Rising Temperatures, Rising Tensions: Assessing the National Security

Risks of Climate Change

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**ABSTRACT**

*Climate change is a multifaceted challenge with far-reaching implications for human, state, and global security. This essay identifies some of these threats, including the increased vulnerability to natural disasters, food and water insecurity, the displacement of people, and other challenges. Additionally, it examines challenges to national and global security. By comparing the United States and India, the essay aims to highlight varying forms of security and their existing capabilities and responses to climate challenges. Through this comprehensive exploration, this paper sheds light on the urgent need for concerted efforts at national and global levels to address how rising temperatures will lead to rising tensions due to climate change.*

**CLIMATE CHANGE AND SECURITY CHALLENGES**

Climate change poses significant security challenges due to its wide-ranging impacts on various dimensions of human and state security. These challenges are not only present today but are projected to intensify in the future if effective action is not taken to mitigate them and adapt. The impacts of climate change are expected to become more severe and widespread, affecting diverse aspects of human security across the globe. If drastic changes are not made, the consequences of climate change will cause global issues that will play an unquestionable role in geopolitics as it affects environmental security, economic security, and health security (Solomon 2011, 496).

This crisis will call for a global reckoning or “global consciousness” if we are to strive for a secure future (Mason 2003, 3). The Annual Threat Assessment released by the Office of the Director of National Intelligence (ODNI) stated,

We assess that climate change will increasingly exacerbate risks to U.S. national security interests as the physical impacts increase and geopolitical tensions mount about how to respond to the challenge…The combination of environmental degradation, rising temperatures, changing precipitation patterns, and other climate effects is likely to lead to an array of human challenges such as food and water insecurity and threats to human health. (2022, 21)

The ODNI has continued to acknowledge the significant role that climate change is likely to play in global security (“Office of the Director” 2023, 22). This recognition underscores the growing consensus among intelligence agencies and security experts that climate change is a major threat with far-reaching implications.

**Natural Disasters and Economic Security**

Natural disasters intensified by climate change have increasingly been recognized as a national security issue by governments and security experts around the world (Vinod 2017, 4). The link between climate change and the frequency and severity of natural disasters is well-established, and the impacts of these disasters can have significant implications for a nation's security. The intensification of climate change-related factors like increased water vapor, higher temperatures, warmer oceans, and rising sea levels pose significant threats to human security. These factors contribute to the development of more powerful storms, along with other extreme weather events, heightening the risk of endangering human lives, displacing populations, and causing immense damage to communities. (“How Can Climate Change” 2023). Moreover, these events could result in extensive damage to critical infrastructure which ultimately has a direct impact on a nation’s economic security.

**Food Security and Water Scarcity**

 The U.S. Department of Agriculture released a comprehensive assessment of climate change's impact on the food system. It highlighted that climate change has already significantly affected agriculture and warned that these impacts are expected to worsen. It identified key consequences, including reduced crop yields, heightened risks of drought and flooding, the proliferation of pests and diseases, changes in livestock production, and increased food insecurity (“Climate Change” 2015, 1-3). Additionally, it emphasizes that low-income and minority communities will likely bear a disproportionate burden due to their reliance on agriculture and vulnerability to climate change (11). These are universal issues that require a global response.

 Climate change knows no borders and its impact on the food system transcends national boundaries. One of the most significant impacts of climate change is water scarcity. Water scarcity is already a major problem in many parts of the world, and it is only going to get worse as climate change continues given its environmental, economic, and health security impact. (Solomon 2011, 496). The U.S. Agency for International Development (USAID) website states,

Water fuels every aspect of life. It is essential for basic health and hygiene, and it drives society’s most essential industries: agriculture, energy and transportation. Without water security there can be no national security. In fact, water is essential to the stability of every country on the planet. Understanding water security means looking beyond immediate supply to political, economic, social and environmental impacts. (“Sustainable Water Partnerships” 2021)

Water has been referred to as the new oil. This notion reflects the increasing recognition of water's importance, scarcity, and potential for conflicts in the modern world. Like oil, water is a critical resource that shapes economic, social, and geopolitical dynamics. Water scarcity and food security are incontestably intertwined. Water plays a fundamental role in agricultural production, making it indispensable for ensuring human security at both the national and global levels.

**Global Migration & Displacement**

A variety of push and pull factors can result in migration, including the effects of climate change (Van Hear et al. 2018, 931). Among other factors, the increased frequency of natural disasters, food insecurity, and water scarcity, can fuel social and political unrest, contributing to conflicts and forced migration. This is a complex issue that could lead to varying geopolitical tensions. As larger numbers of people are displaced, it can strain the capacity of host countries to absorb and integrate migrants. This can create tensions and challenges, such as the unequal distribution of resources, strains on public services, and social polarization. George Friedman, a geopolitical forecaster and strategist on international affairs, argued that countries will need to develop policies to deal with the influx of migrants (Friedman 2009, 133-135). Friedman's predictions about migration due to climate change have been echoed by other experts. The United Nations (UN) has warned that climate change could displace up to 200 million people by 2050. This again is a threat to economic security, as the World Bank has estimated that climate change could cost the global economy $20 trillion by 2050 (The World Bank 2021).

**COMPARATIVE ANALYSIS: UNITED STATES AND INDIA**

**United States**

Second only to China, the U.S. is one of the largest contributors to climate change. It is responsible for 15% of the world’s total carbon dioxide (CO2) emissions (EPA 2023). The rapid deterioration of the environment has created new security challenges that must be addressed with both short and long-term goals not only by the U.S., but globally. Nations must not simply respond, but rather be an active participants in securing the future. CIA Director William Burns referred to climate change as a “transformational moment” that will have a profound impact on global security (Burns 2022, 3). While the U.S. has historically had a strong focus on military power, Burns highlighted how it must adapt its approach to security to consider the growing global security challenges we currently face.

On January 27, 2021, President Biden signed an executive order on tackling the climate crisis at home and abroad. The order directed federal agencies to take a number of steps to reduce greenhouse gas emissions and promote clean energy (“The White House” 2021). The Biden Administration, as well as the leaders of the Intelligence Community (IC), have had a strong public posture on climate change and its security risks. Both Biden’s National Security Strategy (NSS) and the Annual Threat Assessment released by the ODNI discuss cooperating with international partners on shared challenges. The NSS specifically states that the “climate crisis is the existential challenge of our time” (2022, 27). Despite China being considered the largest threat to the United States, the administration has been willing to work with China to tackle the climate crisis. Both countries have reaffirmed their commitment to the Paris Agreement and are working together to reduce greenhouse gas emissions and mitigate the impacts of climate change (“U.S.-China Joint Glasgow Declaration” 2021).

**India**

India is ranked as the third highest contributor to climate change and is responsible for 9% of the world’s total CO2 emissions (EPA 2023). Like many other nations, India has already experienced extreme temperatures as a result of climate change. In addition to rising temperatures, it has experienced more extreme weather events, rising sea levels, changes in agricultural patterns, and ocean warming (Subramanian et al. 2023). Various actions need to be taken in order for India to achieve its climate change commitments, such as transitioning to renewable energy, electrifying transportation, and decarbonizing industries through green hydrogen (Ahluwalia and Patel 2023, 3-4). India has made an ambitious commitment to reach a net zero target by 2070. According to its Nationally Determined Contribution (NDC), India aims to

…reduce the emissions intensity of its GDP by 45% (compared with 2005 levels), achieve 50% total installed electric power capacity from non-fossil fuel energy sources and focus on building momentum for its LiFE Movement﻿ (Lifestyle for Environment). This citizen-centric programme [sic] to combat climate change promotes a heathy, low consumption and sustainable lifestyle using a circular economy approach. (Choudhary 2022)

The development of climate change control policies has helped India prioritize necessary actions and facilitate collective action amongst it and its allies. International agreements and organizations have played a significant role in global efforts to combat climate change. This highlights that both the U.S. and India recognize that climate change is not a localized phenomenon, and that well-planned, collective actions are necessary for mitigating its effects and ensuring a sustainable future.

**CLIMATE DENIERS AND SKEPTICS**

The Pew Research Center conducted a survey that revealed that Americans' attitudes about climate change vary by generation and party (“Key Findings” 2021). Younger generations are more likely than older generations to believe that climate change is happening, that it is caused by human activity, and are more likely to support government action to address climate change. Republicans are less likely than Democrats to believe that climate change is happening and that it is caused by human activity. These findings have implications for climate change policy, as they suggest that it will be difficult to pass legislation to address climate change due to partisan differences in attitudes about climate change. (“Key Findings” 2021). However, since 2009, there has been a notable decline in climate skepticism. This shift reflects a changing landscape of awareness and understanding regarding the realities of climate change (Hornsey et al 2022). This change can be attributed to several factors. Firstly, the increasing body of scientific evidence and research has consistently reinforced the consensus on climate change. Over the years, numerous scientific studies, reports, and assessments from reputable organizations have provided compelling evidence of the causes and consequences of global warming.

**BIOSECURITY IN A CHANGING CLIMATE**

Climate change alters environmental conditions and can lead to various ecological disruptions, which can have cascading effects on the stability of ecosystems. These disruptions can result in the emergence of new diseases, the loss of natural predators that control disease-carrying species, and the introduction of invasive species that harm biodiversity and human health (Hulme 2017, 92). Additionally, climate change affects agricultural productivity and food security through extreme weather events like droughts and floods, damaging crops, reducing yields, and disrupting food production and distribution systems (Gullino et al. 2022). This can result not only in food shortages, but social unrest and conflicts over resources. Therefore, the biosecurity repercussions of climate change have direct implications on both human and state security.

**Perspective and Collaboration**

Climate change and global warming have become widely recognized terms in the U.S., capturing the attention of the average American. Regardless of personal beliefs, individuals across the country are familiar with these concepts, whether they perceive them as a global issue requiring urgent attention, dismiss them as fabricated, or hold views somewhere in between. The presence of these terms in public discourse reflects the widespread awareness of climate change, shaping conversations and perspectives on the topic. Contrarily, a recent Yale study showed that a significant portion of the population in India has limited knowledge or may be entirely unaware of the concept (Leiserowitz et al. 2022). As the study stated, “It is important to note…that lack of awareness of the issue does not mean that individuals have not observed changes in local weather and climate patterns.” Rather, that many people “may have observed changes…without understanding that these changes are related to the broader issue of global climate change” (Leiserowitz et al. 2022).

Despite varying public opinions in the U.S. and India, both governments have taken proactive steps to address climate change together, as well as respectively. Both countries are a part of the Paris Agreement and have committed to investing in climate research and development. Moreover, in 2021, a new high-level coalition was established through the U.S.-India Climate and Clean Energy Agenda 2030 Partnership, which “envisages bilateral cooperation on strong actions in the current decade to meet the goals of the Paris Agreement” (United States Department of State 2021).

**Shared Intelligence and Joint Cooperation**

Both the U.S. and India have had a strong relationship in combating climate change. This is evident through not only the U.S.-India Climate and Clean Energy Partnership, but through various other bilateral commitments made in the past. These include, but are not limited to, efforts in the International Solar Alliance (ISA), Clean Energy Ministerial (CEM), U.S.-India Partnership to Advance Clean Energy (PACE), accelerating renewable energy deployment, U.S.-India Clean Energy Finance Task Force, and various other initiatives (“Fact Sheet” 2016). Ultimately, the two countries have made significant strides together to advance this strategic partnership and cooperate on environmental stewardship.

**ECONOMIC EFFORTS**

The cost of climate change on the global economy is difficult to quantify. In March of this year, the National Oceanic and Atmospheric Administration (NOAA) reported that the “cost of climate and weather disasters in the U.S. last year totaled more than $165 billion—the third most costly year on record” (“The Importance of Measuring” 2023). These costs are projected to rise as the severity of climate change increases. In 2020 alone, 13 million people were affected by Cyclone Amphan and caused over $13 million in damage in India (Picciariello 2021, 8).

**POLICY AND ACTION MOVING FORWARD**

The U.S. has taken significant steps to address the national security consequences of climate change. While this is a crucial step in recognizing and acknowledging the national security implications of climate change, the U.S. needs to continue to translate these words into concrete actions to effectively address this multifaceted challenge. Implementation of robust policies, investments, and international cooperation are necessary to mitigate the security risks associated with climate change. The U.S. should prioritize international collaboration and partnerships to address both the health and state security implications of climate change. This includes sharing best practices, knowledge, and resources with other nations, particularly those most vulnerable to climate-related health risks. By working together, states can enhance their collective capacity to monitor and respond to climate-related health threats, exchange data and information, and coordinate emergency response efforts. International collaboration can also foster the development of innovative solutions and technologies to address climate-related health challenges on a global scale.

In addition to prioritizing international collaboration, the U.S. would benefit from building public awareness and focusing on education. As studies have shown, many people may not fully understand the potential threats posed by climate change to public health and the broader implications for national security. By conducting widespread public awareness campaigns, utilizing various media platforms, and engaging with communities, the U.S. can educate citizens about the health risks associated with climate change. This awareness and education can play a pivotal role in equipping individuals with the knowledge and skills needed to address current and future health security challenges.

**CONCLUSION**

Climate change is a multifaceted challenge to human, state, and global security, which requires urgent and concerted efforts at national and global levels. The impacts of climate change on natural disasters, food security, and displacement of people highlight the need for proactive measures to mitigate and adapt to these challenges. The biosecurity implications further underscore the interconnectedness of human and state security, highlighting that global cooperation must play a crucial role in addressing such a complex issue. Moving forward, it is crucial for the U.S. and other nations to not only recognize the national security implications of climate change but also translate this recognition into concrete actions to ensure a sustainable future for all. By working together, we can foster a resilient and sustainable future.

References

Ahluwalia, Montek Singh, and Utkarsh Patel. “Managing Climate Change: A Strategy for India.” Brookings, February 21, 2023. https://www.brookings.edu/research/managing-climate-change-a-strategy-for-india/.

Burns, William. "The Role of Intelligence at a Transformational Moment." April 14, 2022, Georgia Tech. https://www.cia.gov/static/21993f0aa96849f2dbdfafcc2d6598e6/Director-Burns-Speech-and-QA-Georgia-Tech.pdf.

Choudhary, Kamya. “How Is India Tackling Climate Change?” How is India tackling climate change? November 7, 2022. https://www.lse.ac.uk/granthaminstitute/explainers/how-is-india-tackling-climate-change/.

“Climate Change, Global Food Security, and the U.S. Food System.” USDA, December 2015. https://www.usda.gov/sites/default/files/documents/FullAssessment.pdf.

"Fact Sheet: United States and India – Moving Forward Together on Climate" The White House Archives. 2016. https://obamawhitehouse.archives.gov/the-press-office/2016/06/07/fact-sheet-united-states-and-india-%E2%80%93-moving-forward-together-climate.

Friedman, George. *The Next 100 Years: A Forecast for the 21st Century*. New York: Doubleday, 2009.

“Global Greenhouse Gas Emissions.” EPA, February 15, 2023. https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data.

Gullino, Maria Lodovica, Ramon Albajes, Ibrahim Al-Jboory, Francislene Angelotti, Subrata Chakraborty, Karen A. Garrett, Brett Phillip Hurley, Peter Juroszek, Ralf Lopian, Khaled Makkouk, Xubin Pan, Massimo Pugliese, and Tannecia Stephenson. 2022. "Climate Change and Pathways Used by Pests as Challenges to Plant Health in Agriculture and Forestry" Sustainability 14, no. 19: 12421. https://doi.org/10.3390/su141912421

Hornsey, Matthew J., Cassandra M. Chapman, and Jacquelyn E. Humphrey. 2022. "Climate skepticism decreases when the planet gets hotter and conservative support wanes." Global Environmental Change 74 (2022): 102492. ISSN 0959-3780. doi:10.1016/j.gloenvcha.2022.102492. https://www.sciencedirect.com/science/article/pii/S0959378022000309.

“How Can Climate Change Affect Natural Disasters?” How can climate change affect natural disasters? | U.S. Geological Survey. Accessed June 1, 2023. https://www.usgs.gov/faqs/how-can-climate-change-affect-natural-disasters#:~:text=With%20increasing%20global%20surface%20temperatures,more%20powerful%20storms%20to%20develop.

Hulme, Philip E. 2017. “Climate Change and Biological Invasions: Evidence, Expectations, and Response Options.” Biological Reviews of the Cambridge Philosophical Society 92 (3): 1297–1313. doi:10.1111/brv.12282.

"The Importance of Measuring the Fiscal and Economic Costs of Climate Change." The White House, March 14, 2023, www.whitehouse.gov/omb/briefing-room/2023/03/14/the-importance-of-measuring-the-fiscal-and-economic-costs-of-climate-change/.

Key Findings: How Americans' Attitudes About Climate Change Differ by Generation, Party and Other Factors." Pew Research Center, 26 May 2021, www.pewresearch.org/short-reads/2021/05/26/key-findings-how-americans-attitudes-about-climate-change-differ-by-generation-party-and-other-factors/.

Leiserowitz, Anthony, Edward Maibach, Connie Roser-Renouf, Seth Rosenthal, and Natasha Sarin. "Climate Change in the Indian Mind: Key Findings from a 2022 Survey of the Indian Public." Yale Program on Climate Change Communication, Yale University, 2022, climatecommunication.yale.edu/publications/climate-change-in-the-indian-mind-2022/.

Mason, Colin. 2003. *The 2030 Spike: Countdown to Global Catastrophe*. Sterling, VA: Routledge. https://search-ebscohost-com.ezproxy.bellevue.edu/login.aspx?direct=true&db=nlebk&AN=108795&site=eds-live.

“National Security Strategy.” The White House, October 2022. https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf.

Office of the Director of National Intelligence. "Annual Threat Assessment of the U.S. Intelligence Community." February 2022. https://www.odni.gov/files/ODNI/documents/assessments/ATA-2022-Unclassified-Report.pdf.

Office of the Director of National Intelligence. "Annual Threat Assessment of the U.S. Intelligence Community." February 2023. https://www.odni.gov/files/ODNI/documents/assessments/ATA-2023-Unclassified-Report.pdf.

Picciariello, Angela, Sarah Colenbrander, , Amir Bazaz, and Rathin Roy. “The Costs of Climate Change in India: A Rapid Scoping Study.” Overseas Development Institute, 2021, www.odi.org/sites/odi.org.uk/files/resourcedocuments/14269.pdf.

Solomon, Steven. *Water: The Epic Struggle for Wealth, Power, and Civilization*. New York: Harper Perennial, 2011.

Subramanian, Aishwarya, Aditya Nagarajan, Sruthi Vinod, Samarshi Chakraborty, Krishanasamy Sivagami, Thomas Theodore, Sri Sathyanarayanan, Perumal Tamizhdurai, and V. L. Mangesh. “Long-Term Impacts of Climate Change on Coastal and Transitional Eco-Systems in India: An Overview of Its Current Status, Future Projections, Solutions, and Policies.” RSC Advances, April 19, 2023. https://pubs.rsc.org/en/content/articlehtml/2023/ra/d2ra07448f.

United States Department of State. "U.S.-India Joint Statement on Launching the U.S.-India Climate and Clean Energy Agenda 2030 Partnership." U.S. Department of State, 17 Nov. 2021, www.state.gov/u-s-india-joint-statement-on-launching-the-u-s-india-climate-and-clean-energy-agenda-2030-partnership/.

“U.S.-China Joint Glasgow Declaration on Enhancing Climate Action in the 2020s - United States Department of State.” U.S. Department of State, November 12, 2021. https://www.state.gov/u-s-china-joint-glasgow-declaration-on-enhancing-climate-action-in-the-2020s/#:~:text=The%20United%20States%20and%20China%20intend%20to%20convene%20a%20meeting,reduce%20methane%20from%20the%20agricultural.

Van Hear, Nicholas, Oliver Bakewell, and Katy Long. 2018. “Push-Pull plus: Reconsidering the Drivers of Migration.” Journal of Ethnic & Migration Studies 44 (6): 927–44. doi:10.1080/1369183X.2017.1384135.

Vinod, Thomas. *Climate Change and Natural Disasters*. London and New York: Routledge, 2017.

"The White House. 'Executive Order on Tackling the Climate Crisis at Home and Abroad.' January 27, 2021. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/."

The World Bank. “Climate Change Could Force 216 Million People to Migrate Within Their Own Countries by 2050.” Groundswell Report, September 13, 2021. https://www.worldbank.org/en/news/press-release/2021/09/13/climate-change-could-force-216-million-people-to-migrate-within-their-own-countries-by-2050.