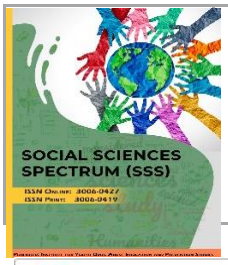

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Climate Change and International Conflict: Assessing Security Risks in Vulnerable Regions

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Abstract

Climate change is emerging as a security issue, as it exacerbates the three features of societies with fragile livelihoods, unequal political power, and limited adaptive capacity. This paper addresses the research problem of 'how climate hazards translate into international conflict risks' and does not assume that climate change is inherently linked to violence. The article adopts a qualitative comparative case study design to examine the Sahel, Syria, and the wider Middle East and South Asia, and to assess the intermediary role of climate-related insecurity between the other three factors: resource scarcity, displacement, economic insecurity, and governance challenges. It draws on peer-reviewed climate-security academic research and on documents from the Intergovernmental Panel on Climate Change, the United Nations, and the World Bank. The results indicate that climate change acts as a conflict risk amplifier: drought, floods, heat stress, and water insecurity further exacerbate social tensions; however, political inclusion and exclusion, livelihood dependence, weak institutions, and the ability to manage adaptation are all factors that influence conflict vulnerability. The article contends that there is a need to strengthen the linkages between climate adaptation, peacebuilding, and human security policy, and to move away from the idea that each policy should be implemented on its own agenda. Policy consequences include increased investment in adaptation finance, regional-level cooperation on resources, an early warning system, and national-level resilience planning.

Keywords: Climate Change, International Conflict, Climate Security, Human Security, Resource Scarcity, Vulnerable Regions.

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Introduction

Background of the Study

Climate change has become a focal point in the international security debate, moving from the fringes of environmental politics. The effects of high temperatures, shifts in precipitation, sea-level rise, drought, flooding, wildfires, and ecosystem degradation are not purely ecological issues but also matters of great concern. They affect food systems, access to water, infrastructure, migration, public health, economic productivity, and the legitimacy of governing institutions. Thus, climate change alters the material conditions under which states and communities strive for security. Security risks are particularly acute in areas where households' livelihoods depend on rain-fed agriculture, pastoralism, informal work, fisheries, and/or climate-sensitive infrastructure. Climate shocks can undermine livelihoods and cause asset losses, intensifying grievances, straining public institutions, and heightening competition for limited resources.

There's a complex relationship between climate change and political unrest. Many of the earliest climate change, environment and security claims proposed that resource scarcity could lead to violent confrontations in communities where population growth overlapped with environmental degradation (Homer-Dixon, 1994). Subsequent scholarship has challenged this claim by demonstrating the variety of security outcomes associated with environmental stress. Climate hazards can increase risk, but the extent of that increase depends on social, political and economic factors (such as institutional responsiveness, the existence of peaceful instruments to deal with conflicts, governance capacity, inequality, and the baggage of local conflict history) (Barnett & Adger, 2007; Buhaug, 2015; Koubi, 2019). For instance, a drought can create scarcity in one place but not cause violence if institutions are in place to equitably allocate drought relief, if water-sharing arrangements are seen as fair, and if drought-affected households can find ways to generate income. Where authority is predatory, elites monopolise adaptation resources, or communities have a history of mistrust, the same hazard can become destabilising.

Hence, the idea of a "conflict risk multiplier" for climate change seems better suited to visualising the phenomenon than to illustrating its connection to war. The risk-multiplier concept highlights indirect routes of risk. Climate variability and change can exacerbate resource constraints, increase migration, threaten economic security and lay bare governance vulnerabilities. These stresses can interact with vulnerabilities, causing insecurity. The notion does not suggest a direct link between climatic hazards and violence. It also avoids the opposite pitfall of treating climate risks as if they were unaware of their "security relevance", recognising that not every climate shock results in war. If a risk-multiplier approach is used, the questions to ask are: How do climate stresses affect incentives, capacities, and social relations in specific contexts?

An urgent question is becoming increasingly relevant amid extreme weather events. In the event of a flood, housing, roads, buildings, and schools, including health facilities, can be destroyed, resulting in temporary or permanent displacement. In the event of a drought, farm yields may decline, food prices may rise, and competition between pastoralists and farmers may intensify. Heat stress can reduce labour productivity, place additional strain on health, and further undermine already fragile economies. Rising sea levels can pose a risk to coastal communities, deltas, and small, remote islands, and raise questions about relocation, sovereignty, and territorial security. These effects are not evenly distributed. Differential hazards affect coastal, mountain, and remote areas, which have limited public resources, undermined infrastructure, political marginalisation, and heavy reliance on natural resource-based livelihoods, placing these areas at higher risk.

Different climate-security pathways are evident in the Sahel, Syria, the rest of the Middle East, and South Asia. The Sahel suffers from frequent droughts, land degradation and desertification, challenges for pastoralism, and weak state control in vast borderlands. While the debate is ongoing, there is evidence that the lack of functioning governance and rural vulnerability played important roles in how climate stress affected Syria prior to and even throughout the war, but not as a direct cause (De Châtel, 2014; Kelley et al., 2015; Selby et al., 2017). Climate displacement and resource governance are key security concerns, as South Asia faces substantial exposure to floods, cyclones, glacier-related hazards, and heat extremes.

Through a qualitative comparative analysis, this article contributes to international relations, security studies, environmental politics, and climate policy by examining the different ways climate change may affect the risk of conflict in vulnerable areas. It is not based on statistical analysis and/or quantitative modelling. Instead, it shifts the focus away from mechanisms, relationships and contextual conditions. It posits that it is the interaction of the three factors, environmental stress, social vulnerability and governance capacity, that generates security risks directly linked to climate change. Political explanations are sufficient on their own, and climate change should be relevant only in relation to how the politicisation of grievances, economic uncertainty and institutional failures operate in its context.

Problem Statement

Climate change can have indirect impacts on security outcomes – resource scarcity, migration, economic insecurity, and governance issues. However, climate change as a direct cause of violence is sometimes inappropriately asserted in policy debates, while in others it is downplayed and viewed as a secondary ‘environmental storyline'. In both roles, the political processes by which climate stress gets on the agenda are hidden. The research problem discussed in this article is how climate pressures can influence conflict risks in climate-change-sensitive areas, even in the absence of high human security risks and low governance capacity.

Research Objectives

- To examine how climate change contributes to conflict risks through resource scarcity, displacement, and economic insecurity.
- To analyse how governance capacity and social vulnerability influence climate-related security risks in vulnerable regions.

Research Questions

- How does climate change contribute to conflict risks in vulnerable regions?
- How do governance and social vulnerabilities shape climate-related security risks?

Significance of the Study

The study is important for research into climate security because it helps clarify the pathways through which climate risks can trigger insecurity, and it does not succumb to environmental determinism. It adds to international conflict studies by demonstrating the interplay among environmental stress, institutions, grievances, and livelihoods. It also adds a new dimension to human security theory regarding four ‘securities': food security, water security, economic security, and personal security, focusing on their respective roles in climate-conflict analysis. The study shows that adaptation can serve as a form of conflict prevention – when it reduces vulnerability, it facilitates legitimate governance and enhances local capacities for cooperation.

Literature Review

Climate Change and Security Studies

We have historically operated within the purely security-studies domain, essentially concerned with military threats, state and territorial defence, and the resort to force. In that context, however, environmental transformation frequently seemed secondary to relations between states or to domestic conflicts within states. But the expansion of the security envelope since the Cold War has enabled the protection of people's security, the security of life, the security of nature, and the security of social equilibria. Human security shifted the focus of security studies from the state as a referent object towards individuals and communities whose lives can be threatened by poverty, hunger, disease, displacement and violence (United Nations Development Programme [UNDP], 1994). Environmental security theory also posited that ecological degradation could exacerbate vulnerabilities and instabilities in contexts of resource scarcity, population pressure, and poor governance (Homer-Dixon, 1994).

Climate security emerged from a wider debate. It asks whether and how climate change influences the frequency, intensity, duration, and/or location of insecurity. There is no consensus among scholars about the robustness of the link between climate change and conflict, or its generalisability. However, some studies show that, under certain social circumstances, climate (summer temperatures, rainfall variability, and droughts) or disasters can affect conflict risk (Burke et al., 2015; Hsiang et al., 2013; von Uexkull et al., 2016). Other work suggests that addressing the limitations of climate variables requires attention to politics, history, institutions, and inequalities (Buhaug, 2010; Gleditsch, 2012; Salehyan, 2008). As of now, the most convincing argument for the salience of climate change and security is that it follows a context-specific pathway and does not necessarily have a universal causal link (Mach et al., 2019; Theisen et al., 2013).

The human security approach is particularly helpful because it addresses the day-to-day underpinnings of security and how climate change challenges them. Armed conflict may not be present at later stages. However, the community could face severe security threats as droughts wipe out food systems, homes are lost during floods, or heatwaves compromise livelihoods. Barnett and Adger (2007) argue that climate can influence social security by diminishing access to resources required for living and by limiting the state's ability to ensure citizens' security. A deontic approach to climate change is significant because the discourse of climate security is politically relevant and can mobilise attention. However, it can also promote militarism, which needs to be supported by justice and vulnerability, McDonald (2013) adds.

The theory of environmental security has also developed. Previous scholarship had a narrow focus on competition for renewable resources. Adaptation, Cooperation, Institutions, and Social Resilience highlight the latter scholarship. Shared rivers, grazing lands, and water bodies that spill beyond borders can be sources of conflict. However, they can also be a motivating force for cooperation if institutions develop predictable rules (Gleditsch et al., 2006). Therefore, both climate risk and resilience need to be addressed by climate security research.

Climate Change as a Conflict Multiplier

Among the most influential analytical lenses in climate-security research are the conflict multiplier and climate change. This can mean that climate change can heighten existing risks, particularly in economically vulnerable, poor, excluded, and underserved societies, and in situations of

unresolved conflict. This operates through four key mechanisms: resource scarcity, climate migration, economic insecurity, and governance weakness.

First, resource limitations may lead to tensions under climate stress, affecting water, food, land, and/or pasture. Water insecurity can be caused by drought, groundwater depletion, glacier melting, inadequate infrastructure, and inequalities in its allocation. A food shortage can occur due to crop failure, livestock losses, market disruptions, and/or price increases. Increased pressure will likely be applied when agrarian lots change hands, when displaced groups peacefully relocate to "overcrowded" regions, or when grazing routes are blocked. But the lack of something cannot simply give rise to violence. Land-use conflicts in the Sahel cannot be understood solely as a result of climate change; however, as Benjaminsen et al. (2012) demonstrate, political ecology, land tenure, and marginalisation are more relevant concepts. Similarly, Ide (2015) concludes that conflicts over renewable resources can be deadly violent only when combined with low institutional capacity, identity splits, and past conflict.

Second, security risks could arise from climate migration driven by forced displacement, migration pressures, and regional instability. Either naturally occurring or manmade (anthropogenic) climate disasters can ruin homes and livelihoods, and less readily identified climate changes can render farming or fishing less viable. Adaptive migration occurs when people move voluntarily, have access to labour markets, and have social networks. Movement becomes problematic for security when there is no choice; it is rapid, poorly managed, and/or politicised by host communities. Reuveny (2007) states that climate-change-driven migration could spark wars if migrants compete with the host community for jobs, land, or public services. However, Brzoska and Fröhlich (2016) warn that migration cannot be considered inherently destabilising, as it involves governance, rights, and social integration.

Thirdly, economic insecurity, which leads to economic losses and poverty, is linked to the risk of climate-driven conflict. Farm output loss can lead to dwindling family incomes, debt and/or a decline in local economies. Loss of herds to pastoralists, loss of harvests to farmers and price shocks to food to urban workers. While various factors are involved in recruitment, such as coercion, ideology, local grievances, and political networks, economic pressure can drive increased recruitment when people believe they lack a legitimate means of livelihood. Loss of livelihood due to climate change is not, in and of itself, a cause of violence, but it can exacerbate conflicts and make them more fragile.

Fourthly, governance weakness is critical for whether climate stress is 'hardship to be managed' or 'political crisis'. The threats posed by climate change can be reduced in countries with credible institutions, inclusive adaptation plans, accountable mechanisms for relief distribution, and dispute-resolution mechanisms. A lack of adaptive capacity can result in communities lacking access to irrigation, flood protection, insurance, social protection, or relocation support. Political instability could put pressure on the authorities to crack down on grievances rather than address them. Five years on, the Syrian drought has acquired political significance due to mismanagement of water resources, failures in agricultural policy, and a lack of state attention to agriculture, says De Châtel (2014). While Selby et al. (2017) argue that the simple climate-war narratives should be questioned, they also argue that political economy and governance aspects should be examined in the context of climate-conflict claims.

These linkages are summarised in Table 1, which connects climate impacts to environmental and social responses and to security threats. The table is not a causal schema, but rather is a grouping of typical pathways found in the literature.

Thus, the literature reflects a conditional understanding of climate security. The numerous effects of climate change get 'socially mediated' and are transformed into security risks. This article continues with a deeper examination of the difference between the two by comparing.

Table 1: *Climate Change Impacts and Security Implications*

Climate Impact	Environmental Effect	Social Effect	Security Risk
Rising temperatures	Heat stress and ecosystem damage	Reduced productivity	Economic instability
Drought	Water shortages and crop failure	Food insecurity	Resource competition
Flooding	Infrastructure destruction	Population displacement	Migration pressure
Sea-level rise	Loss of land	Community relocation	Territorial insecurity

Therefore, by addressing three vvulnerable regional contexts and using human security as the theoretical lens for interpreting vulnerabilities to climate-related conflict.

Theoretical Framework

In this article, the risks of climate-induced conflicts are analysed within the human security framework. Human security replaces the traditional geopolitical security paradigm, which prioritises the security of States and their borders, with a people-centred perspective on protecting people, livelihoods, dignity, and fundamental freedoms. It is particularly relevant to the study of climate security, as climate change can cause many harms; many of these occur before armed conflict. A drought can jeopardise food security, a flood can jeopardise personal safety and housing security, a heat wave can jeopardise economic security, and a water scarcity can jeopardise social cooperation. Such threats may also have a political impact, though not necessarily preceded by organised violence.

The human security chosen here comprises four aspects: food security, water security, economic security, and personal security. The failure to achieve food security may result from a lack of food due to a variety of factors, including declining production, high mortality rates among food producers' animals, and market losses. However, in rain-fed areas, frequent droughts lead to hunger, indebtedness and social tension. When there is competition, from limited water supply, tainted water, inadequate water service infrastructure, or inequitable water distribution, water security is jeopardised. However, when water scarcity is combined with other factors such as ethnicity, land use, or transboundary river politics, it can become very fragile. When climate hazards undermine livelihoods, deplete assets or exacerbate poverty, they do so by undermining economic security. In insecure environments, disasters, displacement, and violence linked to conflicts over natural resources put individuals at risk of harm to their personal security.

Among the human security dimensions used in the analysis (Table 2), each has the potential to yield climate-related outcomes. The table helps deepen understanding of the complex nature of climate change as a security challenge rather than a singular environmental factor.

The system also allows for distinguishing between exposure and vulnerability. Exposure refers to the population, assets, and/or livelihoods in areas vulnerable to climate hazards. Vulnerability is a

circumstance that increases the likelihood of harm, such as poverty, poor governance, inequalities, or a lack of resources.

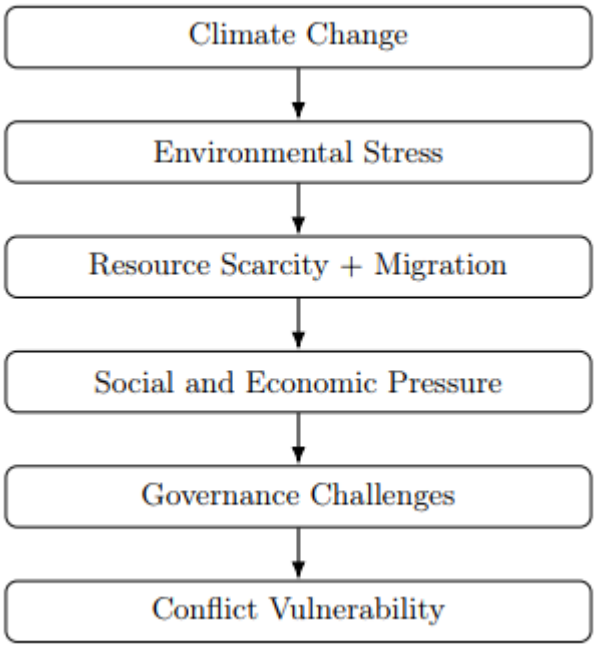
Table 2: *Human Security Dimensions and Climate-Related Risks*

Human Security Dimension	Climate Threat	Possible Outcome
Food security	Crop failure	Hunger and instability
Water security	Reduced water availability	Competition
Economic security	Livelihood losses	Poverty
Personal security	Climate disasters	Displacement

Mobility is a dependent relationship on climate-related livelihoods (Adger, 2006). For two communities, exposure to drought can lead to different security outcomes due to differences in irrigation, savings, trusted authorities, and conflict-resolution systems. The focus of human security analysis is then on capabilities and institutions.

The trajectory of ideas that inform the purposes of this article can be seen in Figure 1. Environmental stress created by Climate change. Environmental stress can exacerbate resource shortages and migration. These pressures cause social and economic pressure. The governance issues then determine whether strain is reduced through adaptation and cooperation or becomes a source of conflict vulnerability.

Figure 1: *Climate Change and Conflict Risk Pathway*



Not a dependence on the linearity of the pathway in every case: the claim is theoretical. Feedback effects are prevalent: conflict can lower the adaptive capacity, destroy critical infrastructure, and make people more vulnerable to shocks from future environmental changes. However, the pathway offers a convenient framework for a qualitative comparison in identifying key mediating processes through which climate change can be relevant to security.

Research Methodology

Research Design

This study uses a qualitative comparative case study approach. Qualitative research has the advantage of exploring meaning, mechanisms, contexts, and institutional arrangements rather than measuring the extent of statistical relationships. Comparative means comparing three cases: security pathways in response to climate change in the regions examined, for similarities and differences. It is important to note that the term "qualitative comparative analysis" is used in the article, but as a general case-comparative approach rather than a formal set-theoretic or statistical approach. Quantitative modelling, regression analysis, or numerical hypothesis testing is not used.

Qualitative research methods were appropriate to address this research problem, as 'climate-conflict connections' are context-specific. A purely variable-centred one can only find correlations, yet often fails when confronted with the question of why similar climate hazards yield different outcomes. Qualitative comparison allows for a focus on causal processes: how does drought impact livelihoods, how does displacement alter migrants' relationships with receiving communities, how do state policies and policies shape grievances, and how are the affected institutions able to manage or exacerbate scarcity. It also enables the analysis to take into account important debates in the literature, such as the 'primal reaction' of violence against the environment and the question of whether climate change was a significant factor in the Syrian conflict or if it is more appropriately understood as a problem in political ecology.

This study is based on second-hand sources. These include peer-reviewed publications in security studies, political geography, environmental politics, migration studies, and climate policy; assessment reports of the Intergovernmental Panel on Climate Change (IPCC); United Nations documents; and World Bank reports. Using secondary sources is acceptable, as this article is a synthesis and comparison of existing evidence across regions, not an original presentation of fieldwork. It also reflects on the ethical and practical issues involved in collecting primary data in conflict-affected areas.

Case Studies

The region of South Asia, the Sahel and the Middle East, including Syria, have been chosen as case studies. They were selected because they represent various shades of climate-security set-ups. The Sahel is a zone of interaction among various critical conditions in drylands: drought, desertification, pastoral mobility, resource competition, borderland governance, and armed-group activity. Syria and the region show the example of water stress, diminished food production, the lack of democracy, uprooting of people, and conflicting accounts of climate war. South Asia is representative of regions where population is large, climate displacement is likely high, flooding is a major risk, river-basin stresses are significant, and heat extremes are severe.

The case selection logic is shown in Table 3 below. The cases are not considered representative of the statistics. Rather, they offer analytically valuable variation in terms of increases in climate exposure, social vulnerability, and governance capacities.

Table 3: *Selected Case Studies and Security Context*

Region	Climate Challenge	Social Vulnerability	Security Concern
Sahel	Drought and desertification	Weak livelihoods	Resource conflicts
Syria/Middle East	Water stress	Agricultural decline	Political instability
South Asia	Flooding	High population exposure	Climate displacement

Data Sources

Four types of sources have been used in analysing the data. To begin with, there is a theoretical and empirical debate in the academic literature on climate security, environmental conflict, human security, and migration. Second, IPCC Reports offer scientific assessments synthesised on the impacts, vulnerability and adaptation. Thirdly, concepts and policy framing of human security are set out in United Nations documents. Fourth, World Bank reports give evidence on internal climate migration, development vulnerability and adaptation finance. The mix of source types increases the analysis by combining scholarly analysis with a policy-relevant assessment.

Data Analysis

Thematic Analysis is used to analyse the study. Five coding themes were used to interpret and analyse the sources: resource scarcity, migration, governance, economic insecurity, and the risk of conflict. Scarcity of resources refers to shortages of water, food, land, and pasture, as well as ecosystem degradation. Migration encapsulates the notions of displacement, relocation, refugee pressure and host-community tension. Governance encompasses institutional capacity, institutional legitimacy, adaptation planning, corruption management, service delivery and conflict management. The indicator of economic insecurity accounts for the loss of livelihoods, poverty, agricultural deterioration, labour market pressures, and households' adaptation to economic shocks. Conflict risk encompasses social tension, political instability, armed group recruitment, communal or inter-communal violence, and security risks at the inter-state or regional levels.

There are three steps in the thematic analysis. Methods: The article identifies the stressors in each case. Second, it outlines the connections between the former stressors and those affecting human security. Finally, it compares the effects of governance and social vulnerability on outcomes. The approach supports critical analysis, as it does not take the sufficiency of climate change or its irrelevance for granted. Rather, it assesses the nature of the interweaving between climate stress and political and security dynamics.

The main drawback is that local variations cannot be compared using a secondary source. There is significant internal diversity across the Sahel, the Middle East, and South Asia; not all communities face the same risks in each region. The article thus refrains from overgeneralizing and presents the cases as ‘regional snapshots’ of climate-security mechanisms. The second constraint is that conflicts can also affect the climate vulnerability, through damage to infrastructure, a decline in institutional capacity, and population displacement. The analysis addresses this by also accounting for the two-way relationship between climate and conflict.

Findings and Analysis

Climate Change and Resource Competition

The first finding is that, as the climate changes, it also increases the risk of conflict by intensifying competition for resources, particularly in the context of weak water, land, and food systems. Drought leads to decreases in surface water, groundwater recharge, pasture production, and crop yields. Excessive heat can increase evapotranspiration and reduce labour efficiency below normal levels. Waterborne diseases and the loss of agricultural land may result from floods. The environmental impacts of all this threaten human security by undermining livelihoods and increasing contestation over access to resources.

Today, influenced by fluctuating rainfall, land degradation, demographic pressures, state weakness, and disputed land tenure, resource competition is a factor in the Sahel. The pastoralists' livelihoods rely on mobility, while the farmers' livelihoods depend on land and water availability to cope with rainfall variability. With ownership of grazing areas under challenge and watering points becoming scarce, and/or with customary mediation falling into disuse, conflicts can escalate and be resolved by force. But it shouldn't be assumed that a rise in conflict in the Sahel is entirely due to climate change, as the literature cautions. According to Benjaminsen et al. (2012), key factors include political marginalisation, rural governance, and land-use institutions. Climate stress is important because it puts pressure on already politically stressed systems!

In the Middle East and Syria, water scarcity is linked to aridity, groundwater depletion, agricultural policies, and river politics. Although the devastating drought prior to the uprising in Syria contributed to agricultural losses and rural distress, the extent to which it caused the uprising remains controversial among scholars. The drought was more likely due to anthropogenic climate change, which, in turn, could have helped cause migration and social stress, Kelly et al. (2015) conclude. De Châtel (2014) highlights the problems of water management, the illegitimacy of the state, and the failure of agricultural policies. Selby et al. (2017) are warning against making a direct link between climate change and the Syrian civil war. As a whole, these works draw a more subtle conclusion: within the scope of the works examined, climate-induced water stress was a factor in vulnerability, and conflict resulted from political oppression, economic liberalisation, governability, and social grievances.

If competition for resources – particularly water – leads to reduced yields, this is not solely due to water scarcity in South Asia. Floods can displace communities, destroy crops, and exacerbate conflicts over embankments, drainage, relief distribution, and land access. Lack of rainfall and soil dryness have also created tensions for agricultural livelihoods, particularly in irrigation-dependent regions. Transboundary river basins are even more complex in terms of allocation security, as there will be disagreement between upstream and downstream users over river allocation, hydropower, sediment management, and flood management. The capacity to cooperate remains possible in the presence of institutional channels for negotiation.

Table 4 provides an overview of the prime climate stressors and their conflict pathways. As the table illustrates, a particular climate-related stressor can undergo different social processes before becoming a security threat.

Table 4: *Climate Stressors and Conflict Pathways*

Climate Stressor	Immediate Impact	Long-Term Security Risk
Drought	Reduced agriculture	Resource conflict
Water scarcity	Competition over water	Social tension
Extreme heat	Productivity decline	Economic instability
Flooding	Infrastructure damage	Displacement

Climate Migration and Security Risks

The second being that climate migration creates security threats in the case of forced, unmanaged and politicised migration. Migration is a common adaptation strategy in many societies. Households can be seasonal migrants, have family members migrate to urban areas, or migrate upon losing livelihoods. These flows can reduce migrants' vulnerability to labour and remittances. It becomes a risk when migrants are suddenly met with unprecedented disasters; when there is little legal protection for migrants, or when migrants are rhetorically painted as being a threat by political actors.

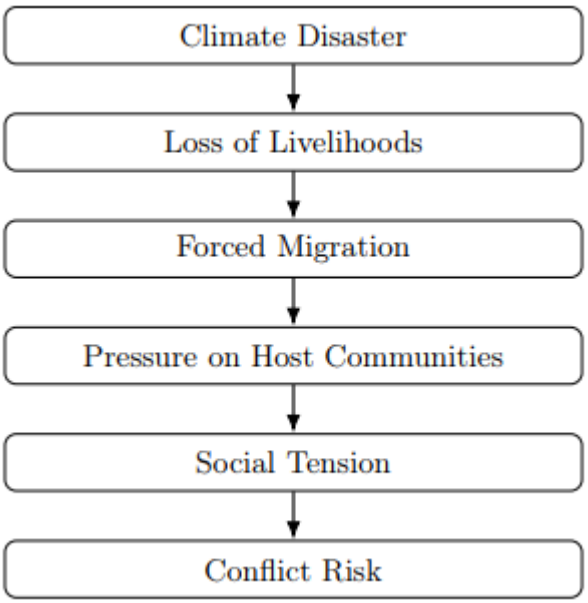
The Sahel is a case in point of the adaptive and contestatory dynamics of mobility. By moving, pastoralists respond to variability in pasture and drought. But borders, insecurities, land privatisation, and agricultural growth might hinder movement. Stress leading to herder(s) encroaching on farming areas can be construed as an issue of ethnic/communal identity. But armed groups may be able to take advantage of these tensions by providing protection, forcing communities, or even controlling resource corridors. Thus, it is not the movement per se, but the collapse of institutional control of movement that poses a security problem.

In the Syrian situation, we saw that drought-induced rural distress was one of the factors driving internal migration, particularly from rural areas to urban peripheries. But migration per se does not necessarily engender conflict. Unemployment, housing pressure, corruption, political repression, and the inefficiency of social protection all contributed to urban grievances. The importance of the Syrian case lies, on the one hand, in the fact that, given the lack of service provision in receiving countries, climate-related displacement can become a political issue, and, on the other hand, in the absence of an inclusive state response.

Due to the twin pressures of floods and cyclones, river erosion, extreme heat, and sea-level rise, South Asia experiences some of the world's most evident climate displacement. Various types of exposure can be seen in coastal areas of Bangladesh, riverine islands, the foothills of the Himalayas and the megacities. Urban pressure can arise from displacement, putting pressure on urban infrastructure, the informal economy, and urban services. The crossing of international borders may also become politicised, particularly if there is a relationship between migration, citizenship, identity, or border security and control. However, if climate migrants are perceived as a security threat, their situation could worsen. In contrast, a human security perspective places rights at the forefront and is based on pre-planned relocation, social protection and investment in host communities.

The migration pathway identified in the case analysis is shown in Figure 2. The figure illustrates the connections among climate disasters, livelihood loss, forced migration, and pressure on host communities, which can lead to tension and a risk of conflict. The pathway can be broken at several points with good planning and inclusive governance.

Figure 2: *Climate Migration and Conflict Pathway*



Comparative Case Analysis

Limiting exposure to climate change is insufficient to reduce susceptibility to conflict; the third finding is that such exposure alone does not affect susceptibility. The severity of the security risks depends on multiple factors, such as climate exposure and governance capacity/social vulnerability, which vary across the three regions of the Sahel, Syria, and South Asia, ranging from high climate exposure and low to moderate governance capacity/social vulnerability. A qualified comparison is provided in Table 5.

Table 5: *Qualitative Comparison of Climate Security Risks*

Region	Climate Exposure	Governance Capacity	Conflict Vulnerability
Sahel	Very High	Low	Very High
Syria	High	Low	High
South Asia	High	Medium	Medium–High

The Sahel has very high levels of conflict vulnerabilities, as it is highly climate-exposed, has weak livelihoods, low government presence, armed groups, ineffective border controls, and debatable resource ownership. In addition to drought and desertification, there are local conflicts and insurgent mobilisation, the state's neglect or neglectful attitude, and cross-border insecurity that affect agriculture and pastoralism, thereby giving rise to violence. In this instance, climate change is exacerbating the context in which conflict operates, but it does not cause the conflict per se.

The high vulnerability of Syria was the result of the combination of water stress and agricultural decline with authoritarian government, neglect of rural areas, economic difficulties and repression. Simple claims are not to be made out of the case. Climate change alone wasn't to blame for the onset of the Syrian civil war; state violence, political mobilisation, regional geopolitics, and social grievances are essential components of understanding the war. However, climate-induced drought

and water insecurity also made the prewar social landscape more fragile, thereby adding to human insecurity.

South Asia is considered medium to high in vulnerability due to high climate exposure, and there is a gap between the climate governance capacities of states and localities. There are disparities in adaptation planning, disaster response, infrastructure, welfare capacity, and political stability across India, Bangladesh, Pakistan, Nepal, and Sri Lanka. In Bangladesh, the country has built significant disaster risk reduction capacities, but there are still significant risks from cyclones, floods, river erosion, and sea-level rise. The level of vulnerability to conflict in the region is thus not uniform. The risks posed by climate displacement, urban stress, and water scarcity can be reduced through institutional capacity (IC), which helps limit the likelihood that these risks will escalate into violence.

Governance and Adaptation Capacity

It's the fourth pillar, where governance and adaptive capacity are critical. Inclusive planning, local participation, effective public finance, and early warning and conflict-resolution mechanisms are available in some societies, which makes the adaptation process easier. Adaptation does not only take a technical approach. Legitimacy, transparency, and equity are as important as irrigation, flood defence, drought-resistant crop development, insurance, and relocation planning. Excluding marginalised communities can exacerbate grievances, even as it reduces overall exposure.

Governance impacts climate security in several ways, including: first, it determines whether resources will be distributed equitably in situations of scarcity. In the end, relief under the exclusive control of elites can lead to higher levels of anger, while open distribution of relief can foster greater trust. Second, governance helps determine the peaceful resolution of resource conflicts. Legitimate customary institutions, local councils, courts, and regional agreements can help reduce violence. Thirdly, governance shapes how migration is managed – as adaptation or as a threat. Fourth, governance sets the conditions for whether the climate policy aims to address root vulnerability or just protect strategic assets.

The Sahel is a good example of the challenges posed by poor governance. In states that lack institutions or are predatory, communities might turn to armed groups when they feel unprotected or lack livelihood opportunities. As seen in Syria, there is a risk of policy failure and repression amid drought. In South Asia, recurring inequality and exposure to disasters put pressure, while improved disaster management has proved life-saving and a way to diminish instability.

The climate vulnerability model developed from these results is shown in Figure 3. If vulnerability to climate exposure is coupled with vulnerability to social exposure and poor governance, a high level of security risk arises. Risk reduction can be achieved, in part, by reducing any component, but in particular, governance is important, as it contributes to both social vulnerabilities and adaptive capacity.

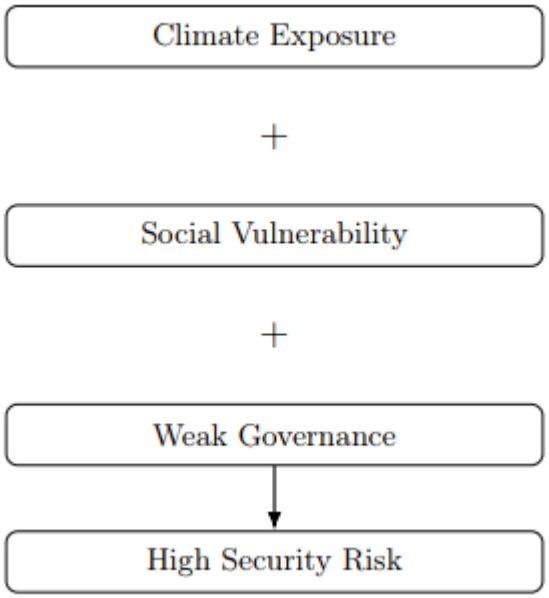
The main conditional risk multiplier argument is corroborated by the findings overall. Climate change increases pressures that could give rise to conflict, and it does so through human security mechanisms. Competition over resources, migration, and economic insecurity can be hazardous when institutions fail to manage them equitably.

Discussion

Analysis corroborates that climate change by itself doesn't result in conflict. A good number of communities suffer drought, floods, storms and/or heat without violence. Others react by

cooperating, moving, adapting, and reforming institutions. Thus, correlating climate conditions and conflicts is probabilistic and conditional, not deterministic. This conclusion is in line with studies that have been warning about assuming a straightforward causal relationship between the environment and conflict (Buhaug, 2010; Gleditsch, 2012; Salehyan, 2008) and studies that have been defining climate as one of several risk factors for conflict (Mach et al., 2019; Theisen et al., 2013).

Figure 3: *Climate Vulnerability Model*



RQ1 was: What is the role of climate change in the conflict risk in vulnerable regions? The answer is a combination of indirect causes, including the exacerbation of resource scarcity, displacement, and economic insecurity brought about by climate change. Access to food and water could be limited during drought; infrastructure could be lost during floods; heat stress during heat waves could limit productivity; and land and relocation could be affected by sea-level rise. Such pressures can lead to increased competition and complaints, as well as heightened social conflict. Through mediation, however, they become conflict risks due to their dependence on livelihoods, political exclusion, market fragility, and institutional weakness. Climate change alters the conditions of security as a background phenomenon, but does not replace a political catalyst for conflict.

RQ2 examined governance and social vulnerability as factors influencing climate-related security risks. Well, it is governance and vulnerability, whether these would make a decisive difference by reducing climate stress or make it overwhelming. Social Vulnerability: When a household lacks savings, land rights, mobility, or access to public services, or has no political say, it is more vulnerable. With good governance, risks can be minimised in terms of institutions' adaptation, conflict arbitration, the security of rights, and equity in resource allocation. But risk levels rise when the authorities fail to govern the rural population, suppress grievances, politicise relief, or fail to prepare for displacement. Moreover, comparative cases show that exposure does not yield uniform outcomes in conflict scenarios. As South Asia demonstrates, high exposure to climate change does not equate to a similar conflict outcome. In contrast, the Sahel is highly susceptible to these effects due to weak governance capacity.

There are implications related to these findings. Firstly, climate security must be tied to human security rather than viewed through a national security lens. Addressing the needs of vulnerable communities facing food insecurity, water scarcity, livelihood loss, and displacement is critical to preventing them from becoming victims of conflict. Secondly, adaptation to climate change is a political process. It allocates resources, validates some claims over others, and can increase or decrease legitimacy. Third, the persistence of climate security research in criticising securitisation will be necessary. When focusing on climate migration as a threat, it may be easier to justify the exclusion and militarisation of borders, whereas framing climate migration through the lens of human security prioritises protection, rights and resilience.

The cases also illustrate how feedback loops between climate change and conflict may occur. Conflict contributes to the damage to infrastructure, the collapse of governance structures, the loss of investments, and the displacement of people, making adaptation more difficult. This mutual exacerbation of climate and conflict vulnerabilities could mean that climate renders conflict vulnerable, and that conflict renders climate vulnerable. Policy needs to break the cycle by addressing environmental stress and political fragility.

Policy Recommendations

Climate security policy should mitigate, but not view populations under the threat of climate change as threats. An international-level increase in adaptation financing, with targeted support for the most vulnerable communities. There is a need for funding for water systems, climate-adapted agriculture, disaster preparedness, social protection, and a relocation plan. An overlay of ‘climate risk' in conflict analysis should be embedded in peace-building organisations, and conflict sensitivity in adaptation planning should be part of planning for climate institutions.

States should increase cooperation in the use of resources at the regional level. Cooperative basin management, e.g. shared river basins, pastoral corridors, food systems and migration routes. Climate information needs should be integrated with conflict indicators into regional early warning systems, alongside local knowledge and humanitarian planning. In the Sahel, this involves facilitating the cross-border movement of pastoralists and mediating disputes. For South Asian countries, this translates into improved flood forecasting, intercountry dialogue within river basins, and preparedness in urban areas.

Governments need to strengthen national-level state institutions to reduce human insecurity. This covers clearer relief distribution, effective governance of water resources, participatory land planning strategies and ultimately local involvement in localisation of adaptation planning. National climate plans should identify climate-sensitive zones and target communities exposed to climate change and socially vulnerable. It is important to recognise that security agencies cannot dominate the policy-making arena on climate change; the leadership of climate resilience planning must lie with civilian institutions, local governments, and community organisations.

Table 6 provides an overview of policy reactions at international, regional and national levels. These responses aim to minimise the factors that contribute to vulnerability to climate-stress-related conflict.

Table 6: *Policy Responses to Reduce Climate Security Risks*

Level	Policy Action	Expected Outcome
International	Adaptation financing	Reduced vulnerability
Regional	Resource cooperation	Less competition
National	Governance improvement	Greater resilience

Conclusion

This article argues that climate change acts indirectly rather than automatically as a causal factor in conflict. Climate change is an issue that affects food, water, economic, and individual security in the face of drought, flooding, heat stress, water scarcity, sea level rise, and ecosystem degradation. When combined with livelihood deprivation, political exclusion, weak governance, displacement, and resource competition, these human security pressures can heighten vulnerability to conflict.

Results of the qualitative comparison indicate that outcomes are driven by vulnerability and governance in the Sahel, Syria (and the wider Middle East), and South Asia. The Sahel is a good example of how factors such as drought, desertification, pastoral mobility, ineffective institutional frameworks, and armed actors can interact to increase conflict vulnerability. Syria highlights the political salience of water stress and crop failures stemming from state failure, repression, and social grievances, but also overestimates the causal power of climate to explain events. Examples from South Asia highlight how security risks persist. They are strongly influenced by persistent inequality, despite disaster governance helping to reduce risks from high exposure to floods, cyclones, and heat to some extent, and to alleviate displacement risks overall.

The central policy implication is that adaptation to climate change is necessary to prevent conflicts. Adaptation is not simply infrastructure and environmental management! It is also a peacebuilding strategy when it safeguards livelihoods, empowers institutions, promotes fair resource governance, and reduces social vulnerabilities. A human security perspective is the best starting point, as it considers the day-to-day situations in which climate change poses security threats. In the future, this should continue to study local mechanisms, avoid deterministic conclusions, and assess the value of inclusive adaptation in reducing the vulnerability of climate-exposed regions to conflict.

Conflict of Interest

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