DRIVERS AND EFFECTS OF CLIMATE CHANGE ON HUMAN SECURITY IN KENYA

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ABSTRACT

Purpose: The purpose of this study was to investigate the drivers and effects of climate change on human security in Kenya. The study aimed to examine the adverse impacts of climate change on various sectors and highlight the need for robust climate-related policies.

Research Methodology: The study used a case study methodology. The population included decision-makers at the Ministry of Tourism, Wildlife and Heritage, the Kenya Wildlife Service, wildlife managers from the Tsavo Conservation Area (TCA), communities near the TCA, and managers of wildlife conservancies near the TCA. The total sample size was 410. Primary data was collected through semi-structured questionnaires, unstructured interviews, and focus group discussions. Both qualitative and quantitative techniques were used, with quantitative data analyzed using the SPSS.

The Study Findings: Climate change has significantly impacted human security in the Tsavo Conservation Area in Kenya. The study also found that community members are aware of these impacts and have witnessed consequences like extreme weather, changes in vegetation, and loss of species.

Conclusion: The study concluded that climate change has significant impacts on human security in Kenya.

Recommendation: The study recommended that an emphasis should be placed on raising public awareness and education about the impacts of climate change on human security.

Keywords: *Drivers, Climate change, Human, Security, Kenya.*

INTRODUCTION

The profound effects of climate change and their broader implications for human security are inextricably linked with non-traditional security discourse. The identification of the environment as a security threat has ushered in a new security discourse (Abdikadir, 2021). Human security is a new approach to security studies that focuses on the safety of individuals. According to Ogata (2005), climate change has largely been regarded as a problem multiplier with ramifications for broader aspects of security, including the human security discourse. As a result, climate change drivers such as droughts, flooding, rising sea temperatures, and biodiversity loss have put human survival at risk all over the world. According to Chaudhry (2015), Kenya, as one of the rapidly developing countries, has not been immune to the threat, and thus it continues to experience the profound effects of climate change, which has come to haunt the well-being of its citizens. Against this backdrop, the purpose of this paper is to first investigate the interrelationship between climatic changes and human security, and then to investigate key drivers and effects of climate change on human security (Ruppel & Funteh, 2019).

STATEMENT OF THE PROBLEM

Climate change has a negative impact on human security. Food and water scarcity, loss of income, competition for natural resources, displacement of people, and climate-related disasters have all been identified as threats to human security. Tsavo Conservation Area (TCA) experiences periodic drought, which causes water and forage scarcity, as well as anthropogenic wildfires. Political, economic, social, and cultural processes are typically responsible for environmental vulnerability. Water and forage scarcity affects both livestock and wildlife. Conflicts over grazing in protected areas are common, and the Kenya Wildlife Service spends a lot of money controlling livestock invasion. The use of frequent fires to clear land for settlements and cultivation continues unabated on community land. As a result, the area's natural climate has been significantly altered, resulting in frequent and intense droughts, erratic rainfall, and significant temperature rise. Furthermore, there are concerns that if rapid climate change is not addressed, local and regional tourism will suffer significant revenue losses and economic insecurity. As a result, the primary goal of this research is to determine the effects and challenges of climate change on human security, specifically in the Tsavo Conservation Area.

LITERATURE REVIEW

This section discusses the theoretical review of the study and the empirical review.

THEORETICAL REVIEW

The Human Security theory was used to guide the research. The Global Human Development Report of 1994 coined the theory as a method of equating security with groups and people rather than territories in the context of development under the auspices of the United Nations Development Programme (UNDP) (McDonald, 2002). Since time immemorial, the concept of security has dominated the international system, making security an essential component that underpins the origin and sustainability of states (Cocklin, 2002). According to MacFarlane and Khong (2006), the Human Security discourse emerged as an antithesis to the traditional security approach, which was criticized for being state-centric, legitimatizing the use of the state's tools of power, and upholding the principle of state sovereignty. It was also chastised for emphasizing aggressive solutions to security-related issues.

It was pioneered and developed as a theoretical approach to security study by scholars such as Ul Haq through research titled "New Imperatives of Human Security," which was published in 1994 and attempted to offer a theoretical understanding of human security and subsequently cleared the way for the concept's universal recognition. According to him, the Human Security discourse emphasises individual security. Terrorism, poverty, diseases, and drugs were identified by Haq as potential threats to human security. Furthermore, he attempted to broaden the concept by including North-South schism, hegemonic political economy, and unequal resource distribution as threats to human security (Rothschild, 2008; Bajpai, 2000).

People-centered, multi-sectoral, prevention-oriented, and context-specific tenets underpin the theory. The first tenet emphasises individuals as units of security threat analysis. Second, it is based on a multi-approach understanding of insecurity, which has broadened the threats and causes of security in areas such as food, health, political, economic, environmental, personal, and community security. In addition, human insecurities cannot be addressed in isolation. It includes elaborate perspectives that consider the need for collaborative and multi-sectoral feedbacks that bring together the discourses of safety, growth, and civil rights (Taylor, 2004). Furthermore, the theory is aware of the dynamic environments in which human security operates, allowing for the advancement of contextualised solutions to human insecurities.

Climate change has recently been recognised as a profound and complex global threat threatening global peace and security. The devastating consequences have been felt across national boundaries, with humanity bearing the brunt of the brunt. Climate change's dimensions can alter people's way of life by posing complex survival challenges. Climate change's potential threats to humanity have prompted a link between climate change and human security. As a result, human security theory, as a critical approach to security studies, continues to be useful in comprehending and contributing to understanding human-related threats arising from the climate change crisis.

EMPIRICAL REVIEW

Human security, which is emerging as an alternative to traditional state-focused security, emphasises the importance of individual safety within societal structures while emphasising human rights and development. Despite criticism for its broad scope and complexity, it seeks to ensure both negative and positive peace (Makanga, 2019). Anthropogenic activities that result in greenhouse gas emissions are a primary cause of climate change, resulting in challenges such as extreme weather patterns, droughts, floods, and pollution. The consequences endanger human security by reducing food production and increasing food insecurity. Climate change threatens human survival, revealing a deep link between climate change and human security (Adger et al., 2014).

Global climate change drivers include increased greenhouse gas emissions since the industrial revolution, which have resulted in significant global temperature increases. Extreme weather patterns have resulted, displacing millions and undermining food security, threatening human security (Scheffran et al., 2012). Climate change impedes the achievement of sustainable development goals in Africa by contributing to food insecurity, scarcity of water, development challenges, health concerns, and climate-induced migration and conflict. Climate change has been shown in studies to exacerbate societal vulnerabilities, contributing to inequality and conflict, especially in the Horn of Africa (Chilunjika & Gumede, 2021).

Climate change also has a negative impact on the agricultural sector in East Africa, threatening food security and contributing to malnutrition and water scarcity. Furthermore, extreme weather patterns linked to climate change cause natural disasters, increasing human mortality and stressing fragile healthcare systems (Olajide, Quadri, & Ojakorotu, 2018). Climate change

exacerbates conflicts over natural resources, worsens water security, and leads to food and water insecurity, particularly in arid and semi-arid areas. Further, Belsoy, Korir, and Yego (2012) asserted that climate change has an impact on Kenya's economy, particularly the tourism sector, by altering wildlife migration patterns and decreasing forest cover.

METHODOLOGY

The study used a case study methodology to investigate the causes and effects of climate change on human security, and mitigation and adaptation measures in line with the Sustainable Development Goal on climate action were proposed. Decision-makers from the Ministry of Tourism, Wildlife and Heritage, the Kenya Wildlife Service, wildlife managers from the Tsavo Conservation Area (TCA), communities near the TCA, and managers of wildlife conservancies near the TCA comprised the target population. Various sections of the population were sampled using various formulae and sampling techniques. The total number of participants was 410. The information was gathered from both primary and secondary sources. Semi-structured questionnaires, unstructured interviews with key informants, and focus group discussions with community members were used to collect primary data. Secondary data was gathered through the review of existing literature, which included journal articles, books, case studies, policy documents, Government documents, conference papers, theses, dissertations, internet sources, and periodicals. The information was analysed using both qualitative and quantitative methods. The quantitative data was analysed with the Statistical Package for Social Sciences (SPSS), which included descriptive statistics like means, percentages, and frequencies.

FINDINGS AND DISCUSSION

Four hundred and ten (410) respondents participated in the study. 384 of 410 People responded to questionnaires, and 26 People were interviewed.

Knowledge/ Awareness on climate change in Kenya

In a scale of one to five, where one represented a strong disagreement while five represented a strong agreement, this study through a respondent population of 384 community members of the Tsavo conservation area, sought to define the climate change issues that influence Kenya. The data was tabulated as shown in Table 1.

Table 1: Knowledge/ Awareness on climate change in Kenya

Statement	1	2	3	4	5
Knowledge/Awareness on Climate Change					
Climate change has resulted to fluctuation in earth's temperatures in Kenya	3%	2%	2%	17%	76%
Severe and prolonged droughts are common in Kenya	3%	4%	3%	16%	74%
Severe floods are common in Kenya	17%	8%	6%	17%	52%
The pattern of weather in Kenya is generally changing and unpredictable	3%	1%	3%	17%	76%
Wildfires are common during dry season	15%	7%	7%	22%	49%
Heat waves are more common now	12%	15%	10%	22%	41%
Climate change has altered habitats of some plants and animals, leading to changes in ecosystems and the extinction of some species	5%	5%	7%	25%	58%
Climate change has affected crop yields and the quality of soil, leading to food shortages and higher food prices	2%	2%	24%	25%	47%
Climate change has led to the spread of diseases such as malaria and other vector-borne diseases, as well as heat-related illnesses	8%	8%	16%	27%	46%
Climate change threatens people's security and survival	4%	3%	8%	28%	57%
Climate change has led to human death due to droughts and flooding	11%	7%	7%	24%	51%
extreme weather events has led to the displacement of communities due to floods	14%	9%	7%	28%	42%
Human activity is responsible for climate change	5%	3%	7%	23%	62%
Habitat degradation/Deforestation is one of the major causes of climate change	2%	2%	8%	19%	69%
Changes that occur naturally within the atmosphere are responsible for climate change	50%	22%	23%	3%	2%
Intensive farming (crop and animal) is a major contributor to climate change	17%	9%	13%	21%	40%

This data shows that respondents in Kenya have a high level of knowledge and awareness about climate change and its effects, but there are some differences in understanding across different statements. Most respondents (93% agreed) that climate change has caused fluctuations in earth's temperatures in Kenya, indicating a high level of awareness of this issue. Similarly, a large majority of respondents (90%) agreed that severe and prolonged droughts are common in Kenya, indicating a high level of awareness of this climate impact. Only 5% of respondents believed that natural atmospheric changes are to blame for climate change, while 85% believed that human activity is to blame. This demonstrates that the respondents have a strong understanding of the role of human activity in causing climate change.

The table also shows that some effects of climate change are more widely recognised than others in areas where the majority of respondents live. 73% agreed that climate change has contributed to the spread of diseases such as malaria and other vector-borne diseases, as well as heat-related illnesses, while 72% agreed that climate change has impacted crop yields and soil quality, resulting in food shortages and higher food prices. Severe floods, unpredictable weather patterns, and heat waves are all common in Kenya, according to 69%, 93%, and 63%, respectively. This indicates a high level of awareness in Kenya about the effects of climate change on extreme weather events and weather patterns.

The data also suggests that respondents have a good understanding of the negative effects of climate change on human populations, with a large majority of 85% agreeing that climate change threatens people's security and survival, and a significant proportion disagreeing. Climate change has affected the habitats of some plants and animals, leading to changes in ecosystems and the extinction of some species, according to 83% of respondents. Most respondents agreed that climate change has impacted crop yields and soil quality, as well as threatened people's security and survival.

These findings were supported in an interview with an opinion leader who said the following

> *"Climate change has significantly affected both the wildlife and the people in this community. The rising temperatures have altered animal behavior, causing them to look for water and seek shade. Severe droughts have required communities to source water for both livestock and wildlife, while floods and wildfires have increased in intensity, damaging property, crops, and affecting both human and wildlife populations. These climate-related issues have led to declining agricultural production and food shortages.*

> *Urgent action is necessary to mitigate the impacts of climate change on all aspects of life in this community*"

Another opinion leader said the following in support of the study's findings during the interviews

> *"The process of urbanization from rural areas leads to a rise in crime rates, slums, diseases, and deaths, along with the added threat of flash floods. Human activities such as deforestation and uncontrolled logging have caused habitat degradation and contributed to climate change. Sustainable practices are necessary to preserve the atmosphere as it is within human control to mitigate the impacts of climate change*"

The findings of this study resonate with the United Nations reports on climate conditions which outline that natural conditions such as volcanic eruptions and other atmospheric conditions are only responsible for less than 10% of the total global climate change. The human activities have accelerated the climate change due to the release of toxic gases in the atmosphere which has led to the destruction of the ozone layer. The study outlines the various influences of climate change which reflect the results of this study. Further the study outlines that a change in the environmental perception can mitigate these changes witnessed.

Decline of human security in Kenya

Through a comment section, one of the respondent community members showed the following strong opinions:

> *"The security of ordinary citizens in the country has significantly declined, affecting their health, physical wellbeing, sources of income, and shelter. Natural disasters such as droughts and floods have caused people to lose their homes, and inter-clan conflicts have exacerbated the situation, making it difficult for citizens to survive. People even face threats from wild animals, making life dangerous. The comments of a political leader reflect the gravity of the situation, with citizens being prime candidates for disaster. The ordinary citizens are left to struggle to meet their nutritional and other physical needs, which greatly impact their survival"*

The findings of this study were further confirmed in the interviews by one respondent from the Wildlife Research and Training Institute who said the following.

> *"The country is experiencing a decline in human security, which is largely attributed to climate change. Tropical climate has experienced a series of climatic events, including droughts, floods, and hailstorms. These climatic events have a severe impact on human security, leading to the loss of homes, sources of income, and limited access to healthcare. People's lives are significantly affected, and conditions that previously existed, albeit in a less severe form, have worsened. It is crucial to mitigate climate change to preserve human security and prevent further deterioration of living conditions"*

The findings of this study reflect the findings of the United Nations Environment Programme reports that outline a series of climate events that pose threat to the human security of the Kenyan citizens. The reports outline that human security has been on the decline with the increase of climate related events such as flash floods, droughts, loss of vegetative cover, diseases and infections. The physical well-being of affected residents is often affected and through human aids and governmental involvement, the reports outline the several methods of interventions including building a focus on climate preservation.

Climate changes influence on human security in Kenya

This argument was strongly supported by one community member who said the following;

> *"Upon analysing the events and disasters associated with climate change, it is evident that they inflict immense pain on people. The uncertainty brought about by these events, including food and health insecurities, is palpable. When disasters such as floods and droughts strike, residents are left to either rely on external aid or face the risk of losing their lives, making it a tragic sequence of events"*

These findings were further supported in the interviews by one opinion leader who said the following:

> *"Human security and climate change are closely intertwined. Climate change has a direct impact on human security by causing displacements and loss of income sources. For instance, droughts that result in the death of animals also lead to the loss of basic income sources that people rely on to access essential services like healthcare. Disasters caused by climate change often result in loss or damage, leaving people vulnerable to various factors that undermine human security"*

The findings of this study reflect the findings of the United Nations' climate reports which outline climate events as key influencers of human security. The reports acknowledge that even though the influence of climate change is slow and often going unnoticed in some areas, in specific areas it is often more pronounced, and these are the areas that face the highest threats to human security. The reports further outline the mitigation recommendations that could be adopted in aid of the influenced communities.

CONCLUSION

The study concluded that climate change has a significant impact on human security in Kenya. Community members in the Tsavo Conservation Area are aware of climate change and have witnessed its effects, such as extreme weather, changes in vegetation, and the extinction of some

plant and animal species. These changes have resulted in economic and emotional hardships, affecting livelihoods and agriculture. Respondents acknowledge that human activities contribute to climate change and believe that climate change threatens human security and survival. Reports from organizations such as the National Environment Management Authority (NEMA) back up these findings, highlighting the loss of vegetation cover and its direct impact on human life in Kenya. Human security is deteriorating in Kenya, with increased health risks, income loss, and hardships caused by climate change-related events such as droughts, floods, and conflicts. As the United Nation Environment Programme and United National Development Programme has emphasized, it is critical to implement climate change mitigation and adaptation strategies in Kenya to protect human security.

RECOMMENDATIONS

Based on the study, it is recommended that:

1) An emphasis should be placed on raising public awareness and education about the impacts of climate change on human security. This should especially be aimed at regions most affected, like the Tsavo Conservation Area, to ensure communities understand the implications of their actions on the environment and can contribute effectively to mitigation efforts.

2) It's crucial to implement comprehensive climate change mitigation and adaptation strategies. These should include measures to reduce greenhouse gas emissions, promote sustainable land use, and encourage the adoption of renewable energy sources. Policymakers should also consider how best to support those whose livelihoods are directly affected by climate change, potentially through financial assistance or retraining in new initiatives.

3) The research also underscores the importance of collaboration among various stakeholders. Government departments, conservation agencies, local communities, and international bodies all have a role to play in addressing the challenges posed by climate change. Their cooperation is essential in ensuring the implementation and enforcement of policies that protect the environment and, consequently, human security.

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