



CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT IN AFRICA

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Human Behaviours, Climate Change and the Necessity of Counselling Intervention

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Abstract

Human actions and inactions have been identified as the major source of climate change. Human behaviours that promote climate change are bush burning, deforestation, hunting, air pollution and improper waste management among others. Despite the devastating effects of the changes in climate, little or no attention is being paid to modification of human behaviour as related to the environment. This study therefore highlighted indicators of climate change and discussed various forms of human behaviours and activities that promote climate change. It also recommended ways by which counselling strategies could be employed in promoting environmental friendly behaviour, enhance favourable climatic condition and sustainable development.

Keywords: Human actions and inactions, Climate change, Devastating effects, Counselling strategies

Introduction

Conducive climate is one of the requirements for sustainable development. Changes in climate hinder proper planning and consequently retard development. According to Yusuf (2010), climate change has the potential of affecting natural and human systems and may be a threat to human development and survival socially, politically and economically. The United Nations (UN) framework convention on climate change defines climate change as a change in climate which is attributed directly or indirectly to human activities that alter the composition of global atmosphere (UN, 2009). According to Nasiru (2009), climate change refers to a change in weather condition that is attributable directly or indirectly to human activities that alter the atmospheric compositions of the earth which leads to global warming. The total mass of the earth's atmosphere at a natural background level, calculated according to their relative volumes are nitrogen 78.09 percent; oxygen 20.95 percent; argon 0.93 percent; carbon dioxide 0.03 percent; and minute traces of neon, helium, methane, krypton, hydrogen,

xenon, and ozone. (Okorodudu-Fubara, 1998). Any alteration in statistical distribution of weather over a period of time that ranges from decades to millions of years as may be caused by the inter-planetary or human factors is called climate change.

Climate change has become a reality as it brings with it, changes in weather patterns that can have serious consequences such as upsetting seasonal cycles, harming ecosystems and water supply, affecting agricultural farming systems, food production and causing sea level rise. Climate change causes flood, landslides, drought and famine. As weather becomes fiercer and storms increase in frequency and intensity, serious socio-economic consequences result. Climate change has a cumulative effect on natural resources including agricultural resources and the balance of nature and its effects on Nigeria are characterized by delay in rainfall, excessive heat, heavy down pour and outbreak of diseases.

Causes of Climate Change

AP-NET (2009) reported that climate change is mainly caused by anthropogenic emissions of greenhouse gases (GHG: CO₂, CH₄, N₂O, HFC, PFC and SF₆), which accumulate in the earth atmosphere and trap the heat. According to the source, the concentration of atmospheric carbon dioxide, a leading cause of global warming continues to increase with world population growth and economic development.

Okali (2004) identified the factors responsible for Nigeria's high vulnerability to climate change as Geographical characteristics (Nigeria lies between 4°N and 14°N and between 3°E and 15°E and spans 6 major generation zones reflecting highly variable climate throughout the country; limited capacity to adapt due to low level of awareness, inadequate financial resources and institutional and technological capability; economic dependence on climate sensitive resources (agriculture employs 70% of the workforce); high population density, general food insecurity issues and serious social tensions; and heavy concentration of Gross Domestic Products (GDP) generating industries in locations that are highly vulnerable to climate change such as Lagos and the Niger Delta.

According to Yusuf (2010) a number of factors are responsible for climate change. There are natural and man-made causes. Natural factors include continental drift, volcanoes, ocean currents, the earth's tilt, comets and meteorites. The industrial revolution of the 19th century has led to the establishment of large scale industries which employed a large scale use of fossil fuels for industrial activities. The energy sector is responsible for about ¾ of the carbon dioxide emissions, 1/5 of the methane emissions and a large quantity of nitrous oxide. It also produces nitrogen oxides (NO) and carbon monoxide (CO) which are not greenhouse gases but do have an influence on the chemical cycles in the atmosphere that promote climate change. Also, natural resources are being used extensively for construction, industries, transport, and consumption. Howarth (2009) observed that climatic change is the most serious threat facing in

the 21st Century. According to the researcher, the event has been linked to human activities and that the impact of global climatic change will persevere for years to come. Human factors have contributed to climate change and presently, the scientific consensus on climate change is that human activity is very likely the cause for the rapid increase in global average temperature over the past several decades. Human activities resulting in emission of GHG include electricity generation from fossil fired power plants, emission from manufacturing processing transportation by gasoline driven vehicles and methane gasses emitted from solid waste and solid landfill sites. Other human activities or behaviours that promote climate change include bush burning, use of vehicles, refrigerators, electric generators, inappropriate dumping of refuse and use of fire wood to mention a few (Akanbi, Imam-Tamim, & Rasak, 2010). All these led to a rise in greenhouse gases in the atmosphere.

Impacts of Climate Change

The negative impacts of climate change are increase in floods and drought, desertification frequency and stronger cyclones, poor agricultural products and extended exposure to contagious diseases. Kasperson and Kasperson (2001) explained that the third assessment of the intergovernmental panel on climatic change (IPCC; 2001) found that the average surface temperature across the globe have increased by 0.6°C. They noted that human activities are responsible for most of the warming. According to them, the ongoing and future changes in climate will continue to alter natural life support systems for human lives in many parts of the globe through rise in level, increase in precipitation over most mid-and high-latitude of the Northern hemisphere, increased intensity and frequency of droughts, floods and severe storms, and unforeseen abrupt changes and extreme climatic events. Specifically, climate change could lead to drought, extreme weather conditions, flooding, violent storms, inadequate water supply, deforestation and health concerns.

Fagbohun (2010) identified the consequences of climate change as:

- a) Melting of glaciers and mountain snow caps that feed the world's rivers and supply a large portion of the fresh water used for drinking and irrigation.
- b) Inadequate water supply which could affect as much as 75-250 millions of people in Africa by 2020.
- c) A rise in sea levels due to the melting of the ice-based land sheets in Greenland and Antarctica, with many islands and coastal areas more exposes to storm damage or coastal flooding.
- d) Adverse weather events such as heat waves, droughts floods and severe storms.
- e) Lower agricultural productivity due to less favourable weather conditions, less available irrigation water, increased heat stress to plants and warmer temperatures, for instance as much as 50% yield decline by 2010 in African countries.

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- f) Increase in vector-borne diseases such as malaria and sleeping sickness
- g) Large number of extinctions of high-level species and social dislocation due to their inability to adapt to rapidly changing climate and habitual conditions.

According to Ali (2010), the manifestations of climate change in Nigeria include:

- a. Changes in temperature and rainfall
- b. Drought in some part of Nigeria
- c. Ocean surge
- d. Coastal emission
- e. Lower agriculture yield
- f. Intensity of extinction and
- g. Adverse weather condition.

Counselling Strategies

It has been identified that most of the major causes of climate change are attributable to human activities or behaviours. According to Benson (2008) most scientists recognized that human behaviour is the main cause of climate crisis. According to the author, understanding human behaviour, and learning how to change it is one of the best hopes for a solution to climate problem. Whether the goal is to reduce carbon emissions or to help vulnerable population deal with rising sea levels and changing weather patterns, it is clear that values, beliefs thoughts and social relationships play important roles. Counselling is an appropriate intervention required to promote environmentally friendly behaviour. Counselling is a professional programme that is specially designed to assist individual in different settings to adopt positive behaviours and adjust effectively in their environment. Makinde (1983) noted that counselling is designed to provide an interacting relationship where the counsellor assists a client or a group of clients to better understand themselves in relating to their present and future concerns. Several counselling strategies have been designed to modify human behaviour, the following are considered relevant to the subject of discourse:

- a. **Reinforcement:** Desirable behaviours such as appropriate disposal of waste can be sustained by government or appropriate authorities through reinforcement. Reinforcement is any action, event or stimulus which increases the frequency of occurrence of behaviour (Essuman, Nwaagun; & Nwahuku, 1990). Reinforcement is contingent on behaviour and thus it is applied after the performance of desirable behaviour. Reinforcer can be in form of praise or commendation, presentation of gift items such as books and calculator and computer to individual who display positive behaviour. Recognition in form of honour can also be used to reinforce behaviours.
- b. **Stimulus control:** Human behaviours are usually caused by events within or outside the individuals. Such event is called stimulus. Individuals who burns refuse could do so due to non-availability of dumping site in their

environment. This is an external stimulus which has led to a response. Stimulus control is a process by which environmental contingencies are altered in order to reduce the probability of a particular undesirable behaviour. Thus, if a government wants to prevent the use of firewood a better alternative need to be provided.

- c. **Counter-conditioning:** It is a strategy of increasing desirable behaviour through reinforcement of an incompatible alternative behaviour in order to stop the undesirable behaviour (Essuman *et al.*, 1990). For instance, if an agent of government desires to discourage unnecessary use of vehicles due to greenhouse emission, the government could provide alternative in form of efficient rail transport or bus services.
- d. **Over-correction:** It is a form of sanction in which an undesirable behaviour is over-corrected. Achebe (1983) noted that over-correction allows the individual to set a situation right and make amends for damages caused. For example, if an individual cuts a tree after such an act as been outlawed, he/she should be required to plant and nurture 20 trees to compensate for the damage.
- e. **Cognitive Restructuring:** It is a counselling strategy of assisting client to avoid undesirable behaviour by getting them to interpret situations with greater accuracy. This is based on Albert Ellis Theory. Ellis (1962) asserted that there are irrational beliefs, expectations or assumptions which inform people's approaches to situation. He stressed that the irrational ideas or behaviours can be modified using therapeutic approaches. This involves three main basic steps viz:
 - i. Identify the undesirable behaviour;
 - ii. Review the irrational assumptions of client, and
 - iii. Guide or teach the clients to modify irrational verbalization. For instance, if a community regards bush burning as a tradition, the counsellor could employ cognitive restructuring to guide their behaviour.

Conclusion

In order to prevent dangerous levels of global warming, there is the need to limit global warming to less than 2°C through concerted actions geared towards reduction of greenhouse gas emissions. Africans should therefore be mobilized to take measures to minimize emission of the gases responsible for global warming. Government and its agencies should embark on mass education to bring about a change in the national attitude. The strategies discussed in this paper can be adopted for implementation and all segments of the society should be involved in the struggle to combat climate change. It has been noted that the developing nations are more vulnerable and at risk in meeting the challenges of climate change for reasons of funding, inadequate technology, poverty and population pressures and thus all hands must be on deck to ensure that citizens of African countries adopt best practice in their behaviours toward the environment.

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