



Swami Vivekananda Advanced Journal for Research and Studies

Online Copy of Document Available on: www.svajrs.com

ISSN:2584-105X

Pg. 51- 58



Climate Change as a Non-Traditional Security Threat: Rethinking Global Security Paradigms.

SWATI CHONGDER

M.A FROM RABINDRA BHARATI UNIVERSITY

Accepted: 05/04/2026

Published: 06/04/2026

DOI: <http://doi.org/10.5281/zenodo.19437525>

Abstract

Climate change has transitioned from being primarily an environmental issue to a significant non-traditional security threat, with extensive implications for human welfare, economic stability, and geopolitical dynamics. Traditional security paradigms, which concentrate on military threats and the sovereignty of states, are increasingly insufficient in tackling dangers that stem from extreme weather phenomena, resource shortages, and ecological decline. Evidence from areas such as Chad, Syria, Iraq, and the United States illustrates that droughts, floods, heatwaves, and storms disrupt food systems, water resources, health services, and livelihoods, resulting in displacement, social unrest, and increased vulnerability. On a global scale, the melting of Arctic ice and the competition for strategic resources, along with climate-sensitive conflicts in the Middle East, highlight the convergence of environmental change with geopolitical tensions and militarization. Moreover, contemporary warfare and energy dependencies intensify the impacts of climate change, creating feedback loops that further destabilize regions. Disparities in climate resilience, especially in developing countries, underscore the dangers posed by cuts in climate assistance and unequal adaptive capacities, emphasizing the connection between climate injustice and global security. The 2025 U.S. Threat Assessment, along with reports from the World Economic Forum and the World Meteorological Organization, indicates that environmental threats are now among the most urgent long-term global risks, underscoring the need to incorporate human security into policy frameworks. This paper contends that effective responses to climate change necessitate comprehensive strategies that integrate disaster preparedness, transitions to renewable energy, humanitarian aid, and international cooperation. Acknowledging climate change as a core security issue is crucial for mitigating cascading risks, protecting vulnerable populations, and fostering a resilient, equitable, and stable global order.

Keywords: Climate Change, Non-Traditional Security, Human Security, Environmental Security, Extreme Weather, Geopolitics, Energy Security, Climate Conflict, Displacement, Global Inequality

1: Introduction

Historically, the notion of security within International Relations was predominantly framed around military threats, the integrity of territories, and the safeguarding of state sovereignty. The primary actors in this paradigm were states, with defence strategies aimed at averting armed conflicts and protecting borders. Nevertheless, in recent decades, the understanding of security has expanded to include non-traditional threats—issues that arise not from direct military confrontations but still present significant dangers to human existence and societal stability. Examples such as climate change, pandemics, cyber threats, and resource scarcity underscore the reality that security now transcends traditional military considerations. The implications of climate change serve as a clear illustration of this shift. Severe droughts and other extreme weather phenomena in areas like Chad, Syria, and Iraq have severely impacted agricultural production, resulting in hunger, migration, and disputes over limited water resources.

Environmental stress functions as a threat multiplier, intensifying pre-existing social, political, and economic vulnerabilities. Populations that are displaced exert further strain on governments and international organizations, leading to humanitarian emergencies, border conflicts, and competition for resources. These effects are not limited to local or national levels: cross-border migration, trade disruptions, and competition for essential resources such as food and water generate global security implications, thereby directly connecting environmental changes to international stability.

Recent evaluations by international leaders highlight that climate change transcends being solely an ecological concern; it has emerged as a fundamental security issue. Inaction intensifies hunger, poverty, and displacement, thereby perpetuating cycles of instability and conflict. The World Economic Forum's

Global Risks Report 2025 identifies extreme weather phenomena, loss of biodiversity, collapse of ecosystems, and significant changes to Earth systems as five of the top ten long-term global risks, emphasizing their 'existential' nature, especially for developing countries with limited capacity to adapt. This represents a notable transformation in the prioritization of global threats, with environmental risks increasingly acknowledged as essential elements of security strategy.

As a result, climate change necessitates a re-evaluation of conventional security frameworks. Its impacts on human welfare, migration patterns, and resource-related conflicts challenge approaches that are solely military in nature, advocating instead for collaborative, environmentally-focused strategies that protect individuals, conserve resources, and bolster resilience. Within this framework, tackling climate change is not merely an ethical and environmental obligation but also a strategic imperative for maintaining global stability, peace, and sustainable development.

Climate Change and Human Security

Climate change poses a significant threat to human security by disrupting essential food systems, water resources, health services, and livelihoods. The year 2024 has been noted as either the warmest or the second-warmest year on record, contingent upon the dataset referenced, while the preceding decade is recognized as the hottest in recorded history. Sea-surface temperatures, especially in the Atlantic Ocean and the Mediterranean Sea, have reached unprecedented heights, resulting in widespread marine heatwaves that impact fisheries and coastal communities.

In the United States, a single day in **mid-March 2025** witnessed nearly all types of extreme weather occurring simultaneously: blizzards around the Great Lakes, destructive high winds and tornado threats in the Eastern states, Arctic cold waves, record-setting heat domes in the Southwest, massive wildfires in

Nebraska, heavy rainfall in Hawaii surpassing 60 centimetres, and drought conditions affecting over half the nation. These simultaneous extremes exemplify the increasing intensity and unpredictability of climate-related hazards, which pose direct threats to human security.

These climatic phenomena extend beyond the borders of the United States. On a global scale, extreme weather conditions intensify food insecurity, as extended periods of drought and flooding diminish agricultural production, jeopardizing both livelihoods and nutritional standards. Water scarcity emerges when erratic rainfall patterns, elevated evaporation rates, and exhausted freshwater resources hinder access to safe drinking water. Furthermore, public health infrastructures face significant pressure: heatwaves, floods, and other calamities heighten the risk of disease, malnutrition, and injuries, exacerbating pre-existing vulnerabilities in regions that are already precarious. When circumstances become untenable, communities are compelled to migrate, leading to displacement and heightened social tensions in the areas that receive them.

In areas such as certain regions of Africa, Asia, and the Middle East, extreme climate conditions have already led to increased hunger, competition for limited water resources, and pressures to migrate. The World Meteorological Organization highlights that these interconnected effects—disturbances to food systems, water scarcity, health emergencies, and displacement—represent considerable socio-economic threats that transcend national boundaries. Vulnerable groups, especially in developing countries, face these challenges with greater intensity due to their restricted ability to adapt, rendering them more severely impacted by environmental shifts.

The concurrent manifestation of various extreme events underscores the interrelation between climate impacts and human security, illustrating that climate

change transcends being merely an environmental issue; it acts as a widespread threat multiplier. Ranging from localized agricultural failures to worldwide migration patterns, climate-induced risks undermine social stability, heighten vulnerability, and pose challenges to governance frameworks. Tackling these threats necessitates comprehensive strategies that merge disaster preparedness, resilient infrastructure, sustainable resource management, and international collaboration, emphasizing the critical importance of positioning climate action as a fundamental aspect of human security policy.

Climate Change and Geopolitics

Climate change is reshaping global geopolitics by making previously unreachable areas accessible, heightening competition for vital resources, and altering established power dynamics. A particularly notable instance of this shift is evident in the Arctic, where swiftly increasing temperatures are changing the strategic environment. In some parts of this region, Arctic air temperatures have risen by as much as 15°C above long-term averages—a significant rise that is drastically diminishing sea ice coverage and changing the region's accessibility and economic prospects. The EU Earth Observation Programme Copernicus reports that the average extent of Arctic sea ice in January was roughly 5.5 percent lower than historical averages, indicating one of the lowest extents recorded in nearly fifty years of satellite observations. These changes are not merely scientific anomalies; they serve as drivers of geopolitical transformation.

As the retreat of sea ice persists, new ocean routes are remaining free of ice for extended durations, thereby enabling maritime navigation that was previously deemed impossible or severely limited. In the past, dense ice sheets rendered Arctic shipping lanes unnavigable for a significant portion of the year; however, due to the current warming trend, these routes are becoming increasingly accessible. The emergence of these pathways considerably reduces

maritime distances among Europe, Asia, and North America, presenting potential economic and strategic benefits that could transform global trade dynamics. In addition to transportation, the Arctic is abundant in untapped natural resources, such as oil, gas, and essential minerals that are crucial for contemporary technologies and energy transitions. The possibility of tapping into these resources has generated heightened interest among influential nations aiming to secure their long-term supply chains and strategic positions.

This developing competition carries significant geopolitical consequences. Experts have expressed worries that major global powers might seek to exert control or influence over sections of the Arctic, citing national security and economic interests as justifications. This could lead to heightened tensions in an area that was previously considered marginal. The military presence and investments in Arctic infrastructure are on the rise, as nations aim to safeguard their interests in these newly accessible regions—evoking the possibility of strategic rivalry in locations far removed from conventional conflict zones.

In various respects, climate change is altering the landscape of power politics and territorial rivalry by converting previously stable borders into areas of strategic contention. This shift highlights that environmental changes are not merely ecological concerns but are fundamentally linked to global power dynamics, economic motivations, and national security agendas. The situation in the Arctic exemplifies that geopolitical strategies must increasingly take climate factors into account, emphasizing the necessity for innovative diplomatic structures and collaborative approaches to prevent climate-induced changes from escalating into conflicts.

Energy Climate change and energy security

The interconnection between energy security and climate conflict is profound, as the reliance on fossil

fuels generates vulnerabilities that reach beyond mere environmental issues to encompass geopolitical instability. The current upheaval in energy markets, intensified by the situation in Iran, underscores the dangers linked to dependence on imported oil and gas. The U.N. climate secretary has urged that governments must hasten the shift away from fossil fuels, pointing out that rising prices pose threats to national security and worsen living expenses. He remarked, “Those risks are abundantly clear right now and are burning at everyone’s feet,” emphasizing that dependence on fossil fuels is not only an economic burden but also a catalyst for conflict.

The Strait of Hormuz serves as a vital chokepoint for global oil transportation, illustrating the intersection of energy and security. Any disturbances in this area, including missile strikes or blockades, result in immediate effects on global markets and increase the likelihood of wider instability. Energy crises instigated by regional conflicts, such as the tensions with Iran, exacerbate climate vulnerability by hindering the transition to renewable energy and extending reliance on high-emission energy sources. In Europe, where over 90% of oil and 80% of gas are imported, leaders are currently formulating emergency plans to protect consumers from escalating energy prices while also striving to avert a recurrence of the 2022 energy crisis that followed Russia's invasion of Ukraine.

In pursuit of long-term solutions, the European Commission has outlined strategies to substitute fossil fuels with renewable and nuclear energy sourced domestically, with the goal of bolstering energy security, stabilizing costs, and diminishing greenhouse gas emissions. Renewable energy presents a dual benefit: it reduces susceptibility to external political disruptions and aids in climate mitigation, all while creating job opportunities in clean technology industries. Despite the pressure from nations like Italy and Hungary to temporarily ease climate regulations for short-term economic relief, experts caution that

such actions would be counterproductive and would postpone the necessary broader transition towards strategic energy independence.

The forthcoming U.N. climate negotiations, set to take place in November in Antalya, Turkey, are under vigilant observation due to security threats, notably recent missile launches from Iran that were intercepted by NATO defences. These occurrences highlight the pressing need to incorporate energy security into climate policy, illustrating that dependence on fossil fuels transcends mere economic or environmental considerations and poses a substantial security risk. In the end, the shift towards renewable energy is not only vital for addressing climate change but also crucial for diminishing geopolitical vulnerabilities, stabilizing global energy markets, and protecting both human and national security from potential future crises.

Climate Change, War, and Environmental Damage

Modern warfare has become a crucial factor in driving climate change, establishing a perilous feedback loop in which conflict and environmental degradation mutually exacerbate each other. The ongoing conflict between the US and Israel with Iran exemplifies the severe environmental repercussions of modern warfare. Within a mere 14 days, military actions involving warplanes, drones, and missiles produced around 5 million tonnes of greenhouse gas emissions, exceeding the total annual emissions of the 84 countries with the lowest emissions.

The devastation inflicted by targeting both civilian and energy infrastructure further intensifies emissions. The US-Israeli coalition is reported to have attacked thousands of locations in Iran and hundreds in Lebanon, leading to the destruction of approximately 20,000 civilian structures, which is estimated to release 2.4 million tonnes of CO₂ equivalent. Throughout the military operations, between 2.5 and 5.9 million barrels of oil were utilized, resulting in an additional 1.88 million tonnes of CO₂e, while aircraft, naval

vessels, and missile systems contributed another 172,000 tonnes. The extensive deployment of bombs, missiles, and drones added roughly 55,000 tCO₂e from munitions alone. The total emissions recorded in the initial two weeks, amounting to 5,055,016 tCO₂e, are comparable to the annual emissions of a medium-sized economy reliant on fossil fuels, such as Kuwait, or the cumulative emissions of the 84 countries with the lowest emission.

The environmental costs associated with warfare illustrate a self-perpetuating cycle: climate change exacerbates resource scarcity, extreme weather events, and geopolitical tensions, which subsequently heighten the probability of conflict. From the University of Energy and Natural Resources in Ghana cautions that emissions are projected to surge dramatically if assaults on oil facilities persist, further worsening global warming. The act of burning emissions equivalent to Iceland's annual output within a mere two weeks is unsustainable, underscoring the pressing necessity to incorporate climate considerations into conflict management and international security strategies.

The harsh truth is that contemporary warfare is propelling climate change itself. In addition to immediate devastation, conflicts disrupt energy infrastructures, ruin essential facilities, and exacerbate resource scarcity, thereby creating feedback loops that threaten both human and planetary security. Confronting the environmental repercussions of warfare is no longer a matter of choice—it has become an essential element of climate mitigation efforts and global security frameworks. Neglecting this issue risks accelerating both environmental degradation and geopolitical instability concurrently.

Inequality and Climate Injustice

Climate change has a disproportionate impact on developing nations, intensifying existing inequalities and posing significant security threats to the global

community. Recent proposals from the UK government to decrease climate aid to these countries by about 14%, reducing it to approximately £2 billion per year, highlight the conflict between domestic priorities and international obligations. Critics contend that such reductions jeopardize both lives and long-term stability in regions already facing severe weather events, resource shortages, and unstable governance. This cut occurs amidst financial pressures associated with global conflicts, including the ongoing crisis in Iran, and signifies a broader withdrawal from the UK's commitments to foreign aid.

The overall aid budget of the UK has decreased to 0.3% of gross national income, down from 0.5% previously, which adversely affects climate initiatives, health, education, and humanitarian efforts. Plans to invest £3 billion in nature and forest conservation have been abandoned, and the move away from multi-year budgeting undermines sustainable, long-term interventions. Experts caution that these funding cuts disproportionately affect the Global South, which depends on international assistance to cope with climate-related challenges such as droughts, flooding, and food insecurity. By reducing financial support, developed countries risk exacerbating global inequality, hindering efforts to build resilience, and leaving vulnerable communities at risk of cascading socio-economic and environmental crises.

Legislators and global observers have emphasized that a reduction in climate assistance may diminish a country's soft power, create tensions in alliances, and jeopardize global stability. As Foreign Secretary Yvette Cooper pointed out, it is vital to maximize impact within limited budgets; however, the withdrawal of support endangers Britain's credibility and its capacity to affect humanitarian and climate results. In the end, climate change represents not merely an environmental issue but also a catalyst for inequality and insecurity. Tackling it in a fair manner is crucial for fostering global peace, promoting human

development, and alleviating the unequal burdens experienced by developing nations.

Changing Global Security Paradigm

Global security is experiencing a significant transformation as conventional military threats converge with environmental and technological challenges. Although traditional threats continue to be urgent, the report marks a pivotal change: climate change is now acknowledged as a facet of national security, altering the understanding of what defines a threat.

This transformation signifies a wider shift from state-centric security to human security, prioritizing the safeguarding of individuals, communities, and essential infrastructure rather than merely protecting borders or military resources. Environmental risks, ranging from extreme weather events to resource shortages, now intensify conventional security issues, heightening susceptibility to conflict, displacement, and economic turmoil. Intelligence analysts are progressively incorporating climate data into defence evaluations, recognizing that disasters such as heatwaves, floods, and droughts can intensify disputes over water, food, and energy, especially in geopolitically sensitive areas.

The report highlights the necessity for a comprehensive security framework that integrates military readiness with environmental, economic, and technological factors. For instance, advanced missile systems are combined with less expensive, disposable systems intended to saturate defences, while migration driven by climate change and competition for resources leads to societal tension and instability. By embedding human security into strategic planning, policymakers can tackle both urgent threats and the enduring vulnerabilities introduced by climate change. This shift in paradigm also stresses the importance of international collaboration and preventive diplomacy, acknowledging that the effects of climate change

transcend national boundaries and that technological rivalry, such as advancements in AI, is linked to environmental resilience.

Essentially, contemporary security paradigms must reconcile military strength with adaptive strategies that safeguard human welfare and global stability. As threats increase in both magnitude and intricacy, the incorporation of environmental considerations into national security policy is imperative—it is crucial for maintaining peace and alleviating cascading risks in the 21st century.

Conclusion

The accumulating evidence from recent studies highlights that climate change has evolved beyond its conventional classification as merely an environmental issue, emerging instead as a significant non-traditional security threat with far-reaching geopolitical, economic, and humanitarian implications. The World Economic Forum has identified extreme weather events and biodiversity loss as “existential” global risks, while the World Meteorological Organization has documented a rise in widespread droughts, floods, and heatwaves, indicating that environmental threats are exacerbating human vulnerability. Extreme weather phenomena disrupt food production, water availability, and health systems, leading to mass displacement and increasing socio-economic instability in vulnerable regions.

At the same time, climate change is altering power relations in resource-rich regions such as the Arctic, where melting sea ice is creating new shipping routes and enabling access to valuable minerals, thereby intensifying competition and militarization. Conflicts in the Middle East provide another dimension, as modern warfare contributes to climate change through significant greenhouse gas emissions and infrastructure destruction, creating a feedback loop in which environmental degradation fuels further instability. Energy crises further compound these risks,

as dependence on fossil fuels increases vulnerability to geopolitical disruptions, while the transition to renewable energy offers a pathway toward long-term stability and security.

Inequality and climate injustice remain central to the security discourse. Reductions in climate aid by developed countries, including the United Kingdom, threaten the resilience of the Global South, deepening global inequalities and contributing to future instability.

In conclusion, addressing climate change is intrinsically linked to ensuring global security. Effective responses require integrated strategies that combine disaster preparedness, renewable energy transitions, humanitarian assistance, and international cooperation. Recognizing climate change as a fundamental security issue will enable the international community to mitigate cascading risks, protect vulnerable populations, and promote a stable, resilient, and equitable global order.

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