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National Security and Climate Change: A Strategic Imperative for the 21st Century

by John L. Craig

The climate crisis presents a major challenge to modern governance and security systems. Traditionally, national security has focused on kinetic threats such as terrorism, armed conflict, and cyberwarfare, but the 21st century requires redefining what constitutes a national threat. Climate change introduces a new array of risks that are borderless, slow to develop, yet increasingly severe, and deeply linked to economic and social vulnerabilities. Recently, the International Court of Justice recognized climate change as an urgent and existential crisis threat.[1]

It has been challenging to find and reconcile sources to provide a balanced and objective overview of climate change and national security within our highly complex planetary system.

This article explores the connection between climate change and national security from multiple perspectives, demonstrating that responding to climate change is not merely an economic and environmental issue—it is a strategic imperative.

Background

To put this article into context, we are living in unusual times, and it is easy to become distracted from critical issues, including climate change, by the ongoing chaos and slashing of norms, and for good reasons.[2] These are not the traits of a strong and viable democracy led by rational and ethical leadership.[3] Others fear that the United States is dangerously close to normalizing autocracy.[4] In short, the world is experiencing a far-right trend and a lack of strong ethical leadership.[5] General (Retired) Vincent Brooks explains this differently in his top strategic concerns for our nation: the first is the absence of domestic tranquility, and the second is the lack of empathy in U.S. policy and the American body politic.[6] General (Retired) Barry McCaffrey describes what keeps him awake at night as a loss of the rule of law and democracy.[7] Noted journalist David Brooks states that we are

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living in a society without a shared moral order.[8] These echo the prescient *It Can't Happen Here* by Sinclair Lewis, published in 1935.[9] While the absence of domestic tranquility or a shared moral order may be our biggest strategic threat, climate change—beyond natural variability—stands as perhaps the most significant existential risk to the health and welfare of our planet and all life on it, including humans. Societies tend to prioritize short-term gains and our world remains fragmented. Consequently, the focus on climate change is suffering. In this context, national security and climate change are deeply intertwined for many reasons. Climate change is a growing and urgent threat to our national security—contributing to natural disasters, increased refugee flows, and conflicts over essential human needs.[10]

In 2015, the U.S. National Security Strategy included, for the first time, that climate change was a threat to the safety and security of the home of one of the world's most powerful militaries.[11] Later that year, the implications of climate change on national security were expanded upon.[12] This recognition has continued for more than 10 years. By contrast, the 2025 Annual Threat Assessment of the U.S. Intelligence Community is the first in over a decade to omit climate change.[13] The U.S. Intelligence Community is now likely operating with a blind spot that could jeopardize national security.[14] National security and climate change are subjects on the national defense agenda for many countries today. Generally, climate change acts as a threat multiplier in national security, almost always indirectly and through complex mechanisms.[15] Additionally, national security and climate change are intergenerational issues tied to the global economy, making it a more complex and interconnected challenge for the U.S. and other nations.

In 2024, Planet Earth surpassed 1.5°C (2.7°F) above pre-industrial levels for the first time—a troubling milestone in global climate change.[16] If the warming trend persists,[17] and without significant cuts in greenhouse gas emissions, global temperatures are expected to exceed 2°C (3.6°F) before 2050.[18] Some estimates predict a rise of 2.5°C (4.5°F) by mid-century, while more extreme forecasts suggest an increase of nearly 3°C (5.4°F) by 2100 if urgent action is not taken. A recent study led by physicist and climatologist James E. Hansen provides a detailed analysis supporting these trends.[19] It warns that the shutdown of the Atlantic Meridional Overturning Circulation could happen within the next 20 to 30 years unless global warming is reduced. This situation is referred to as the "point of no return," as it could cause significant problems, including sea level rise of several meters over the next 50 to 150 years. The goals set in Paris are not just targets—they are a fragile path through systemic chaos.

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Although these projections involve some uncertainty, the potential impacts of climate change are well-documented,[20] and many scenarios forecast catastrophic outcomes.[21] Ongoing geopolitical instability,[22] competing policy proposals,[23] and other existential crises further complicate the global response,[24] making effective action more difficult. Merely focusing on traditional warfighting capabilities is insufficient and recent efforts by our government appear to be aimed at dismantling climate action[25] and resilience. The National Security Strategy must address numerous threats to national security, including climate change.

The complexity and interconnection of Earth's functions make precise forecasting difficult. However, the scale of the climate change challenge is so vast, the risks so complex,

and so many actors involved, that we have never dealt with such a multifaceted risk before.

The Intergovernmental Panel on Climate Change (IPCC) warns that continued increases in global temperatures will cause rising sea levels, more frequent heatwaves, droughts, and extreme weather events.[26] The resulting decline in agricultural productivity, water shortages, and increased disaster frequency weaken public health, destabilize economies, and heighten social tensions, especially in regions with weak governance. If the post-emissions plateau were achieved (i.e., zeroing out greenhouse gas emissions and flatlining global warming), it would almost certainly not limit global warming to 1.5°C. Further, reaching that plateau is not realistic.[27]

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Examples of Climate Change and Increasing Risks

Some scientists place the effects of climate change into three categories: settled and certain, limited evidence and low agreement, and uncertain. The current scientific evidence is settled and certain that CO2, global temperatures, land warming, heat waves, and sea level rise are increasing as a result of climate change. There is limited evidence and low agreement that heavy rain, floods, droughts, and wildfires have increased due to climate change. It is uncertain and unknown whether the likelihood of tornadoes, ice sheet collapse, and a permafrost carbon bomb have increased as a result of climate change.[28] It is important to note that while some impacts remain uncertain or not fully settled, this does not mean they are unaffected by climate change. Ongoing research continues to clarify and quantify these potential influences.

The Office of Management and Budget released a 2024 report on the federal government's financial exposure to climate change risks.[29] Although pinpointing the exact financial risk was challenging, it was clear that the risk is significant and growing, including for the Department of Defense and national security. Some of these risks include:

- Sea-level rise: According to the National Oceanic and Atmospheric Administration in 2023, the global average sea level has risen by eight to nine inches since 1880, more than doubling from 2006 to 2015.[30] High tide flooding is now 300 to 900 percent more common than it was fifty years ago. This increase is attributed to the melting of glaciers and ice sheets, as well as thermal expansion. Nearly thirty percent of the U.S. population lives in coastal areas, where sea level rise contributes to flooding, shoreline erosion, and storm damage. Additionally, sea level rise can create stronger storms, alters ocean currents, contaminates freshwater aquifers, causes land rebound, and results from increasingly heated seas and atmosphere both locally and regionally.

- Melting ice sheets: Ice sheets, such as the Arctic and Antarctic sea ice,[31] the Greenland Ice Cap,[32] as well as ice fields[33] and glaciers,[34] are melting at an unprecedented rate. The ice sheets of Antarctica and Greenland alone hold about two-thirds of the Earth's freshwater and have contributed to roughly one-third of the global sea level rise since 1993.[35]

- Extreme weather events:[36] These include heatwaves, droughts, wildfires, flooding, stronger storms such as hurricanes, heavy rainfall, winter storms, and rising sea levels, which lead to increased frequency, intensity, and impacts.[37]

- Water scarcity[38] and insecurity:[39] These

worsen due to extreme weather events like droughts and floods, which disrupt precipitation and the entire water cycle. This is one aspect of a highly complex planetary system affected by climate change, including in the United States.

- Food insecurity: Extreme weather events damage crops and livestock, including land, sea, and freshwater foods. These disruptions can also lead to higher food prices, lower yields, and reduced availability. Like many aspects of climate change, vulnerable populations are the most affected.[40]

- Displacement: Climate change worsens existing human displacement and increasingly acts as a driver, interacting with other impacts of climate change.[41]

Climate change should not be viewed solely through a U.S. national security lens because it is a global issue, and the risks are varied and extensive.[42] Likely climate-change–exacerbated extreme weather events were ranked by the World Economic Forum as the second and first risks over the next two and ten years, respectively. Major changes to Earth systems driven by global warming are also considered the number three risk in the next ten years.

While the United States has faced the largest overall economic losses from climate-related disasters, the most severe impacts disproportionately affect the most vulnerable populations.[43] There is evidence that six of nine tipping points have already been crossed.[44] Much of this data is over two years old, so these estimates may be underestimating the speed and severity of the change.

Climate Change Impacts on U.S. National Security

In 2021, the U.S. Department of Defense released a Climate Risk Analysis, highlighting that climate change poses systemic risks to U.S. national security, defense infrastructure, and force readiness. Similar concerns have been echoed by NATO, the UN Security Council, and governments across Europe and Asia. Climate change is no longer a distant threat; it is happening now, with its impacts already evident in conflict zones, refugee emergencies, and domestic disaster response efforts. At the NATO 2021 Summit in Brussels, allies agreed to prioritize climate change, referring to it as "a crisis and threat-multiplier" in their 2022 Strategic Concept.[45] In this report, NATO stated:

> Climate change is a defining challenge of our time, with a profound impact on Allied security. It is a crisis and threat multiplier. It can exacerbate conflict, fragility, and geopolitical competition. Increasing temperatures cause rising sea levels, wildfires, and more frequent and extreme weather events, disrupting our societies, undermining our security, and threatening the lives and livelihoods of our citizens. Climate change also affects the way our armed forces operate. Our infrastructure, assets, and bases are vulnerable to its effects. Our forces need to operate in more extreme climate conditions, and our militaries are more frequently called upon to assist in disaster relief.

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The 2021 National Intelligence Council report on Climate Change and International Responses highlights the increasing challenges to U.S. national security through 2024, illustrating the risks and potential impacts caused by climate change.[46] This information is somewhat outdated, as we have already surpassed 1.5°C of warming above pre-industrial levels. The connection between national security and climate change also impacts multiple generations.

Climate Change as a National Security Threat

That climate change threatens national security gained attention in the mid-2000s after the 2007 CNA Military Advisory Board report called climate change a "threat multiplier."[47] It emphasized that climate stress does not directly cause conflict, but worsens existing social, economic, and political vulnerabilities.

Climate change threatens the stability of already vulnerable regions. Countries in the Sahel, for example, face intensified droughts, lower agricultural yields, and shrinking water supplies.[48] These environmental pressures increase competition among communities, raise interethnic tensions, and create opportunities for recruitment by extremist groups.[49] Similar patterns occur in parts of South Asia, where decreasing water access escalates tensions between nuclear-armed neighbors India and Pakistan.[50]

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The economic costs of climate-related disasters further weaken a country's resilience.[51] In 2023 alone, the United States faced at least $92.9 billion in weather and climate disasters, disrupting essential supply chains and diverting funds from other national priorities.[52]

The U.S. National Intelligence Estimate on Climate Change (2021) warned of increasing geopolitical tensions due to the global shift away from fossil fuels, competition over critical minerals, and the militarization of the Arctic.[53] Climate change is, therefore, not just a background factor, but a catalyst for strategic competition.

It is imperative to analyze climate change as a national security threat within the existing national security strategy development process. It can then be considered along with other security threats in a whole-of-government analysis.[54]

Climate Change and Military Readiness

Military readiness, or the ability of armed forces to effectively perform their assigned missions, is directly impacted by climate change. As environmental conditions become more unpredictable and severe, military infrastructure, personnel, and operations face increasing strain.

U.S. military bases serve as a clear example. Coastal installations like Naval Station Norfolk, the world's largest naval base, face frequent flooding and rising sea levels, threatening not only facilities but also deployment capabilities.[55] A 2019 Pentagon report[56] found that over fifty percent of U.S. military bases, including operational bases abroad, are at serious risk from flooding, extreme temperatures, wind, drought, and wildfire.[57]

In training environments, extreme heat limits exercises and endangers troops. At Fort Irwin, California, temperatures can exceed 110° F, creating unsafe conditions for prolonged outdoor operations.[58] These problems are also seen internationally.[59] In Australia,[60] record-setting bushfires have damaged bases and disrupted exercises, while in Europe,[61] melting permafrost[62] destabilize infrastructure in Arctic military zones.

Climate change also presents new operational challenges for militaries.[63] Humanitarian assistance and disaster relief (HADR) missions have become more frequent and extensive. After Typhoon Haiyan in the Philippines in 2013, the U.S. military deployed aircraft carriers and thousands of personnel.[64] Although these missions are vital, they divert resources from primary defense objectives and highlight the need for climate preparedness.

Furthermore, logistical networks are at risk from climate change. Rising sea levels and severe storms damage key ports, airfields, and supply routes. In conflict zones, climate-related disruptions to local food and water systems can jeopardize operational effectiveness and troop support.

Recognizing these risks, several militaries have begun to integrate climate resilience into their strategic planning. The U.S. Department of Defense developed the Climate Adaptation Plan to enhance installation resilience, promote low-carbon operations, and reinforce supply chain robustness.[65] NATO has established a Climate and Security Centre of Excellence to address the impacts of climate change on defense policy.[66] However, significant gaps still exist in forecasting, resource planning, and interagency coordination.[67] Military planners need to incorporate long-term climate projections into basing decisions, procurement, and force posture.[68]

Resource Scarcity, Conflict, and Governance

One of the clearest ways climate change affects national security is by increasing competition for vital resources—water, food, and arable land. As these resources become scarcer due to changing climate patterns, societies under stress are more prone to conflict, insurgency, and government collapse.[69]

Water scarcity is a major source of tension. Currently, over two billion people live in water-stressed areas, and climate change is expected to worsen this situation.[70] Decreasing freshwater supplies can lead to domestic conflicts and heighten international tensions, especially where rival nations share transboundary rivers. The Nile River Basin,[71] used by Egypt, Sudan, and Ethiopia, has long been a source of conflict, with the construction of the Grand Ethiopian Renaissance Dam (GERD)[72] raising concerns about the water supply in downstream countries.

Similarly, in the Middle East, the Tigris and Euphrates rivers have long been sources of conflict among Turkey, Syria, and Iraq.[73] Changes in precipitation caused by climate change, along with rising water demand and dam construction, have reduced flow and water quality, leading to agricultural failure and displacement of rural populations—factors that can incite radicalization and unrest.

Food insecurity persists. In the Horn of Africa, prolonged droughts have destroyed crops and livestock, resulting in widespread hunger and economic hardship.[74] These conditions have created recruitment opportunities for extremist groups like al-Shabaab, which exploit local grievances to grow their influence.[75]

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Climate change also weakens governance by overloading public institutions that are often ill-equipped for environmental crises.[76] In fragile states, climate-related shocks can reduce trust in government, expose corruption, and restrict the government's ability to provide basic services. When institutional capacity is limited, local conflicts over land and resources can quickly escalate and spill over borders, affecting regional stability.

Rivalry over resources could lead to interstate conflict. India and China, for example, have long argued over their Himalayan border, which also serves as a vital water source for both nations.[77] Melting glaciers, shifting monsoon patterns, and decreased snowpack generate strategic uncertainty about water availability—adding new complexities to already sensitive geopolitical issues. Addressing climate-driven resource insecurity requires coordinated efforts that extend beyond security measures. It

includes investing in development, diplomacy, environmental sustainability, and governance.[78]

Climate-Induced Migration and Border Pressures

Climate-induced migration[79] is an increasing concern for national security agencies worldwide.[80] As climate effects make certain areas less livable due to extreme heat, rising sea levels, or ongoing droughts, millions may be forced to relocate, putting pressure on political systems, infrastructure, and social cohesion.

Unmanaged, migration can strain governments and pose security challenges.

According to the World Bank, climate change could displace over 200 million people worldwide by 2050 if urgent action is not taken.[81] The most vulnerable regions include Sub-Saharan Africa, South Asia, and Latin America—areas where internal migration might lead to urban overcrowding, unemployment, and heightened political instability.

In the United States, rising sea levels threaten coastal communities, especially in low-lying states like Florida and Louisiana.[82] Recurrent hurricanes have already displaced thousands, with "climate refugees" seeking permanent inland resettlement. In Alaska, melting permafrost is forcing the relocation of entire Indigenous villages—creating challenges for federal and state coordination.[83]

International migration connected to climate change is even more destabilizing. The 2015 European migration crisis,[84] although mainly caused by conflict in Syria and other Middle Eastern countries, was also indirectly influenced by long-term droughts that led to food insecurity and rural displacement in Syria. The resulting surge of refugees into Europe increased political polarization, boosted far-right movements, and altered the continent's internal and external policies.[85]

Migration flows often connect with smuggling, trafficking, and other transnational crimes, making response strategies more complex.[86] Meanwhile, public opinion in receiving countries may turn hostile, raising the risk of domestic unrest and xenophobia. Unmanaged, migration can strain governments and pose security challenges. Policymakers need to focus on proactive adaptation and relocation strategies, invest in resilient infrastructure, and support international frameworks for handling climate displacement.[87] Legal frameworks also require modernization.[88] Under current international law, the term "refugee" does not include those displaced by environmental factors, leaving climate migrants in legal limbo.[89]

Geopolitical Implications of a Changing Climate

Climate change is transforming the geopolitical landscape in significant and sometimes unexpected ways.[90] As natural resources shift, new trade routes develop, and environmental pressures change power dynamics, nations must adapt their strategic postures accordingly.[91] Nowhere is this clearer than in the Arctic.[92] Climate change is quickly transforming the region, melting sea ice and opening previously inaccessible maritime routes. The Northern Sea Route, for example, has become more navigable, offering a shorter path between Europe and Asia. This change has significant implications for global trade, energy exploration, and military presence.

Russia, the largest Arctic country, has significantly expanded its military presence in the region by reopening Cold War-era bases and deploying icebreakers, submarines, and long-range bombers.[93] China, although not an Arctic country, has declared itself a "near-Arctic state" and is investing heavily in Arctic shipping and research.[94] These actions have raised concerns

among NATO members, leading to increased surveillance and deployments by Canada, the U.S., and Nordic countries.

As countries move away from fossil fuels, traditional petrostates might face economic decline and instability.[95] This is especially concerning in regions like the Middle East and Central Asia, where governments depend heavily on oil revenues to fund public services and maintain political control. An unorganized transition could create new fault lines and conflict zones.

At the same time, climate diplomacy has,[96] until recently,[97] been emerging as a new arena for international influence. Nations leading in green technology and climate finance (such as the EU) can exert soft power through environmental leadership. Conversely, countries perceived as climate laggards may face diplomatic isolation or trade penalties.

For national security strategists, these trends call for a reassessment of priorities.[98] Intelligence agencies need to monitor environmental factors alongside traditional indicators. Defense planners must anticipate how changing geography and resource distribution will influence alliances, military logistics, and economic security.[99]

These are highlights of impacts that affect U.S. National Security, directly, indirectly, or through a combination.

Threat multiplier[100]

There is probably no aspect of national security that climate change does not amplify. Climate change is pervasive and affects nearly everything on Earth, including national security.

Renders military installations and infrastructure vulnerable

The National Security Council has identified more than thirty U.S. military installations at risk from rising sea levels.[101] A 2019 Pentagon Report found that more than fifty percent of military bases, including operational bases abroad, are at severe risk from flooding, extreme temperatures, wind, drought, and wildfire.[102]

Disrupts national103 and military equipment/ vehicle (Part 1104 and Part 2105) initiatives

This includes such as electric vehicles. According to the latest data from the Environmental Protection Agency, in 2022, transportation was the largest source, twenty-eight percent, of emissions in the U.S.

Conversely, countries perceived as climate laggards may face diplomatic isolation or trade penalties.

Disrupts infrastructure and military operations

Detecting submarines may be more difficult due to changes in seawater.[106] Submarine detection relies heavily on acoustic signals, which are affected by the temperature, pressure, and salinity of seawater. As climate change warms the oceans and alters their structure, these changes interfere with sonar performance, which is a key tool in naval surveillance and warfare. Increases in ocean acidification and sea surface temperature changes may lead to maritime vessels needing more frequent maintenance.[107] Increasing heat could also negatively affect land and air operations, while sea level rise in low-lying coastal areas may impact space operations.[108] Infrastructure such as roads,[109] bridges, airports and runways, and rail lines[110] are impacted by high temperatures, mainly due to stress and buckling from expansion, as well as melting and softening. Resilience and civil preparedness operations[111] involve preparing for and responding to extreme weather and climate changes. This increasingly requires military-civilian partnerships, as neither side typically has all the necessary resources. While strengthening resilience is primarily a national responsibility, it

also enhances NATO's strength.[112] The scarcity of water and the rise in dust storms further threaten operational capabilities.[113]

Exacerbates existing conflicts

Like other aspects of national security, climate change acts as a threat multiplier, heightening geopolitical tensions as countries pursue and defend their interests, along with societal, economic, and environmental pressures that can worsen or trigger conflicts.[114] These pressures can include competition for scarce resources, water shortages, increased migration and displacement, environmental harm, disrupted livelihoods, social and political unrest, and ripple effects across local, regional, or national boundaries due to one or more of these factors.[115]

The Arctic is affected more and warming faster than anywhere else on Earth.

Geopolitics create new challenges

This is especially true in the Arctic, as previously cited.[81] The Arctic is affected more and warming faster than anywhere else on Earth. As the Northwest Passage becomes more ice-free, competition for access, transit, and resources increases. This growing activity in the Arctic is shown by the establishment of the Army's 11th Airborne Division in Alaska and the increasing presence of the U.S. Navy.[116]

Refugees and migration

The U.S. currently lacks a legal protection system to offer a permanent safe haven for those displaced by climate change. Migration has increased substantially since 2000, reaching a record high of 2.3 million crossing the southern border, many of whom are climate refugees.[117]

Increases the risk of disease outbreaks

Climate change threatens public health by causing more cardiovascular deaths and respiratory illnesses due to heat waves, altering infectious disease transmission, boosting pathogens and vectors, and leading to malnutrition from crop failures.[118] Recent outbreaks of several emerging infectious diseases have caused significant death and illness, and the frequency of these outbreaks is expected to rise because of pathogen, environmental, and population factors influenced by climate change.[119]

Food and water insecurity

Food and water insecurity is another aspect of climate change that acts as a threat multiplier. Climate change impacts global, regional, and local food security by disrupting food availability, reducing access to food, complicating utilization, and leading to increasingly damaging outcomes from 2050 to 2100, driven by higher global warming scenarios.[120] Risks extend beyond agricultural production to other parts of the global food system, including processing, storage, transportation, and consumption. Similarly, increased water scarcity, altered precipitation patterns, and extreme weather events can disrupt water availability, quality, and infrastructure.

Policy and Strategic Recommendations

Former Secretary of Defense Austin wrote, "climate change fundamentally alters the conditions that shape military operations at home and around the world," and the Defense Department must "both understand and adapt to the ways in which extreme weather and climate change affect our readiness and capabilities."[121] The U.S. Department of Defense, Department of State,[122] and all other federal agencies[123] have plans to address climate change within the context of national security and beyond. It's essentially a whole-of-government approach, as well as a whole-of-society approach.[124] The U.S.

has had a Framework for Climate Resilience and Security.[125]

Now, the current U.S. Administration is not engaging in climate science, as well as dismantling capabilities and programs. Further, climate change deniers exercise powerful influence across the government. Thus, many of these recommendations are currently moot points.[126]

Regardless, effectively addressing the intersection of climate change and national security requires comprehensive, forward-looking policies that cross traditional boundaries between environmental management, defense strategy, and international relations. While climate change cannot be solved solely through security measures, national security institutions play a crucial role in building climate resilience and preparing for emerging risks.

Integrate Climate Risk into National Security Strategy

Climate risks should be integrated into national security doctrines, defense white papers, and intelligence assessments. Governments should regularly evaluate climate risks related to military installations, supply chains, and operational environments. These evaluations should guide procurement decisions, force posture, and strategic planning at the highest levels.

Climate-Resilient Infrastructure Investments

Military and civilian infrastructure must be made resilient against rising sea levels, flooding, wildfires, and heatwaves. This includes strengthening coastal bases, upgrading energy systems with microgrids and renewable sources, and investing in sustainable building materials and practices. The U.S. and allied nations should implement climate adaptation plans for all new and existing defense infrastructure.

Strengthen Interagency and International Collaboration

Climate security challenges are inherently cross-border. Tackling them requires coordination among defense, intelligence, diplomatic, environmental, and development agencies. Internationally, mechanisms such as the NATO Climate and Security Centre of Excellence, the UN Security Council's climate security agenda, and regional frameworks (e.g., the African Union's climate and conflict initiatives) should be strengthened and supported.

Expand Humanitarian and Disaster Relief Capabilities

As climate-related disasters become more frequent and severe, militaries and civilian emergency services must be equipped and trained for swift deployment. This involves stockpiling supplies, improving logistics networks, and building cooperative response frameworks with international partners. Civil-military cooperation is essential for a quick and effective disaster response.

Governments should establish legal and policy frameworks to manage climate-induced migration.

Address Climate-Driven Migration Proactively

Governments should establish legal and policy frameworks to manage climate-induced migration. This involves creating relocation pathways, investing in adaptation efforts for vulnerable communities, and updating asylum policies to account for environmental displacement. Regional collaboration is crucial to prevent unilateral border closures or humanitarian crises.

Foster Climate Intelligence and Early Warning Systems

National security agencies should invest in climate-aware intelligence gathering and

risk assessment. Satellite monitoring, AI-powered predictive analytics, and scenario planning can enhance situational awareness and support preemptive measures. Early warning systems should be shared with allies and international organizations.

Lead in Green Defense and Decarbonization

Defense institutions are significant energy users and primary sources of national emissions. Shifting to cleaner energy sources—such as hybrid military vehicles, biofuels, and solar energy—can lower operational vulnerabilities and demonstrate leadership on climate action. Countries like the UK and Germany have already committed to green defense initiatives, and others should follow.

Promote Climate-Sensitive Development in Fragile States

To prevent climate-related instability, development assistance should focus on building resilience in vulnerable countries. This involves investing in water management, sustainable agriculture, conflict resolution mechanisms, and community-based adaptation. These efforts help lower the risk of state failure and reduce the need for military intervention.

U.S. Science Leadership

Perhaps more than anything else, we must continue to be global leaders in science. As the President of the National Academies recently stated, there is a pessimistic scenario developing, a worst-case situation where U.S. science falls behind other nations.[127] Science is the very foundation of our national security, defense, understanding, and addressing climate change. Without it, we are adrift, posing increased risks to national security and climate efforts. It has recently been reported that seventy-five percent of U.S. scientists are looking for jobs outside of the U.S.[128]

Conclusion

Climate change is no longer just a peripheral environmental concern – it has become a critical national security issue with significant implications for global stability, sovereignty of states, and military readiness. As temperatures rise, sea levels climb, and extreme weather events become more frequent, these phenomena serve as threat multipliers, exacerbating vulnerabilities in fragile nations, accelerating mass migrations, increasing the risk of conflicts over resources, military infrastructure, strategic resources, human displacement, and domestic and global security.[129]

This calls for ethical and moral leadership in conjunction with a comprehensive, proactive, cross-sectoral, inter-generational, whole-of-government, and whole-of-society strategy that integrates climate resilience into national security planning, emphasizing the importance of adaptable defense strategies, diplomacy, regional collaboration, and climate aware intelligence at local, national, and global levels. ***IAJ***

Notes

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