



Interrogating Climate Change, Conflict and Human Security in Sub-Saharan Africa

By

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Abstract

Climate change is recognized as a profound security threat, weakening the capacity of states to address challenges like severe weather patterns, droughts, land degradation, and flooding, particularly in developing regions such as Sub-Saharan Africa. This phenomenon significantly impacts human security, which encompasses access to vital elements such as water, food, energy, health, and livelihoods, alongside physical safety. This paper therefore interrogates the nexus between climate change, conflict and human security. It is desk research that dwells on secondary data and the use of thematic analysis. This paper is anchored on the Eco-violence theory by Homer-Dixon which claim that climate change exacerbates existing environmental scarcities of fundamental resources like fresh water, cropland, forests, and fish. These scarcities, compounded by factors such as population growth and unequal access, can reduce economic productivity, induce migration, and trigger conflict and insecurity. The findings of this paper shows that climate change contributes to food insecurity through decreased crop yields, water scarcity from altered precipitation, and climate-induced migration leading to displacement and clashes, particularly between nomadic pastoralists and sedentary farmers over dwindling resources. The paper further argues that while the direct causal link between climate change and violent conflict is debated, there is strong consensus that it acts as a "threat multiplier". It intensifies pre-existing vulnerabilities, including poverty, weak governance, and societal cleavages, rather than being the sole cause of conflict. Africa is especially vulnerable due to its reliance on rain-fed agriculture and limited adaptive capacities. Addressing these interwoven challenges requires integrated, multi-sectoral policies focused on building resilience and strengthening governance

Key Words: Climate Change, Conflict, Security, Human Security, Resources, Weather



INTRODUCTION

Climate change has emerged as a profound and multifaceted security threat, particularly for the African continent, despite Africa contributing the least to global greenhouse gas emissions (Brown & Crawford, 2009; Brown, Hammill, & McLeman, 2007; Osawe, Ojeifo, & Aziegbemhin, 2021). While the Earth's climate has always undergone natural changes, the current rate and intensity of warming are largely attributed to anthropogenic activities, rendering the situation catastrophic (Adishi & Oluka, 2018; Boko et al., 2007; Chilunjika & Gumede, 2021). This phenomenon is not merely an environmental concern but has been recast as a critical international peace and security issue, recognized by various global bodies including the African Union and the United Nations Security Council (Adishi & Oluka, 2018; Brown, Hammill, & McLeman, 2007).

The discourse around climate change and security has evolved, moving from initial perceptions as a peripheral environmental issue to an economic and energy problem, and now, significantly, a security threat (Adishi & Oluka, 2018; Brown, Hammill, & McLeman, 2007; Tarusarira, 2024). Security analysts and academics have warned for some time that climate change threatens water and food security, resource allocation, and coastal populations, which in turn could increase forced migration, raise tensions, and trigger conflict (Brown, Hammill, & McLeman, 2007; Chilunjika & Gumede, 2021; Osawe, Ojeifo, & Aziegbemhin, 2021). This perspective is often framed by the concept of climate change as a "threat multiplier" (Brown, Hammill, & McLeman, 2007; Tesfaye, 2022). This means that rather than being a direct cause of conflict, climate change exacerbates existing vulnerabilities and socio-economic, political, and environmental challenges (Adishi & Oluka, 2018; Brown & Crawford, 2009; Osawe, Ojeifo, & Aziegbemhin, 2021; Tesfaye, 2022). In Africa, these pre-existing vulnerabilities include rapid population growth, widespread poverty, weak governance, inadequate infrastructure, limited adaptive capacity, and a history of inter-communal and intra-state conflicts (Brown & Crawford, 2009; Osawe, Ojeifo, & Aziegbemhin, 2021; Tesfaye, 2022; Yeboah, 2024).



The understanding of security itself has broadened from a traditional state-centric, militaristic view to encompass human security, which places the individual at its core (Chilunjika & Gumede, 2021; Osawe, Ojeifo, & Aziegbemhin, 2021; Tesfaye, 2022). Human security involves safeguarding essential rights and freedoms, including access to water, food, energy, transportation, health, and livelihoods, as well as education, lifestyle, and community (Chilunjika & Gumede, 2021; Osawe, Ojeifo, & Aziegbemhin, 2021). When these fundamental aspects are jeopardized, societal instability, including violent and non-violent conflicts, can arise (Chilunjika & Gumede, 2021). Climate change directly impacts these components, making the security implications particularly severe for poor communities in developing countries, especially those in sub-Saharan Africa (Chilunjika & Gumede, 2021; Osawe, Ojeifo, & Aziegbemhin, 2021). The Sahel region, in particular, is noted as highly vulnerable, experiencing larger average temperature increases and struggling with political instability and state fragility (Tsfaye, 2022). Many low-income countries in tropical and subtropical regions, as well as arid areas, are predisposed to rising temperatures and decreasing water availability (Chilunjika & Gumede, 2021).

This paper is hinged on the following objectives:

- i. To establish and examine the nexus between climate change and conflict in the Sahel
- ii. To examine the concept of conflict in the context of climate change
- iii. To identify and interrogate the implications of climate induced conflict on human security
- iv. To suggest path ways toward addressing climate change as driver of conflict and the humanitarian consequences of climate-induced conflict

Concept of Conflict in the Context of Climate Change

Conflict, in the context of human security and climate change, is generally conceptualized as a dispute or incompatibility between opposing sides (Brown & Crawford, 2009). While conflict is a normal and inherent aspect of social existence, it becomes a destructive force when the capacity to mediate incompatible interests breaks down, leading to the pursuit of those interests through violence (Brown & Crawford,



2009). Often, the term "conflict" is used as shorthand for "violent conflict"(Brown & Crawford, 2009). The sources highlight that conflicts arise as individuals and groups pursue their survival and security needs, often stemming from religious, ethnic, or political differences, poverty, and particularly, resource scarcity (Adishi & Oluka, 2018).

A key conceptual understanding is that climate change is not a direct or sole cause of conflict, but rather functions as an indirect "threat multiplier"(Tesfaye, 2022; Adishi & Oluka, 2018; Brown & Crawford, 2009; Brown et al., 2007; Tarusarira, 2024; FES Nigeria Policy Brief, 2022). This means it intensifies existing problems and vulnerabilities, making them more complex and difficult to resolve (Tesfaye, 2022; Brown & Crawford, 2009; Brown et al., 2007; FES Nigeria Policy Brief, 2022). The link between climate change and security risks like conflict is dependent on the confluence of various socioeconomic and political factors (Tarusarira, 2024; Brown et al., 2007).

Climate change contributes to conflict through several pathways:

- Worsening living conditions and escalating grievances or competition over dwindling resources (Tarusarira, 2024; Chilunjika & Gumede, 2021). Resource scarcity, driven by environmental degradation or increased demand, can diminish economic productivity, leading to deprivation and conflict (Adishi & Oluka, 2018; Homer-Dixon, 1999 as cited in Adishi & Oluka, 2018).
- Maladaptation, where attempted adaptation strategies to climate change inadvertently worsen existing security risks or create new ones (Tarusarira, 2024).
- Mobility and displacement of populations due to deteriorating livelihoods. While migration can be an adaptation strategy, it can also lead to increased community-level violence, particularly when migrants encounter other groups in areas with limited resources (Tarusarira, 2024; Chilunjika & Gumede, 2021; Osawe et al., 2021; Brown & Crawford, 2009).



- Increased recruitment by armed groups, who capitalize on climate impacts and existing frustrations, especially in areas where state governance is weak or absent (Tarusarira, 2024; Tesfaye, 2022).
- Opportunities for local elites to exploit instability to gain greater control over resources and advance their strategic objectives (Tarusarira, 2024).

There is ongoing academic debate regarding the direct causal link between climate change and conflict (Osawe et al., 2021; Adishi & Oluka, 2018; Brown & Crawford, 2009; Brown et al., 2007; Tarusarira, 2024). Skeptics emphasize that conflicts typically arise from a combination of social factors and that direct empirical evidence is limited (Adishi & Oluka, 2018). Conversely, proponents point to increasing evidence of climate-induced conflicts, such as farmer-herder clashes over diminishing water and grazing lands, exacerbated by issues like desertification and weak state governance (Adishi & Oluka, 2018; Chilunjika & Gumede, 2021; FES Nigeria Policy Brief, 2022).

Conflicts are further exacerbated by Weak governance and inadequate institutional capacity, which hinder a state's ability to manage risks, provide essential services, and facilitate peaceful dispute resolution (Tefaye, 2022; Adishi & Oluka, 2018; Brown & Crawford, 2009; Brown et al., 2007; FES Nigeria Policy Brief, 2022). Ineffective governance directly contributes to climate vulnerability (Tefaye, 2022). Poverty and existing socio-economic disparities, which heighten the vulnerability of marginalized populations and reduce their capacity to adapt. This can increase their likelihood of resorting to violence or joining armed groups (IMF, 2022; Brown & Crawford, 2009; Brown et al., 2007; FES Nigeria Policy Brief, 2022). Pre-existing grievances, including feelings of marginalization, inequality, and injustice, which armed non-state actors can exploit (Tefaye, 2022; FES Nigeria Policy Brief, 2022). Cultural and religious factors, such as the sacred significance of resources like land or livestock, can rigidify divisions between conflicting parties and render conventional conflict resolution strategies ineffective if they fail to acknowledge these non-material dimensions (Tarusarira, 2024).

Ultimately, the extent to which climate change contributes to violence is largely determined by governance and governmental responses, rather than solely by the



climate "signal" itself (Brown & Crawford, 2009; Brown et al., 2007). Effective conflict prevention and resolution in this context necessitate integrated, multi-sectoral approaches that prioritize human security, strengthen adaptive capacities, and foster robust conflict resolution mechanisms, taking into account the complex interplay of environmental, social, economic, and political factors (Tesfaye, 2022; Chilunjika & Gumede, 2021; FES Nigeria Policy Brief, 2022).

Perspectives of Human Security: A Conceptual Analysis

Human security is a dynamic concept that emerged in 1994, introduced by the United Nations Development Programme (UNDP), marking a significant evolution from traditional, state-centric security paradigms (Chilunjika & Gumede, 2021; UNDP, 1994). This shift occurred particularly after the Cold War, as external threats to state security diminished and internal, intra-state conflicts became more prevalent, prompting policymakers and scholars to seek a new framework focused on the individual (Roff, 2017; Gemedda & Sima, 2015).

Conceptually, human security is defined as an all-inclusive, multi-dimensional approach to security that integrates elements from national security, economic development, and human rights (Chilunjika & Gumede, 2021; Osawe et al., 2021). Its primary objective is the safeguarding of essential rights and freedoms of life for individuals (Ağır, 2015; Ağır et al., 2016; Chilunjika & Gumede, 2021). The United Nations Economic Commission for Africa (UNECA) further elaborates that human security is a condition enabling citizens to fully participate in governance processes, live peacefully, safely, and freely, and enjoy their fundamental rights, including access to health facilities and basic necessities like education and resources (UNECA, 2011). It encompasses all measures put in place to ensure citizens are able to meet their yearnings and aspirations.

The concept of human security encompasses several key dimensions, aiming to protect individuals from various critical fears:

- **Economic security** focuses on freedom from poverty (Roff, 2017; Chilunjika & Gumede, 2021).



- **Food security** entails ensuring access to sufficient food (Roff, 2017; Chilunjika & Gumede, 2021).
- **Health security** involves access to healthcare and protection from disease (Roff, 2017; Chilunjika & Gumede, 2021).
- **Environmental security** pertains to protection from environmental pollution and depletion (Roff, 2017; Chilunjika & Gumede, 2021; FES Nigeria Policy Brief, 2022).
- **Personal security** encompasses physical security/safety, including freedom from torture, war, criminal attacks, domestic violence, drug use, suicide, and traffic accidents (Roff, 2017; Chilunjika & Gumede, 2021).
- **Community security** addresses the survival and physical security of traditional cultures and ethnic groups (Roff, 2017; Chilunjika & Gumede, 2021).
- **Political security** grants the freedom to enjoy civil and political rights, and freedom from political oppression (Roff, 2017; Chilunjika & Gumede, 2021).

Beyond these core categories, human security also incorporates access to vital resources such as water, energy, and transportation, alongside livelihoods, education, and lifestyle (Lewis & Lenton, 2015; Chilunjika & Gumede, 2021). Fundamentally, it places the physical safety, well-being, and freedom of the individual at its core, considering these ideals achievable through economic development and good governance (Bai et al., 2014; Chilunjika & Gumede, 2021).

The conceptualization of human security acknowledges that a failure to guarantee these aspects can lead to societal instability, manifesting as both violent and non-violent conflicts (Lewis & Lenton, 2015; Chilunjika & Gumede, 2021). In this context, climate insecurity is explicitly identified as a crucial link between climate change and conflict (Stark et al., 2009; Osawe et al., 2021). Climate change is widely regarded as a "threat multiplier," intensifying existing vulnerabilities, degrading social, economic, political, and physical systems, and making challenges more complex and difficult to resolve (Brown et al., 2007; CNA, 2007; Osawe et al., 2021; Adishi & Oluka, 2018; Tesfaye, 2022; FES Nigeria Policy Brief, 2022). This magnification of threats



disproportionately affects marginalized populations, increasing risks to life, property, and settlements, thereby contributing to potential conflict (Stark et al., 2009; Osawe et al., 2021).

Theoretical Framework

The importance of theory cannot be overemphasized. This paper adopts the Homer-Dixon Eco-violence theory. Thomas F. Homer-Dixon's "Eco-violence theory" provides a significant framework for understanding the link between environmental factors and conflict (Adishi & Oluka, 2018).

Homer-Dixon (1998) posits that large populations in many developing countries are highly dependent on four fundamental environmental resources for crop production: fresh water, cropland, forests, and fish (Adishi & Oluka, 2018). His theory argues that scarcity or shrinking of these resources, due to misuse, overuse, or degradation, can under certain circumstances trigger conflicts and insecurity (Adishi & Oluka, 2018). Homer-Dixon (1999) elaborates that a decrease in the quality and quantity of renewable resources, coupled with population growth and unequal resource access, collectively or individually increase scarcity for specific population groups regarding cropland, water, forests, and fish (Adishi & Oluka, 2018). This scarcity can then reduce economic productivity for both local groups experiencing it and the wider regional and national economies (Adishi & Oluka, 2018). The affected people may migrate or be expelled to new lands, and these migrating groups often trigger ethnic conflicts when they move into new areas. Furthermore, decreases in wealth and deprivation can directly lead to conflicts (Adishi & Oluka, 2018).

The theory fundamentally assumes that resource scarcity arises from insufficient supply, excessive demand, or unequal distribution of a resource, often due to environmental hazards. This forces segments of society into deprivation and violence (Adishi & Oluka, 2018). Homer-Dixon emphasizes that these sources of scarcity are, in turn, caused by variables such as population growth, economic development, pollution, transnational crime, unemployment, terrorism, and most prominently, climate change (Adishi & Oluka, 2018). Relevance to Climate Change and Conflict: The eco-violence theory is considered capable of capturing the intricate linkages



between climate change and conflict (Adishi & Oluka, 2018). For example, a basic feature of pastoralists (herdsmen) is migration, which is often driven by climate change. This forced migration can make them "desperate guests" with "unwilling hosts," automatically triggering conflict (Adishi & Oluka, 2018). The Nigerian Benue, Plateau, Kogi farmers/herders conflict come to mind. Climate change, by leading to the drying up of seas (reducing fish and fresh water) and drought/desertification consuming crop and forest lands, directly contributes to the short supply of environmental resources that can trigger violence (Adishi & Oluka, 2018).

Homer-Dixon's work is a significant reference point in climate security discourse, particularly his seminal articles and books from the 1990s that examined the link between natural resources and violent conflict (Tarusarira, 2024). He is cited for identifying population displacement and drops in agricultural outputs as events capable of breeding insurgencies, guerrilla warfare, and terrorist attacks, directly linking climate change with acute violence (Adishi & Oluka, 2018; Homer-Dixon, 1991 as cited in Adishi & Oluka, 2018). The resource scarcity theory he popularized argues that when resources are depleted, competition and conflict will arise over the remaining limited resources (Tarusarira, 2024).

However, the idea of climate change directly instigating violent conflict and insecurity remains a subject of considerable debate in expert literature, with opinions divided into "enthusiasts" and "skeptics" (Adishi & Oluka, 2018). Critics argue that the theory, and other neo-Malthusian notions of "carrying capacity," tend to assume the worst—that people will fight rather than cooperate over scarce resources—and may underestimate African populations' capacities to adapt and manage conflicts (Brown & Crawford, 2009; Brown et al., 2007). They also point out that highly developed economies might experience less conflict over resources even with increased demand (Brown & Crawford, 2009).

Despite the debate, sources acknowledge that climate change presents real development challenges that, under certain circumstances, may contribute to the emergence and longevity of conflict (Brown & Crawford, 2009). Climate change is often viewed as a "threat multiplier" that intensifies existing problems and



vulnerabilities, such as water scarcity and food insecurity (Brown & Crawford, 2009; Brown et al., 2007; Tesfaye, 2022; FES Nigeria Policy Brief, 2022). This means it exacerbates existing challenges rather than being a sole direct cause (Adishi & Oluka, 2018; Chilunjika & Gumede, 2021; Tarusarira, 2024).

The sources indicate that non-climate factors, such as governance, poverty, and conflict management, will largely determine whether and how climate change translates into a security threat (Brown & Crawford, 2009). Nonetheless, the "securing" of climate change into foreign and defense policy agendas has generated political pressure for intensified climate action (Tarusarira, 2024).

Impact of Climate Change on Human Security in Sub-Sahara Africa

The far-reaching impacts of climate change on human security in sub-Saharan Africa are manifested in several critical areas:

Extreme Weather Patterns: Global warming leads to environmental and social variations, including hotter temperatures and more severe weather patterns (Chilunjika & Gumede, 2021). The excessive emission of greenhouse gases, primarily from burning fossil fuels and deforestation, causes a gradual heating of the Earth's atmosphere and surface (Boko et al., 2007; Chilunjika & Gumede, 2021). These changes manifest as more frequent and intense heat waves, destructive storms, wind-blown rains, and prolonged droughts (Chilunjika & Gumede, 2021; Tesfaye, 2022). For instance, Zimbabwe experienced its worst drought in 40 years between 2018 and 2019, while Cyclone Idai devastated Mozambique, Zimbabwe, and Malawi in 2019, causing thousands of deaths and millions displaced (Chilunjika & Gumede, 2021; Yeboah, 2024). Poor and less developed countries, lacking financial and institutional capacity, are disproportionately affected by these disasters (Chilunjika & Gumede, 2021).

Water Scarcity: Climate change contributes to decreasing precipitation levels, increased frequency and length of droughts, and degradation of water quality due to rising temperatures, which lower dissolved oxygen concentration (Chilunjika & Gumede, 2021). While some high-latitude areas may see increased rainfall, subtropical



and mid-latitude arid regions are projected to experience diminished average rainfall (Chilunjika & Gumede, 2021; Tesfaye, 2022). This situation leads to a sharp increase in demand for irrigation, domestic, and industrial water use, and can also result in "too much" water, such as flooding in other regions (Chilunjika & Gumede, 2021). Water scarcity exacerbates health and economic inequalities, particularly in Northern sub-Saharan Africa and the Sahel (Chilunjika & Gumede, 2021). By 2040, per capita renewable water availability in Sahelian countries (excluding Senegal) is projected to decline, potentially putting countries like Burkina Faso below the threshold of absolute water scarcity (Tefaye, 2022).

Food Production and Food Security: Climate change directly hampers the four key dimensions of food security: availability, stability, utilization, and access (Chilunjika & Gumede, 2021; Yeboah, 2024). It impacts crop yields, soil fertility, water-holding properties, and increases crop pests and diseases (Chilunjika & Gumede, 2021; Yeboah, 2024). A projected 20% decline in agricultural production in least developed countries by 2080 due to climate change, along with an estimated 15% reduction in crop yields, threatens to treble the number of undernourished individuals in sub-Saharan Africa between 1990 and 2080 (Chilunjika & Gumede, 2021; Baptista et al., 2022). This decline also causes food prices to increase and purchasing power to decrease, leading to increased malnutrition and food insecurity (Chilunjika & Gumede, 2021; Yeboah, 2024). Countries relying heavily on rainfed agriculture, like Nigeria, are particularly vulnerable (Osawe, Ojeifo, & Aziegbemhin, 2021). Food insecurity is both a cause and consequence of violence, contributing to a "conflict trap" and linking to increased risks of demonstrations, mutiny, and internal conflicts (Adishi & Oluka, 2018; Chilunjika & Gumede, 2021).

Climate-Induced Migration: Historically, migration has served as a coping mechanism for environmental change (Osawe, Ojeifo, & Aziegbemhin, 2021; Tesfaye, 2022). However, climate change is altering this pattern, leading to more permanent or semi-permanent internal migration, especially to urban areas, straining host communities and exacerbating social tensions (Chilunjika & Gumede, 2021; Osawe, Ojeifo, & Aziegbemhin, 2021; Tesfaye, 2022; Yeboah, 2024). The nomadic



pastoralists in the Sahel region, for example, are increasingly forced to migrate due to desertification and dwindling grazing lands, leading to clashes with settled farmers (Chilunjika & Gumede, 2021; Tesfaye, 2022; Adishi & Oluka, 2018). While the direct causal link between climate change and conflict remains debated (Chilunjika & Gumede, 2021; Osawe, Ojeifo, & Aziegbemhin, 2021; Tarusarira, 2024), its impact on migration undeniably amplifies existing societal pressures (Osawe, Ojeifo, & Aziegbemhin, 2021; Yeboah, 2024).

Conclusion and the Path Forward

The ability of Sahelian countries to manage these complex climate-induced risks largely depends on the strength and effectiveness of their governance structures (Tefaye, 2022). Weak governance, corruption, and uneven development create grievances that violent non-state actors exploit, further destabilizing regions already vulnerable to climate shocks (Tefaye, 2022; Adishi & Oluka, 2018). Conversely, countries with effective government policies that protect domestic producers and mitigate food insecurity, such as Morocco, have largely avoided climate-related internal conflict (Tefaye, 2022). Policymakers and stakeholders may struggle to develop targeted interventions that address the most pressing needs without a comprehensive understanding of the challenges facing African food systems (Yeboah, 2024).

Addressing these challenges requires a holistic and multi-sectoral approach that integrates climate change concerns into broader policy frameworks (Chilunjika & Gumede, 2021; Tesfaye, 2022). Key policy interventions include:

- **Investing in climate-resilient agriculture:** This involves water management systems, irrigation technologies, and sustainable land-use practices like cover-cropping, regenerative agriculture, and zero-tillage (Baptista et al., 2022; Chilunjika & Gumede, 2021). Developing drought-resistant crops and alternative fodder is also crucial (Adishi & Oluka, 2018).



- **Enhancing resilience and disaster risk reduction:** Preparing communities for hazardous events and supporting their recovery without increasing future vulnerability is crucial (Chilunjika & Gumede, 2021; Tesfaye, 2022).
- **Strengthening governance and rule of law:** Prioritizing democratic principles, accountability, and the provision of basic services can address root causes of fragility and prevent conflict (Tefsaye, 2022).
- **Promoting regional cooperation and honoring climate finance commitments:** International support through grants, concessional financing, capacity development, and technology transfer is vital, especially for adaptation efforts in vulnerable, fragile states (Baptista et al., 2022; Tesfaye, 2022). Donors should overcome risk aversion to invest in marginalized areas and ensure aid reaches disadvantaged groups, including women and youth who are uniquely vulnerable (Tefsaye, 2022).
- **Shifting energy policies:** Limiting fossil fuel use and promoting renewable and cleaner energy sources are essential for long-term food security and sustainable development (Chilunjika & Gumede, 2021). Sahelian countries should be afforded the policy space and time to balance development goals with climate objectives, potentially utilizing natural gas as a transition fuel (Tefsaye, 2022).

Ultimately, ensuring a resilient, stable, and prosperous Africa in the face of climate change demands concerted efforts by national governments, guided by Sustainable Development Goal 13 (SDG 13), and robust international cooperation (Chilunjika & Gumede, 2021; Adishi & Oluka, 2018; Tesfaye, 2022). By prioritizing human security and adopting integrated strategies, the adverse effects of climate change on the well-being of African populations can be mitigated (Tefsaye, 2022).

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