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Reimagining Peacebuilding in Sub-Saharan Africa: A Critical Examination of the Intersectionality of Climate Change, Conflict and Human Security

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Abstract

As the Sub-Saharan region grapples with the dual challenges of environmental degradation and socio-political instability, traditional peacebuilding appears increasingly inadequate. This study explored the intersectionality of climate change, conflict and human security in Sub-Saharan Africa's peacebuilding context. It adopted a qualitative methodology. Data was collected through desktop research. The findings revealed a complex interplay between environmental stressors such as drought, resource scarcity, displacement and conflict escalation. Marginalised communities were found to be disproportionately affected, leading to heightened tensions and violence. Furthermore, the study identified successful peacebuilding initiatives that have integrated climate resilience. This demonstrates that addressing environmental issues is critical for sustainable peace. The paper concludes with policy recommendations calling for collaboration among governments, non-governmental organisations and local communities to enhance peacebuilding efforts in the face of ongoing climate challenges. Additionally, climate adaptation should be a core component of human security strategies in Sub-Saharan Africa.

Keywords: *Peacebuilding, climate change, Human security, Conflict dynamics, Climate resilience*

Introduction

The 21st century has witnessed a rise in policy and academic discourse around climate change. There is a general understanding that current global climate change is attributable to human behaviour (Mikhaylov et al,2020). Evidence of climate change ranges from droughts leading to depleted water sources, floods, rising sea levels and desertification, among others. Regions across the Global South, particularly within Sub-Saharan Africa and selected areas of Asia, remain disproportionately vulnerable to the multifaceted impacts of climate change. These vulnerabilities stem from a confluence of factors such as limited adaptive capacities, high dependence on climate-sensitive livelihoods such as rain-fed agriculture, underdeveloped infrastructure and persistent socio-economic inequalities (Okolie, Prince & Okechukwu, 2024).Despite being part of a continent that contributes minimally to global greenhouse gas emissions, Sub-Saharan Africa faces some of the most severe impacts of climate change (IPCC, 2018; Epule etal, 2022). The Intergovernmental Panel on Climate Change (IPCC) has projected that with global warming levels between 1.5°C and 2°C, negative impacts would become widespread and severe (IPCC, 2018). This would lead to increased poverty, inequality, human morbidity, and mortality thereby posing serious challenges to the attainment of the United Nations' 17 Sustainable Development Goals.

Additionally, sub-Saharan Africa is a region replete with conflict and human security challenges. Empirical research increasingly underscores the intricate and interdependent relationship between climate change, human security and conflict (Sweijs, De Haan & Van Manen, 2022). For instance, Mbaye (2020) contends that existing literature on the Sahel region indicates a strong correlation between climate change and both the emergence and persistence of violent conflict. This perspective rests on the notion that, in response to climate-related stressors, communities often resort to migration and competition over limited natural resources as survival strategies (Wakdok & Bleischwitz, 2021).In line with this view, Schilling et al. (2018) argue that climate change functions as a "threat multiplier," intensifying pre-existing vulnerabilities and societal tensions. This dynamic is pronounced in regions such as Lake Chad, the Horn of Africa, and the Sahel, where livelihoods are closely tied to rain-fed agriculture and pastoral practices.

Extreme weather events, for example, such as climate change-induced droughts, cyclones and floods, have been linked to increased

competition for scarce resources, which lead to violent conflict in the Sahel, the Lake Chad Basin and the Horn of Africa region (Hsiang et al., 2013; Kazeem, 2024). This threatens rights-based resilience of households (Mutongoreni et al, 2024). Ngcamu, (2023) argued that the interplay between environmental stressors and socio-political factors creates a precarious situation where marginalised communities are disproportionately affected. This leads to heightened tensions and potential violence (Petrova, 2024). According to Tesfaye, (2022), as environmental stressors intensify, they aggravate existing tensions and may trigger or prolong conflict, thereby destabilising already vulnerable regions.

Consequent to this, a comprehensive appreciation of the intersectionality of climate change, conflict and human security is crucial for developing effective peacebuilding strategies in fragile regions in Sub -Saharan Africa (Nyasimi, & Jakarasi, 2024). These fragile regions include the Sahel, Lake Chad Basin and the horn of Africa.Petrova (2024) posits that climate change impacts are unevenly distributed, with marked disparities across geographic areas and socio-economic groups. Vulnerable populations bear a disproportionate burden of climate-related hazards. Their livelihoods are undermined, and this exacerbates poverty and increases vulnerability to conflict, which in turn poses a direct threat to human security (UNDP, 1994; Adger et al., 2014; Oli et al., 2019). As highlighted earlier, this study explores the intersectionality of climate change, conflict and human security in Sub-Saharan Africa.

Objectives of the Study

The study's objective is to explore the intricate relationship between climate change, conflict and human security in Africa. It is underpinned by the following research questions:

1. How does climate change intensify existing conflicts and pose threats to human security across diverse Sub-Saharan African contexts
2. To what extent have peacebuilding efforts in Sub-Saharan Africa integrated climate adaptation and resilience, and what insights can inform future conflict-sensitive environmental governance?
3. What evidence-based policies can empower governments, NGOs, and local communities to strengthen multisectoral cooperation in tackling climate-related challenges across Sub-Saharan Africa?

Significance of the Study

The significance of this study is rooted in its potential to enrich the expanding body of literature on the nexus of climate change, human security and conflict, particularly within the Sub-Saharan African context. The study purports to equip policymakers, practitioners and community leaders with the necessary insights to integrate climate resilience into peacebuilding frameworks. This is particularly critical given the increasing frequency and intensity of climate-related disasters, conflicts and human security challenges across the sub -Saharan region.

Gaps in the Current Literature

Despite significant advancements in the fields of peacebuilding and human security, several critical gaps persist in the literature. The integration of climate change as a factor influencing conflict dynamics and human security in Sub-Saharan Africa is one such area warranting research. Sweijs, De Haan, & Van Manen (2022) opine that integration of climate change into existing theoretical frameworks is still limited in academic discourses. While climate change is increasingly recognised as a driver of conflict, there is a lack of comprehensive models that incorporate environmental factors into peacebuilding and human security theories (Medina et al, 2024). Available frameworks tend to focus on political, social and economic dimensions and hence neglect how climate-induced resource scarcity and environmental degradation exacerbate tensions in Sub-Saharan Africa. This gap calls for research that bridges these fields and develops integrated models to better understand the multifaceted impacts of climate change on security.

In addition, much of the available literature tends to focus on top-down approaches to peacebuilding, thereby neglecting local perspectives and indigenous knowledge systems (Mac Ginty, 2011; Pahl, 2012). Research that prioritises grassroots experiences and insights in formulating peacebuilding strategies is hence essential, as it could lead to the development of culturally relevant and effective interventions.

Another significant gap is the lack of interdisciplinary approaches. The fields of peacebuilding, climate change and human security often operate in silos (Berkes, 2017; Houghton et al., 2015). Integrating insights from environmental science, sociology, economics and conflict studies can enrich global understanding of the complex interplay between climate change, human security and peacebuilding efforts.

Lastly, the current literature lacks robust metrics for assessing the effectiveness of peacebuilding initiatives in the context of climate change. Developing indicators that capture the multifaceted outcomes of peacebuilding efforts remains a critical area for further research (Fletcher et al., 2016; Rojas, 2018). This study sought to close this gap through critically exploring the intersectionality of climate change, conflict and human security within the context of peacebuilding in Sub-Saharan Africa.

Literature Review

This section defines key concepts underpinning the study which are critical to the understanding of the intersectionality of climate change, human security and conflict. Thereafter, an overview of key themes and findings in existing research on climate change, human security and conflict would be undertaken.

Definition of key terms

Peacebuilding is defined as a strategy for fostering positive relationships at the individual, community and political levels across multiple boundaries. This encompasses religious, racial, ethnic, class, national, and racial divides. It aims to address injustices through nonviolent means and transform the structural factors that lead to violence (Mutongoreni, Gwiza & Vain, 2025). Galtung (1996) argued that peacebuilding includes several components, such as conflict prevention, management and resolution, as well as conflict transformation and strategies for reconciliation in the aftermath of the conflict.

Climate change refers to alterations in climate patterns that can be linked directly or indirectly to human activities, which modify the composition of the global atmosphere. The primary factor driving these shifts is the increase in greenhouse gas emissions, resulting from both natural processes and human actions such as industrial activities, energy production and changes in land use (Fawzy et al., 2020).

Conflict refers to a scenario where two or more parties, be they individuals, groups or societies, pursue goals that are mutually exclusive (Diez, Bode & Da Costa, 2011). It involves disagreements over the distribution, legitimacy and appropriateness of specific resources or values. Conflict has been a fundamental aspect of human life and social evolution. When managed effectively, it fosters social dynamics that lead

to transformative changes and the enhancement of social relations and institutions (Siregar, 2022). However, when conflict escalates into aggression and violence, it has devastating effects on society.

Security typically refers to the safeguarding of a state's territorial integrity and political framework, primarily through military means (Baldwin, 2018). According to Acharya (2001), human security focuses on the protection, dignity, safety and well-being of individuals rather than the state itself. It entails protection from chronic threats such as hunger, diseases and repression and defence against abrupt, destabilising events that disrupt everyday life. A state may pose a security threat if it fails to uphold human rights and meet the fundamental needs of its citizens.

Climate Change as a Threat Multiplier

One of the foundational concepts in the study of climate change and conflict is the idea that climate change acts as a threat multiplier (Knutsen & Pedersen, 2024). This view was popularised by the U.S. Department of Defence. It suggests that climate change exacerbates existing vulnerabilities and conflicts rather than causing conflict (CNA Corporation, 2007). Mbaye (2020) posited that numerous studies supported this perspective. Environmental stressors such as drought, flooding and resource scarcity, it has been argued, intensify pre-existing tensions in areas characterised by weak governance and social inequalities. Hsiang et al. (2013) demonstrated a clear link between climate variability and increased instances of civil conflict. Similarly, Schwerdtle et al. (2018) emphasised that climate change impacts exacerbate existing grievances in vulnerable communities and lead to violent confrontations. A 2021 study by the World Bank highlighted that climate change could displace millions of people (World Bank, 2021). This would further strain resources and potentially lead to conflict over access to land and water.

Mechanisms Linking Climate Change and Conflict

The mechanisms linking climate change and conflict are complex and interrelated (Sweijs, De Haan, & Van Manen, 2022). Studies have identified several critical mechanisms linking climate change and conflict dynamics. This shows that environmental stressors exacerbate existing vulnerabilities and tensions within societies (Kasperson et al., 2022). One primary mechanism identified is resource scarcity. As climate change

leads to decreased availability of essential resources such as water and arable land, competition among communities intensifies (Tesfaye, 2022). In regions already burdened by socio-economic inequalities such as the Lake Chad basin, resource scarcity could ignite violent conflicts. This is especially true when communities perceive that their livelihoods are being threatened (Ide et al., 2014; Benjaminsen, 2016). Tesfaye, (2022)posited that prolonged droughts in the Sahel region have resulted in heightened tensions between pastoralists and farmers, leading to violent confrontations over dwindling resources.

Another significant mechanism linking climate change and conflict is economic stress. Climate-related disasters, such as hurricanes, floods, and droughts, disrupt livelihoods and devastate local economies. This in turn creates long-term instability. As communities struggle to recover, economic instability can lead to social unrest and a breakdown of social cohesion. Burke et al. (2009) highlight how agricultural failure due to climate impacts leads to increased poverty levels, pushing marginalised groups toward desperation and conflict. According to Benjaminsen (2016), this economic strain is particularly acute in regions where populations are already vulnerable.

Migration and displacement form another critical link between climate change and conflict (Freeman, 2017; Tesfaye, 2022). Environmental degradation, which is driven by climate change force populations to migrate in search of better living conditions. Benjaminsen and Svarstad (2021) argued that this movement potentially leads to significant demographic shifts and results in tensions between displaced populations and host communities. Rigaud et al. (2018) highlight that influx of migrants, strain local resources and services. Additionally, the influx of displaced populations exacerbates pre-existing social tensions in areas with limited resources or where ethnic or cultural differences are highly pronounced, as is the case in the Sahel, Lake Chad basin and the Horn of Africa region (Askland et al, 2022). In these regions climate-induced migrations have contributed to conflicts over land and water.

Furthermore, weakened governance is a critical factor that exacerbates the impacts of climate change on conflict dynamics (Folorunsho & Samuel, 2025). In countries of the Sahel region such as Chad, Niger, Mali, Burkina Faso and Nigeria, additional pressures from climate change eroded state capacity to manage conflicts effectively (Tesfaye, 2022; Birhan, 2024). Mastrorillo et al. (2016) argue that when governments lack the resources or legitimacy to respond to the challenges posed by climate change, their ability to mediate disputes and

provide essential services diminishes (Folorunsho & Samuel, 2025). The absence of effective governance often facilitates the emergence of non-state actors and militia groups who capitalise on institutional weaknesses for strategic advantage. This power void also fosters conditions in which unresolved grievances intensify, laying the groundwork for protracted cycles of violence.

Adaptation and Resilience Strategies

With the intensifying effects of climate change becoming more apparent, there is a heightened emphasis on developing adaptation and resilience strategies aimed at minimising related risks and fostering long-term community stability (Cochrane & Cafer, 2018). Studies have highlighted the importance of community-based adaptation efforts, which address environmental challenges and reduce the potential for conflict (Kirkby, Williams & Huq, 2018). These strategies are tailored to reflect local conditions and priorities, and include climate-resilient farming techniques, permaculture, efficient water governance and restoration of degraded ecosystems. Community-based adaptation strategies have the advantage of emphasising the active involvement of local populations in decision-making processes (Cochrane & Cafer, 2018; Schwerdtle et al., 2018). The ensuing outcomes are typically more sustainable and equitable.

According to Bizikova et al. (2015), in regions where water scarcity is a pressing issue, implementing efficient water management systems mitigates the impacts of climate change. Techniques such as rainwater harvesting, drip irrigation and traditional water catchment systems enhance water availability for agricultural and domestic use. These initiatives also contribute to conflict reduction through ensuring more equitable access to water resources. Tang and Adesina (2022) cited successful case studies from countries like Morocco and Kenya which demonstrated how integrated water resource management led to improved community relations and reduced tensions over shared water supplies.

Furthermore, the role of ecosystem restoration cannot be overlooked. Healthy ecosystems provide essential services, such as flood regulation, soil fertility and climate regulation, which are crucial for community resilience (Pandey & Ghosh 2023). Restorative initiatives for degraded landscapes such as, reforestation, wetland restoration and sustainable land management, significantly enhances communities' capacity to cope with climate change-related impacts (Tang & Adesina,

2022). Akinyetun and Ogunbodede (2023) argued that when local communities engage in these processes, the benefits extend beyond environmental improvements. Empowered communities take charge of their adaptation strategies, which in turn strengthen social cohesion and reduce the likelihood of conflict. Froese and Schilling (2019) argued that adaptation strategies should be supported by national and international policies that recognise the interlinkages between climate change, development and conflict. Additionally, Mastrorillo et al. (2016) posit that collaboration among governments, NGOs and local communities creates frameworks that facilitate resource sharing, capacity building and investment in sustainable development practices.

Theoretical Frameworks

This study explored the intersectionality of climate change, conflict, and human security in the Sub-Saharan African context, drawing on the human security framework as its guiding lens. At its core, this framework recognises that individuals and communities face grave threats arising from forces beyond their control (Gasper, 2014). These include climate change-related floods, cyclones and droughts, economic instability, armed conflict, inadequate public policy, terrorism, and environmental degradation. Climate change, as a global environmental phenomenon, acts as a catalyst for local tensions, disrupting livelihoods and intensifying competition over scarce resources. These disruptions can escalate into conflict, undermining both community stability and individual well-being. While historical forms of human insecurity included famine, war, and enslavement, today's threats are increasingly climate-induced, manifesting through prolonged droughts, destructive floods, rising sea levels, and resource-related clashes (Leaning & Arie, 2000). The human security paradigm marks a decisive shift away from traditional, state-centric models of national security, focused on military power and territorial integrity, and instead emphasises the protection of individuals and communities (McCormack, 2008; Andersen-Rodgers & Crawford, 2022). In regions such as the Sahel, Horn of Africa, and Lake Chad Basin, for example, recurrent climate stressors have exacerbated tensions between pastoralists and farmers, often exploited by extremist groups to incite violence. This in turn creates a situation of human insecurity. Through the lens of the human security framework, addressing these challenges demands a comprehensive understanding of security that integrates the individual, economic, environmental, health and political dimensions forming the basis of climate-responsive peacebuilding. Beyond mitigating

harm associated with climate change, the framework offers transformative potential by placing individuals at the centre of policy formulation, scholarly analysis and community discourse (McCormack, 2008). Genuine security is realised when people live without fear or deprivation, with their rights, dignity, and livelihoods protected. In this regard, human security framework provides a meaningful pathway for resolving root causes of conflict in climate-vulnerable settings.

Methodology

The study used a qualitative research methodology to explore the complex intersection of climate change, conflict and human security in African peacebuilding. Busetto, Wick and Gumbinger (2020) describe qualitative research as an inquiry into the inherent nature of phenomena, focusing on aspects such as qualities, manifestations, contexts and subjective interpretations. This form of research deliberately excludes considerations like numerical frequency, geographic distribution, or placement within linear causal frameworks. Such an approach was particularly well-suited for exploring the subtle realities and lived experiences of individuals residing in conflict-affected regions. Supporting this perspective, Hammarberg, Kirkman and de Lacey (2016) emphasise that qualitative methodologies are geared toward understanding meaning, personal experiences and viewpoints, primarily from the perspective of research participants. Furthermore, these methods provide critical insights into how social tensions are shaped and influenced by environmental pressures. Snyder (2012) adds that qualitative strategies are essential when seeking to uncover the underlying drivers of observed patterns, especially those that are unexpected or not immediately visible. The decision to use a qualitative method was also pragmatic in that relying on secondary data offered ethical, logistical and cost advantages given the difficulties of accessing high-risk zones.

Data Collection Method

Data collection involved thorough desktop-based secondary research. This included a systematic review of academic literature from databases such as Scopus, Web of Science, EBSCOhost, JSTOR, ProQuest Political Science database, and the Upsala Conflict Data Programme, among others; reports from international organisations like the United Nations and the World Bank; and case studies. The study specifically

chose peer-reviewed journals and policy briefs based on their academic rigor and relevance to Sub-Saharan Africa.

Data Analysis

Data were analysed using thematic analysis. This method provides a structured yet adaptable framework for identifying and interpreting patterns of meaning within qualitative datasets (Christou, 2022). The analysis followed Braun and Clarke's (2013) well-established six-phase approach: familiarisation with the data, generation of initial codes, theme searching, theme review, theme definition and naming and final reporting (Castleberry & Nolen, 2018). Thematic analysis facilitated the detection of meaningful connections across critical domains such as climate-driven resource scarcity, population displacement, community resilience strategies and conflict mitigation. To bolster the credibility and contextual depth of the findings, the study employed methodological triangulation. This entailed cross-referencing diverse data sources and integrating insights from various regional case studies to produce a more refined and reliable interpretation of data.

Case Studies in Sub-Saharan Africa

This section discusses case studies in the Sahel, Lake Chad Basin and the Horn of Africa region.

Case Study 1: Sahel Region

The term 'Sahel' refers to 'border' in Arabic. The Sahel Region is a geographical region in Africa that separates the Sahara Desert in the North and the tropics to the South. It is characterised by arid and semi-arid lands with an annual rainfall average of 12 to 20 inches per year. States of the Sahel region are generally politically fragile, and these are Burkina Faso, Mali, Mauritania, Niger and parts of Nigeria (Sartori & Fattibene, 2019). About 80% of the population lives below the poverty datum line. The area is characterised by environmental degradation and sustained population growth. Depleting water resources are encouraging many people to migrate either within the region or to North Africa. Migration has acted as a copying mechanism for communities faced with environmental hardships. It is worth noting that pastoralists and farmers have historically shared land and water sources in the Sahel region for millennia. The quest for these resources has often led to violent

confrontations (Laremont, 2021). Raineri (2020) argued that since the advent of the new millennium, conflict in the region has continued to skyrocket. Conflict metrics show that the region is caught in a spiral of insecurity. Abugu et al., (2021) reviewed literature on global climate change from the 1990s to 2021 and posited that climate change influenced resource conflicts in this fragile region. This view is shared by Raleigh (2010), who argued that environmental factors were catalysts to low level conflict in marginalised communities. What this suggests is that climate change in the Sahel is an indirect threat multiplier that compounds the multiple local risk factors for conflict. Non-state actors linked to Al-Qaeda or the Islamis State have exploited the peace void created by climate change-related conflicts in the region. Climate change in this region exacerbates competition over dwindling resources, which fuels conflict escalation and radicalisation. To halt climate change-related challenges, programmes have been rolled out in the Sahel region with a view to fight desertification, develop food security and preserve wildlife (Raineri, 2020).

For example, in Nigeria, rapid population is exerting pressure on the environment. The limited resources are being burdened by climate change (Conroy, 2014). Owing to encroaching desert in the north, grazing and fertile lands are disappearing, triggering migration to the south in search of grazing lands (Mahdi, 2024). The southward migration, sometimes by armed Muslim pastoralists in search of water and grazing lands, threatens predominantly Christian communities in the south who feel threatened by displacements in their ancestral lands (Wakdok & Bleischwitz, 2021). The ensuing conflict sometimes takes religious overtones. The conflict situation is worsened by weakened institutional pillars that promotes ungoverned settlements, corruption and government failure to uphold human security. Apart from the conflict emanating from the north, in Nigeria's Niger Delta, ongoing violence has been linked to environmental degradation and competition over dwindling resources. According to Olaniyi (2019), oil-rich region has suffered significant ecological damage from oil spills and gas flaring, which has devastated local fisheries and agriculture. As communities struggle to secure their livelihoods in the face of environmental destruction, tensions have escalated, leading to violent clashes between local communities and multinational corporations as well as between different ethnic groups. The conflict in the Niger Delta serves as a stark reminder of how environmental issues can intersect with political grievances and economic exploitation, resulting in prolonged instability.

This in turn impacts human security, thereby threatening attainment of the 17 UN Sustainable Development Goals by the year 2030.

Case study 2: Lake Chad Basin

Another significant example is the Lake Chad Basin, a region that surrounds Lake Chad in the Sahelian zone of Africa. This area is bordered by four countries: Chad, Nigeria, Cameroon and Niger (Wakdok & Bleischwitz, 2021). The basin spans approximately 1.5 million square kilometres. It accounts for about 8% of Africa's land area and extends across eight nations, which are Algeria, Cameroon, the Central African Republic, Chad, Libya, Niger, Nigeria and Sudan (Conroy, 2014). Lake Chad was historically the fourth largest lake in Africa and a vital freshwater resource, renowned for its rich biodiversity. However, it has, however, experienced significant reductions in water levels over the past six decades due to climate change and human activities. Overexploitation and increasing demographic pressure have resulted in a dramatic reduction of the waterbody, shrinking it by over 90%, thereby undermining the capacity of local communities to sustain their livelihoods (Owonikoko & Momodu, 2020). This decline has led to increased migration to the lake's shores, as communities seek access to dwindling resources (Zaidan, 2024).

The shrinking lake has adversely affected agriculture and fishing. These developments have intensified competition among local populations over dwindling resources. The erosion of traditional livelihoods has fostered conditions conducive to criminal activity, facilitated recruitment into terrorist networks, and driven widespread migration to urban centres in search of economic opportunities. Consequently, towns and cities are increasingly grappling with the spillover effects—manifesting as violent clashes, rising insecurity, and socio-economic strain (Owonikoko & Momodu, 2020). According to the UNHCR (2023), these fragile conditions have contributed to the rise of extremist groups, such as Boko Haram, which have capitalised on the grievances associated with resource scarcity and economic hardship (Hoffman, 2018). For example, Boko haram has expanded its activities to cover Chad, Cameroon and Niger over and above Nigeria. The insurgency has resulted in the deaths of over 20,000 people and has displaced numerous communities, restricted movement and prompted large-scale migrations to safer regions (Wakdok & Bleischwitz, 2021). The governance of Lake Chad has emerged as a significant source of

tension among its riparian states, impeding collaborative efforts to address growing insecurity in the region. This lack of coordinated management has weakened collective responses to climate-induced challenges and undermined peacebuilding. As highlighted by Owonikoko and Momodu (2020), the area faces a proliferation of transnational and cross-border criminal activities—including rural banditry, farmer-pastoralist clashes, cattle rustling, kidnapping, and the trafficking of humans, narcotics, and arms—all of which contribute to heightened instability across national boundaries.

Case Study 3: The Horn of Africa

The Horn of Africa presents a compelling case for examining the complex interplay between climate change, conflict, and human security. This sub-region encompasses Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda. It is characterised by profound ecological fragility, socio-political volatility and developmental disparities. The region is susceptible to climate-induced insecurity, with the conflict in Darfur, Sudan, being a prominent example. This conflict has been intricately linked to prolonged droughts and resource competition between pastoralists and farmers (Ahmed, Rotich & Czimber, 2025). Research by Kahl (2006) indicates that the increasing scarcity of water and arable land has intensified tensions in a region already fraught with socio-economic disparities. As traditional livelihoods became unsustainable due to changing climatic conditions, competition for resources escalated, leading to violent confrontations.

Loss of agricultural productivity and livestock due to climate shocks left many communities economically disenfranchised thereby creating fertile ground for radical ideologies and insurgent mobilisation in the region. Empirical studies by van Baalen and Mobjörk, (2016) suggest that deteriorating livelihood conditions, particularly among youth, facilitated recruitment into extremist groups such as Al-Shabaab in Somalia. This conflict has resulted in loss of lives as well as displacements (Lwanga-Ntale & Owino, 2020). Additionally, climate-induced displacement and transhumance have further complicated the region's security landscape. Pastoralist movements across borders in search of grazing land and water have frequently led to intercommunal clashes between pastoralists and sedentary agrarian populations. In regions such as Turkana (Kenya) and Karamoja (Uganda), these dynamics have manifested in violent cattle

raids and retaliatory attacks which are often exacerbated by the proliferation of small arms and weak governance structures.

Aside from the above**, e**nvironmental degradation has also been instrumentalised by political elites to consolidate power or marginalise opposition groups. In Sudan and Kenya, resource-based conflicts have been manipulated to serve political ends, thereby entrenching divisions and perpetuating cycles of violence. This politicisation undermined efforts at sustainable peacebuilding and diverted attention from structural reforms needed to address climate vulnerability. The cumulative impact of climate change on human security in the Horn of Africa is profound. It encompasses not only physical insecurity due to violence but also economic insecurity, food and water scarcity and displacement.

Analysis

The case studies showed that there is an intricate connection between climate change, environmental stressors and conflict dynamics. Each region presents unique challenges and opportunities regarding how communities navigate environmental changes while striving for peace and stability. In the Sahel, ongoing desertification and erratic rainfall patterns have significantly affected pastoralist and agricultural communities (Reij et al, 2020). For instance, the conflict in Mali has roots in competition over increasingly scarce resources and is exacerbated by climate change (Benjaminsen et al., 2021). The case studies demonstrate how shifting weather patterns have intensified competition between herders and farmers, leading to fragility and violent confrontations (Ngcamu, 2023). Conversely, successful community-led initiatives aimed at sustainable land management have emerged, fostering cooperation among rival groups and reducing conflict potential.

In the Horn of Africa, particularly in countries like Somalia, Sudan, South Sudan and Ethiopia, recurrent droughts and food insecurity have fuelled tensions and violence (Lwanga-Ntale & Owino, 2020). Insurgent groups such as the Al-Shabaab have emerged in Somalia, compounded by fragile state institutions and a weak government. The case of Somalia demonstrates how climate-related shocks have weakened governance structures, leading to power vacuums that militant groups exploit (Nor, 2025). However, initiatives like the Somali National Development Plan, which integrates climate resilience into economic planning, show promise in addressing environmental and security challenges by promoting community engagement and sustainable development.

Environmental stressors such as drought, flooding and land degradation were noted as critical in shaping conflict dynamics across these regions. For example, prolonged droughts in the Sahel and Lake Chad region have led to food insecurity. This prompted migrations which sparked tensions in host communities (Lwanga-Ntale & Owino, 2020). The Horn of Africa faced similar challenges. For example, droughts in this region in Somalia, Sudan and Ethiopia, threaten livelihoods and exacerbate existing political conflicts. This undermined efforts for peace and stability. Water scarcity is a significant stressor in regions dependent on agriculture. The competition for dwindling water resources in Chad, Mali and Sudan has led to conflicts not only between agricultural communities but also between pastoralists (Nor, 2025). Such environmental pressures lead to a cycle of violence that threatens human security and further destabilises already fragile regions.

Successful peacebuilding initiatives that incorporate climate resilience offer valuable lessons for addressing the nexus of climate change and conflict. For example, in the Sahel projects that focus on agroecological practices have not only improved food security but also fostered cooperation among different ethnic groups. For example, the Great Green Wall initiative aims to combat desertification while promoting inter-community dialogue and collaboration (Reij et al., 2020). In the Horn of Africa, initiatives like the Resilience Learning Project have demonstrated the effectiveness of combining climate adaptation strategies with peacebuilding efforts (Mohamed et al., 2025). These initiatives have enhanced community resilience and reduced the likelihood of conflict.

From the foregoing, the analysis of case studies in short revealed several key findings regarding the relationship between climate change, environmental stressors and conflict dynamics. First, environmental stressors, such as drought, flooding and resource scarcity, are significant contributors to conflict. They often exacerbate existing tensions among communities (Petrova, 2024). For example, in the Sahel, competition for land and water intensified conflicts between pastoralists and farmers (Reij et al., 2020), while in the Horn of Africa, recurrent droughts have destabilised governance structures, fostering violence and insecurity (Nor, 2025). Second, successful peacebuilding initiatives that incorporate climate resilience demonstrate the potential for addressing environmental and conflict challenges. Projects in the Sahel that promote agroecological practices and community cooperation, as well as regional water management frameworks in the Horn of Africa, demonstrate how

collaborative approaches mitigate conflict and enhance resilience (Reij et al., 2020). These initiatives highlight the importance of integrating environmental considerations into peacebuilding strategies to achieve sustainable outcomes.

Discussion

The complex interplay between climate change, human security and conflict demonstrates the need for a comprehensive and multi-dimensional approach to addressing instability in vulnerable regions in Sub-Saharan Africa (Reij et al., 2020). The case studies presented situations in the Sahel, Lake Chad Basin and Horn of Africa. Nations covered in these regions include Nigeria, Mauritania, Chad, Niger, Mali, Burkina Faso, Sudan, South Sudan, Somalia and the Niger Delta, among others. The case studies show that environmental stressors exacerbate existing socio-political vulnerabilities. This undermines human security and fosters conflict (Nor, 2025). According to Tesfaye, (2022), this dynamic is not merely a consequence of climatic changes but also reflects broader systemic failures in governance and socio-economic structures.

In addition, climate change operates as a "threat multiplier," amplifying resource scarcity and human insecurity (Sweijs, De Haan & Van Manen, 2022). In regions like the Sahel, the Horn of Africa and the Lake Chad Basin, the depletion of vital resources such as water and arable land intensified competition among communities leading to violent confrontations. These environmental pressures compound pre-existing issues of inequality, governance deficits and historical grievances (Okolie, Prince & Okechukwu, 2024). For instance, the prolonged droughts in Darfur transformed traditional resource-sharing practices into contentious disputes, escalating tensions between farmers and pastoralists (Mohamed et al, 2025). Similarly, the shrinking of Lake Chad has devastated agriculture and fishing industries (Benjaminsen et al, 2021), leaving communities vulnerable to exploitation by extremist groups like Boko Haram.

Furthermore, human security and vulnerability security, defined by access to essential needs such as food, water and healthcare, are profoundly affected by climate-induced stressors. The Somali famine of 2011 and the subsequent 2024 drought exemplify how the erosion of human security can spiral into humanitarian crises, where ineffective governance magnifies the impact of environmental disasters (Nor, 2025). In Sudan, disrupted agricultural production due to climate variability

exacerbates food insecurity, displacing populations and fuelling ethnic tensions. This shows the cyclical relationship between human insecurity and vulnerability, wherein limited adaptive capacity leaves communities increasingly exposed to the adverse effects of climate change and conflict.

The inability of governance systems to mitigate these challenges further compounds the risks of conflict. In the Niger Delta for example, ecological degradation caused by oil spills and gas flaring has undermined local livelihoods and threatened human security, fostering economic despair and political grievances (Kazeem, 2024). Weak state institutions, coupled with exploitation by multinational corporations, catalysed violence among ethnic groups. This highlights the intersection of environmental degradation, governance failures and socio-economic disparities. Similarly, in Somalia and the Lake Chad Basin, inadequate governmental responses to environmental crises have contributed to the rise of al-Shabaab and Boko Haram, respectively. These militants exploit resource scarcity and economic disenfranchisement to advance their agenda. This stresses the need for strong governance systems that tackle the underlying drivers of vulnerability and support the development of climate-resilient solutions.

Marginalised communities, such as pastoralists, smallholder farmers and indigenous populations, face heightened vulnerabilities in the context of climate change and conflict (Nyasimi & Jakarasi, 2024). As these groups depend directly on natural resources for their livelihoods, they are mostly susceptible to environmental changes (Freeman, 2017). For instance, in the Sahel, pastoralist communities are increasingly forced to migrate in search of water and grazing land, which leads to tensions with settled agricultural populations (Folorunsho & Samuel, 2025). The lack of land rights and recognition further intensifies their vulnerability. Additionally, these communities are often excluded from formal decision-making processes. In the Horn of Africa, marginalised groups frequently experience the brunt of droughts and food insecurity. This in turn led to increased competition over resources and subsequently conflict. Furthermore, the intersection of poverty, gender, and ethnicity intensifies vulnerabilities, as women and minority groups often have restricted access to support systems and adaptive resources.

Conclusion

This study confirmed the complex interconnections between climate change, human security and conflict dynamics across Sub-Saharan

African regions such as the Sahel, the Horn of Africa and Lake Chad Basin. The key findings show that environmental stressors like drought, resource scarcity and land degradation intensify existing community tensions, culminating in violent conflicts. Moreover, the hurdles associated with climate change pose significant threats to human security, especially within the context of weak governance systems that can exacerbate instability. These fragile governance structures not only fail to address the root causes of conflict but also create environments conducive to the rise of insurgent groups, such as Boko Haram in Nigeria and Al-Shabaab in Somalia. In light of these findings, it is evident that effective peacebuilding initiatives must prioritise climate resilience. This could be done by promoting sustainable resource management and fostering cooperation among diverse community groups. Such initiatives can mitigate the risks posed by environmental stressors and contribute to more stable and secure societies. Addressing the intersectionality of climate change, conflict and human security is essential for developing comprehensive strategies for long-term peace and sustainability in Sub-Saharan Africa.

Recommendations

From the foregoing discussion, a number of recommendations can be drawn. Firstly, as a strategy to address the intertwined challenges of climate change, human security and conflict, policymakers should develop context-specific frameworks that explicitly incorporate climate adaptation measures tailored to the unique environmental and socio-political contexts of affected regions. This includes conducting comprehensive assessments of local vulnerabilities and resource dynamics to inform targeted interventions.

Secondly, it is essential to promote sustainable resource management by implementing programmes that encourage practices such as agroecology, integrated watershed management and community-based resource management. These initiatives can enhance food security while reducing competition over resources, thereby mitigating conflict risks.

Thirdly, investing in capacity-building programmes that empower local communities to adapt to climate change is also crucial. Such programmes should provide training on sustainable practices, improve access to technology and facilitate community-led initiatives that promote resilience and cooperation among different groups. The capacity-building initiatives could take a multidisciplinary approach and

target policymakers, practitioners and community leaders. It could focus on integrating climate adaptation into peacebuilding efforts, which will equip stakeholders with the necessary skills and knowledge.

Fourthly, it is vital that governance and legal frameworks are strengthened. This entails supporting the establishment of equitable governance structures that recognise the rights of marginalised communities in resource allocation and decision-making processes. This in turn helps in reinforcing land tenure security and promoting inclusive policies that address historical grievances.

Fifthly, it is expedient that interdisciplinary collaboration be fostered across environmental, humanitarian and peacebuilding organisations. Multi-stakeholder platforms should be established to facilitate dialogue, share knowledge and coordinate efforts in addressing these intertwined challenges. Academic institutions and researchers should be engaged to promote interdisciplinary research that explores the links between climate change, human security and peacebuilding. The collaborative research initiatives can generate valuable insights and innovative solutions that inform policy and practice. Local communities could be involved in the research and policy formulation process to ensure that their voices are included. Engaging communities in co-creating knowledge and solutions fosters ownership and increases the likelihood of successful implementation. Additionally, integrating climate risk assessments into conflict analysis frameworks would enable more informed decision-making and the development of proactive strategies that address potential triggers of violence.

Lastly, it is essential to leverage technology and data-sharing platforms as a strategy to enhance collaboration among stakeholders. Tools such as remote sensing and GIS could provide critical data for understanding environmental changes and their implications for conflict dynamics.

Policy Implications

The growing body of research highlights the critical need for integrated approaches that merge climate adaptation with conflict resolution strategies. As the impacts of climate change continue to intensify, policymakers are increasingly encouraged to recognise the importance of tackling environmental issues within the broader context of peacebuilding and security. This is essential in fostering long-term stability and resilience in vulnerable regions.

One key policy implication is the necessity for multidisciplinary frameworks that incorporate environmental considerations into conflict prevention and resolution efforts. Traditional peacebuilding approaches often overlooked the environmental dimensions that can exacerbate tensions. Policymakers can more effectively address the root causes of conflict by integrating climate adaptation strategies into peacebuilding initiatives. This involves not only recognising the impact of resource scarcity on social dynamics but also implementing proactive measures to enhance community resilience to climate stressors.

The United Nations Development Programme (UNDP) has highlighted the role of sustainable development in preventing conflict. It advocates for policies that promote socio-economic resilience alongside environmental sustainability (UNDP, 2015). This dual focus is crucial as it acknowledges that economic stability, social equity and environmental health are interconnected elements that contribute to overall peace. Policymakers should prioritise investments in sustainable livelihoods, education and infrastructure that enhance both environmental resilience and community cohesion. For instance, developing sustainable agricultural practices can improve food security while fostering collaboration among diverse community groups, thus reducing the potential for conflict.

Furthermore, collaboration among stakeholders is essential for creating effective policies. Governments, non-governmental organisations and local communities must work together to develop and implement strategies that reflect the unique challenges of each region. Engaging local populations in decision-making processes ensures that policies are culturally sensitive and tailored to specific contexts. This participatory approach not only enhances the effectiveness of adaptation strategies but also builds trust and social capital within communities, which are vital for conflict prevention.

Another important aspect of policy-making is the need for data-driven decision-making. Robust research and data collection on the links between climate change and conflict can inform more effective policies. Policymakers should invest in research that examines the specific dynamics of climate-induced conflict in various regions, enabling them to design targeted interventions. Additionally, monitoring and evaluation mechanisms should be established to assess the impact of implemented policies, allowing for adjustments based on real-time data and community feedback.

Finally, international cooperation is crucial in addressing the transboundary nature of climate change and conflict. Global challenges require coordinated responses that transcend national borders. Policymakers should engage in regional dialogues and partnerships that focus on shared environmental resources, such as rivers and ecosystems, to foster collaborative management and conflict resolution strategies.

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