

Assessment of the Role of Climate Change in Influencing International Security

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Abstract

Climate change has emerged as an important concern in international security because of its implications for livelihoods, food security, natural resources, human mobility and the stability of vulnerable societies. This study examined the relationship between climate change and international security, focusing on its effects on security, its contribution to resource competition and violent conflict, and international responses to climate-related security risks. The study adopted a qualitative research design based on documentary sources, while relevant literature and empirical studies were analysed thematically. The study found that climate change affects international security through food insecurity, water stress, livelihood disruption, displacement and weakened community resilience, particularly in fragile and conflict-affected areas. It also found that climate-related pressure on land, water and other natural resources can intensify competition and contribute to violent conflict, although such outcomes are shaped by political, socioeconomic and institutional conditions. Furthermore, the study established that international responses increasingly recognise the connection between climate change, peace and security, but greater coordination between climate adaptation, development, humanitarian assistance and conflict prevention remains necessary. The study concludes that climate change should be understood as a security risk multiplier rather than an automatic cause of conflict. It recommends stronger climate adaptation and resilient livelihoods, improved resource governance and local conflict-resolution mechanisms, and integrated international early-warning and conflict-prevention strategies.

Keywords: *Climate Change, International Security, Resource Competition, Violent Conflict, Climate Adaptation, Conflict Prevention.*

Introduction

Climate change has moved beyond being regarded solely as an environmental or developmental concern. It has increasingly become an issue of international security because changes in temperature, rainfall patterns, sea levels, ecosystems and the frequency of extreme weather events can affect the stability of states and societies. Droughts, floods, desertification, declining agricultural productivity and water stress can weaken livelihoods and increase pressure on already vulnerable populations. The United Nations increasingly recognises these connections, particularly where climate-related pressures interact with poverty, weak institutions, political instability and existing conflicts (United Nations, 2022).

The relationship between climate change and security, however, is not as straightforward as the expression “climate conflict” sometimes suggests. Climate change does not automatically produce war. Rather, it can operate through several pathways, including competition over land and water, food insecurity, livelihood loss, displacement, migration, weakened state capacity and social grievances. Barnett and Adger (2007) argue that climate change can undermine human security by

reducing people's access to resources and weakening the capacity of governments to provide essential services.

This has generated an important debate among scholars. Some earlier environmental-security studies placed considerable emphasis on resource scarcity as a source of competition and violence. Homer-Dixon (1999), for instance, associated environmental scarcity with social and political pressures that could contribute to violent conflict. Other scholars have cautioned against treating environmental scarcity as a direct or automatic cause of conflict. Buhaug (2016) argues that climate change is more appropriately understood as an indirect and conditional influence whose effects depend heavily on political, economic and institutional circumstances. More recent research by Mach et al. (2019) similarly finds that climate has affected organised armed conflict within states, but that factors such as low socioeconomic development and weak state capacity remain substantially more influential.

The international-security dimension of climate change therefore requires a broader understanding of security. It involves not only the protection of territorial boundaries but also the protection of people, livelihoods, institutions, economies and communities from risks that can undermine peace and stability. The UN Security Council has increasingly incorporated climate-related risks into discussions and mandates concerning peace and security. Against this background, this study examines the relationship between climate change and international security, with particular attention to the pathways through which climate-related pressures affect conflict and instability, the implications for international peace and security, and the measures required to strengthen global responses.

Statement of the Problem

Climate change is increasingly creating conditions that can aggravate existing security challenges, particularly in developing and conflict-affected societies. Drought, flooding, desertification, declining agricultural productivity, water stress and climate-induced displacement can intensify competition over limited resources and place additional pressure on governments and communities. The problem is that climate change is often treated separately from security planning, even though its effects frequently interact with poverty, weak governance, inequality and existing conflicts. At the same time, there is disagreement over the extent to which climate change itself causes conflict. While some scholars establish links between climate variability and violence, others argue that political institutions, socioeconomic conditions and governance failures provide more direct explanations for conflict. This conceptual and policy gap makes it necessary to examine climate change not as an automatic cause of war but as a risk multiplier whose security consequences depend on the resilience, institutions and political conditions of affected societies.

Objectives of the Study

The study seeks to:

- i. Examine the major pathways through which climate change affects human and international security.
- ii. Assess the relationship between climate change, resource competition, displacement and violent conflict.
- iii. Examine international responses to climate-related security threats and identify measures for strengthening climate-related peace and security.

Conceptual Framework

Climate change refers to long-term shifts in temperatures and weather patterns, particularly changes associated with human activities that increase greenhouse-gas concentrations in the atmosphere. Its significance for security lies less in temperature increase alone than in the wider social and political consequences produced by changing environmental conditions. The IPCC's assessment shows that climate risks are increasingly interconnected. Climate-driven food insecurity, water stress and livelihood disruptions can interact with competition over land, political instability, pandemics and conflict, producing cascading risks across societies and regions (IPCC, 2022). This moves the analysis away from a simple climate-versus-conflict argument. Climate change creates or intensifies pressures, but the way those pressures translate into insecurity depends on social and political conditions.

Traditional approaches to international security have generally concentrated on the survival of states, territorial integrity, military threats and the balance of power. The climate-security debate has widened this understanding. Climate change can threaten national security without involving conventional military aggression. A prolonged drought, for example, can undermine agricultural production, increase food prices, reduce rural incomes, encourage migration and place pressure on government institutions.

One of the oldest arguments in environmental-security literature is that declining environmental resources can generate competition. Homer-Dixon (1999) argued that environmental scarcity could contribute to social stress, migration and violent conflict under certain circumstances. However, contemporary scholarship has questioned any straightforward scarcity-conflict relationship. Buhaug (2016) argues that climate change has an indirect and conditional effect on conflict rather than producing violence automatically.

Barnett and Adger (2007) provide a major contribution to the human-security perspective by arguing that climate change can undermine access to resources necessary for livelihoods and can weaken the ability of states to provide services and opportunities. This approach is particularly valuable because it places people at the centre of security analysis. It also explains why two countries experiencing similar climatic events may experience very different security outcomes. Climate-induced migration is another important pathway linking environmental change and security. Drought, flooding, sea-level rise and loss of agricultural livelihoods can force people to move within or across national borders. Migration itself is not necessarily a security threat. The security problem arises when movement occurs on a large scale in settings where resources, employment and public services are already under pressure.

A major point emerging from the literature is that governance determines how climate risks are translated into security outcomes. Climate change tends to become more dangerous where governments lack the capacity to provide basic services, manage natural resources, respond to disasters or resolve disputes. Mach et al. (2019) found that climate has affected organised armed conflict within countries, but socioeconomic development and state capacity were judged to be substantially more influential drivers of conflict.

The conceptual framework of this study therefore understands climate change as a risk multiplier. Climate stress can produce livelihood disruption, resource pressure, displacement and social grievances, which may increase insecurity. However, this chain is not automatic. Strong

institutions, inclusive governance, adaptation policies and effective conflict-resolution mechanisms can interrupt the process.

Theoretical Framework: Human Security Theory

This study is anchored on Human Security Theory, which emerged prominently in international policy debates through the United Nations Development Programme's Human Development Report of 1994. The theory broadens the meaning of security from protecting states against military threats to protecting people from serious threats to their survival, livelihoods and dignity. Its relevance to climate change is straightforward: environmental degradation, food insecurity, water scarcity, displacement and loss of livelihoods can threaten human security even when no foreign army is involved.

Applied to this study, Human Security Theory provides a useful basis for explaining why climate change should be considered an international-security concern. A farmer whose livelihood is destroyed by prolonged drought, a community displaced by flooding, or a population facing severe water shortages may experience insecurity even where the territorial integrity of the state remains intact. Barnett and Adger (2007) similarly demonstrate that climate change can undermine human security by affecting livelihoods, resource access and state capacity. The theory therefore helps explain the first objective by showing how climate change moves from an environmental problem to a security problem through its effects on people and communities.

The theory is also useful for understanding the relationship between climate change and violent conflict. Human security does not assume that environmental stress automatically causes violence. Instead, insecurity emerges through interaction between environmental pressures and political, economic and institutional vulnerabilities. This position is consistent with the IPCC's assessment that climate change interacts with multiple non-climatic factors and that context matters significantly in determining conflict outcomes. The theory therefore provides a framework for examining resource competition, displacement, livelihood insecurity and weak governance while also explaining why international responses should go beyond military measures to include adaptation, development, social protection, conflict prevention and institutional strengthening.

Methodology

The study adopted a qualitative research design based on documentary research. This approach was considered appropriate because the study focuses on existing knowledge, scholarly debates, international policy documents and institutional responses to climate-related security challenges.

Data were obtained from secondary sources, including peer-reviewed journal articles, books, reports of the United Nations, IPCC assessments, international policy documents and other credible academic publications. Particular attention was given to literature on climate change, human security, environmental security, conflict, migration, resource competition and international peacebuilding.

The study employed content and thematic analysis. Relevant materials were carefully reviewed and organised around the three objectives of the study. The analysis focused on recurring themes concerning climate-related vulnerabilities, resource competition, displacement, conflict risks, governance, international cooperation, adaptation and peacebuilding.

Absolutely. The analysis should be organised strictly around the three objectives, and every empirical study should be brought into the relevant objective rather than placed in a separate, disconnected empirical section. The findings should then emerge directly from those objective-based analyses.

Analysis of the Study

The analysis of this study is organised around the three specific objectives. Empirical evidence from studies on climate change, food insecurity, migration, resource competition, violent conflict, Lake Chad and international responses is integrated into each objective to establish what is known, where the evidence converges, and where important qualifications remain.

The Effects of Climate Change on International Security

Climate change has increasingly become a security concern because of its effects on food production, water availability, livelihoods, human mobility and the capacity of states and communities to cope with environmental pressures. However, the relationship between climate change and international security is not a simple case of environmental change directly producing conflict. Rather, climate change tends to operate through existing political, economic and social vulnerabilities. Barnett and Adger (2007) argue that climate change can undermine human security when it reduces access to essential resources and weakens people's ability to sustain their livelihoods. This perspective is important because it shifts attention from climate change as a direct military threat to the wider conditions through which environmental stress can affect stability.

Empirical evidence supports this position. Anderson et al. (2021), examining drought-related food insecurity across sub-Saharan Africa between 2009 and 2019, found that violent conflict significantly worsened the effects of drought on food security, with particularly serious effects in countries including Nigeria and South Sudan. Their findings also showed that pastoral areas experienced more widespread and persistent drought-related food crises than agricultural areas. This demonstrates that climate-related shocks become more severe where conflict has already weakened livelihoods, agricultural production and local coping mechanisms. In other words, environmental stress and insecurity can reinforce one another rather than operate independently.

The Lake Chad Basin provides a particularly relevant example. Nagarajan et al. (2024), drawing on 229 in-depth interviews conducted across Nigeria, Niger, Chad and Cameroon, found that ecological and climatic changes interacted with conflict, livelihood insecurity and weak institutional capacity. Changes in environmental conditions reduced the ability of communities to depend on traditional livelihoods, while continuing insecurity further restricted their capacity to adapt. The study therefore provides empirical support for understanding climate change as a factor that can deepen existing security vulnerabilities in fragile environments.

At the same time, the evidence does not support the argument that climate change alone caused the Boko Haram insurgency or other forms of insecurity in the Lake Chad region. Nagarajan et al. (2024) caution against reducing the region's complex security problems to the shrinking of Lake Chad. The basin has experienced substantial historical environmental fluctuations, while the emergence and persistence of Boko Haram have also involved political, socioeconomic, religious, institutional and security factors. Climate change is therefore better understood as one factor interacting with an already complicated security environment.

Migration is another important pathway through which climate change affects security. A systematic review by Gómez-Álvaro and Caro-Carretero (2026), covering 42 peer-reviewed studies on West Africa, found that climate-induced migration is closely connected to environmental stress, poverty, socioeconomic inequality, political instability and institutional constraints. More than 70 per cent of the displacement discussed in the reviewed literature was internal, showing that climate-related mobility does not necessarily translate into cross-border migration or international conflict. The study also identifies climate-induced immobility as an important but relatively under-researched problem. Some vulnerable populations may lack the resources required to move even when remaining in place exposes them to increasing environmental risks.

The evidence therefore establishes that climate change affects international security through several interconnected channels: food insecurity, livelihood disruption, water stress, displacement, migration and pressure on state and local institutions. The security consequences are most pronounced where governments and communities already face poverty, conflict, weak institutions or limited adaptive capacity. Climate change should consequently be regarded as a significant security risk, but not as an independent or automatic cause of conflict.

The Relationship between Climate Change, Resource Competition and Violent Conflict

The second objective focuses on whether climate change increases competition over scarce resources and contributes to violent conflict. The empirical literature suggests that the relationship exists, but it is conditional. Homer-Dixon (1999) argues that environmental scarcity can intensify competition over resources and contribute to social instability, particularly where institutions are unable to manage competing demands. Contemporary research, however, provides a more cautious interpretation by showing that environmental pressures interact with political institutions, economic conditions, population dynamics and existing grievances.

Mach et al. (2019), in a major assessment of the relationship between climate and armed conflict, concluded that climatic variability and change can influence the risk of organised armed conflict, particularly within countries. However, the study also found that socioeconomic conditions, political institutions and state capacity remain substantially more important in determining overall conflict risk. This finding is significant because it prevents an overly deterministic interpretation of the climate-conflict relationship. Climate change can increase pressure, but whether that pressure develops into violence depends considerably on the institutional and political environment in which it occurs.

The experience of the Sahel and Lake Chad Basin illustrates this conditional relationship. Increasing temperatures, changing rainfall patterns, drought and environmental degradation can affect access to pasture, water and agricultural land. For farmers and pastoralists whose livelihoods depend directly on these resources, environmental pressure can increase the frequency of contact and competition. Nevertheless, competition over resources does not automatically become violent. The outcome depends on the strength of traditional conflict-resolution systems, government institutions, land-tenure arrangements, migration patterns, access to weapons, criminal networks and the political management of local grievances.

The Nigerian farmer-herder conflict illustrates this point. Changes in rainfall and vegetation patterns can influence pastoral mobility and the availability of water and pasture. Such changes may increase interaction between pastoralists and farming communities. However, attributing the

conflict solely to climate change would overlook land-use changes, population growth, expansion of cultivated areas, weak dispute-resolution mechanisms, insecurity, criminality and the proliferation of arms. Climate stress may therefore intensify existing competition, while political and institutional conditions influence whether that competition remains manageable or becomes violent.

Evidence from Anderson et al. (2021) further strengthens this interpretation. Their findings show that drought-related food crises became considerably more severe where violent conflict was already present. Conflict destroyed livelihoods and disrupted food systems, thereby reducing the capacity of affected populations to recover from environmental shocks. This demonstrates a two-way relationship:

Climate stress → livelihood disruption → resource pressure → increased vulnerability → potential conflict

At the same time:

Conflict → destruction of livelihoods and institutions → reduced adaptive capacity → greater climate vulnerability

This two-way relationship is particularly important for understanding contemporary security in vulnerable regions. Climate change can place additional pressure on already contested resources, while conflict makes communities less capable of adapting to further environmental change.

The evidence from Lake Chad reaches a similar conclusion. Nagarajan et al. (2024) found that environmental changes, livelihood insecurity and continuing conflict interacted in ways that weakened community resilience. Wakdok and Bleischwitz (2021) similarly connect climate change and resource pressures in Northern Nigeria and the Lake Chad region with broader questions of security and resource governance. The implication is not that environmental scarcity mechanically produces violence, but that scarcity can become more dangerous where institutions are unable to distribute resources fairly, resolve disputes and protect vulnerable populations.

The analysis therefore finds that climate change can contribute to resource competition and violent conflict, but the relationship is mediated by political, economic and institutional conditions. Effective resource governance and conflict-resolution institutions can reduce the likelihood that climate-related pressure will develop into violence. Conversely, weak institutions, poverty and pre-existing insecurity can magnify the security consequences of environmental stress.

International Responses to Climate-Related Security Risks

The third objective examines how the international community has responded to the security implications of climate change. International responses have gradually moved beyond treating climate change exclusively as an environmental or development issue. The United Nations has recognised climate change as having possible security implications, while subsequent international initiatives have increasingly connected climate adaptation, peacebuilding, humanitarian action and conflict prevention.

The IPCC (2022) provides an important foundation for this approach by demonstrating that climate impacts are unevenly distributed and that vulnerability is strongly influenced by socioeconomic conditions and institutional capacity. This means that international responses cannot focus exclusively on reducing greenhouse-gas emissions. Adaptation, resilience-building, livelihood

protection and institutional strengthening are also necessary, particularly in fragile and conflict-affected societies.

The international response is also increasingly concerned with early warning and preventive action. The United Nations Climate Security Mechanism has promoted approaches that connect climate information with peace and security analysis. Such an approach is important because conventional security institutions may identify violence after it has already occurred, whereas climate-security analysis can help identify environmental and socioeconomic pressures that could contribute to instability.

The West African experience demonstrates why such integration is necessary. Gómez-Álvaro and Caro-Carretero (2026) show that climate-induced mobility in West Africa is shaped not only by environmental conditions but also by poverty, political instability, inequality and institutional limitations. Their systematic review therefore suggests that international responses based solely on environmental adaptation may be insufficient. Climate policy needs to be connected with livelihood development, social protection, migration management and institutional strengthening.

Similarly, the evidence from Lake Chad demonstrates the need for responses that address climate vulnerability and insecurity simultaneously. Nagarajan et al. (2024) shows that communities facing environmental change may have declining coping capacities when they are simultaneously exposed to armed conflict. In such circumstances, humanitarian assistance without long-term livelihood support may provide temporary relief without addressing the underlying vulnerability. Conversely, security interventions that ignore environmental and livelihood conditions may fail to address some of the pressures affecting affected communities.

International responses should therefore prioritise four interconnected areas. First, climate adaptation and resilient livelihoods should be strengthened in communities dependent on agriculture, livestock and natural resources. Second, early-warning systems should combine climate, food-security and conflict indicators rather than treating them as separate risks. Third, resource governance and local conflict-resolution mechanisms should be strengthened to manage disputes over land, water and pasture. Fourth, migration and displacement policies should recognise mobility as one possible adaptation strategy while also addressing the circumstances that make people unable to move.

The empirical evidence consequently indicates that the effectiveness of international climate-security responses depends on their ability to bridge the traditional separation between environmental policy, development assistance, humanitarian action and security policy. A fragmented response may address individual symptoms without adequately dealing with the interaction between climate vulnerability and insecurity.

Findings of the Study

The findings of the study are presented in direct relation to the three specific objectives.

In relation to the first objective, the study found that climate change has significant implications for international security through its effects on food security, water availability, livelihoods, human mobility and the resilience of vulnerable communities and states. The empirical evidence shows that climate change does not operate as an isolated security threat. Rather, its effects become more pronounced where poverty, weak institutions, existing conflict and dependence on climate-sensitive livelihoods are already present. Evidence from sub-Saharan Africa demonstrates that

drought-related food insecurity becomes more severe in areas affected by violent conflict, while evidence from the Lake Chad Basin shows that environmental changes can interact with livelihood insecurity and declining coping capacity. The study therefore finds that climate change constitutes a significant security risk because it can deepen existing vulnerabilities and place additional pressure on communities and institutions.

In relation to the second objective, the study found that climate change can intensify competition over land, water, pasture and other natural resources and may contribute to violent conflict, but it does not automatically or independently cause conflict. The empirical evidence indicates that the relationship is strongly influenced by political, socioeconomic and institutional conditions. Climate-related changes in rainfall, temperature, water availability and vegetation can disrupt farming and pastoral livelihoods and increase competition over resources. However, whether such competition develops into violence depends on factors such as population pressure, land-use patterns, governance, conflict-resolution mechanisms, poverty, insecurity and access to arms. The evidence from Nigeria and the Lake Chad Basin therefore supports a conditional climate-conflict relationship rather than a direct causal explanation of violence.

In relation to the third objective, the study found that international responses to climate-related security risks have increasingly recognised the connection between climate change, development, humanitarian concerns and peace and security, but greater integration of these responses remains necessary. Existing international approaches emphasise climate adaptation, resilience, early warning, humanitarian assistance and conflict prevention. However, empirical evidence from West Africa and the Lake Chad Basin indicates that climate vulnerability is closely connected to poverty, livelihood insecurity, displacement, institutional weakness and conflict. Consequently, responses that address climate change separately from development and security concerns may not adequately address the underlying vulnerabilities. The study finds that effective international responses require greater coordination between climate adaptation, livelihood protection, resource governance, migration management, early-warning systems and conflict-prevention initiatives.

Overall, the study finds that climate change and international security are interconnected through environmental, economic, social and political processes. Climate change can increase vulnerability, intensify pressure on natural resources and worsen existing security challenges, but its effects are shaped substantially by the strength of institutions, socioeconomic conditions and existing conflicts. The evidence therefore supports understanding climate change as a security risk multiplier rather than an automatic or standalone cause of violent conflict.

Summary

This study examined the relationship between climate change and international security, with particular attention to its effects on security, resource competition and violent conflict, as well as international responses to climate-related security risks. The study found that climate change affects international security mainly through food insecurity, water stress, livelihood disruption, displacement and weakened community resilience, particularly in vulnerable and conflict-affected societies. It also established that climate change can intensify competition over land, water and other natural resources and may contribute to violent conflict, but such outcomes are not automatic, as political, socioeconomic and institutional conditions strongly influence how environmental pressures develop into insecurity. Furthermore, the study found that international responses have increasingly recognised the connection between climate change, peace and security, but greater coordination is required between climate adaptation, development, humanitarian assistance,

resource governance, migration management and conflict prevention. Overall, the study demonstrates that climate change should be understood as a significant security risk multiplier whose effects are shaped by existing vulnerabilities, institutional capacity and patterns of conflict.

Conclusion

The study concludes that climate change has become an important dimension of international security because its effects extend beyond environmental degradation to food insecurity, livelihood disruption, resource competition, displacement and heightened vulnerability in fragile societies. The evidence examined shows that climate change does not independently or automatically produce violent conflict; rather, its security consequences are shaped by poverty, weak institutions, competition over natural resources, existing grievances and unresolved conflicts. Experiences from sub-Saharan Africa, Nigeria and the Lake Chad Basin demonstrate that environmental stress can deepen existing insecurity when communities and states lack the institutional and economic capacity to adapt effectively. The study further concludes that addressing climate-related security risks requires a shift from isolated environmental interventions towards integrated approaches that combine climate adaptation, sustainable livelihoods, effective resource governance, early warning, conflict prevention and appropriate migration management. Ultimately, managing the security implications of climate change requires strengthening the resilience of states and communities while addressing the political, economic and institutional conditions that determine whether environmental pressures become sources of instability or opportunities for adaptation and cooperation.

Recommendations

1. Governments and international organisations should strengthen climate adaptation, food-security programmes and resilient livelihoods in climate-vulnerable communities to reduce the security risks associated with environmental stress.
2. Governments should improve the management of land, water and grazing resources and strengthen local conflict-resolution mechanisms to prevent climate-related resource competition from escalating into violence.
3. International organisations should integrate climate adaptation, early-warning systems, humanitarian assistance and conflict-prevention strategies to ensure a coordinated response to emerging climate-related security threats.

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