RISKS OF CLIMATE CHANGE AND HUMAN SECURITY IN NIGERIA

OLAMIDE S. ADELANA, PhD
DEPARTMENT OF POLITICAL SCIENCE AND INTERNATIONAL RELATIONS, ANCHOR UNIVERSITY, LAGOS
oadelana@aul.edu.ng, adelanaolamide@gmail.com

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ABSTRACT
In this paper the issues of climate change and human security are examined in relation to Nigeria particularly in terms of the consequences of the former on the latter. The paper aims at examining the perceptions and risks of climate change in Nigeria, the variables of human security in the country, and the nature of the links between risks of climate change and variables of human security in Nigeria. The paper is based on secondary data using simple descriptive and content analysis. It argues that climate change presents a serious threat to the human security of the Nigerian communities. It poses a considerable threat to the country, its ecosystems and many of its species. This research is unique and different from previous related studies because basic dimensions or realms of human security, such as economic security, food security, health security, environmental security, personal security, community security, and political security are aggregated, specifically as they relate to Nigeria. It further argues that all dimensions of human security in Nigeria are susceptible to the risks of climate change. To this end, the paper concludes and suggests additional proactive measures of mitigating the scourge of climate change and enhancing human security in the country.

Introduction

Climate change has been viewed as an issue that has received significant international attention over the past years (Barimah, *et al*. 2015; Schwebel, 2018; Dannenberg, *et al*, 2019; von Uexkull and Buhaug, 2021; Arnall, 2023; Vogler, 2024). Therefore, climate change can be described as a protracted and recurrent geopolitical issue capable of not only leading to geopolitical tensions and conflicts but also impacting national security and food security of a polity. For instance, climate change presents a serious threat to sustainable development and certainly impedes its efforts to reduce pervasive poverty, create jobs, enhance access to sustainable energy and improve the well-being of its citizens (Mshelia, 2013). These threats and attendant impacts, as argued in this paper, are capable of further undermining the ability of government and society to respond adequately to disasters, leading to lower economic opportunities and thereby heightening the risk of conflicts that ultimately threaten national security.

Amazingly, there has been very little direct attention to this area of research. While there has been some discussion on the relationship between climate change and conflict (Gleick 1994; Barnett, 2008), and on the relationship between biodiversity conservation and violence (Matthew, 2002; Matthew *et al*. 2002; Matthew, 2004), there has been little emphasis on the broader implications of climate change for human security, including how enhanced human

security can potentially mitigate climate change. Climate change is particularly complex and it affects many aspects of international politics, economics, migration, human rights, development, trade, health and environmental systems and can act as a stressor making situations of instability, conflict, and humanitarian crises more likely and severe. However, it is important to note exactly how climate change will influence human security. There is still uncertainty about the exact magnitude, rate and geographical impact of climate change.

Across the world, the prospects for human security are deeply affected by local and global processes of climate change. The objective of this paper is to examine this complex relationship at different scales, across different issues, and in different places in Nigeria. The general argument of this paper is that climate change poses new and, in some cases, unprecedented threats to human security in Nigeria. In the country, little research has been conducted concerning the perceptions of effects of climate change on human security generally. Many people might not have heard about climate change and its impact. The proportion of people who might have heard about climate change and its impact on people may be significantly higher in the rural areas.

Generally, the concept of security refers to freedom from the risk of loss or damage to a thing that is important to survival and well-being. There are several explanations as to why the relationship between global environmental change and human security has been overlooked or underestimated, and we focus here on two. The first is that global environmental change has been largely framed as an issue of science, with a focus on understanding the large-scale processes of the earth system, and not its outcomes on peoples' needs, rights, and values (O'Brien and Leichenko 2000; O'Brien 2006). The second explanation is that there has been a tendency to downplay issues of development, equity, ethics, power relations, and social justice in global change research, prioritizing instead a general, aggregated notion of welfare.

The foregoing notwithstanding, not much intellectual resources have been deployed in examining the climate change crisis as a threat to human security in the country. In recent years too, there is seemingly a palpable silence literally and practically on the issue of climate change and its devastating effects on human security in Nigeria. Specifically, the conceptual thrust of this paper is premised on the exploration and aggregation of basic dimensions or realms of human security, such as economic security, food security, health security, environmental security, personal security, community security, and political security in relation to climate change in Nigeria. To further distinguish it from past studies, the susceptibility of all dimensions of human security in Nigeria to the risks of climate change is interrogated. This paper is, therefore, interested in knowing how the foundations and dimensions of broadly defined human security are threatened by climate change. This is because climate change is believed to be undermining the pillars of prosperity in a society, including water security, energy security, food security, personal security and political security. The main objective of this paper, therefore, is to increase awareness and action to adapt to climate change. To ensure a systematic approach to discussing these issues, they are discussed under various headings. The conceptual clarifications of climate change and human security are discussed in the next section. In the subsequent sections the paper reviews the relevant literature and theories, results and discussion of findings, and lastly conclusion and recommendations.

Conceptual Clarification

Understanding Climate Change

Climate is generally defined as the average state of the atmosphere for a given time scale (hour, day, month, season, year, decade and so forth) and generally for a specified geographical region (Houghton, 2002). Climate, in a narrow sense, is usually defined as the average 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 or millions of years. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organization (WMO). The relevant 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.

Climate change is defined as the change in climate attributed directly or indirectly to human activity which, in addition to natural climate variability, is observed over comparable time periods (Houghton, 2002). If human activities are

associated with climate change, it follows that its likelihood resultant effects human security, as posited in this paper, cannot be overemphasized. But the definition adopted by the United Nations Framework Convention on Climate Change (UNFCCC) focuses only on the human activity that alters the composition of the global atmosphere and excludes other human activity effects such as changes in the land surface. According to NOAA National Weather Service (2007), climate change is a long-term shift in the statistics of the weather (including its averages). For example, it could show up as a change in climate normals (expected average values for temperature and precipitation) for a given place and time of year, from one decade to the next.

A change of climate 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. Climate change is also described as the regional or global-scale changes in historical climate patterns arising from natural and/or man-made causes and resulting in both intermittent but increasingly frequent, extreme impacts (e.g. large storms and heat waves) and slow on-set, pervasive, cumulative effects (e.g. extinction of life forms and sea level rise); and climate change involves the interactions of many systems, such as the atmosphere, hydrosphere, cryosphere, and biosphere, as well as the human systems (Simon, 2007). Above all, the climate change phenomenon can easily be understood as a by-product of globalization (Sanusi, 2013). Accordingly, it is widely perceived as an amorphous and all-embracing concept, with increasing impacts on human activities with full forces that span across national boundaries.

On the Concept of Human Security

The concept of human security evolved as a result of the changes in security environment after the end of the Cold War, and the concept has attracted much attention. The term 'human security' was invented or at least broadly popularized in the international community by the UN Development Programme in its 1994 Human Development Report intended as an agenda-package for the following year. The organization gave the definition of human security as, the security of people through development not arms; through cooperation not confrontation; and through peace not war. Also, human security can be said to have two main aspects. It means first, safety from such chronic threats as hunger, disease and repression. Besides, it means protection from sudden and hurtful disruptions in the pattern of daily life, whether in homes, in jobs or in communities (UNDP, 1994). These perspectives on human security further explain the importance of studying and preventing threats to every dimension of human security.

Human security is viewed as the protection of the vital core of all human lives in ways that enhance human freedoms and fulfillment; the security of individuals, their livelihoods, and human rights including economic security, food security, health security, environmental security, personal security, community security and political security (Ogata and Cels, 2003). The concept of human security actually refers to almost all security aspects, including threats and risks. As recognized by Kofi Annan (cited by Fuentes and Aravena, 2005), human security is far more than just an absence of violent conflict. It is also a matter of human rights, of good governance, of access to education and to health care and of ensuring that all people have opportunities and choices to fulfil their potential in life. Every step taken in this direction, he has affirmed, is also a step towards reducing poverty, towards achieving economic growth and towards preventing conflict. He has pointed to freedom from want, freedom from fear, and the freedom of future generations to inherit a healthy natural environment as being the interrelated building blocks of human security and, therefore, of national security.

Human security represents an effort to re-conceptualise security in a fundamental manner. It is primarily an analytical tool which focuses on ensuring security for the individual, not the state (Richard and Deepayan, 2006). Human security refers to an emerging paradigm for understanding global vulnerabilities whose proponents challenge the traditional notion of national security by arguing that the proper referent for security should be the individual rather than the state (Matlary, 2008). By this is meant that human security holds that a people-centered view of security is necessary for national, regional and global stability. The term can be understood to encompass the concepts of conflict prevention, crisis management and civil-military coordination, and further draws on the responsibility to protect, effective multilateralism, and human development'.

The Commission on Human Security (CHS), in one of its past final reports *Human Security Now* (2003), defines human security as a process of protecting the vital core of all human lives in ways that enhance human freedoms and human fulfillment. Human security also indicates the protection fundamental freedoms, that is, freedoms that are the essence of life. It means protecting people from critical (severe) and pervasive (widespread) threats and situations. It connotes the continuous use of processes that build on people's strengths and aspirations. It means creating political, social, environmental, economic, military and cultural systems that together give people the building blocks of survival, livelihood and dignity (CHS, 2003). This further gives people a hope of well-being and sense of security.

Literature Review and Theoretical Framework

The Impact of Climate Change on Human Security

O'Brien (2007) warns that in our globalizing world, human security in one place or for one group is increasingly linked to the actions and outcomes of others. From a social perspective, climate change mitigation and adaptation may potentially create new inequities, vulnerabilities and insecurities. It is in view of this, therefore, that climate change is regarded as one of the greatest opportunities in history for addressing inequities and enhancing human security, and as an extraordinary opportunity for responding to and creating social change. As a macro-driver of many kinds of environmental changes such as coastal erosion, declining precipitation and soil moisture, increased storm intensity, and species migration, climate change poses risks to human security (McCarthy *et al*. 2001). According to Sanusi (2013), climate change is caused by human activities and the emission of greenhouse effects; and the impact transcend national border. In this case, the human or natural actions in one society or country could have a catastrophic effect on another country. Similarly, Oladipo (2009) contends that climate change has had a profound effect on economic, socio, culture, political, technological and even biological nature of man and plants in the global village. This explains climate change as a universal phenomenon with a multiplier environmental impact.

There is every reason to believe that as the 21st century unfolds, the security story will be bound together by climate change, and it has become a security issue because if it is not addressed, people will die and states will fail (Vogel, 2007). This underscores the importance of studies on the issue of climate change and how to mitigate it in the contemporary period. It has, however, been argued that climate change, its mitigation and adaptation may potentially also create new inequities, vulnerabilities and insecurities (O'Brien, 2007). However, climate change is not just a political and economic issue. Above all, it is a human issue, where the livelihoods of numerous communities are threatened and their security is at stake. Wisner *et al*. (2007) have developed an analytical model in which the interactions between climate change and human security issues are outlined. Human security is threatened and conflicts arise where climate change impacts on food, health and water availability. It has been reported by WHO (2014) that climate change could be projected to have substantial adverse effects on human health that will be distributed unequally within and between populations. It is, however, stated as a rule that, wealthier countries and individuals will be better able to adapt to the impacts of climate change (Podesta & Odgen, 2008). The way climate change can and does undermine human security varies across the world because entitlements to natural resources and services vary across space, and the social determinants of adaptive capacity are similarly varied. For instance, Barnett and Adger (2007) contend that the vulnerability (potential for loss) of people to climate change depends on the extent to which they are dependent on natural resources and ecosystem services, the extent to which the resources and services they rely on are sensitive to climate change, and their capacity to adapt to changes in these resources and services. In other words, the more people are dependent on climate sensitive forms of natural capital, and the less they rely on economic or social forms of capital, the more at risk they are from climate change.

Barnett and Adger (2007) have argued that climate change undermines human security in the present century, and will increasingly do so in the future. It does this by reducing people's access to natural resources that are important to sustain their livelihoods. In addition to this, climate change has the likelihood to undermine the capacity of states to provide the opportunities and services that help people to sustain their livelihoods, and which help to

maintain and build peace. In certain circumstances, these direct and indirect impacts of climate change on human security and the state may in turn increase the risk of violent conflict.

Although it has been widely argued that climate change affects everyone regardless of race, caste, ethnicity, sex and level of income, its impacts are contended to be more heavily felt by poor nations and communities, and climate change magnifies existing inequalities. The contention is that, in the large number of weak and crisis-prone nation states, climate change will most likely increase chronic instability. Nigeria is not an exception in this case. Consequently, the case of climate change and human security in Nigeria can be discussed within this argument. According to Nigerian Environmental Study Team (2006), Nigeria is vulnerable to the impact of climate change due to a long coastline; she is prone to sea level rise, which caused flood in coast cities; and contaminate fresh water aquifers, due to increasing storm potential. There are also incidents of increased in drought and desertification in Nigeria, as a result of global warming. The changes in rain pattern are threats to food production in some places like Benue, Niger, Ondo and Osun State of Nigeria. Food production capacity has fallen drastically, since the country agriculture is mostly rain-fed. For instance, the IPCC Fourth Assessment Report (2007) identified Nigeria as a climate change "hot spot" likely to see major shifts in weather patterns in the 21st century. This is also corroborated by Sanusi (2013), in that climate change is a threat to Nigeria's economic development potentials, human capacity, environment and national development in particular. In this case, it can be argued that all the six geo-political zones in the country have experienced the negative impacts of climate change in different ways, largely because of the geographical location along the Equator.

The Essence of Human Security

As argued by the Commission on Human Security (CHS, 2003), the need for a new paradigm of security is associated with two sets of dynamics. First, human security is needed in response to the complexity and the interrelatedness of both old and new security threats – from chronic and persistent poverty to ethnic violence, human trafficking, climate change, health pandemics, international terrorism, and sudden economic and financial downturns. Such threats tend to acquire transnational dimensions and move beyond traditional notions of security that focus on external military aggressions alone. Second, human security is required as a comprehensive approach that utilizes the wide range of new opportunities to tackle such threats in an integrated manner. Human security threats cannot be tackled through conventional mechanisms alone. Instead, they require a new consensus that acknowledges the linkages and the interdependencies between development, human rights and national security.

Human security brings together the 'human elements' of security, rights and development. As such, it is an inter-disciplinary concept that displays features such as people-centered, multi-sectoral, comprehensive, context-specific, and prevention-oriented. As a people-centered concept, human security places the individual at the 'centre of analysis.' Consequently, it considers a broad range of conditions which threaten survival, livelihood and dignity, and identifies the threshold below which human life is intolerably threatened. Human security is also based on a multi-sectoral understanding of insecurities. Therefore, human security entails a broadened understanding of threats and includes causes of insecurity relating for instance to economic, food, health, environmental, personal, community and political security.

Theoretical Framework

The Theory of Anthropogenic Global Warming

Although there are many theories of climate change, anthropogenic global warming (AGW) has been treated as the only credible theory. Other theories of climate change have also enjoyed substantial credibility. This theory of climate change contends that human emissions of greenhouse gases, principally carbon dioxide (CO_2), methane, and nitrous oxide, are causing a catastrophic rise in global temperatures. The mechanism whereby this happens is called the enhanced greenhouse effect. This theory is called "anthropogenic global warming," or AGW for short (Gore, 2006). Bast (2010) argues that a major reason for the ascendance of the AGW theory was its endorsement by an agency of the United Nations, the Intergovernmental Panel on Climate Change (IPCC). The IPCC's stated mission is not to discover what accounts for climate change, but to assess the risk of human-induced climate change.

AGW theory explains that energy from the sun travels through space and reaches Earth. Earth's atmosphere is mostly transparent to the incoming sunlight, allowing it to reach the planet's surface where some of it is absorbed and some is reflected back as heat out into the atmosphere. Certain gases in the atmosphere, called "greenhouse gases," absorb the outgoing reflected or internal thermal radiation, resulting in Earth's atmosphere becoming warmer than it otherwise might be. Proponents of the AGW theory believe man-made CO2 is responsible for floods, droughts, severe weather, crop failures, species extinctions, spread of diseases, ocean coral bleaching, famines, and literally hundreds of other catastrophes. Accordingly, all these disasters will become more frequent and more severe as temperatures continue to rise. Above all, nothing less than large and rapid reductions in human emissions will save the planet from these catastrophic events.

This paper adopts this theory to explain the causes of climate change. This becomes imperative in order to understand and appreciate its effects on various dimensions of human security. It further justifies the use of causal-effect theory in explaining socio-political phenomenon. The theory is uniquely used in this paper to explain both the causes and effects of climate change in relation to basic realms of human security, as distinguished from previous related works.

Securitization Theory

The main argument of securitization theory is that it is by labelling something a security issue that it becomes one (Wæver, 2004). By stating that a particular referent object is threatened in its existence, a securitizing actor claims a right to extraordinary measures to ensure the referent object's survival. The issue is then moved out of the sphere of normal politics into the realm of emergency politics, where it can be dealt with swiftly and without the normal (democratic) rules and regulations of policy-making. The securitization proponents argue that to prevent 'everything' from becoming a security issue, a successful securitization consists of and requires three steps, which are identification of existential threats; emergency action; and effects on inter-unit relations by breaking free of rules (Buzan, *et al*. 1998). To present an issue as an existential threat is to say that if a perceived problem is not tackled, everything else may be affected and may therefore become difficult to deal with in the nearest future. This theory is, therefore, adopted by this paper with a view to justifying the securitization of various dimensions or realms of human security examined. The use of the theory in this paper explains and justifies each of the basic dimensions of human security as susceptible to security threats from the condition of climate change, which distinguished its use from previous related works.

Methodology

This paper assessed the issues of climate change and human security in relation to Nigeria. This is simply because the two concepts have contemporarily become subjects of great interest all over the world, and developing countries are becoming more inclined in responding to climate change and enhancing human security generally. To tackle this issue, the following research questions were generated: What are the perceptions and risks of climate change in Nigeria? What are the dimensions or variables of human security in Nigeria? What is the nature of the relationship between risks of climate change and dmsions of human security in Nigeria? The paper was based on secondary data as it undertook a detailed review of existing literature on climate change and human security. This included different websites, local and international organizations' reports, project reports, journals, and research papers. The data were specifically obtained from various authors' research works and National Human Development Report. Data collected were presented by using simple descriptive and content analysis.

Results and Discussion of Findings

Risks and Perceptions of Climate Change

Climate change is one of the greatest global challenges of the 21st century whose threat is not only global but also multi-dimensional, irresistible, unpredictable and transcends national border (Sanusi, 2013). The Inter-governmental Panel on Climate Change (IPCC) Third Assessment Report noted that the Earth average surface temperature increased by 0.6 + 0.2 centigrade in the 20th century (Haruna, 2005), and this trend is expected to continue with an increase of 1.4 to 5.8 by 2100. According to an EU document, unmitigated climate change beyond 2°C will lead to unprecedented security scenarios as it is likely to trigger a number of tipping points that would lead to further

accelerated, irreversible and largely unpredictable climate changes (Human Security Network, 2007). Even under the best-case scenario (with an average global temperature increase of 1.3°C by 2040), human security implications may include: heightened internal and cross-border tensions caused by large-scale migrations; conflict sparked by resource scarcity, particularly in the weak and failing states of Africa; increased disease proliferation, which will have economic consequences; and some geopolitical reordering as nations adjust to shifts in resources and prevalence of disease. It is also contended that in the case of severe climate change, corresponding to an average increase in global temperature of 2.6°C by 2040, massive nonlinear events in the global environment give rise to massive nonlinear societal events. The conclusion is that internal cohesion of nations will be under great stress, both as a result of a dramatic rise in migration and changes in agricultural patterns and water availability.

Nigeria has not been immune from global warming. It is in view of this that Ogbuagu (2002) stated that there exists a linkage between climate change condition and human security, specifically human health in Nigeria, to the extent that certain respiratory diseases such as malaria thrive best when weather is very hot in Nigeria. In the Northern State of Nigeria, the cerebral spinal meningitis diseases are rampant as a result of hot climate attributed to the global warming. Likewise in the south west and south-east, flooding has produced water borne diseases in cities like Oyo, Ogun, Cross River, Osun, and Enugu State in Nigeria. The First Nigerian National Communication under the UNFCCC (2003) estimates that the nation's southern coastline is susceptible to sea level rise of between 0.5 and 1.0 meter by the end of the century. In this case, if the sea level should rise up to one meter, it is most likely that between 45 and 50 million people will be affected and/or relocated. The coastal region is home to most of Nigeria's industry, thus making the economy even more vulnerable. A study commissioned by the UK Department for International Development (DFID) in 2009, estimated that in the absence of adaptation measures between 2 and 11% of Nigeria's GDP could be lost by 2020. This was largely because, with sea level rise, onshore oil fields could become submerged resulting in higher production costs, reduced investment and deference or outright loss of production. From the view of the country's agricultural and socio-economic conditions in the last three years, it can be concluded that this prediction has become a reality. As stated by Sanusi (2013), some regions have been affected, particularly the southern coastal region and the far north. Accordingly, some sectors of Nigeria's economy have been affected. Similarly, a preliminary Integrated Assessment mode of 2008, predicted that CC have resulted in a loss of GDP of between 6% and 10% and it could increase by 30% by the year 2050. This worth an estimate of N15 trillion and N69 trillion comes year 2050. Although the period seems to be a bit far ahead, there is need for proactive and preemptive measures to start mitigating the effects of climate change, and this further justifies the imperativeness of this paper.

Part of the findings of this paper indicates that majority of Nigerian women (61.9%) perceive climate change as a threat to their individual security against men (59.5%) who also express the same perception. While the rural areas of the country could be affected most by the climate change phenomenon as indicated by 65.2%, the urban environments could experience the lesser threat as shown by 56.0%. Generally, the finding shows that climate change is a threat to the whole country irrespective of its geo-political zones as represented by above average of 60.6%. This is simply an indication that the issue of climate change is not absolutely strange in Nigeria, and there is substantial awareness among the populace as regards its threats.

The basic dimensions or realms of human security are aggregated, specifically as they relate to Nigeria. It has been argued in the literature that climate change affects all areas of human security (economic security, food security, health security, environmental security, personal security, community security, and political security). For instance, Ogbuagu (2002) and WHO (2014) have linked climate change with health security in their different studies; Haruna (2005) also established a relationship between climate change and environmental security; Barnett and Adger (2007) as well as Oladipo (2009) discussed a nexus between climate change and political security; the association between climate change and economic security was analysed by Oladipo (2009) and Sanusi (2013); while Vogel (2007) created a link between climate change and personal security, Wisner et al. (2007) dwell on the issues of climate change and community security.

Summary of Findings

Climate change is expected to have serious environmental, economic, and social impacts on Nigeria in particular, where rural farmers whose livelihoods depend on the use of natural resources are likely to bear the brunt of its adverse impacts. The country is also confronted by issues like poverty, environmental degradation, natural resources depletion, shrinking water resources; gas flaring, and desertification. Climatic change in this fragile ecosystem and nature-based livelihood system of the rural communities may further threaten the livelihood of the local people in the country. The findings revealed that climate change has started to manifest in Nigeria with results that are multifaceted and will be dramatic unless immediate mitigating actions are taken. Climatic change is most likely to result in a variety of direct problems, including increased frequency of extreme weather events, flooding, storms, drought, desertification, increases in sea temperatures, heat and cold waves, the melting of glaciers and permafrost in the country if appropriate and proactive steps are not taken. All these may also have some devastating effects on socio-economic and geopolitical structure of Nigeria.

Conclusion

This paper concludes that climate change is one of the greatest and most complex challenges not only the international community but also what developing countries, including Nigeria have to deal with today and in the years to come. The contemporary trend is that governments globally are increasingly treating climate change as a security threat, and Nigerian government should not be an exception. Conceptually, climate change is becoming a serious collective security challenge to all countries. This paper, therefore, becomes important as a guide for the public, politicians, climate experts and perhaps security actors. Theoretically, the extent and scale of Nigeria's vulnerability to the impacts of climate change will be underscored and determined by the government's response measures and the societies' ability to increase their resilience to disasters. Where the government cannot cope adequately, this will have economic consequences and heightens the risk of conflicts, ultimately threatening national security. This paper is not an end in itself, but a means to better mitigate and adapt to climate change, as well as a mechanism to enhance human security.

Recommendations

There is need for more education and awareness among the Nigerian populace as this will enable them to appreciate that climate change is a public economic, food, health, community, personal, environmental, and political issue. A high level of awareness on the relationships between climate change and human security may help to increase the success of any preventive programme on climate change.

The Nigerian government should invest in the new technology devices, and cooperate with the international organizations on climate change measures by showing a sincere interest in the climate change project initiated by international agencies. This is because a part of the solution to climate change crisis lies in being proactive by developing appropriate technologies to reduce the scourge of climate change on the country now and in the future.

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