

# A Climate of Terror?

## Part I: Approaches to the Study of Climate Change and Terrorism

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## Reviews

- ▶ “A Climate of Terror? Climate Change as an Indirect Contributor to Terrorism,” Madeline Romm.
- ▶ “A Climate of Terror? Climate Change as a Potential Ideological Driver of Terrorism,” Marcus A. Boyd, Ph.D.
- ▶ “A Climate of Terror? Climate Change as a Means for Terrorist Exploitation,” Samuel Henkin, Ph.D.

## About START

The National Consortium for the Study of Terrorism and Responses to Terrorism (START) is a university-based research, education and training center comprised of an international network of scholars committed to the scientific study of terrorism, responses to terrorism and related phenomena. Led by the University of Maryland, START is a Department of Homeland Security Emeritus Center of Excellence that is supported by multiple federal agencies and departments. START uses state-of-the-art theories, methods and data from the social and behavioral sciences to improve understanding of the origins, dynamics and effects of terrorism; the effectiveness and impacts of counterterrorism and CVE; and other matters of global and national security. For more information, visit [www.start.umd.edu](http://www.start.umd.edu) or contact START at [infostart@umd.edu](mailto:infostart@umd.edu).

## About Pool Re

Pool Re's purpose is to enable the UK insurance market to offer terrorism cover to any commercial property that requires it. Central to the proposition is the integration of Pool Re's cover with the underlying property policy which ensures that there is no gap in the cover provided. Pool Re was designed to insulate the taxpayer from financial losses arising from acts of terrorism. It has achieved this effectively, to date paying £635m, £1.25bn when adjusted for inflation, in respect of 13 claims arising from certified terrorism events in the UK since our establishment. It has never called on the Government's guarantee. For more information, visit [www.poolre.co.uk](http://www.poolre.co.uk).

# EXECUTIVE SUMMARY

Climate change is one of the most significant global issues of our time. In a recent United Nations Security Council Meeting, UN Secretary-General António Guterres stressed that “no one is safe from the destructive effects of climate disruption.”<sup>i</sup> The ongoing gravity of stresses to the global climate system is increasingly understood as “unequivocal” and “unprecedented” as rapid and widespread climatic variability occurs.<sup>ii</sup> Moreover, accelerating rates of anthropogenic environmental change engender novel human security threats. Increased severity and frequency of natural disasters, land degradation, diminishing biodiversity, extreme weather, and many other environmental insecurities pose great societal risks. There is growing acknowledgment within the national security, research, and policy communities and among the private sector that climate change acts as a “threat multiplier.”<sup>iii</sup> As a threat multiplier, climate change has the potential to exacerbate existing social, political, and economic tensions aggravating societal vulnerabilities. These tensions and vulnerabilities manifest in numerous and often unforeseen ways but can increase the likelihood of fragility and violent conflict in a given context.<sup>iv</sup>

## The Climate-Security-Nexus

The complexity of the indirect and multidimensional links between climate change and security—the “climate-security-nexus”—has drawn specific attention to the need to better understand how climate change might cause conflict and what underlying conditions are present. Violent conflict is never mono-casual, and no direct causal link between climate change and violent conflict can be fully determined. Nevertheless, increasing evidence from around the world shows that climate change can exacerbate and compound risks known to contribute to insecurity factors that drive violent conflict.<sup>v</sup> The pathways through which violent conflict manifests in relation to climate change are highly contextual and determined by a range of interacting environmental, political, and socioeconomic factors and insecurities.

While significant attention is given to the complexities of the relations between climate change and violent conflict, less attention is paid to the ways climate change potentially fuels or aggravates enabling factors and drivers that set the stage for terrorism.<sup>vi</sup> As a starting point, our research explores how the interplay between climate change and terrorism is presented and understood in the wider research space. While there is little consensus on definitions of terrorism, we recognize terrorism, as a unique form of political violence.<sup>vii</sup> Moreover, terrorism is an extremely complex phenomenon, encompassing a multiplicity of groups with different origins, ideologies, and causes.

## Terrorism and Climate Change?

Trends in terrorism produce greater uncertainty as the diversity and diffusion of violent extremism grow, including in online spaces. Likewise, the operational capacity of terrorist organizations has become more sophisticated while also facilitating increased violently rudimentary “lone-wolf” acts of terror.<sup>viii</sup> Terrorism is increasingly understood as part of a complex web of asymmetric systematic risks that constitute compounding threats to society.

Radicalization and recruitment to terroristic violence are widely acknowledged as a defining societal challenge. Furthermore, as climate change increasingly shapes contributing factors to vulnerability and fragility, shaping the life chances of billions, the possible conditions through which climate change and terrorism interact require greater examination: What are the environmental, political, and socioeconomic factors and insecurities that interact to constitute conditions for violence? To what degree are these interactions contributors to radicalization into violent extremism and terrorism? What potential does climate change have to exacerbate existing tensions, disrupt societal relationships, and create new threats exploited by terrorist organizations? To what degree can terrorist organizations exploit climate change stress points for coercive means to control or influence populations?

## Research Directions

Underlying this series of Rapid Reviews is the understanding that research on the climate-security-nexus and the under-researched interactions between climate change and terrorism are “piecemeal” and have “generated limited understanding.”<sup>ix</sup> The uncertainties that shroud both climate change and terrorism offer significant analytical challenges often resulting in quite speculative research. Linking climatic change to rare violent outcomes, like terrorism, is a highly involved endeavor. Although a corpus of empirical studies supports a link between climate change and violent conflict, others find no connection or a weak one.<sup>x</sup> The same is true of the limited number of empirical studies that examine climate change and terrorism.<sup>xi</sup> The contradictory nature of findings over the past decade of systematic research on the climate-security-nexus, including terrorism, should not be viewed as a failure of expert consensus but rather as a call for researchers to re-engage rigorous research design that takes into account the need for more sophisticated theoretical frameworks, methodological multiplicity, and contextually specific analysis.

Aided by advances in data type and availability, geo-referenced methods, and finer temporal resolution of climate data, researchers are now able to investigate potential contributing mechanisms in pathways of climate change to violence and terrorism, the conditions under which these emerge and are sustained, the various actors at play, and the range of possible outcomes in terms of conflictive (or cooperative) behavior.<sup>xii</sup> Additionally, as methodological rigor emerges in research on terrorism we are better positioned to address key questions: 1) how and 2) why do individuals join violent extremist organizations (VEOs) and 3) what motivates VEOs to commit terrorist acts.<sup>xiii</sup>

Thus, our capacity and capabilities for understanding the drivers of terrorism and anticipating new threats, compounded by climate change, continue to develop. Motivated by the call for more sophisticated theoretical models and methodologies the overall goal of this research

agenda is to delve into three recognized climate change and terrorism interaction areas within research to map the state of present knowledge. Our findings are based on a synthesis of a vast corpus of literature,<sup>xiv</sup> which investigates both the climate-security-nexus and the following climate change and terrorism interaction areas:

- ▶ Climate change as an indirect contributor to terrorism;
- ▶ Climate change as an ideological driver of terrorism; and,
- ▶ Climate change as a means for terrorist exploitation to control or coerce populations.

These interaction areas are not mutually exclusive and the overlap across interaction areas is substantial. Although there have been fundamental issues raised and connections made in previous research on these interaction areas, we consider multiple pathways and feedback loops through which climatic phenomena may translate into violent social and political outcomes, specifically acts of terror.

## Key Findings

As a result, select key findings include:

- ▶ While climate change may not be a direct ‘root cause’ of terrorism” it is recognized as a predominant destabilizing force that fosters an enabling environment for violent extremist organizations (VEOs).
- ▶ When regions are exposed to, or situated in, an environment susceptible to climate insecurities and are highly dependent on that environment for livelihoods, a positive correlational relationship between climate change and violence strengthens. This relationship may affect violent extremism as well and requires further analysis.
- ▶ During the 1990s and early 2000s the Earth Liberation Front (ELF) conducted a series of attacks that resulted in millions of dollars of property damage and serve as the foundation

for understanding climate change as a potential ideological driver of terrorism

- ▶ Neo-Luddites, the Anti-Technology Movement, and “eco-fascists” currently present the most significant concern due to their support for violence against humans and desire to destroy technology assets. However, the Covid-19 pandemic has caused disillusionment within mainstream environmentalist movements which may shape future ideological and tactical considerations.
- ▶ VEOs may exploit the effects of climate change as a means to exert influence over populations by exercising strategic tactics (capture, sabotage, and/or looting) to cause physical and economic harm to infrastructure and services or choose to strategically control such resources. The profitability of controlling essential resources may lead to more VEOs strategically capturing resources and their markets fully, or partially, and weaponizing them to support operational functions.
- ▶ VEOs may exploit weakened (real and perceived) government capacity and legitimacy to respond to climate change by fostering radicalization narratives of alienation and abandonment.
- ▶ VEOs may exploit individual and group grievances and insecurities exacerbated by climate change for recruitment into violent radicalization, including fostering narratives of marginalization, exclusion, and relative deprivation.

## A Call to Action

With the growing frequency and intensity at which climate change occurs better understanding of its impacts on macro trends, meso factors, and micro drivers of insecurity matters, especially related to terrorism. Failure to meet the challenges posed by both climate change and terrorism has significant real-world consequences.

For future research, this series of Rapid Reviews offer a foundation and framing for which to test more specific relationships and hypotheses between climate change and terrorism. Conducting systematic empirical studies on the interactions between climate change and terrorism requires greater nuance in understanding the complexities of relational and mediating factors. Improved and innovative data collection, data integration, and data analysis are necessary to further investigate the ways climate change may exacerbate terrorism.

For members of IFTRIP, and the wider insurance industry, our findings offer relevant insights. Climate change is and will continue to be a key risk that will shape and impact the industry. The same can be said of the risk of terrorism. As risk experts, re/insurers have already taken notable actions to address climate change and terrorism. However, a more comprehensive and holistic approach to better understanding climate change and terrorism’s mutual relations and interactions requires greater action.

## RECOMMENDATIONS

- ▶ **Strengthen partnerships.** Stronger partnerships between the re/insurance sector, researchers responsible for better understanding climate change and violence risks, and governments tasked with the protection and well-being of citizens can facilitate better, more coordinated responses to climate change and its negative impacts. Additionally, the re/insurance sector should seek to partner with and support corollary forms of data collection and application. Strong partnerships are essential in filling knowledge gaps and pursuing evidence-informed policies and practices.
- ▶ **Improve Frameworks.** The re/insurance industry serves as an expert on risk management. As climate change increasingly becomes a systemic risk to global stability—compounding other major societal risks—creating new frameworks that are risk-based and anticipatory is necessary to manage the potential

impacts of climate catastrophes and climate-related risks. Re/insurers already work with sophisticated tools related to natural catastrophes. Taking this into account, the integration of diverse data and methods can further improve risk modeling, such as multiple scenario analysis, providing meaningful and design-useful information and analysis for decision making.

- ▶ **Support Resilience Efforts.** The re/insurance industry is well-positioned to educate stakeholders and invest to support the transition to a more resilience-focused future. Risk awareness must be coupled with a better understanding of how societal and economic resilience plays a key role in alleviating the potential impacts of climate change catastrophes and political violence. The re/insurance industry can play a key role in building socioeconomic resilience to climate change risk from the beginning with the right partnerships, data and methods, and standards.
- ▶ **Set Standards.** There are several sources of uncertainty related to climate change and its impact on global economic stability. Collaborative and clear definitions and concept setting and transparent data on climate change and terrorism are necessary. To leverage the re/insurance industry's expertise in risk management to address climate change, standards must be set. Standards must be scalable and sustainable. A strong evidence base with scientific methodologies is needed for standards to be set to ensure a better impact on the economy. Both quantitative (near-term) and qualitative (long-term) assessments are useful in strategically setting and adopting standards.
- ▶ **Rescale Scope.** While climate change and terrorism are global phenomena, their severity and frequency are distributed unevenly. Therefore, the scope at which climate change and terrorism impact society must be responsive to varying scales of investigation over different time horizons. The re/insurance industry needs to take into account more frequent and less severe forms of climate-related acts of political violence (e.g., riots) and malicious activities (e.g., sabotage, selective damage, blockades). Creating more risk-specific guidance is essential to navigating evidence-informed decisions in risk management.

## FUTURE STEPS

- ▶ **Promote Research.** IFTRIP, and the wider re/insurance industry, should promote and lead further research in this evolving area of interest and regularly update its findings.
- ▶ **Grow Expertise.** IFTRIP should focus on soliciting expertise and advice from experts (scientists, academia, policymakers, the private sector, and those in the re/insurance sector) in climate change and terrorism to broaden the knowledge and improve collaboration on the consequences of this existential threat on the drivers of terrorism utilizing START's consortium network.
- ▶ **Develop Action Plan.** IFTRIP, and the wider re/insurance industry, should utilize expertise in ongoing research efforts to develop an action plan moving forward in this topical area.
- ▶ **Explore Resilience.** The terrorism re/insurance industry should explore ways of improving its resilience to the systemic risks of climate change and how best to manage and mitigate this catastrophic tail risk.
- ▶ **Disseminate Findings.** The findings of this initial report should be shared with the leadership of COP26 along with any action plans developed.
- ▶ **Co-Fund Research.** Members of IFTRIP, and the wider global re/insurance industry, should be approached to co-fund the next stages of research.

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- <sup>i</sup> Guterres, António. 2021. "State of the Planet". Transcript of speech delivered at United Nations Security Council, NYC, December 2021.
- <sup>ii</sup> IPCC, 2021: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press.
- <sup>iii</sup> Gen Sullivan, Gordon R. USA (Ret), 2007. *National Security and the Threat of Climate Change*. Arlington, VA: CNA; Bryan, Joe, 2017. "Climate Change as a Threat Multiplier," *Atlantic Council*; Huntjens, Patrick and Nachbar, Katharina, 2015. "Climate Change as a Threat Multiplier for Human Disaster and Conflict," *Hague Institute for Global Justice*; and Middendorp, Tom and Bergema, Reinier, 2019. "Where Macro Meets Micro: How Climate Change Fuels Violent Extremism," *Global Observatory*, International Peace Institute.
- <sup>iv</sup> Hsiang, Solomon M. and Burke, Marshall, 2013. "Climate, Conflict, and Social Stability: What Does the Evidence Say?," *Wiley Interdisciplinary Reviews: Climatic Change*, 123(1): 39-55; Buhaug, Halvard, 2015. "Climate-conflict research: some reflections on the way forward." *Wiley Interdisciplinary Reviews: Climate Change* 6(3): 269-275.
- <sup>v</sup> See Barnett, Jon and Adger, W. Neil, 2007. "Climate Change, Human Security and Violent Conflict," *Political Geography* 26(6): 639-55; Buhaug, Halvard, Nils Petter Gleditsch, and Ole Magnus Theisen, "Implications of Climate Change for Armed Conflict," *Social Dimensions of Climate Change* 25 February 2008; Burke, Marshall, Hsiang, Solomon M., and Edward Miguel, 2015. "Climate and Conflict," *Annual Review of Economics* 7(1): 577-617; Nordås, Ragnhild and Gleditsch, Nils Petter, 2007. "Climate Change and Conflict," *Political Geography* 26(5): 627-38; Raleigh, Clionadh and Urdal, Henrik, 2007. "Climate Change, Environmental Degradation and Armed Conflict," *Political Geography* 26(6): 674-694.
- <sup>vi</sup> Asaka, Jeremiah, 2021. "Climate Change - Terrorism Nexus? A Preliminary Review/Analysis of the Literature". *Perspectives on Terrorism*, 15 (1), 81-92; Somers, Scott, 2019. "How Terrorists Leverage Climate Change." *New Security Beat*, URL: <https://www.newsecuritybeat.org/2019/09/terrorists-leverage-climate-change/>; Telford, Andrew. 2020. "A Climate Terrorism Assemblage? Exploring the Politics of Climate-Terrorism-Radicalisation Relations." *Political Geography* 79: 102-150. Nett, Katharina and Rüttinger, Lukas, 2016. "Insurgency, terrorism and organised crime in a warming climate: Analysing the links between climate change and non-state armed groups". *Adelphi Climate Diplomacy Report*. Retrieved from <https://www.adelphi.de/en/publication/insurgency-terrorism-and-organised-crime-warming-climate>. Renard, Thomas, 2008. "Heated terror: Exploration of the possible impacts of climate change on the causes and the targets of terrorism". *Les Cahiers du RMES*, 5(1): 15-53
- <sup>vii</sup> Our working definitions of "terrorism" can be found in the glossary of terms in the Annex.
- <sup>viii</sup> Spaaij, Ramón. 2010. "The enigma of lone wolf terrorism: An assessment." *Studies in Conflict & Terrorism* 33(9): 854-870; Spaaij, Ramón, and Hamm Mark S., 2015. "Key issues and research agendas in lone wolf terrorism." *Studies in Conflict & Terrorism* 38(3): 167-178.
- <sup>ix</sup> Advisory Committee for Environmental Research and Education. 2021. "Environmental Change and Human Security Research Directions for the National Science Foundation". A Report of the NSF Advisory Committee for Environmental Research and Education. Prepared by the Environmental Change and Human Security Subcommittee.
- <sup>x</sup> Salehyan, Idean. 2014. "Climate Change and Conflict: Making Sense of Disparate Findings." *Special Issue: Climate Change and Conflict* 43: 1-5; Selby, Jan, and Hoffmann, Clemens. 2014. "Rethinking Climate Change, Conflict and Security." *Geopolitics* 19(4): 747-56; IPCC, 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* 1132.
- <sup>xi</sup> Asaka 2021
- <sup>xii</sup> Buhaug, Halvard. 2015. "Climate-conflict research: some reflections on the way forward," *WIREs Climate Change*, 6:269-275.
- <sup>xiii</sup> Shuurman, Bart. 2019. "Topics in terrorism research: reviewing trends and gaps 2007-2016". *Critical Studies on Terrorism*, 12(3): 463-480.
- <sup>xiv</sup> See Annexes for project methodology.