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The Murky Waters: Climate Change, Migration, and the Evolving Threat of Crime in Nigeria

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ABSTRACT: *This paper delves into the multifaceted relationship between climate change and crime in Nigeria, exploring whether climate-related phenomena influence crime rates. Leveraging secondary data from academic and news sources, the study finds evidence that temperature increases, a key facet of climate change, significantly impact specific crime types. Notably, homicides, robberies, herder-farmer conflicts, and burglaries exhibit a positive correlation with rising temperatures. The analysis draws upon the ecological theory of crime, emphasizing how environmental transformations shape crime patterns. Recognizing the potential burden of climate-driven crime, the study recommends incorporating climate change mitigation strategies within Nigeria's criminal justice system and broader policy landscape. This proactive approach offers the potential to not only combat environmental challenges but also mitigate the associated rise in criminal activity.*

KEYWORDS: climate change, crime, temperature, migration, crime rates

INTRODUCTION

Climate change has emerged as a significant global security concern due to its capacity to destabilize societies and exacerbate existing security threats. The prioritization of this issue at the 2009 G8 summit, surpassing other global concerns and economic crises, indicates its urgency (Folami & Folami, 2012). Empirical evidence confirms the changing nature of our planet's climate, which is manifested in rising sea levels, droughts, desertification, depletion of water resources, and altered weather patterns. These changes present substantial challenges, particularly in Africa,

where the continent experiences temperature extremes, frequent floods, and escalating desertification (USAID, 2023).

Nigeria, like many other African nations, is grappling with the multifaceted impacts of climate change. The increasing frequency of droughts and unpredictable rainfall patterns pose a threat to agricultural productivity, jeopardizing food security and livelihoods for millions (USAID, 2023). Consequently, this situation fuels competition for resources and migration, potentially leading to social unrest and conflict. A notable example is the influx of livestock herders from neighboring countries like Niger and Chad, driven by desertification in their homelands (USAID, 2023).
Moreover, climate change exacerbates existing security challenges in Nigeria. The vast ungoverned spaces in the Sahel region, resulting from environmental degradation and weak governance, provide favorable conditions for criminal and terrorist organizations to operate with ease. Nigeria's porous borders enable these groups to engage in illicit activities such as arms, human, and drug smuggling, further destabilizing the region (Ukah, 2020).

Research indicates a direct connection between climate-induced migration and increased crime rates in Nigeria. Studies demonstrate that a significant proportion of highway robberies are committed by Fulani herders displaced by desertification in neighboring countries (Bala-Gbogbo, 2010). These unauthorized immigrants are also involved in the ongoing religious conflict in the nation, highlighting the intricate interplay between climate change, scarcity of resources, and societal tensions.

The association between climate change and crime is not unique to Nigeria alone. The United Nations Secretary-General, Antonio Guterres, has emphasized how climate disruption fuels grievances and instability, facilitating the recruitment of terrorist groups such as Boko Haram and Al-Shabaab (United Nations, 2021). This phenomenon is further supported by criminological research, which suggests that long-term increases in temperature can influence crime rates through various mechanisms, including increased heat stress and economic hardship (Agnew, 2012; White, 2016).

While seasonal analysis has established a link between temperature fluctuations and crime rates within shorter timeframes (Andresen & Malleson, 2013; Ranson, 2014), understanding the long-term effects of climate change requires a different approach. Due to the gradual nature of global warming, studies that utilize data on annual temperature changes are crucial for capturing the potential long-term correlation between climate change and crime (Rotton & Cohn, 2003).
Thus, this study aims to fill this gap by examining the relationship between climate change and crime in Nigeria, with a specific focus on how temperature changes influence individual and societal behavior, potentially leading to displacement and criminal activity. The research will employ the ecological theory of crime, which suggests that environmental factors, including

climate, interact with individual and social characteristics to influence crime rates (Sutherland, 1947).

This study offers the following contributions; Provide a thorough examination of the intricate link between climate change and crime in Nigeria. Highlight the social repercussions of climate change, such as relocation, resource constraint, and conflict. Make suggestions to policymakers in Nigeria to address the security issues posed by climate change. Lastly, close the gap between environmental criminology and security studies by demonstrating the interconnectivity of these disciplines in comprehending current security concerns.

Theoretical framework

The ecological theory of crime presents a valuable framework for examining the intricate connection between climate change and crime in Nigeria. As Wikström (2009) aptly asserts, this theory delves into the interplay between social and environmental factors in shaping human behavior and opportunities for criminal activity. In the context of climate change, this becomes particularly pertinent, as environmental changes directly impact societal interactions and create new landscapes conducive to criminal behavior. Factors induced by climate change, such as droughts, desertification, and unpredictable rainfall patterns, disrupt traditional livelihoods and availability of resources (USAID, 2023). This disruption can result in displacement, competition for limited resources, and an increase in poverty, creating conditions favorable for criminal activity (Wikström & Treiber, 2009a). In Nigeria, for instance, the arrival of herders from neighboring countries due to desertification has been linked to heightened competition for resources and conflict, potentially contributing to higher crime rates in specific regions (Ukah, 2020).

Moreover, the displacement caused by climate change often leads to the establishment of informal settlements characterized by inadequate infrastructure and weak social control (Agnew, 2017). These environments lack sufficient housing, employment opportunities, and social support systems, providing fertile ground for criminal activities to flourish (Perkins & Taylor, 1997). In Nigeria, the rapid urbanization resulting from climate-induced migration strains existing social structures and increases vulnerability to crime (Folami & Folami, 2012). Additionally, climate change can weaken informal regulation and traditional moral codes that previously acted as deterrents to crime (Wikström et al., 2012). The disruption of social networks and community structures can lead to a decline in collective efficacy and social control, thereby further enhancing the opportunity for criminal behavior (Sampson et al., 1997). In Nigeria, the displacement of communities due to climate change weakens traditional conflict resolution mechanisms and exacerbates existing social tensions, potentially influencing crime patterns (Boko Haram Research Group, 2015).

Therefore, the ecological theory explicitly recognizes the role of environmental factors, including climate change, in shaping criminogenic opportunities (White, 2016). This allows for a more comprehensive understanding of crime causation beyond individualistic explanations. The theory

encourages the consideration of spatial analysis and the distribution of crime, along with its correlation with environmental factors (Andresen & Malleson, 2013). This approach can be employed to map crime hotspots and identify areas most susceptible to climate change-driven criminal activity. By identifying the environmental factors that contribute to crime, the ecological theory can inform targeted interventions and policy measures aimed at mitigating the criminogenic effects of climate change (Agnew, 2012). Such interventions could entail investments in climate-resilient infrastructure, diversification of livelihoods, and community-based initiatives to strengthen social cohesion (USAID, 2023).

While the ecological theory provides a valuable framework, it is important to acknowledge its limitations. Individual characteristics, motivations, and past experiences also play a role in shaping criminal behavior (Agnew, 2012). Furthermore, the theory primarily focuses on urban environments, necessitating adaptations for its application to rural settings heavily impacted by climate change (White, 2016). The ecological theory of crime offers a powerful perspective for understanding the complex relationship between climate change and crime in Nigeria. By acknowledging the role of environmental transformations in shaping criminogenic opportunities and weakening social control mechanisms, this framework can inform targeted interventions and policy measures to build resilience and mitigate the adverse effects of climate change on security and social well-being. As we navigate the challenges posed by climate change, integrating such ecological perspectives into criminological research and policy will be crucial in ensuring a more secure and sustainable future for all.

METHODOLOGY

Adopting a secondary research methodology, this study sets out on a thorough investigation of the intricate correlations between climate change, crime, and security within the context of Nigeria. Equipped with a discerning perspective, we delve into a rich assortment of scholarly publications, research papers, and relevant materials. Each strand is meticulously disentangled and scrutinized, uncovering established knowledge and emerging themes within this dynamic and multifaceted terrain. This approach facilitates an efficient yet comprehensive analysis of broad and intricate subjects, capitalizing on the valuable groundwork laid by previous research while simultaneously striving to reveal novel insights and nuanced perspectives. Through rigorous engagement with established works, our objective is to elucidate previously unexplored connections and shed light on the evolving interplay between these pivotal forces that shape the Nigerian landscape.

Reassessment of the Climate Crime Link in the 21st Century

For centuries, the idea that higher temperatures contribute to criminal behavior has been present in human observation. Presently, this anecdotal knowledge is supported by robust scientific research in the field of environmental criminology, which investigates the intricate connection between increasing global temperatures and the escalation of crime rates, particularly violent

crime. As the world grapples with the unprecedented realities of climate change, this study delves into the most recent studies on this significant and evolving issue, examining the theoretical foundations, key empirical evidence, and critical avenues for future research.

Two primary mechanisms continue to dominate the theoretical landscape: effects at the individual level and effects at the environmental level. At the individual level, elevated temperatures can initiate a series of physiological and psychological reactions that predispose individuals to aggression and impulsive behavior. Research demonstrates how discomfort and irritability caused by heat can diminish self-control, thus increasing the likelihood of engaging in criminal acts (Field, 1992; Agnew, 2012). This effect may be particularly pronounced in individuals with existing vulnerabilities to violence or stress (Bushman & Anderson, 2001). Prolonged exposure to heat further intensifies stress levels, particularly in densely populated urban areas, contributing to frustration, conflict, and ultimately, criminal activity (Agnew, 2012).

Beyond individual psychology, the environment plays a crucial role in the connection between heat and crime. Warmer weather often leads to changes in people's activities, resulting in more time spent outdoors. This increased public visibility creates more opportunities for certain types of crimes, such as robberies or assaults (Agnew, 2012). Additionally, extreme heat can weaken social ties and community cohesion, reducing informal social control and fostering feelings of anonymity, thus potentially creating an environment conducive to criminal activity (Lynch et al., 2020). This weakening of social cohesion may be particularly notable in communities already facing socioeconomic challenges (Hsiang et al., 2017).

Recent research strengthens the empirical foundation of the heat hypothesis. A study conducted by Zhang et al. in 2023 discovered a significant positive correlation between daily temperature fluctuations and rates of violent crime in 375 Chinese cities, highlighting the potential global applicability of this phenomenon. Similarly, studies in the United States have demonstrated links between heat and increases in domestic violence (Reeves & Roth, 2016) and the use of force by law enforcement (Hsiang et al., 2017), thus expanding the scope of the relationship between heat and crime.

Nevertheless, the relationship between heat and crime remains nuanced. Recent work by Bischof et al. (2022) suggests a non-linear association between temperature and crime, with crime rates peaking at moderate temperatures and declining at both extremely high and extremely low temperatures. This emphasizes the significance of considering contextual factors and potentially non-linear relationships when examining the connection between heat and crime.
The potential implications of climate change for global crime rates are worrisome. Studies project a substantial increase in crime, particularly in warmer regions, as long-term warming trends persist (Ranson, 2014; Mares, 2013; Mares & Moffett, 2016). This underscores the urgency of comprehending the complex interplay between temperature, socioeconomic factors, existing crime

patterns, and specific types of crime. Such understanding is essential for developing effective preventive measures and policy interventions to mitigate the potential rise in crime associated with climate change.

The Shifting Terrain: How Climate Change Reshapes Nigeria's Landscape and Lives

Climate change is gradually transforming the Nigerian landscape, reshaping it in various ways and leaving behind new patterns of vulnerability and resilience across different regions. From the barren north, where the invading dunes and increasing temperatures present significant challenges, to the coastal regions in the south, where the escalating tides introduce their own array of issues, the country is struggling with the multifaceted effects of a changing environment. These impacts have profound consequences for the people of Nigeria and their future.

In the northern part of the country, the specter of desertification looms large. This phenomenon is driven by a combination of factors such as deforestation, overgrazing, and shifting precipitation patterns, and it is causing fertile lands to be lost at an alarming rate. Although the official estimates suggest that the encroachment is happening at a rate of 0.6 km per year, local assessments paint a much bleaker picture, with figures reaching up to 30 km annually (Nwokeoma & Chinedu, 2017; Adeyeye,2017). As a result of this ecological transformation, agricultural lands are shrinking, heatwaves are becoming more frequent and intense, and droughts are gripping the region, leading to a chronic scarcity of water (Elisha, et al. 2017). This, in turn, disrupts the lives of rural communities, forcing farmers to abandon their ancestral lands and seek alternative livelihoods (Rani & Reddy, 2023).

Moving further north, to the Sahel region, climate change is acting as a potent catalyst for insecurity. The region's heavy reliance on rain-fed agriculture makes it particularly vulnerable to fluctuations in rainfall patterns. As climate variability disrupts established weather cycles, scarcity of resources becomes a defining reality, pushing pastoralists and smallholder farmers into a precarious existence (Behnke & Mortimore, 2016). This scarcity further fuels migration, as communities are forced to search for dwindling resources, and it often exacerbates existing conflicts between pastoralists and farmers over competition for land and water (Nkonya et al., 2016). In addition to these resource conflicts, ethnic and religious tensions further complicate the situation, contributing to a fragile security environment in the region, as highlighted by a study on the Boko Haram insurgency (Frimpong, 2020).

Moving southward, the focus shifts to the rising waters and unpredictable weather patterns that characterize southern Nigeria. This region experiences increasing heatwaves and humidity, coupled with erratic and destructive flooding seasons. The city of Lagos, the bustling economic hub, is particularly at risk from rising sea levels. Studies predict a substantial rise in sea levels in the coming decades, with some estimates suggesting that large parts of the city could be inundated within the next 50 years (Onyemelukwe et al., 2020). The 2012 floods, the worst in Nigeria's

history, serve as a stark reminder of the devastating potential of these changing weather patterns. The floods affected all 36 states, resulting in loss of life, displacement of communities, and widespread destruction of homes, farmlands, and infrastructure (Adefolalu,2010).

The consequences of climate change in Nigeria go beyond environmental degradation. The hardships faced by individuals and communities compel them to adopt various survival strategies. Relocation is a common strategy, but it often exposes individuals to new vulnerabilities, such as increased crime rates and exploitation in unfamiliar environments (Onyemelukwe et al., 2020). This complex web of cause and effect highlights the profound social and economic implications of climate change, which call for innovative and multifaceted solutions.

Finally, climate change casts a long shadow over Nigeria, affecting a wide range of landscapes and communities. From the advancing deserts of the north to the swelling floods of the south, the country faces a slew of difficulties, each requiring unique answers. Addressing these difficulties necessitates not only strong adaptation methods, but also a collaborative effort to address the underlying causes of climate change. By recognizing the complex effects of this phenomenon and actively seeking answers, Nigeria can navigate the stormy waters of climate change and create a more resilient future for its people. This future necessitates not only adaptation, but also proactive mitigation initiatives on both the national and international levels.

Climate Change, Migration and Cross-Border Crime in Nigeria

The tapestry of West Africa is a complex and dynamic landscape that is characterized by a multitude of interconnected factors. It is a region that is imbued with both the vibrant vitality of life and the foreboding shadows cast by the ever-changing climate. In the case of Nigeria, this evolving landscape brings forth not only its own unique set of ecological challenges but also a significant influx of individuals who are compelled to flee the arid and parched realities of neighboring countries such as Chad and Niger Republic. These individuals are driven by the relentless forces of desertification, dwindling resources, and the haunting specter of food insecurity. They arrive in Nigeria with the hopes of seeking refuge and opportunities for a better life. However, their arrival also stirs a troubling undercurrent - the potential for a rise in cross-border crime, which could further exacerbate the existing security concerns in the region (Nkonya et al. 2016).

To fully comprehend and analyze this complex phenomenon, it is essential to delve deep into the potent framework of environmental stress-migration. Extensive research conducted by scholars such as Nkonya et al. (2016) and Rani & Reddy (2023) paints a stark and vivid picture of the underlying dynamics at play. These studies reveal that resource scarcity and environmental degradation act as powerful "push" factors, compelling individuals to migrate towards perceived havens like Nigeria. The pressure to migrate intensifies even more with the specter of extreme weather events and rising sea levels, as highlighted by Frimpong (2020) groundbreaking study on

the connection between environmental scarcity, violent extremism, and displacement, particularly in the context of Boko Haram.

However, Nigeria's notoriously porous borders, particularly those shared with Niger and Cameroon, present a significant and concerning security vulnerability. As Bello and Mohammed (2022) astutely warn, these open passages not only facilitate the entry of genuine refugees but also provide an opportunity for individuals with nefarious intentions, including foreign militants and terrorists, to infiltrate the country. This influx of migrants with potentially ulterior motives further compounds the pre-existing security challenges faced by Nigeria, placing immense strain on law enforcement resources and potentially fueling ethnic or religious tensions, as cautioned by Folami and Folami (2012). Moreover, the competition for increasingly scarce resources between local communities and migrants can create a fertile ground for conflicts that jeopardize national security. These concerns are not limited to Nigeria alone but resonate across the entire West African region. Abebe (2014) emphasizes the potential for large-scale displacement due to sea-level rise and extreme weather events, which in turn intensify migration pressures. Similarly, studies conducted by Christian Aid (2007) and Odoh & Chilaka (2012) shed light on how environmental changes have triggered significant rural-urban migration within neighboring nations like Mali and Burkina Faso, further compounding the challenges faced by the region as a whole.

In order to effectively confront and address this complex and multifaceted challenge, a multi-pronged approach is imperative. Regional cooperation must form the bedrock of any viable and sustainable solution. Joint initiatives that are focused on mitigating the root causes of displacement in vulnerable countries, such as targeted investments in climate-smart agriculture and sustainable resource management practices, as suggested by Rani & Reddy (2023) can significantly stem the tide of migration. This collaborative effort should extend beyond mere rhetoric and encompass concrete actions aimed at bolstering border security through coordinated intelligence sharing and joint patrols, drawing inspiration from existing frameworks like the ECOWAS Protocol on Transhumance, as proposed by Imobighe (2009).

On the domestic front, it is crucial to integrate migrants into the fabric of Nigerian society. This can be achieved by fostering social cohesion through cultural exchange programs and by ensuring equitable access to resources and basic services for all individuals, regardless of their background or migration status, as advocated by Frimpong (2020). By doing so, the formation of marginalized and disenfranchised communities, which are particularly susceptible to exploitation and recruitment by criminal networks, can be preemptively prevented. Additionally, strategic investments in infrastructure development, particularly in sectors such as education and healthcare, can enhance the overall resilience of communities and equip them with the necessary tools to effectively cope with the influx of population, as highlighted by Onyemelukwe et al. (2020).

Finally, the tapestry of West Africa is a complex and intricate mosaic that is shaped by a myriad of factors, including the vibrant tapestry of life and the ominous shadows cast by a changing climate. Nigeria, in particular, must grapple with the ecological challenges unique to its landscape, as well as the influx of climate migrants fleeing neighboring countries. However, this influx also brings forth concerns related to cross-border crime and security. Understanding the phenomenon of environmental stress-migration is crucial in addressing these challenges, and a multi-pronged approach that emphasizes regional cooperation and domestic integration is necessary for effective solutions. Through collaborative efforts and strategic investments, the nation can navigate this complex landscape and ensure a sustainable and secure future for all its inhabitants**.**

CONCLUSION

Climate change is not a novel concept to the global community, as it has brought forth perilous implications to the world, particularly in relation to crime. The United Nations Security Council has formally acknowledged climate change as a catalyst for exacerbating threats to international peace and security. The alteration in climatic conditions has resulted in widespread chaos across the globe, including the displacement of individuals. These changes have subsequently influenced the trends and patterns of criminal activities, with some crimes undergoing transformation due to the movement of affected populations across national borders. Notably, conflicts have arisen between herders from Niger, Guinea, Lake Chad, and other regions who have migrated into Nigeria, primarily due to limited resources.

The theoretical perspectives emphasize the necessity of adaptation and coping mechanisms for individuals affected by climate change in order to ensure their survival. The theory investigates the correlation between climate change and crime. Consequently, societies impacted by climate change require adaptive mechanisms to navigate such challenges. Given its far-reaching societal and environmental implications on human life, food security, national security, and the future of humanity, climate change can no longer be regarded solely as a scientific or geographical issue. Its ubiquity has instigated social upheaval.

Recommendations and Future Research

1. Implementation of effective policies: Policies aimed at mitigating climate change ought to be formulated to support the reduction of greenhouse gas emissions and facilitate the transition to renewable energy sources. This approach will contribute significantly to the promotion of sustainable and contemporary practices that address the underlying causes of climate change, as well as its impact on security and crime within communities.
2. Enhancement of community engagement: Investing in social and sensitization programs, education, and job opportunities can foster the development of knowledgeable communities that are better equipped to cope with the challenges posed by climate change. This, in turn, can help reduce the potential for crime.

3. Preparedness through early warning systems: Developing robust disaster response plans and implementing effective early warning systems can ensure efficient emergency management. By minimizing social disruptions caused by climate-related disasters, these measures can also reduce the potential for crime in their aftermath.
4. Strengthening law enforcement: The researchers recommend allocating additional resources to law enforcement agencies to address climate-related crimes, such as illegal resource extraction and environmental pollution. This allocation will aid in deterring and combating these crimes. The Nigerian law enforcement and emergency management agencies should promote inter-agency synergy between relevant security agencies to minimize such crimes.
5. Improving international cooperation: Collaborating with other countries to exchange information, intelligence, and best practices in combating transnational crimes related to climate change is crucial. Such cooperation will enhance global efforts to address climate-related crimes.

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