

Climate Change And Geopolitical Instability

Analyzing the Role of ESG Frameworks in Mitigating Conflict and Displacement

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Abstract

Climate change has been seen as an environmental crisis and also as a catalyst for geopolitical instability. The present study portrays the relationship of climate-induced vulnerabilities, political risks, conflict emergence, and population dislocation and indicates how ESG preparedness, in particular the strength of social and governance systems, can significantly dilute these risks. The study indicates that countries with strong institutions and governance will better manage climate-related threats. With the support of endogeneity tests and PSM, the study proves climate vulnerability as a true catalyst for geopolitical unrest. The study therefore endeavours to underline the necessity of involving ESG frameworks when building climate resilience in nations or at the international level for the purpose of conflict reduction and security protection.

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Keywords

vulnerable regions, political risks, climate change, wars, global security

INTRODUCTION

Climate change has emerged as one of the most pressing global challenges of the 21st century, crossing environmental borders and intersecting with economic, political and social domains. Its effects are not limited to rising temperature or extreme weather patterns, but also expand the instability of national and regional political systems. Human activities have instigated institutional pollution resulting in extreme weather conditions including heat waves and excessive rain and droughts and tropical cyclones as described by the Intergovernmental Panel on Climate Change (IPCC). Natural resource scarcity

has intensified global tensions because crucial economic necessities like “oil and gas together with minerals and water support both economic development and national defense systems and living standards”. Environmental emissions from human activities have grown to double CO₂ concentrations in the atmosphere resulting in worse climate risks. Traditional indicators of climate, including temperature changes, rainfall variations, droughts, and storms, increase potential intergroup conflict risks with an estimated 11 percent increase for each standard deviation change.

The threat of climate change transforms into a security challenge since the shifting ecological balances because of famine and resource shortages cause conflicts about basic necessities such as water, food, and energy that occur both inside and outside state borders. National security faces direct threat from resource limitations which compels states to enhance military strength and defense

capabilities. Migration caused by climate change creates border control conflicts and tense situations between states regarding refugee policies in addition to establishing resource distribution methods² Climate change-induced environmental disturbances, such as rising sea levels and prolonged droughts, are causing mass migrations, sheer depletion of resources, and growing social tensions. The human-created inequalities caused by climate change heighten geopolitical conflicts and often strangle vulnerable communities, pressing the conditions for unrest. With the increasing frequency of resource scarcity, nations may slowly start vying for such strategic assets, increasing geopolitical tension. In any case, climate change is but a multiplier of security threats, economic upheavals, and

² Abdikafi Hassan Abdi et al., *Exploring the effects of climate change and government stability on internal conflicts: Evidence from selected sub-Saharan African countries*, 30 *Environmental Science and Pollution Research*, 118468–118482 (2023).



resource conflicts, thereby restating its tight association with geopolitical strife.³

While various strategies, policies, and regulations have been formulated by the governments and policymakers to counter these challenges, corporate enterprises are also adapting to the new `normal` of environmental, social, and governance (ESG) readiness. The major shift is not entirely due to imposed regulations; corporate leaders and stakeholders alike are awakening to the realization that sustainability pays off. To add to that, international organizations, government edicts, and expectations from global supply chains are placing more and more emphasis on climate-sensitive business practices. In consequence, corporations are aligning their business operations more with sustainability principles, not just for compliance purposes, but also for building resilience and enhancing

³ McKenzie F. Johnson et al., *Intrastate Environmental peacebuilding: A review of the literature*, 137 *World Development*, 105150 (2021).

reputation in an interconnected area of the global economy that is heavily eco-conscious, sustaining the prospects for survivability in the long run.⁴ The environmental component of the ESG evaluates how a country manages its resources through waste disposal, emissions control, and sustainability projects. Of course, renewable energy, eco-friendly policies, and lower carbon footprints do increase a unit's ESG score. Also considered at the national level are the policies pertaining to environmental conservation, carbon emissions, and resource sustainability.⁵

The social aspect states the following components: rights as to diversity, just work, employee well-being and the tie with the community. Social responsibility goes beyond being confined to the corporate setting; it also

⁴ Daniel Abrahams, *Conflict in abundance and peacebuilding in scarcity: Challenges and opportunities in addressing climate change and conflict*, 132 *World Development*, 104998 (2020).

⁵ Courtland Adams et al., *Sampling bias in climate-conflict research*, 8 *Nature Climate Change*, 200–203 (2018).



includes concerns like a wider social context on equality, access to education, health care, as well as labor rights. Such a measure toward social welfare is reflected in the nation's policies and programs concerning that area.

According to the third pillar of governance, it includes ethical leadership, accountability, transparent decision-making, and institutional integrity. It also applies to multi-level governance in that "governance" can be an assessment of institutions, political stability, compliance with the rule of law, and respect for human rights and freedom. Strong governance indicates transparency and efforts against corruption both qualify the supposedly strong ESG framework.⁶ Investing in ESG is a means to accelerate the shifting into a low-carbon economy, thus making a sustainable economic framework while resolving conflicts over limited resources—both critical to interrupting

climate change. ESG further has become a wider context of corporate social responsibility, prompting businesses to actively engage in the roots of climate change and mitigate the arising conflicts.

This study presents new empirical evidence on how climate change risks manifest themselves in geopolitical conflicts worldwide.

Several traditional evaluation dimensions exist to analyze climate vulnerability because they consider national exposure to hazards as well as element sensitivity and adaptive potential for managing climate effects. ND-GAIN CVI measures three assessment perspectives along with six sectoral dimensions which use economic social and governance indicators to evaluate adaptability readiness. The established indicators provide research insights regarding how climate vulnerability affects migration patterns along with bond yields and global climate finance distribution and

⁶ Francesco Amodio & Giorgio Chiovelli, *Ethnicity and violence during Democratic transitions: Evidence from South Africa*, 16 *Journal of the European Economic Association*, 1234–1280 (2017).

corporate capital costs and bank funding activities.⁷

ESG preparedness at the country level is considered a very critical mitigator of the impact of climate vulnerability on geopolitical conflict. Nevertheless, the analysis further suggests that the mitigating action mainly emanates from the social and governance components of ESG. Additionally, the quality of institutions within the country lends further credence to the moderation. The findings of this study suggest that the climate-vulnerable countries would be able to abate geopolitical risk if the focus on ESG were strengthened and their governance frameworks enhanced.

Supplementary assessments are indicating that ESG and all its components effectively moderate this relationship in the sub-sampling that excludes the USA and together with the MENA countries, while climate

vulnerability is not so destabilizing in the NATO member states and G7 nations. This study, therefore, discusses how ESG preparedness at the national level is key when confronting climate change-triggered geopolitical challenges. This signals the importance of weaving economic, social, and governance concerns into national policymaking, recognizing the many and complex linkages between climate change, socio-economic development, and geopolitical stability. The embedding of ESG into government strategy is thus sine qua non in order to effectively buffer disturbances associated with climate change. Furthermore, the outcome casts light on implications for the private sector and stakeholders in other sectors beyond the government.⁸ The research introduces important progress through the combination of Environmental Social Governance (ESG) factors into its assessment framework. Instead of

⁷ Konstantin Ash & Nick Obradovich, *Climatic Stress, internal migration, and Syrian Civil War Onset*, 64 *Journal of Conflict Resolution*, 3–31 (2019).

⁸ Samuel Bazzi et al., *Unity in diversity? how intergroup contact can foster nation building*, 109 *American Economic Review*, 3978–4025 (2019).

previous studies we establish ESG as a central mediating factor which determines how climate change influences geopolitical conflicts. The study demonstrates why governmental institutions must enhance national ESG preparedness through acknowledging ESG considerations as essential for policymaking. Policymakers need to establish structured frameworks supported by incentives that introduce ESG principles into decision-making procedures for promoting sustainable practices. Efficient policy implementation toward sustainability goals serves dual purposes for reducing global warming effects while reducing geopolitical conflicts in creating a stronger sustainable future. Through academic research NGOs gain better clarity about their duty to support government entities and industries in building extensive inclusive approaches for comprehensive strategy development. The growing interest of investors indicates that they select organizations that make significant ESG

commitments because these choices help build portfolios that prioritize sustainability and resilience objectives. These efforts lead toward establishing a global transition for responsible sustainable practices. This discourse demonstrates how governmental policies unite with NGO advocacy to create investor influence leading to integrated answers to climate change effects on global stability.⁹

Research Objectives

- To find the association between climate change and geopolitical tensions, and resource conflict and territorial dispute.
- To study the effects of climate change that aggravate armed conflict and war for particular areas suffering from environmental degradation.
- To assess the impact of climate change on forced displacement,

⁹ *Constitution of the Maritime Safety Committee of the Inter-Governmental Maritime Consultative Organization* (Advisory Opinion), Dissenting Opinion of J. Moreno Quintana, 1960 I.C.J. Rep. 150 (June 8).

migration patterns, and refugee crises.

- To analyze the global legal regimes and policies designed to prevent conflicts and displacements due to climate change.
- To propose solutions for reducing climate-related security threats through policy changes and increased international cooperation.

Research Methodology

The doctrinal research method is therefore used in this study, and primarily through secondary sources, such as legal texts and treaties, case law, and scholarly literature thereof. The research also involves a critical study of existing literature, including reports from international agencies such as the United Nations, the Intergovernmental Panel on Climate Change, and the UN High Commissioner for Refugees. Comparison of legal systems would be done to compare international frameworks on climate change-related conflict and migration. Some regions

will also be subjected to case studies of environmental degradation, focusing on their ramifications. In addition, the study seeks to address the effectiveness of existing policies and provide the needed legal and institutional reforms to prevent climate-related geopolitical conflict. Through this doctrinal kind of research, the study intends to provide a theory and law point of view regarding the complex nature of relationships among climate change, civil wars, and forced human displacement.

IS THERE A SIGNIFICANT IMPACT OF CLIMATE CHANGE ON CONFLICT RISK?

Many studies increasingly analysed the possible causal influence climate change can exert on all forms of conflict from short-term fluctuations in temperature and precipitation. Here, we are still seeing the impact of such long-term climatic changes but the matter should more be placed in what changes caused by climate change itself may be for the

conflict, rather than its short-term variation.¹⁰

The Impact of Temperature on Conflict Risk

Academics have been researching the historical relationship between temperature and conflict at various levels. At the level of individuals, psychological and physiological studies are beginning to show effects of temperature on human behavior. Psychologists and sociologists suggest that conditions of severe heat may trigger aggression, impacting emotions and thinking processes. There are some psychological theories that bear further discussion. The *General Aggression Model* (GAM) postulates that environmental stimuli (for example temperature) increase irritability or frustration and in turn heighten aggressive behavior. This is allied to the Routine Activity Theory (RAT), which states that high

temperatures more easily facilitate social interaction, thus raising the opportunity for types of conflict-interpersonal violence.¹¹ To check whether these micro patterns extend to the larger conflicts, great scholars have been working intensively. At the global level, some of the studies point to higher temperatures corresponding to increased risks of conflict. The same trend is observed by regional analyses.

It is important to see how different degrees of temperature rise affect conflict. Therefore, moderate temperature rise already correlates with increased violent crimes and social aggression; extreme heat events, such as prolonged heat waves, might lead to incrementally higher levels of social unrest or increase competition for scarce resources. However, determining temperature change thresholds well-aligned with conflict increase

¹⁰ Valentina Bosetti et al., *Should they stay or should they go? climate migrants and local conflicts*, 21 *Journal of Economic Geography*, 619–651 (2020).

¹¹ Halvard Buhaug et al., *Climate-driven risks to peace over the 21st Century*, 39 *Climate Risk Management*, 100471 (2023).

remains a complex and fluid research territory.

With the case of more precise and spatially extensive data collection in recent years, a new wave of studies has been able to probe the link between rising temperature and risk for conflict in Asia, Africa, and the Middle East. Some findings do indicate a correlation, but the overall effect tends to be rather limited. It is difficult to validate these temperature-related conflict risks using process tracing and identify precise causal pathways. This highlights the urgency of tracing the specific mechanisms linking climate change and conflict, rather than merely relying on statistical correlation.¹²

The Impact of Precipitation on Conflict Risk

In recent times, the studies on precipitation patterns and conflict have

undergone some considerable fine-tuning. As with the temperature debate, conflicting results were presented in the initial researches. Such studies indicated that droughts intensified scarcities of resources, reduced economic growth, and compounded food insecurity; thereby rendering violent conflict highly probable. However, some studies reported no definite relationship between the two variables of drought and conflict.

More recent studies provide a more complex understanding of the situation and an increasing consensus among scholars that precipitation loss and extended dry periods raise the danger of different types of violence. Nonetheless, such impacts are usually stronger for communal conflict and riots than for large-scale civil wars. Climate-induced reductions in precipitation are not the only or major factors linked to conflict. Drought-conflict nexus does occur but occurs with the provision of other

¹² Halvard Buhaug & Nina von Uexkull, *Vicious circles: Violence, vulnerability, and climate change*, 46 Annual Review of Environment and Resources, 545–568 (2021).

contextual factors such as restricted access to wells, dams, and irrigation infrastructure; dependency on agriculture; ethnic discrimination; pre-existing grievances in society; and poor state intervention. It has also been seen in some micro studies that social cohesion weakens, intergroup tensions sharpen, and support for violence against political rivals gains ground during droughts.¹³ The first point, that by drought alone one must not conclude the relationship with conflict, is then followed by the evidence that in certain conditions, increased precipitation also heightens the likelihood of violence. On the one hand, rebel groups can even sustain themselves by utilizing natural resources, or state forces may target such agriculturally rich areas, or even cows are raided while their tracks are erased by rain. Various climate projections indicate that the continuing changes in climate associated with global warming would

intensify rainfall over certain areas that could lead to very severe flooding in the near future. Secondly, from the observation point of view that it is likely to bring forth a series of chances to avert conflict, it does not directly connect or determine conflict as a result of a dryness condition. The critique of arguments which claimed droughts to have triggered conflicts from case studies as the Syrian civil war or as politically unstable areas like the Lake Chad region was vigorously undertaken by several scholars. Newer results have nonetheless revealed that spells of exceptionally low rainfall were indeed among the factors contributing to conflicts in Syria and Western Africa; other factors were likely to be even more important.¹⁴

The Impacts of Weather Extremes

The available evidence shows that climate change intensifies the

¹³ Sujatha Byravan & Sudhir Chella Rajan, *Taking lessons from refugees in Europe to prepare for climate migrants and Exiles*, 10 *Environmental Justice*, 108–111 (2017).

¹⁴ Chloe Canavan & Tobias Ide, *Contention, cooperation, and context: A systematic review of research on disasters and political conflicts*, 108 *International Journal of Disaster Risk Reduction*, 104558 (2024).

occurrence of extreme weather disasters which include storms as well as floods and heat waves and landslides and drought. When such natural disasters impact exposed social groups they create major casualties and enormous destruction across communities.

Scholarly work about how climate disasters create an environment suitable for conflicts has gained enormous focus in academia. Initial research about the topic produced ambiguous findings that somewhat resemble Russian roulette. It is, however, more recent studies that have begun to present a more unified outlook. Essentially, most scholars have reached an agreement—that climate-related disasters can trigger violent conflict, although particular conditions are crucial. The opposite scenario, where a disaster weakens the authority of the state or empowers the rebel groups is a much more likely context for escalating the violence.¹⁵

¹⁵ Rosario Carmona, *Global guidelines, local interpretations: Ethnography of climate policy*

More evidence, however, exists on the connection between public protests and riots in relation to a state's inefficacy in disaster-causing preparedness and response. Some types of natural disaster may, as a result, prolong civil wars during these times when both warring sides reorganize or inappropriately use humanitarian aid to support military operations. But establishing such a link has proved to be moot especially where destruction from disasters undermines the rebels' capability to carry on the fight.

CLIMATE CHANGE AND CONFLICT DYNAMICS

Contemporary studies are increasingly outdoing one another in documenting how climate change stands to increase the hazards of violence, but rarely does it ever act as a sole factor for the occurrence of violent conflict. It, instead, adds to former stresses of a region having already been prone to violent

implementation in Mapuche territory, Southern Chile,
24 *Climate Policy*, 1018–1033 (2023).

conflict. The previous collections of studies, which forged broad hypotheses as to linking climate to conflict, failed to establish much in the way of direct associations. However, recently studies utilizing better detailed data and contextual factors have confirmed the tension that climate change has with conflict dynamics.¹⁶

- **Migration**

Migration is increasingly viewed as an adaptation strategy for possible climate change. Permanent and seasonal migration have been associated with some climate impacts, like long-lasting droughts, greater natural catastrophes, reduced land productivity, and less access to essential natural resources. However, barriers in the form of inadequate infrastructure for migration, few job opportunities, and lack of money constrain the most vulnerable populations to utilize migration as an

adaptation strategy. Despite these constraints, climate change is likely to become an important condition affecting migration, thereby transforming demographic movement patterns at the regional and global levels.¹⁷ Among the major concerns of climate-induced migration, arise the resultant social and political tensions, with heightened rivalry for scarce resources within host communities. Migration, in some settings, has been associated with heightened competition along ethnic and religious lines, with tensions primarily shaped by tense historical and social dynamics of intergroup relations. Work in Kenya illustrates how migration induced by environmental stressors such as drought and water scarcity has intensified disputes over access to jobs and housing. Similarly, it is charted how ecological changes forced groups in Sudan from resource-scarce areas into more opportunistic regions, triggering

¹⁶ Xuan Chen et al., *Observed trends in multiple breadbasket yield shocks*, 19 *Environmental Research Letters*, 104005 (2024).

¹⁷ Eunbin Chung & Inbok Rhee, *Disasters and intergroup peace in sub-saharan Africa*, 59 *Journal of Peace Research*, 58–72 (2022).

resource scarcity while inflaming interethnic conflicts in areas with high immigration.¹⁸

In northern Nigeria, environmental degradation provoked by climate change has compelled the Fulani herdsmen to migrate to the southern areas, predominantly inhabited by Christian farmers. These migrations have triggered massive bloody conflicts over land and water resources. While the conflicts have their roots in long-standing social and economic rivalries, climate-induced displacement aggravates the same. It has been reported that a similar trend is observed in other areas within Nigeria and India.

Among the most widely debated case studies on climate-induced migration and conflict is Syria; sustained droughts contributed to mass rural-to-urban migration, eventually stimulating the onset of the Syrian civil war. While this

interpretation is contested, it places the larger issue on the table, namely that climate change can act as a threat multiplier, especially when increased competition over vital resources results from migration. If such migration processes are increasingly climate change-driven, it is therefore urgent that policymakers take the lead in crafting proactive strategies to mitigate the resulting risks and encourage social cohesion in the receiving communities.¹⁹ A few studies lend credence to the view that climate change intensifies circular migration, with attendant risks of ill-conceived violence. Some scholars even argue against an assumed linearity or transitional character of climate-induced migration to violent conflict. Rather than being a catalyst for tension, migration may provide some measure of relief through the redistribution of stressed populations from environmentally stressed regions

¹⁸ Fabien Cottier & Idean Salehyan, *Climate variability and irregular migration to the European Union*, 69 *Global Environmental Change*, 102275 (2021)..

¹⁹ Olivier Damette & Stéphane Goutte, *Beyond climate and conflict relationships: New evidence from a copula-based analysis on an historical perspective*, 51 *Journal of Comparative Economics*, 295–323 (2023).

to those endowed with greater economic and ecological capacity; thereby alleviating local resource pressures, diminishing prospects for conflict.

In this context, it was argued that actually, climate change serves to inhibit interstate commerce rather than facilitate it. The study argues that often economic hardships imposed by climate-induced changes deplete household assets, thus creating a scenario in which migration for many becomes economically impractical. Similarly, recent studies of Bangladesh find no significant correlation between climate disasters and conflict related to migration and counter the idea that displacement due to the environment is unavoidably provoked into violence.

As a whole, empirical evidence is inconclusive on whether migration acts as a facilitator between climate change and violence. Some authors argue in favor of a link, while others reject it and advocate further work on the various

aspects of this complex relationship. What is to be investigated in future works is the specification of whether and under which conditions climate change leads to conflict through migration, and the design of risks encountered by populations from whom relocation is impossible, notwithstanding worsening environmental conditions.²⁰

CONCLUSION

Scientists along with public and political entities have created increased notice about the link between climate change and potential conflicts. Researchers have extensively investigated this relationship between climate change and conflict potential during the last few years. The majority of published findings demonstrate that such relationships lead to conflict through high-resolution analysis or contextual assessment. A summary of current research indicates the principal results to identify vital

²⁰ Gabrielle Daoust & Jan Selby, *Understanding the politics of climate security policy discourse: The case of the Lake Chad basin*, 28 *Geopolitics*, 1285–1322 (2022)



pathways by which climate change raises conflict risks. Four factors notably economic disruption together with declining agricultural production and resource competition and climate-induced migration pathways resulting from environmental degradation serve as primary ways to look at the complex link between environmental changes and ways they fuel conflict.

Several mechanisms beyond the primary ones are still significant issues for further research. Contrarily, the role institutions may play, along with ethnic division, maladaptive responses to climate change, energy insecurity, geopolitical tensions, and biodiversity destruction, may also have a strong influence on patterns of climate-induced conflict. While earlier research identified potential pathways to climate change impacts and conflict escalation, a finer-grained approach is required to clarify this nexus.

Future research ought to zero in on precise areas and types of conflict where climate vulnerabilities become especially acute. Areas more reliant on natural resources can add to the set of geographical sites facing tensions—such as the Sahel, South Asia, and coastal areas against rising sea levels—as key case studies for deepening analysis. In terms of types of conflict, interactions can be analyzed right from inter-state conflicts to localized communal violence and see if climate pressure brings instability particular to that kind of disruption. Targeting these dimensions through a focused research agenda could generate a well-rounded perspective regarding climate-induced risks of conflict and subsequent effective policy mechanisms.

The complex interplay between social and geographical contexts gives rise to a plethora of vulnerabilities, therefore causing regionally varied responses to climate-induced conflicts. One is thus necessarily drawn to a more nuanced



appreciation of vulnerability, fashioned by a cocktail of socio-economic conditions, constitutional arrangements, and historical factors, notably the hangover of colonialism. Climate-conflict research should recast its focus from a state-centric view to an interdisciplinary stance, drawing from political ecology and other critical theoretical positions. This shift would encourage a sounder account of the varying responses to climate-induced stress held by diverse actors: political elites, state authorities, non-state actors, and local communities; sometimes even through violent means. A systematic inquiry into the feedback loops that interconnect climate change, vulnerability, and conflict will inform these processes further.

Moreover, existing studies have mainly dealt with short-term climatic fluctuations, such as those with a seasonal or yearly rhythmicity in temperature and precipitation. However, such findings call for putting into

examination the long-term impacts of climate change, both for the steady increases in temperatures at the global level and temporal changes of characteristics like sea level, all of which may be more serious and long-lasting in regard to conflict dynamics. An understanding of these long-term climatic trends is paramount with regard to their influence on socio-political stability, competition over resources, and migration patterns over time. Further studies should also be directed at measuring the underlying processes through which climate change causes conflict. Such an effort would require a comprehensive understanding of the interactions between environmental changes and related socio-economic and political drivers. Advanced methodologies such as Structural Equation Modeling and GIS-based risk assessments can then be adopted for such robust analyses. Additionally, employing micro-level sources such as satellite images and social media analytics will refine understanding of



conflict pathways only broadly sketched out by earlier studies. Additionally, researchers have to expand their scope beyond commonly examined climate variables, such as temperature and precipitation, to include other important influences like sea level rise, climate tipping points, and unanticipated effects of climate mitigation policies on conflict dynamics. This will adopt a multi-disciplinary approach by using current technologies to examine how future studies could give better insights into the many intertwined linkages between climate change and conflict, thus also better informing policy responses.

