to elicit data from the respondents

### Validity of the Instrument

The structured questionnaire instrument was validated to ensure that it reflects the research framework/model. Some copies of the questionnaire were given to some selected members of the respondents. The aim was to ascertain the extent to which they understood the content of the instrument.

### Reliability of the Instrument

Using Spearman's rank correlation approach, the reliability of the instrument was ascertained.

### Administration of the Instrument

All items on the close-ended questionnaire were scored on the bases of five (5) points using the Likert Scale. The five points were;

A Strongly agreed (SA)

B Agreed (A)

C Indifference (I)

D Disagreed (D)

E Strongly Disagree (SD)

### Data Presentation

The data obtained were presented in tables and corresponding values expressed in percentages.

## DATA ANALYSIS

**TABLE 1: To Identify the Causes of Climate Change and Global Warming in Nigeria**

Responses (%)	Q <sub>1</sub>	Q <sub>2</sub>	Frequency	Percentage
Strongly Agree (SA)	53	55	108	45.0
Agree (A)	49	48	97	40.4
Indifference (I)	8	6	14	5.8
Disagree (D)	6	6	12	5.0
Strongly Disagree (SD)	4	5	9	3.8
Total	120	120	240	100

Source: Field Survey, 2015

The first objective of this study is to identify the root causes of climate change and global warming in Nigeria. In the questionnaire section (refer to the

Appendix), questions numbers 1 and 2 were used to address the objective.

From the table 1, 45.0% of the respondents strongly agreed that human

activities, deforestation and bush burning are some of the identified causes of climate change global warming in Nigeria;

and that climate change and global warming in Nigeria can also result from industrial as well as transportation

emissions. Furthermore, 40.4% of the respondents agreed to the above assertion; 5.8% were indifferent, 5.0% disagreed to the issue in question, while 3.8% strongly disagreed.

**TABLE 2: To Examine the Effect of Climate Change and Global Warming on the Management of Business in Nigeria**

Responses	Q <sub>3</sub>	Q <sub>4</sub>	Frequency	Percentage (%)
Strongly Agree (SA)	50	52	102	42.5
Agree (A)	56	53	109	45.4
Indifference (I)	5	5	10	4.2
Disagree (D)	6	6	12	5.0
Strongly Disagree (SD)	3	4	7	2.9
Total	120	120	240	100

**Source: Field survey, 2015**

The second objective of this study is to examine the effect of climate change and global warming on the management of business in Nigeria. In the questionnaire section (refer to the Appendix), questions numbers 3 and 4 were used to assess the objective. From the table 2, 42.5 % of the respondents strongly agreed that changing rainfall patterns and high flood incidence are some of the consequences

of climate change in Nigeria; and that business operations are affected by these factors as well as drought and desert encroachment.

Furthermore, 45.4% of the respondents agreed to the above assertion; 4.2% were indifferent, 5.0% disagreed to the issue in question, while 2.9% strongly disagreed.

**TABLE 3: To Ascertain the Strategies to Address the Challenges of Global Warming and Climate Change on the Management of Business in Nigeria**

Responses	Q <sub>1</sub>		Q <sub>2</sub>	Frequency
Strongly Agree (SA)	56	50	106	44.2
Agree (A)	54	5	112	46.7
Indifference (I)	5	4	9	3.8
Disagree (D)	3	5	8	3.3
Strongly Disagree (SD)	2	3	5	2.0
Total	120	120	240	100

**Source: Field survey, 2015**

The third objective of this study is to ascertain the strategies to address the challenges of global warming and climate change on management of business in Nigeria.

In the questionnaire section (refer to the Appendix), questions numbers 5 and 6 were used to assess the objective. From the table 3, 44.2% of the respondents strongly agreed that reducing demand for emission-intensive goods and services; increasing efficiency gains and reducing

fossil fuel emissions are some of the strategies to address the challenges of global warming and climate change on management of business in Nigeria; and that the management of various businesses will be enhanced if the strategies just mentioned are adhered to. Furthermore, 46.7% of the respondents agreed to the above assertion; 3.8% were indifferent, 3.3% disagreed to the issue in question, while 2.0% strongly disagreed.

### CONCLUSION AND RECOMMENDATIONS

Based on the analysis carried out, the followings findings were made:

- The root causes of climate change and global warming include Astronomical variations, Milankovitch variations and Human activities such as Deforestation & bush burning,

Industrial and Transportation emissions.

- Some of the effects of Climate change and Global warming on the management of business in Nigeria include fall in business activities, destruction of certain goods and services and loss of interest in

business activities resulting to low productivity.

- There are inadequate strategies to address the challenges of global warming and climate change on management of business in Nigeria

- Adaptation and mitigation strategies of global warming and climate change on management of business in Nigeria are grossly inadequate.

### CONCLUSION

Climate change and Global warming are global environmental problems with serious local consequences, which pose significant potential threat to present and future business activities. The effects of Climate change and Global warming have now become topics of serious considerations in carrying out business activities worldwide and in third world

countries like Nigeria in particular. Reducing demand for emission-intensive goods and services; increasing efficiency gains and reducing fossil fuel emissions are some of the strategies to address the challenges of global warming and climate change on management of business in Nigeria.

### RECOMMENDATIONS

The following recommendations are made based on the findings of this study:

- Government and Nigeria citizens should embark on the reduction of the transaction of emissions-intensive goods and services, increasing efficiency gains, increasing use and development of low-carbon technologies, and reducing fossil fuel emissions which can be achieved through the alternative source of Energy such as solar energy, geothermal, bio-fuel, and wind Energy.
- They should embark on continuous planting of trees

around their houses, forestation, afforestation and avoidance of deforestation, reduction of carbon emissions, Cessation of gas flaring sequestration or carbon capture.

- They should also embark on planting crops that can survive in drought period, Irrigation farming, putting on clothes and shoes that are climate friendly which will ensure their comfort and shedding plants,
- Business managers should endeavour to forecast whether and climate conditions so as to enable them plan ahead of the type of

business activities they are going to embark on based on.

- The type of business to be carried on at any particular season must be weather friendly.

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