Climate Change - Terrorism Nexus? A Preliminary Review/ Analysis of the Literature

by Jeremiah O. Asaka

Abstract

Climate change and terrorism are two key global security concerns of our time. Despite that fact, the two continue to predominantly be analyzed separately by most security studies scholars. However, interest on the interplay between these two concerns has grown considerably particularly over the past two decades. The growth in interest is attributable to the close to two decades of scholarship on the climate-security nexus. That scholarship establishes climate change as a threat multiplier, which worsens existing problems and aggravates vulnerabilities. This text presents findings of a preliminary literature review/analysis of 112 documents published between 2000 and 2020. The literature review/analysis was guided by the following three broad questions. What does the literature say about the link and/or lack thereof between climate change and terrorism? What is the publication trend for literature that explore the relationship between climate change and terrorism? What insight(s) for future policy and/or research? The text identifies two patterns of interaction with regards to the interplay between climate change and terrorism. On one hand, a simple one-way indirect relationship wherein climate change aggravates existing social vulnerability, which is a known enabler/driver of terrorism. On the other hand, a complex relationship wherein climate change contributes to terrorism and vice versa through a self-reinforcing process characterized by feedback loops.

Keywords: Climate change, terrorism, climate security, global security, human security, environmental security

Introduction

Since the end of Cold War, security thinking has evolved considerably. Security no longer simply revolves around a given state's concern(s) with imagined/real external aggression threats from either another state's military (or joint military force involving an alliance of states) or non-state actor(s) particularly an individual terrorist (also known as lone wolf) and/or amorphous terrorist organization (for example, Al Qaeda, Islamic State of Iraq and Syria [ISIS], Al Shabaab, and Boko Haram). Today, the notion of security encompasses issues that were previously considered to be outside its purview such as climate change, pandemics (for example, coronavirus disease of 2019 [COVID-19], Ebola, Severe Acute Respiratory Syndrome [SARS], and Middle East Respiratory Syndrome [MERS]), disasters (for example, hurricanes, wildfires, droughts, and floods) and a host of other concerns which are usually framed under the *human security* banner, including food security, economic security, personal security, community security, political security, health security, and environmental security, among others.[1] Indeed, today even proponents of state-centered security (national security) are increasingly framing issues such as climate change and infectious diseases in security terms.[2]

Concern over security implications of climate change dates back several decades and continues to grow both among security studies scholars and policy makers.[3] The broad and growing literature on a climate-security nexus is predominantly focused on understanding the relationship between climate change and security in all its facets.[4] Therefore, the literature can be grouped into several not-quite-comprehensive and not-so-neatly defined categories as follows.

- Climate and conflict/peace literature, which initially primarily looked at climate change's threat multiplier effect on existing conflicts but has since evolved to also focus on the conflict/peace potential of climate change adaptation and mitigation.[5]
- Climate change and natural disasters literature explores what climate change's effect on the intensity and frequency of weather-related disasters such as hurricanes, floods, tropical cyclones, droughts, and

wildfires among others means for security of individuals, communities, cities, and countries across different geographical contexts.[6]

- Climate change and the resource nexus literature shows how climate variability and climate change acting, for example, on the water-energy-food nexus can exacerbate human insecurities in a variety of ways in various geographical contexts across the globe.[7]
- The literature on climate change and public health examines the influence of climate change on disease emergence, spread, and spatial distribution to understand what it means for global health security. This literature establishes that climate change contributes both to the emergence of new pandemics as well as the continued spatial spread of diseases across various geographical contexts.[8]
- A final category involves literature that explores the interplay between climate change and migration. This literature explains how climate change acting on existing social vulnerabilities predisposes certain sections of human population in places like Central America and Mexico among others to migrate as a coping strategy—usually with far-reaching implications for their own human security as well as the homeland security of the migrant-receiving countries such as the United States.[9]

These are just a few examples of ways that extant literature frames and/or explores the climate-security nexus.

A relatively recent and growing area of interest—for both scholars and policy makers—within the climate-security nexus scholarship concerns the relationship and/or lack thereof between climate change and terrorism.[10] An increasing number of security studies scholars—especially scholars of national/homeland security—are concerned with understanding the interplay between climate change and terrorism.[11] It is this specific aspect of the climate-security nexus that this Research Note concerns itself with. It documents findings of a preliminary literature review/analysis of the interplay between climate change and terrorism in various geo-political contexts. This literature review/analysis was guided by the following three broad questions. (i) What does the literature say about the link and/or lack thereof between climate change and terrorism? (ii) What is the publication trend for literature that explore the relationship between climate change and terrorism? (iii) What insight(s) can we derive for future policy and/or research?

This Research Note is divided into four sections. Following this introduction is a methods section, which discusses the methodological aspects of the text, including literature search, selection and review/analysis. This is then followed by a findings and discussion section organized around the three guiding questions (i, ii & iii). Finally, the Research Note ends with a conclusion section, which summarizes its key findings and makes recommendations for future policy and research.

Literature Review/Analysis

Literature search was purposely limited to the period between January 2000 and February 2020. It proceeded as follows. First, the author purposely selected eight reputable peer-reviewed journals with a focus on terrorism/security/intelligence (see Table 1 for a list of journals and summary of the number of articles that were selected for review/analysis from each journal). In selecting journals, the author was guided by whether or not a journal is peer-reviewed and/or has a security/terrorism/intelligence focus. This being a preliminary literature review/analysis, it is by no means exhaustive. Journals that otherwise meet the selection criteria but have not been included here should not in any way be construed as not meriting inclusion. The following search phrases were used to search for peer-reviewed articles within the selected journals: climate change, global warming, and climate security. Articles that mention at least one of these terms were selected for further review/analysis. A total of 92 peer-reviewed articles were selected for review/analysis at the end of this stage of the literature search process.

***Table 1**: A Summary of Peer-Reviewed Articles*

Name of Journal	Number of Articles
Perspectives on Terrorism	7
Journal of Terrorism Research	3
Studies in Conflict and Terrorism	12
Terrorism and Political Violence	11
Journal of Strategic Security	18
International Journal of Cyber Warfare and Terrorism	2
International Journal of Intelligence and CounterIntelligence	18
Intelligence and National Security	21
Total	92

Source: Author
Note: This table details the names of journals and the respective number of articles selected for review/analysis from each journal.

Second, a Google search was conducted using two key search phrases, namely climate security report and climate change and terrorism report. Additionally, government and think-tank reports on climate change and terrorism were also sought on websites of the following purposively selected think-tanks and United States (U.S.) government departments/programs: U.S. Global Change Research Program, U.S. Department of Defense (DOD), U.S. Department of State, U.S. Department of Homeland Security, the Center for Climate and Security, American Security Project, International Military Council on Climate and Security, and Adelphi. The choice of these entities was primarily informed by the centrality of climate change, security, and/or terrorism to their mission/work. As was the case with journals, this is not an exhaustive list. Any entity that is not included here should not be seen as not meriting inclusion. Instead, non-inclusion of such entities should be understood within the context of this text being a preliminary literature review/analysis. This stage of the literature search process resulted in the selection of 21 reports, which were subjected to a further in-text search procedure to identify and select only those that mention both climate change/global warming and terrorism (and its variance, namely terrorist and terror) for review/analysis.

The in-text search was conducted using the following search words/phrases: Climate change, Global warming, Climate security, Terrorism, Terrorist, and Terror. It proceeded as follows. For every report that mentioned climate change, global warming, and/or climate security following an initial in-text search, a corresponding in-text search for terrorism, terrorist, and/or terror was performed on the same. All the 21 documents were subjected to both an initial and corresponding in-text search process. But only documents that mentioned climate change, global warming, and/or climate security during initial in-text search and terrorism, terrorist, and/or terror during corresponding in-text search were selected for review/analysis. A total of 17 reports were selected for review/analysis (see Table 2).

***Table 2**: A Summary of Reports*

Report	Reviewed/Analyzed
2005 U.S. National Defense Strategy	N
2008 U.S. National Defense Strategy	Y
2010 U.S. Quadrennial Homeland Security Review	Y
2014 U.S. Quadrennial Defense Review	Y
2014 U.S. Quadrennial Homeland Security Review	Y
Country Reports on Terrorism 2016	Y
Country Reports on Terrorism 2017	N
Country Reports on Terrorism 2018	N
2018 U.S. National Defense Strategy	N
2019 Report on Effects of a Changing Climate to the Department of Defense	Y
A Climate Security Plan for America (2019)	Y
A Security Threat Assessment of Global Climate Change (2020)	Y
Insurgency, Terrorism and Organized Crime in a Warming Climate (2016)	Y
American Security Project's Climate Security Report (2012)	Y
First U.S. National Climate Assessment Report (2001)	Y
Second U.S. National Climate Assessment Report (2009)	Y
Third U.S. National Climate Assessment Report (2014)	Y
Fourth U.S. National Climate Assessment Report (2018)	Y
2010 U.S. Quadrennial Defense Review Report	Y
The Responsibility to Prepare and Prevent (2019)	Y
2020 World Climate Security Report	Y

Source: Author
Note: This table details the twenty-one reports that were initially selected for review/analysis and the seventeen that were actually reviewed/analyzed. The first column details all the twenty-one reports that were initially selected for review/analysis. The second column identifies the seventeen reports that were actually reviewed/analyzed. In the second column, Y indicates that a report was reviewed/analyzed and N indicates that a report was not reviewed/analyzed.

Finally, two books and one thesis were purposely selected for review because of their centrality to the topic at hand. In summary, this Research Note is based on a review/analysis of 112 documents. Table 3 provides a summary of the reviewed/analyzed documents by type and quantity.

***Table 3**: A Summary of Reviewed/Analyzed Documents by Type and Quantity*

Type of document	Quantity
Peer-reviewed articles	92
Reports	17
Theses	1
Books	2
Total	112

Source: Author
Note: This table details literature that was reviewed/analyzed by the author. Notes only contain in-text citations.

The literature review/analysis involved reading the selected documents, thematic/statistical analysis of the same, synthesis of the findings, and presentation of the synthesis in a concise and coherent narrative format.[12] Thematic analysis involved manual coding of the selected documents using qualitative codes, which emerged from an initial coding of one of the selected documents entitled *Insurgency, Terrorism, and Organized Crime: Analyzing the Links Between Climate Change and Non-State Armed Groups*.[13] This particular document was purposively selected for initial coding because of its specific focus on the nexus between terrorism and climate change, which is the primary focus of this text. The codes that emerged from the initial coding process

are climate change, global warming, security, and terrorism. During the second cycle of coding, these codes were subsequently organized into two broad themes: Climate change and security, and climate change and terrorism. Finally, the third cycle of coding involved thematic analysis of the rest of the documents using these codes. Statistical analysis involved generating a publication trend and frequency distribution. The specifics of this particular method are discussed further in the next section.

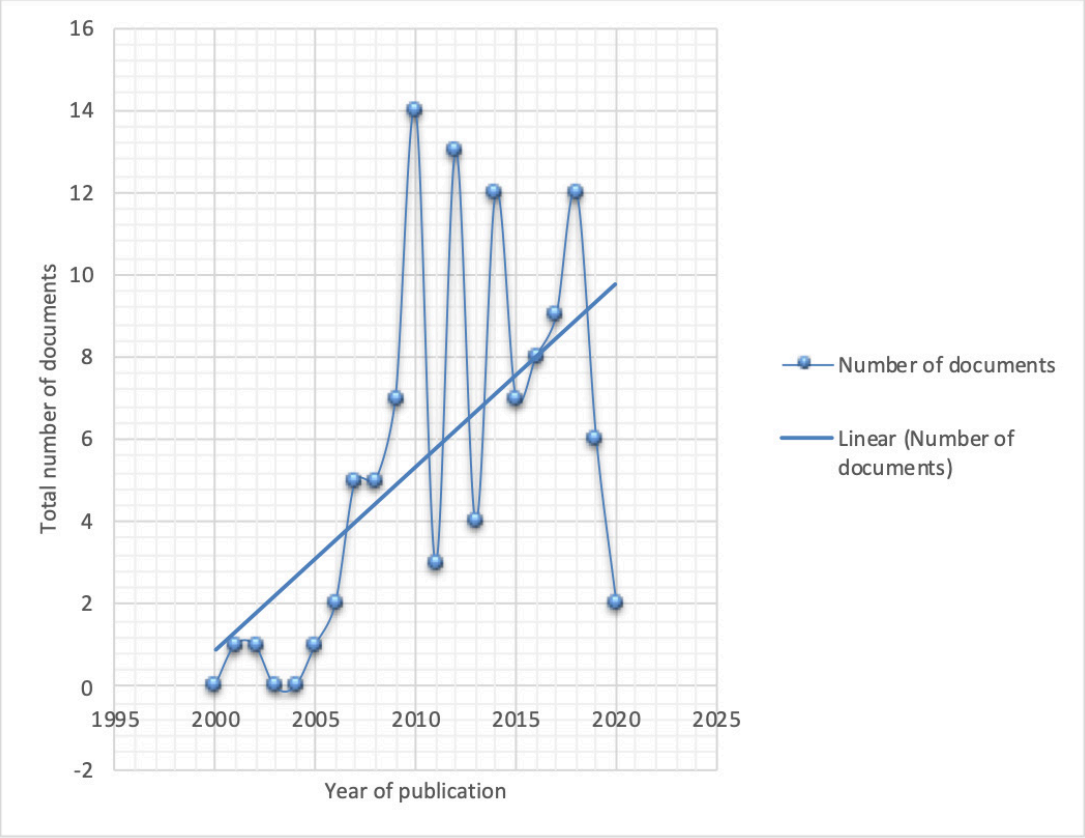
Findings and Discussion

What Is the Publication Trend for Literature That Explores the Relationship between Climate Change and Terrorism?

An issue of particular interest in the context of this review/analysis concerns gaining insight into the publication trend of climate change and security/terrorism literature. In order to generate a publication trend, the author first tallied the number of publications for each type of document that was selected for review/analysis—namely peer-reviewed journal articles, reports, theses, and books. This initial tallying was based on year of publication. The resultant disaggregated data was then aggregated for each year from 2000 to 2020. With the aid of Microsoft[å] Excel for Mac, the author generated and visualized a publication trend (see Table 4).

As Table 4 shows, there has been a sustained rise in the number of publications since 2000. Furthermore, considering that peer-reviewed journal articles constitute more than eighty percent of documents reviewed/analyzed for this text, and also that the articles were sourced from primarily national security-oriented journals, the observed trend can be interpreted to mean that today climate change is entrenched as a security issue/concern.

***Table 4**: Publication Trend*

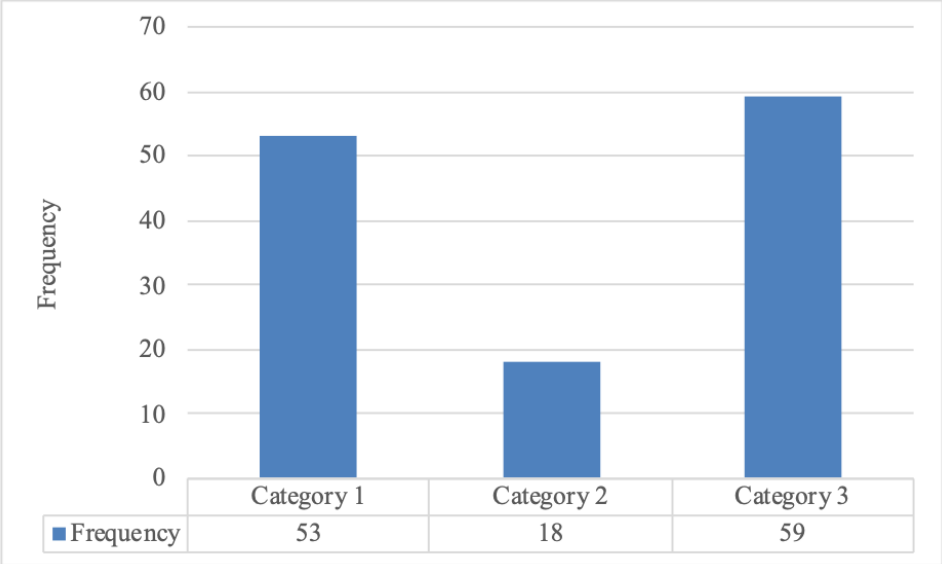


Source: Author
Note: This table details the overall trend in publication of literature on climate change and security/terrorism from 2000 to February 2020. The table is based on literature that was reviewed/analyzed by the author for this text. Notes contain in-text citations only.

On a related note, in the process of thematically analyzing the selected documents, it became apparent that some documents discuss climate change and security/terrorism without necessarily exploring the connection between them. This reality necessitated a simple statistical analysis to highlight the relative distribution of the documents based on whether or not they explore the climate security/terrorism nexus. In order to achieve this, the author relied on insight from the thematic analysis of the documents and came up with the following three broad categories to facilitate statistical analysis: (1) Document explores the link and/or lack thereof between climate change and security; (2) Document specifically explores the link and/or lack thereof between climate change and terrorism; (3) Document does not explore the link and/or lack thereof between climate change and security/terrorism.

Using a YES/NO criterion, each document was then categorized accordingly. To facilitate statistical analysis, the author coded YES as 1 and NO as 0. With the aid of Microsoft Excel for Mac, the author then computed frequency distribution for the three aforementioned analytical categories and visualized the same using a column chart (see Table 5).

***Table 5**: Relative Distribution of Documents Based on Whether or Not They Explore Nexus*



Source: Author
Note: This table details frequency distribution of the reviewed/analyzed documents with respect to three analytical categories: (1) Document explores climate-security nexus; (2) Document specifically explores climate-terrorism nexus; (3) Document neither explores climate-security nexus nor climate-terrorism nexus. It is worth pointing out here that category 2 is a subset of category 1. Meaning all documents in the former category belong in the latter category as well. But obviously not all documents in category 1 belong in category 2.

Table 5 reveals that a relatively large proportion (59 out of 112) of the literature that was reviewed/analyzed does not explore the relationship between climate change and security. Even more important in the context of this Research Note, Table 5 shows that a significantly small proportion (18 out of 112) of the literature that was reviewed/analyzed does specifically explore the interplay between climate change and terrorism. Why this is the case is open to interpretation and falls outside the scope of this Research Note (but would make for an interesting undergraduate/graduate research project). Perhaps a final insight from the foregoing is that climate change is increasingly gaining traction in the literature on terrorism.

What Does the Literature Say about the Link and/or Lack Thereof between Climate Change and Terrorism?

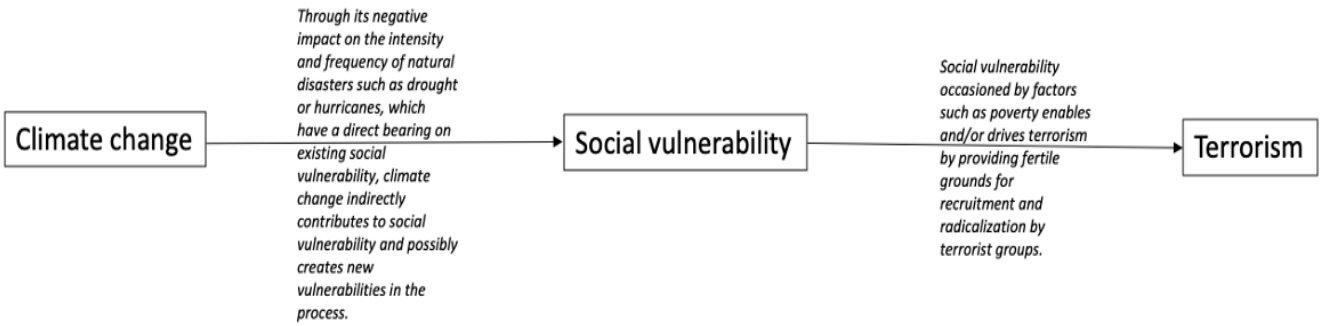
A key message emerging from the literature review concerns the existence of a relationship between climate change and terrorism. But how does this relationship play out exactly? This Research Note finds that climate change and terrorism are linked in at least two ways. First, there exists a simple one-way indirect link between the two whereby climate change acts as a threat multiplier and/or enabler of terroristic activity (see Figure 1).

In this first relationship, climate change acting as a threat multiplier can worsen existing social vulnerability if adaptation and/or mitigation measures are not put in place to help reduce such vulnerability and/or build resilience.[14] Social vulnerability has been linked to both the spread of terrorism as well as the likelihood that an individual may be recruited to join a terrorist group as the following passage notes:

> *Boko Haram*, other radical religion-based movements, 'for hire' gangs of political thugs and common criminal networks draw their support and recruits largely from poverty-stricken, destitute young males desperate for an alternative to the life fate and history have condemned them.[15]

Foley and Holland point out that, "climate change aggravates existing poverty, social tensions, environmental degradation, and weak political institutions; these factors may impact the numbers of terrorist organizations, especially if the presence of the state weakens".[16] As if to reiterate this point, the 2014 quadrennial defense review report of the U.S. DOD provides that "climate change and associated trends may also indirectly act as 'threat multipliers.' They aggravate stressors abroad that can enable terrorist activity and violence, such as poverty, environmental degradation, and social tensions". [17]

***Figure 1**: A Simple One-Way Indirect Relationship between Climate Change and Terrorism*



Source: Author
Note: This Figure shows a simple one-way indirect relationship between climate change and terrorism. It details how climate change's influence on the intensity and frequency of weather-related disasters leads to worsening of existing social vulnerability which in turn feeds into terrorism thereby enabling and/or driving it.

Furthermore, the literature review/analysis also establishes that context is key in determining whether or not climate change enables terroristic activities.[18] For instance, climate change can be an enabler of terroristic activities in a post–natural disaster context where the response capacity of the affected state and/or population is significantly comprised.[19] A recent United Nations Development Program (UNDP) report on the interplay between climate change and violent extremism corroborates this point when it states, in part, that "fragile and natural resource constrained contexts can provide fertile ground for violent extremist groups to flourish and extend their reach, particularly, where governance and institutions are weak and may not be able to respond, the COVID-19 pandemic serving also to highlight gaps in response".[20] With climate change expected to aggravate the intensity and frequency of natural disasters such as hurricanes, it is possible to see how it links to an elevated risk of terroristic activity picking up. In other words, an increase in the intensity of weather-related natural disasters may in turn take a toll on state capacity to respond and/or cope. With state's capacity to respond/cope comprised, terrorist groups may find it easy to take advantage of the situation to recruit members and/or stage attacks on an already-vulnerable communities, cities, or countries.

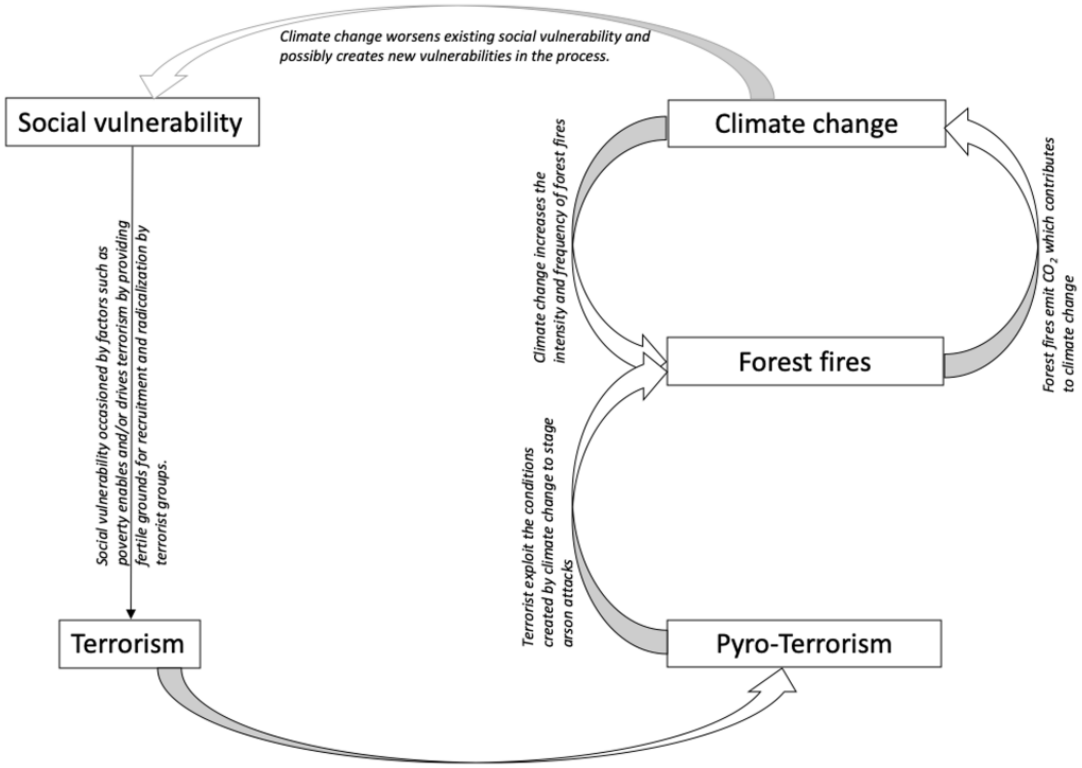
Second, the literature review/analysis also establishes the existence of a complex relationship between climate change and terrorism, which is self-reinforcing through feedback loops. That is, climate change drives and/or enables terrorism, which in turn drives climate change through a feedback loop (see Figure 2). A case in point is the effect of climate change on forest fires and vice versa. As noted in the introduction section of this Research Note, climate change is expected to increase the intensity and frequency of forest fires. In the wake of increased frequency and intensity of forest fires in parts of Europe, Australia, and the United States in the recent past, an individual acting alone or as part of a terrorist group can take advantage of this emerging new

normal to engage in pyro-terrorism.[21] Indeed, some terrorist groups such as Al Qaeda are known to have at some point seriously considered launching arson attacks in some of these forest fire–prone regions of the world as the following passage reveals:

> From the beginning of September 2008, a renewed concern emanated from Western intelligence agencies to the effect that Al Qaeda terrorists were planning a 'global fireball,' in a departure from its war on the West. Deliberately lighting forest fires in Europe, the United States, and Australia would not only stretch emergency services, but would also leave insurance companies facing multibillion-dollar claims, as the credit crunch bites. The fires would also create a pollution disaster, with billions of tons of climate change gases escaping into the atmosphere. The so-called Forest Jihad is being championed by Islamic scholars and Osama bin Laden's terror strategists who believe setting fire to dry woodlands will produce maximum damage at minimum risk.[22]

Pyro-terrorism—if it were ever to happen on a grand scale—would undoubtedly contribute to climate change through emission of greenhouse gases. Climate change then in turn makes conditions favorable for pyro-terrorism and the cycle continues probably until an intervening variable changes its course. With forest fires expected to get worse in terms of frequency and intensity as climate changes, vulnerability of forests to terrorist attacks remains a real concern for governments across the globe.[23]

***Figure 2**: A Complex Relationship between Climate Change and Terrorism*



Source: Author
Note: This figure shows a complex relationship between climate change and terrorism. It details a self-reinforcing feedback loop relationship where: (1) climate change indirectly contributes to terrorism by exacerbating existing social vulnerability, and (2) pyro-terrorism (a subset of terrorism) directly drives climate change through terrorist-instigated forest fires.

From the foregoing, it is evident that climate change is without a doubt linked to terrorism and vice versa. Thus, a climate-terrorism nexus does indeed exist. This finding is in tandem with existing knowledge on the broader climate-security nexus.[24]

What Insight(s) for Future Policy and/or Research?

After close to three decades of environmental security research and scholarship, and close to two decades of research specifically on security implications of climate change, it is now time to move beyond the usual preoccupation—particularly among security studies scholars—with understanding the link between climate change and security. While there is really nothing wrong with deepening understanding of the climate-security nexus, it is important to be wary of paralysis of analysis and its associated dangers including inability to make headways especially where timely decision-making aimed at reducing vulnerability and building resilience is needed.

Knowledge on climate change's contribution to human insecurity and other insecurities (for example, insecurity relating to key critical infrastructure sectors such as water, energy, and food) is now well established. Because of this fact, the text argues that focus should now shift toward leveraging such knowledge to guide context-specific adaptation and/or mitigation interventions at multiple scales across the globe.

Fortunately, this perceived paralysis of analysis is somewhat limited to the academy. The U.S. DOD, for example, has been at the forefront championing for action on climate change.[25] The U.S. military has long considered climate change to be both a threat multiplier and an existential threat, Trump presidency's position on climate change notwithstanding.[26] Climate change impacts U.S. military readiness and response through several pathways including: frequent and intense flooding which threatens military bases at home and abroad; frequent and intense heat waves which limit outdoor training opportunities; and frequent and intense hurricanes which overstretch the military's response capacity in addition to threatening military bases at home and abroad. Due to these (and other) reasons, U.S. military continues to treat climate change as a serious security concern.

Moreover, insights from the Obama presidency show considerable strides have been made on the practitioner's front as the following passage attests.

> Under the Obama administration, a multipronged approach seems to have developed in countering the al-Shabaab that combines hard and soft power, with the United States either using unilateralism, bilateralism, and multilateralism to counter weak, fragile states that may become homes to radical, Islamist groups. On the multilateral side, Washington has sought to work with regional actors, such as the Intergovernmental Authority on Development (IGAD) and the African Union peacekeeping operation in Somalia. With IGAD the United States is addressing human security issues by working on climate change detection and analysis as well as the promotion of resilience in the face of environmental insecurity. In 2016, United States Agency for International Development (USAID) and IGAD signed an agreement committing USAID to a five-year program to increase trade, investment in food security, and health service for marginalized communities.[27]

In the wake of recent calamities such as the COVID-19 pandemic and the 2020 desert locust invasion in parts of Africa and the Middle East, proactive approaches exemplified in the U.S. military resilience building endeavors and the Obama administration's multipronged strategy point to where the focus should be moving forward.[28] As such, future research should focus less on understanding the nexus and more on leveraging existing knowledge on the nexus to inform policy accordingly. For example, it is known that social vulnerability is an important bridge that links climate change and terrorism.[29] Therefore, addressing social vulnerability should be central to future research and policy. The future demands more targeted context-specific action and less analysis for analysis sake.[30]

Conclusion

Climate change is real. In a security context, it is both a threat multiplier and an existential threat. This Research Note set out to understand what extant literature says about the link and/or lack thereof between climate change and terrorism. It establishes that climate change and terrorism are linked and that the relationship between the two plays out in at least two different ways.

On one hand, climate change aggravates existing social vulnerability which enables/drives terrorism. On the other hand, climate change drives terrorism and vice versa through a complex relationship characterized by feedback loops.

Importantly, this Research Note finds that existing climate-security nexus literature is to a large extent focused more on understanding the link and/or lack thereof between the two. It finds that minimal attention is given to actions for addressing the climate-security nexus challenge. In this regard, the Research Note makes the case for a shift in the focus of climate-security nexus scholarship from simply explaining the nexus to changing the nexus in such a way as to minimize its deleterious aspects. To that end, the text recommends that future research in this area should focus on understanding how to best leverage existing knowledge on the nexus to inform context-specific adaptation and/or mitigation intervention(s) at multiple scales across the globe. Concerning the climate-terrorism nexus specifically, focus of future scholarship should be on understanding how to effectively reduce social vulnerability and build resilience in specific contexts especially those that have a history of terroristic activities such as the United States, Nigeria, Kenya, Pakistan, and Somalia among others. Since greater social vulnerability often feeds into ongoing conflict(s)—and/or contributes to the emergence of domestic resource-related conflicts—it tends to lead also to cross-border emigration. On the other side of the border immigration exercises pressures on receiving countries, e.g., in Europe and North America. This, in turn, tends to increase xenophobia which contributes to right-wing violence particularly against migrants. This issue is of growing concern across the globe, but more so in the Sahel region, Central America, and countries around the Mediterranean. And climate change, acting as a threat multiplier, will only make things worse.

As this preliminary review/analysis has established, climate change acts on existing vulnerabilities that serve as actual and/or potential drivers/enablers of terrorism. Therefore, future policy interventions aimed at addressing actual and/or potential security implications of climate change should focus on reducing—ideally eliminating—vulnerabilities especially social vulnerabilities in affected contexts around the globe. To achieve this in the specific context of terrorism, it is imperative that climate change adaptation/mitigation be mainstreamed and made a key aspect of global counterterrorism strategy by all concerned actors.

About the Author: **Jeremiah O. Asaka** *is an assistant professor of security studies at Sam Houston State University, Huntsville, TX. He specializes in human and environmental security. Email: joa012@shsu.edu*

Notes

[1] United Nations Development Programme. *Human Development Report 1994*. New York, USA: Oxford University Press, 1994; Scheffran, J. M. Brzoska, H.G. Brauch, P.M. Link, and J. Schilling. *Climate Change, Human Security and Violent Conflict: Challenges for Societal Stability*. Hexagon Series on Human and Environmental Security and Peace. New York: Springer, 2012; Matthew, Richard A. "Climate Change and Human Security." In: *Climate Change: What It Means for Us, Our Children, and Our Grandchildren*, by Joseph F.C. DiMento and Pamela Doughman, 257–94. MIT Press, 2014.

[2] Immerman, Richard H. "Transforming Analysis: The Intelligence Community's Best Kept Secret." *Intelligence and National Security* 26, nos. 2–3 (2011), pp. 159–181; URL: https://doi.org/10.1080/02684527.2011.559138; Wolfendale, Jessica. "Terrorism, Security, and the Threat of Counterterrorism." *Studies in Conflict & Terrorism* 30 (2007), pp. 75–92; URL: https://10.1080/10576100600791231.

[3] Busby, Joshua. "Taking Stock: The Field of Climate Security." *Current Climate Change Reports* 4 (2018), pp. 338–346.

[4] Gemenne, François, Jon Barnet, W. Neil Adger, and Geoffrey D. Dabelko. "Climate and Security: Evidence, Emerging Risks, and a New Agenda." *Climate Change* 123 (2014), pp. 1–9.

[5] Dabelko, Geoffrey D., Lauren Herzer, Schuyler Null, Meaghan Parker, and Russell Sticklor. "Backdraft: The Conflict Potential of Climate Change Adaptation and Mitigation." Environmental Change & Security Program Report. Washington, D.C.: Woodrow Wilson International Center for Scholars, 2013.

[6] Ramsay, James D., and Terrence M. O'Sullivan. "There's a Pattern Here: The Case to Integrate Environmental Security into Homeland Security Strategy." *Homeland Security Affairs* 9 (2013), pp. 1–21; Butts, Kent Hughes. "Environmental Security and Climate Change: A Link to Homeland Security." *Homeland Security & Emergency Management* 11, no. 2 (2014), pp. 269–79; O'Sullivan,

Terrence M. "Environmental Security Is Homeland Security: Climate Disruption as the Ultimate Disaster Risk Multiplier." *Risk, Hazards & Crisis in Public Policy* 6, no. 2 (2015), pp. 183–222.

[7] Asaka, Jeremiah O. "Water-Energy-Food Nexus and Human Security in Northwestern Kenya." In *Policy and Governance in the Water-Energy-Food Nexus: A Relational Equity Approach*, edited by Anastasia Koulouri and Nikolai Mouraviev, pp. 77–94. Earthscan Studies in Natural Resource Management. New York, NY: Routledge, 2020; Bassel, Daher, Sanghyun Lee, Rabi Mohtar, Jeremiah O. Asaka, and Stacy VanDeveer. "Security, Climate Change and the Nexus." In: *Routledge Handbook of the Resource Nexus*, edited by Raimund Bleischwitz, Holger Hoff, Catalina Spataru, Ester van der Voet, and Stacy VanDeveer. New York: Routledge, 2018.

[8] Zhou, Guofa, Noboru Minakawa, Andrew K. Githeko, and Guiyun Yan. "Association between Climate Variability and Malaria Epidemics in the East African Highlands." *PNAS* 101, no. 8 (2004), pp. 2375–2380; Huynen, Maud, Pim Martens, and Su-Mia Akin. "Climate Change: An Amplifier of Existing Health Risks in Developing Countries." *Environment, Development and Sustainability* 15, no. 6 (2013), pp. 1425–1442; Patz, Jonathan A., and Melissa J. Hatch. "Public Health and Global Climate Disruption." *Public Health Review* 35, no. 1 (2014), pp. 1–23; Butterworth, Melinda K., Cory W. Morin, and Andrew C. Comrie. "An Analysis of the Potential Impact of Climate Change on Dengue Transmission in the Southeastern United States." *Environmental Health Perspectives* 125, no. 4 (2017), pp. 579–585; Canyon, Deon V., Frederick M. Burkle, and Rick Speare. "Health Security in Hawaii by 2050: The Physical Effects of Climate Change." *Journal of Homeland Security and Emergency Management* 14, no. 2 (2017).

[9] Kaenzig, R., and E. Piguet. "Migration and Climate Change in Latin America and the Caribbean." In: *People on the Move in a Changing Climate. Global Migration Issues*, edited by E. Piguet and F. Laczko, 2: pp. 155–716. Global Migration Issues. Springer, Dordrecht, 2014.

[10] UNDP. "The Climate Security Nexus and the Prevention of Violent Extremism: Working at the Intersection of Major Development Challenges." UNDP Policy Brief. New York: United Nations Development Programme, 2020.

[11] Somers, Scott. "How Terrorists Leverage Climate Change." *New Security Beat*, September 9, 2019. URL: https://www.newsecuritybeat.org/2019/09/terrorists-leverage-climate-change/; Telford, Andrew. "A Climate Terrorism Assemblage? Exploring the Politics of Climate-Terrorism-Radicalisation Relations." *Political Geography* 79 (2020). URL: https://doi.org/10.1016/j.polgeo.2020.102150.

[12] Nowell, Lorelli S., Jill M. Norris, Deborah E. White, and Nancy J. Moules. "Thematic Analysis: Striving to Meet the Trustworthiness Criteria." *International Journal of Qualitative Methods* 16 (2017), pp. 1–13. URL: https://doi.org/10.1177/1609406917733847.

[13] Nett, Katharina, and Lucas Rüttinger. "Insurgency, Terrorism, and Organized Crime: Analyzing the Links Between Climate Change and Non-State Armed Groups." Berlin: Adelphi, October 2016.

[14] Adger, W. Neil, Juan Pulhin, Jon Barnet, Geoffrey D. Dabelko, Grete K. Hovelsrud, Marc Levy, Ursula Oswald Spring, and Coleen Vogel. "Human Security." In *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by Christopher B. Field, V. R. Baros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, M. Chatterjee, et al., pp. 755–791. New York, USA: Cambridge University Press, 2014; Lytle, Natalie. "Climate Change as a Contributor to Terrorism: A Case Study in Nigeria and Pakistan." *Senior Theses* 207 (2017). URL: https://scholarcommons.sc.edu/senior_theses/207.

[15] Hansen, William. "Poverty and Economic Deprivation Theory: Street Children, Quranic Schools/Almajirai and the Dispossessed as a Source of Recruitment for Boko Haram and Other Religious, Political and Criminal Groups in Northern Nigeria." *Perspectives on Terrorism* 10, no. 5 (2016), pp. 83–95.

[16] Foley, Catherine, and Andrew Holland. "Climate Security Report." American Security Project, 2012. URL: www.americansecurityproject.org.

[17] Department of Defense. "2014 Quadrennial Defense Review." Washington, D.C.: U.S. Army, 2014.

[18] Givens, Austen D., Nathan E. Busch, and Alan Bersin. "Going Global: The International Dimensions of U.S. Homeland Security Policy." *Journal of Strategic Security* 11, no. 3 (2018). URL: https://doi.org/10.5038/1944-0472.11.3.1689.

[19] Berrebi, Claude, and Jordan Ostwald. "Earthquakes, Hurricanes, and Terrorism: Do Natural Disasters Incite Terror?" *Public Choice* 149, no. 3/4 (2011), pp. 383–403; Berrebi, Claude, and Jordan Ostwald. "Exploiting Chaos: Terrorist Target Choice Following Natural Disasters." *Southern Economic Journal* 79, no. 4 (2013), pp. 793–811.

[20] UNDP (2020), p. 4.

[21] Baird, Robert A. "Pyro-Terrorism—The Threat of Arson-Induced Forest Fires as a Future Terrorist Weapon of Mass Destruction." *Studies in Conflict & Terrorism* 29 (2006), pp. 415–428.

[22] Fighel, Jonathan. "The 'Forest Jihad.'" *Studies in Conflict & Terrorism* 32 (2009):, pp. 802–810.

[23] Flannigan, M.D., B.J. Stocks, and B.M. Wotton. "Climate Change and Forests." *The Science of the Total Environment* 262 (2000):

pp. 221–29; Lieberman, Bruce. "Wildfires and Climate Change: What's the Connection?" Yale Climate Connections, July 2, 2019. URL: https://www.yaleclimateconnections.org/2019/07/wildfires-and-climate-change-whats-the-connection/.

[24] Joshua Busby (2018)., pp. 338–346; Richard Matthew (2014)., op. cit., pp. 257–294

[25] Klare, Michael T. *All Hell Breaking Loose: The Pentagon's Perspective on Climate Change*. 1st ed. New York: Metropolitan Books, 2019.

[26] Klare, Michael T. (2019); Reuters. "In Focus: Trump and Climate Change." *Climate,* 2020. URL: https://news.trust.org/packages/trump-and-climate-change/.

[27] Kfir, Isaac. "Al-Shabaab, Social Identity Group, Human (In)Security, and Counterterrorism." *Studies in Conflict and Terrorism* 40, no. 9 (2017), pp. 772–789. URL: https://doi.org/10.1080/1057610X.2016.1236569.

[28] Harvey, Chelsea. "Summer Presents Dangerous Choice: Swelter in Quarantine or Risk Contagion." *Scientific American*, April 28, 2020. URL: https://www.scientificamerican.com/article/summer-presents-dangerous-choice-swelter-in-quarantine-or-risk-contagion/; Gronwold, Nathanial. "Desert Locust Swarms Continue to Spread in Africa, Middle East." *Scientific American*, March 4, 2020. URL: https://www.scientificamerican.com/article/desert-locust-swarms-continue-to-spread-in-africa-middle-east/.

[29] William Hansen (2016)., pp. 83–95; Richard Matthew (2014)., pp. 257–294

[30] Abrahams, Daniel. "Conflict in Abundance and Peacebuilding in Scarcity: Challenges and Opportunities in Addressing Climate Change and Conflict." *World Development* 132 (2020). URL: https://doi.org/10.1016/j.worlddev.2020.104998; Busby, Josh. "It's Time We Think beyond 'threat Multiplier' to Address Climate and Security." *New Security Beat,* January 21, 2020. URL: https://www.newsecuritybeat.org/2020/01/its-time-threat-multiplier-address-climate-security/; Dabelko, Geoffrey D., Lauren Herzer, Schuyler Null, Meaghan Parker, and Russell Sticklor. "Backdraft: The Conflict Potential of Climate Change Adaptation and Mitigation." Environmental Change & Security Program Report. Washington, D.C.: Woodrow Wilson International Center for Scholars, 2013.