

A Climate of Terror?

Climate Change as a Means for Terrorist Exploitation

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SUMMARY

Research Questions

- ▶ In what ways can violent extremist organizations (VEOs) exploit the effects of climate change as a means to control or coerce populations in their operational areas?
- ▶ To what extent have VEOs advanced recruiting efforts in response to negative climate change impacts in an attempt to exploit climate change vulnerabilities?

Key Insights and Findings

- ▶ VEOs may exploit individual and group grievances and insecurities exacerbated by climate change for recruitment into violent radicalization, including fostering radicalization narratives of marginalization, exclusion, and relative deprivation.
- ▶ VEOs may exploit weakened (real and perceived) government capacity and legitimacy to respond to climate change by fostering radicalization narratives of alienation and abandonment. Furthermore, VEOs may attempt to fill in this gap by responding to the challenges posed by climate change to enhance their local authority and continue to undermine their opponents (generally the government).
- ▶ 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. Specifically, VEOs can exploit the impacts of climate shocks to inflict maximal damage undermining political and socioeconomic structures to further their ideological objectives.
- ▶ VEOs may exploit the impacts of climate change to influence populations by aggravating political and socioeconomic weaknesses to exert control over essential provisions and resources' nodes and networks. Additionally, the profitability of controlling essential provisions and resources may lead to more VEOs strategically capturing resources and their markets fully, or partially, and weaponizing them to support operational functions.



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Background

Broadly, climate change is increasingly contributing to environmental, political, and socioeconomic fragility and insecurity. Violent extremist organizations (VEOs) proliferate and can operate more easily in fragile contexts. As the frequency and severity of climate change increase, a better understanding of the ways VEOs exploit the effects of climate change as a means to control or coerce populations in their operational areas becomes more pressing. In particular, increased fragility and insecurity facilitate opportunities for VEOs to,

- ▶ Attract sympathizers and recruit new members; and
- ▶ Actively weaponize resulting insecurities to pursue strategic and tactical ends.

While most existing research on the interactions between climate change and terrorism explores terrorist organizations in relation to macro trends and meso factors,¹ this rapid review first highlights the *conditions*, *drivers*, and *enabling factors* underlying possible recruitment and radicalization into violent extremism pathways and their links to climate change. In other words, this rapid review broadly aims to address how climate change affects patterns of violent radicalization. The rapid review then pivots to examine VEOs motives and decision-making about climate change. Of particular concern are the ways VEOs may weaponize environmental factors and insecurities to coerce populations in pursuing their strategic and tactical ends.

Violent extremist organizations (VEOs) proliferate and can operate more easily in fragile contexts."

Evidence Review

Radicalization into Violent Extremism

There is growing expert consensus that there is no single "terrorism," nor is there a single terrorist profile.² Unlike terrorism, the understanding that radicalization is a process whereby people turn to extremism is not particularly controversial. Radicalization into violent extremism can be understood as a set of complex pathways with unique formations and dynamic causal mechanisms that can lead to multiple outcomes, including acts of terror.³ There are several approaches and models used to explain and visualize radicalization into violent extremism.⁴ Regardless of competing models, there is consensus that radicalization must be conceived as a set of multifaceted pathways that play out over a period of time and involves different factors and dynamics.⁵

¹ King, Marcus DuBois, 2015. "The weaponization of water in Syria and Iraq." *The Washington Quarterly* 38(4): 153-169; 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.*; Walch, Colin, 2018. "Weakened by the storm: Rebel group recruitment in the wake of natural disasters in the Philippines." *Journal of Peace Research*, 55(3): 336-350.

² Borum, Randy, 2011. "Radicalization into violent extremism I: A review of social science theories." *Journal of strategic security* 4(4): 7-36; Horgan, John, 2008. "From profiles to pathways and roots to routes: Perspectives from psychology on radicalization into terrorism." *The ANNALS of the American Academy of Political and Social Science* 618(1): 80-94.

³ Ibid.

⁴ Borum, Randy, 2011a. "Radicalization into violent extremism I: A review of social science theories." *Journal of strategic security* 4(4): 7-36; Borum, Randy, 2011b. "Radicalization into violent extremism II: A review of conceptual models and empirical research." *Journal of strategic security* 4(4): 37-62. McCauley, Clark, and Sophia Moskalenko. 2017. "Understanding political radicalization: The two-pyramids model." *American Psychologist*, 72(3): 205.

⁵ Jensen, Michael A., Anita Atwell Seate, and Patrick A. James. 2020. "Radicalization to violence: A pathway approach to studying extremism." *Terrorism and Political Violence* 32(5): 1067-1090; Fahey, Susan, and Simi, Pete, 2019. "Pathways to violent extremism: a qualitative comparative analysis of the US far-right." *Dynamics of Asymmetric Conflict* 12(1): 42-66; Hwang, Julie Chernov, 2018. "Pathways into terrorism: understanding entry into and support for terrorism in Asia." *Terrorism and political violence* 30(6): 883-889.

To simplify the complexity of radicalization models we can determine five common elements:⁶

- 1) The existence of **predisposing life experiences** that typically reflect historical and structural conditions that preceded the shift towards violent extremism.
- 2) Proximal or acute **activating situations** that serve as drivers and enabling factors to engage in violent extremism.
- 3) The existence of **predisposing vulnerabilities** that typically reflect an individual's "need" states (psychological and psychosocial) that can push an individual to seek alternative world views.
- 4) Intensity of **social and group dynamics** that can facilitate an individual's engagement with an extremist group.
- 5) Application of **ideology and narrative** which fosters in-group formation and out-group derogation and offers action pathways to violence and terror.

These elements offer clarity in understanding radicalization as they shed light on the potential conditions, drivers, and enabling factors of violent extremism. Additionally, radicalization into violent extremism occurs at one or several levels:⁷

- ▶ **Micro Level:** Corresponds to the individual person and involves feelings of alienation, marginalization, discrimination, relative deprivation, humiliation, and rejection among others;
- ▶ **Meso Level:** Includes communities and groups and relates to the supportive social surroundings or broader extremist environment;
- ▶ **Macro Level:** Includes the roles of government (including its foreign policy), society (e.g., public opinion), socioeconomic opportunities, and majority-minority dynamics, among other elements.

While these levels are closely interrelated they capture different levels of explanations of radicalization into violent extremism. Moreover, these different levels clarify that there is no single driver of radicalization, but rather, several complex push, pull, and personal factors that affect radicalization into violent extremism.⁸

In this regard, we can begin to consider how climate change impacts the process of radicalization into violent extremism in several ways (see Figure 1). For instance, climate change creates environmental insecurity that sets the conditions for which grievances emerge, especially related to material and livelihood deterioration. Climate change also aggravates other human insecurities creating new needs, like better access to food and water, to alleviate vulnerability and risk. Furthermore, climate change exacerbates existing political insecurities stressing the state's capacity to address population needs. VEOs fuel grievances by offering compelling narratives of who is to blame, like the government, and radicalizing agents offer opportunities to improve population or individual needs.

Push Factors: *Overlap with structural root causes of terrorism that drive people toward resorting to violence.*

Pull Factors: *Capture aspects that make extremist groups/lifestyles appealing to some.*

Personal Factors: *Specific individual characteristics that make individuals more vulnerable to extremist ideology.*

⁶ Ibid.

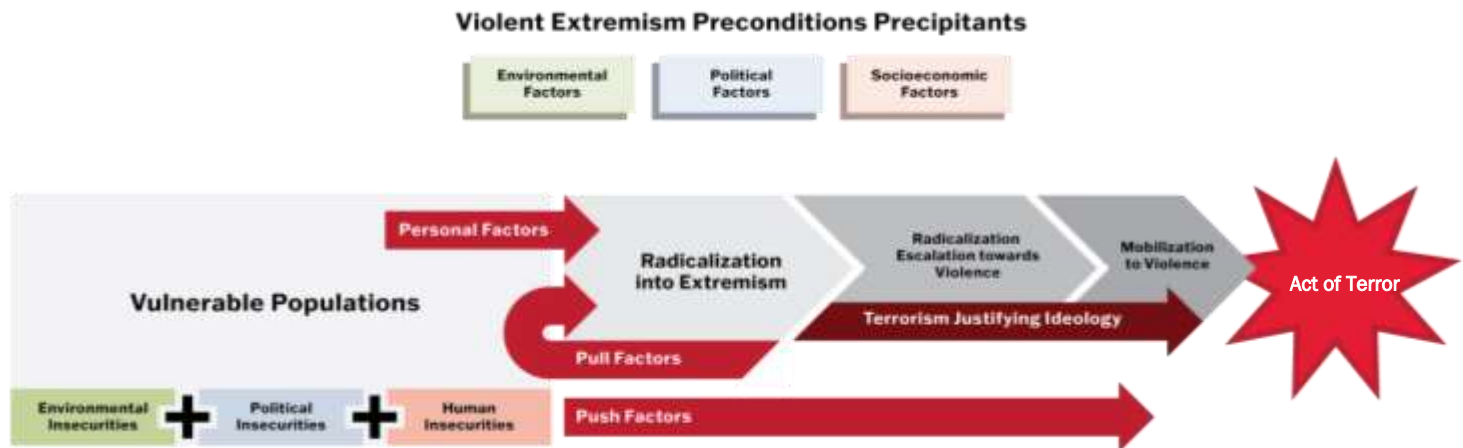
⁷ Bjørgo, Tore, (ed.) 2005. *Root causes of terrorism: Myths, reality and ways forward*. London: Routledge; Newman, Edward. 2006. "Exploring the "root causes" of terrorism." *Studies in Conflict & Terrorism* 29(8): 749-772. Bjørgo, Tore, and Andrew Silke. 2018. "Root causes of terrorism." In Silke (ed). *Routledge Handbook of Terrorism and Counterterrorism*: 57-65.

⁸ Vergani, Matteo, Muhammad Iqbal, Ekin Ilbahar, and Greg Barton. 2020. "The three Ps of radicalization: Push, pull and personal. A systematic scoping review of the scientific evidence about radicalization into violent extremism." *Studies in Conflict & Terrorism* 43(10): 854-854.

Overall, climate change impacts radicalization into violent extremism in the following ways:

- ▶ **Exacerbate the underlying conditions** necessary for terrorism to develop (i.e., the “root causes” of terrorism);
- ▶ **Multiply the drivers of radicalization** that can facilitate the emergence of terrorism (i.e., push, pull, and personal factors);
- ▶ **Multiply and intensify the number of enabling factors** that can lead to surges in political violence, including acts of terrorism (i.e., political instability);

Figure 1: *Radicalization into Violent Extremism Model*



Climate Change and Root Causes of Terrorism

A useful approach to better understanding how climate change serves as a means for terrorist exploitation to control or coerce populations is to explore the ways climate change may exacerbate the “root causes” of terrorism.⁹ The concept of root causes of terrorism suggests that there are causal relationships that can be determined between underlying societal conditions and terrorist activity. Therefore, one can identify “causes” of terrorism and take action to eliminate or reduce them. However, the root causes approach is far more nuanced than it initially appears, offering more than a simplistic cause-effect understanding of terrorism.¹⁰

Root causes consist of multiple combinations of factors and circumstances ranging from general to specific, societal to the individual level, global to local, dynamic to static, or other possible variations.¹¹ While there is some controversy around the idea of root causes,¹² as an analytical approach, root causes create a framework where several conceptual distinctions offer explanations that inform our understanding of the conditions, drivers, and enabling factors of terrorism. A useful distinction is to engage two different types of causes behind terrorism:¹³

⁹ Bourekba, Moussa. 2021. “Climate change and Violent Extremism in North Africa. Barcelona Centre for International Affairs (CIDOB)”; Asaka 2021; Institute for Economics and Peace, 2020. “Ecological Threat Register 2020”. *Understanding Ecological Threats, Resilience, and Peace*.

¹⁰ Silke and Bjørge 2018; Horgan, John. 2014. *The Psychology of Terrorism* (2nd ed.). London: Routledge.

¹¹ Sinai, Joshua. 2005. “A conceptual framework for resolving terrorism’s root causes”. In Bjørge (ed.) *Root Causes of Terrorism: Myths, Reality and Ways Forward*. London: Routledge.

¹² Bennett, William. 2002. *Why We Fight: Moral Clarity and the War on Terrorism*. Washington, DC: Regnery Publishing Inc. Crenshaw, Martha. 1981. “The causes of terrorism.” *Comparative politics* 13(4): 379-399.

¹³ Chrenshaw 1981, Bjørge 2005. Neumann, Peter. 2017. “Countering Violent Extremism and Radicalisation That Lead to Terrorism: Ideas, Recommendations, and Good Practices from the OSCE Region”, *Organisation for Security and Co-Operation in Europe*.

- ▶ **Preconditions:** phenomena that tend to be structural in nature and enable a wide range of outcomes, of which terrorism is only one. It should be noted, that even if preconditions exist for a given context they are not solely responsible for causing terrorism. In other words, preconditions are those conditions that set the stage for the emergence of terrorism. Common examples of preconditions include political instability, weak rule of law, corruption, inequality, etc.
- ▶ **Precipitants:** types of causes that more directly influence the emergence of terrorism. Precipitants are commonly understood as push, pull, and personal factors that directly affect a vulnerable individual or group's propensity towards radicalization into violent extremism.

In all, root causes represent the structures that set the stage for terrorism in the long term (preconditions) and the specific events or phenomena that can facilitate, motivate or trigger radicalization into violent extremism and/or terrorist acts (precipitants).¹⁴ Climate change as a threat multiplier can aggravate existing preconditions and multiply precipitants which may drive recruitment and radicalization in diverse contexts (Figure 2). Taking this point into account, investigating the ways climate change can exacerbate diverse climate, contextual, and escalating factors believed to lead to violent radicalization is necessary. Increased vulnerability and insecurity combined with climate change fragility provide advantageous opportunities to attract more members as a result of increasingly adverse conditions.¹⁵

“Climate change as a threat multiplier can aggravate existing preconditions and multiply the precipitants which may drive recruitment and radicalization”

To start, the root causes approach differentiates between different levels and types of causation related to the process of radicalization:¹⁶

- ▶ **Structural causes** impact peoples' lives in ways that they may or may not be conscious of or understand at the macro level. Macro-level trends generally relate to systemic conditions such as globalization or rapid modernization that shape life chances in different contexts.
- ▶ **Facilitator (or accelerator) causes** capture aspects of violent extremism and terrorism that are appealing and attractive, without being principal forces. Facilitator causes are significantly impacted by pull factors like violent extremist narratives (i.e. propaganda), a sense of belonging, ideology, and other incentives (e.g., monetized opportunities).
- ▶ **Motivational causes** are the actual grievances individuals experience at the micro (personal) level that motivate them to act. Grievances are more than momentary feelings or expressions of discontent, rather they are the source or symptoms of an individual's real or perceived suffering. Motivational causes are underpinned by the adoption of a particular ideology and extremist rhetoric that places an individual on the radicalization spectrum where hostility and violence are further rationalized.
- ▶ **Triggering causes** are the direct precipitators of terrorist acts. Triggering causes are diverse and may be historic or provocative events, a disaster, an offensive act committed by perceived enemies, or other events and actions that call for revenge or mobilization.

An illustration of how these factors and different causal levels can link together climate fragility risk and violent extremism can be seen in Table 1. The table is useful in highlighting the complex range of factors that are involved as well as showing that the boundaries between factors and levels and types of causation are often blurred.

¹⁴ Bjørgo 2005.

¹⁵ Stuart, Jack. 2019. “Climate Change and Violent Extremism in Africa: A Contested Link”. In Tschudin Alain, Moffat, Craig, Buchanan-Clarke, Stephen, Russel, Susan, and Lloyd Coutts (eds.), *Extremisms in Africa* (vol. 2). Tracy McDonald Publisher. London.

¹⁶ Ibid, 3-4.

Table 1: Root causes of terrorism in climate fragile contexts

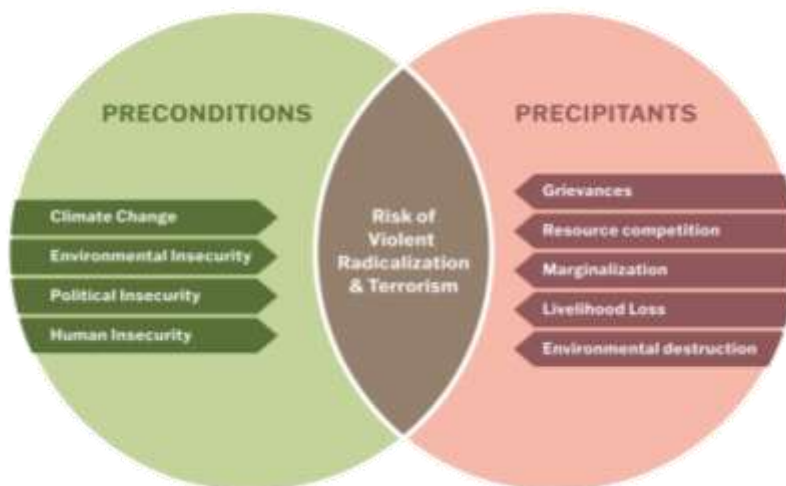
Structural Causes	Facilitator Causes
Climate variability Climate pressure Lack of good governance (state fragility) Globalization High/Rising levels of distributive inequality Poor climate adaptability Resource scarcity/abundance	Resource competition Lack of opportunities (e.g., unemployment) Climate-related migration Elites' exploitation of resources Alienation and abandonment
Motivational Causes	Triggering Causes
Livelihood loss Absolute and relative deprivation Lack of resilience Ethno-cultural tensions Environmental degradation Climate-related displacement Exclusion and marginalization	Climate Shock Economic shock Environmental destruction Rising cost of living (e.g., food) Climate adaption policies and practices Resource conflict

Importantly, just because a root cause may be present in a given context does not necessarily mean that radicalization to violence or terrorism will occur. As we have seen, causes operate at different levels from large-scale macro trends to everyday individual personal factors.

Overall, underlying grievances in the context of enabling conditions (structural causes) may give rise to increased radicalization into violent extremism and terrorist activity as a result of precipitant and motivational forces. Underlying grievances and motivational forces serve VEOs' recruitment efforts in not only sourcing terrorist recruits but also assisting in building a supportive base. Thus, climate change increasingly shapes contributing factors to vulnerability and fragility negatively impacting aggrieved individuals. In return, vulnerable individuals seek alternative views which address their grievances and in some cases, VEOs offer those alternative views (or opportunities).

The root causes approach does not imply a direct causal relationship between climate change and violent extremism but rather highlights the fact that climate change is a threat multiplier exacerbating the underlying conditions of terrorism and multiplying the drivers of radicalization into violent extremism.

Figure 2: Preconditions and precipitants of risk of violent radicalization and terrorism



Climate Change in Terrorist Recruitment and Radicalization Narratives

VEOs employ a range of communication strategies to advance their strategic objectives.¹⁷ Narratives are the most pervasive communication strategy of VEOs in recruitment and radicalization. Narratives serve to convey ideology, values, justifications, or key messages to potential recruits and the greater public.¹⁸ Put simply, narratives' main function is to *persuade*. In the context of terrorism, narratives are employed to shift beliefs and attitudes. The extent to which narratives change beliefs or attitudes is mainly reliant on the underlying conditions (root causes) and drivers (push, pull, and personal factors) that facilitate the emergence of terrorism.

Broadly, narratives used in recruitment and radicalization define the in-group, define the out-group (culprits), define how grievances are a result of the existence of the out-group and set the conditions for the level of hostility or violence that must be aimed at the out-group.¹⁹ As each of these conditions is further determined, the possibility for escalation to violence increases as negative views of the out-group rise and the justification for violence is conveyed.

Escalation to violence or terrorist activity often depends upon the strength of a *terrorism-justifying ideology* within a radicalization pathway.²⁰ Terrorism-justifying ideology instructs groups and individuals on radicalization into violent extremism pathways towards escalatory acts of violence and terror.²¹ In other words, it ultimately grants a license to violence and sets the conditions for the perceived allowability of terrorism. Terrorism-justifying ideology contains three essential characteristics:

- ▶ **Grievances** believed to be suffered by one's in-group;
- ▶ **Culprits** presumed responsible for perpetrated grievances, often identified as a perceived out-group or out-group member; and
- ▶ **Narratives** that interpret violence as a morally warranted and effective method of resolving grievances, often through acts of terror.

Presently, there is weak evidence that climate change is employed in recruitment and radicalization narratives of VEOs as well as employed in terrorism-justifying ideology.²² Of course, this does not mean that climate change and the environment have not served as ideological drivers in past eco-terrorism and environmental terrorism movements (see Rapid Review #2). Rather, it reflects the present evidence that while climate change is itself a grievance and culprits can be identified (e.g., extractive industries, governments, climate change deniers, etc.) the strength of climate change in a terrorism-justifying ideology within current VEOs' narratives is lacking.

However, the extensive range of grievances exacerbated by climate change poses a greater opportunity for VEOs to develop new communication strategies to extend the grounds for recruitment (see Rapid Review #1). Additionally, the growth of climate activism globally presents the potential to trigger groups and actors to radicalize and develop a potentially violent climate change motivated extremism.²³

¹⁷ Braddock & Horgan 2016.

¹⁸ Ibid, 381.

¹⁹ Berger, J.M. 2018. *Extremism*. MIT Press; Braddock, Kurt, and John Horgan. 2016. "Towards a guide for constructing and disseminating counternarratives to reduce support for terrorism." *Studies in Conflict & Terrorism* 39(5): 381-404.

²⁰ Kruglanski, Arie W., Michele J. Gelfand, Jocelyn J. Bélanger, Anna Sheveland, Malkanthi Hetiarachchi, and Rohan Gunaratna. 2014. "The psychology of radicalization and deradicalization: How significance quest impacts violent extremism." *Political Psychology* 35: 69-93.

²¹ Ibid.

²² Spadaro, Paola Andrea. "Climate Change, Environmental Terrorism, Eco-Terrorism and Emerging Threats." *Journal of Strategic Security* 13, no. 4 (2020): 58-80.

²³ Macaskill, Andrew and M, Muvija. 2022. Climate activists promise daily protests after blocking 10 UK oil terminals. Accessed 1 April 2022. <https://www.reuters.com/world/uk/climate-protesters-block-10-uk-oil-terminals-six-people-arrested-2022-04-01/>.

Climate Change Effects on Terrorist Recruitment

There is a vast range of socioeconomic, political, and ideological strategies and non-violent and violent tactics used by VEOs to enlist new members and build supportive bases.²⁴ Regardless of the numerous strategies and tactics employed, all VEOs must recruit new members and sympathizers to stay relevant and operate effectively.²⁵ Generally, there are three common conditions that most VEOs employ to recruit members:

- ▶ **Financial incentives:** to lure individuals impacted by increasing economic insecurity and vulnerability with promises of economic welfare.
- ▶ **Kinship:** the influence of common identity characteristics, communal bonds, ideology, social cohesion, religion, and their exploitation for conscription.
- ▶ **Political and cultural history:** competing political and cultural narratives and experiences that create suspicion across different divides (religion, ethnicity, nationality, etc.) in society that are exploited.

Simply put, terrorist recruitment at its most fundamental level requires defining the in-group and creating **in-group cohesion**: identity grouping defined by shared beliefs, traits, and practices (including behavior) which set the parameters for in-group eligibility, and thus potential recruitment.²⁶ While the connections between climate change and terrorist recruitment are under-researched, several discernible climate change effects on terrorist recruitment are already occurring in predominantly climate-vulnerable and politically fragile contexts that are worth noting:

- 1) As climate change increasingly exacerbates livelihood insecurity VEOs are already employing recruitment techniques that offer socioeconomic stability. For instance, Boko Haram has expanded its recruiting efforts in northern Nigeria and Cameroon by offering recruits monthly salaries that are ten times the minimum wage (\$600-\$800) in the region that suffers endemic underemployment (as high as 75 percent).²⁷
- 2) Climate change will increasingly stress agricultural and fishing sectors decreasing their sustainability and prompting new migratory patterns. In Morocco rural to urban migration has rapidly increased the rate of urbanization, particularly slum development on the outskirts of Casablanca, Tangiers, and Tétouan. The existence of these slum areas has been linked to a growth in violent extremism in the country.²⁸ For instance, two-thirds of Moroccan foreign terrorist fighters who joined IS in Iraq and Syria are originally from the slum development in Tangiers.²⁹
- 3) Increasing frequency, intensity, and duration of climate shocks that negatively impact food and water security are likely making it easier for VEOs to recruit in climate fragile contexts. It is

“As climate change increasingly exacerbates livelihood insecurity VEOs are already employing recruitment techniques that offer socioeconomic stability.”

²⁴ Faria, João Ricardo, and Daniel G. Arce M. 2005. "Terror support and recruitment." *Defence and Peace Economics* 16(4): 263-273; Neumann, Peter. 2012. *Joining al-Qaeda: jihadist recruitment in Europe*. Routledge; Bloom, Mia. 2017. "Constructing expertise: Terrorist recruitment and "talent spotting" in the PIRA, Al Qaeda, and ISIS." *Studies in Conflict & Terrorism* 40(7): 603-623.

²⁵ Ranstorp, Magnus. 2010. *Understanding violent radicalisation: terrorist and jihadist movements in Europe*. Routledge.

²⁶ Berger 2018.

²⁷ Cullen S. Hendrix and Jessica Anderson, *Resilience and Food Security Amidst Conflict and Violence: Disrupting a Vicious Cycle and Promoting Peace and Development* (Washington, DC: USAID, 2021).

²⁸ Masbah, Mohammed. 2015. 'Moroccan Foreign Fighters - Evolution of the Phenomenon, Promotive Factors, and the Limits of Hardline Policies'. Berlin: SWP (Stiftung Wissenschaft und Politik).

²⁹ Ibid.

estimated that 60 to 70 percent of local IS fighters in Iraq and Syria were recruited as a result of poor policy planning and a lack of adaptation strategies during major droughts.³⁰

- 4) The negative consequences of climate change in climate fragile contexts further strain the relationship between different population groups and governments. As this relationship deteriorates, VEOs foster radicalization narratives of alienation and abandonment aimed to weaken government legitimacy and recruit vulnerable individuals exhibiting political frustration. For instance, in the border regions of Mali, Burkina Faso, and Niger VEOs, like Katiba Macina and Al-Qaeda in the Islamic Maghreb (AQIM), actively present themselves as alternatives to weak governments.³¹
- 5) Climate change will impact resource competition increasing the value of certain resources. In politically fragile contexts, VEOs aim to strategically capture and control resources and their markets fully, or partially, to financially support operational functions requiring recruited labor. For example, Jama'a Nusrat ul-Islam wa al-Muslimin (JNIM) and other VEOs are seizing gold mines in Senegal to exploit market chains to profit, and similarly in Somalia, Al-Shabaab exploits charcoal mining.³²

Other climate change effects on terrorist recruitment that have been discussed but, to date, have not explicitly come to fruition relate to the unintended effects of climate change policy:³³

- 6) Climate change mitigation discussions and policy frameworks have sown division between developed economies, which are most resilient to climate change, and developing or under-developed economies that are least resilient to climate change. VEOs can exploit this division to recruit vulnerable individuals in developed economies to carry out attacks.
- 7) Climate change mitigation regimes predominately target carbon emissions and require the decarbonization of energy systems which involves a massive global energy transition. This energy transition may impact the stability of states that rely on extractive economies (e.g., Saudi Arabia and the other Gulf States, Ghana, Venezuela, etc.). VEOs can exploit this instability but, more importantly, will need to adapt to a financial future where funding from extractive industries/economies is not sustainable. Funding links between the Gulf States and VEOs are fairly well known.³⁴

In the near term, climate change itself is unlikely to serve as a recruitment or radicalization strategy or tactic. Although climate change exacerbates underlying conditions conducive to radicalization to violent extremism, other options to overcome them exist, apart from terrorism. Yet, as a threat multiplier, climate change has and will continue to produce recruiting opportunities for VEOs in climate-vulnerable and politically fragile contexts. Furthermore, climate change will continue to aggravate political and socioeconomic weaknesses that will likely make current or future VEOs more capable or likely to emerge.³⁵

³⁰ Leggiere, Katherine. 2015. "Countering ISIS recruitment in western nations." *Journal of Political Risk* 3(1).

³¹ Paulin Maurice Toupane, Adja Khadidiatou Faye, Aïssatou Kanté, Mouhamadou Kane, Moussa Ndour, Cherif Sow, Bachir Ndaw, Tabara Cissokho and Younoussa Ba. 2021. "Preventing violent extremism in Senegal: Threats linked to gold mining." *ISS West Africa Report* 2021, no. 36: 1-34.

³² Petrich, K. (2019). Cows, Charcoal, and Cocaine: Al-Shabaab's Criminal Activities in the Horn of Africa. *Studies in Conflict and Terrorism*. <https://doi.org/10.1080/1057610X.2019.1678873>

³³ Lukas Rüttinger et al., *A New Climate for Peace: Taking Action on Climate and Fragility Risks: An Independent Report Commissioned by the G7 Members* (Germany: Adelphi, 2015), <https://www.newclimateforpeace.org/#report-top>.

³⁴ Realuyo, Celina 2015. "Combating Terrorist Financing in the Gulf: Significant Progress but Risks Remain." *The Arab Gulf States Institute in Washington*; Le Billon, Philippe, and Fouad El Khatib. 2004. "From free oil to 'freedom oil': Terrorism, war and US geopolitics in the Persian Gulf." *Geopolitics* 9(1): 109-137.

³⁵ Hendrix, Cullen. 2021. "Climate Change and Terrorism: Three Risk Pathways to Consider". *The Center for Climate Security*.

Weaponizing the Climate Change and Terrorism

VEOs frequently use a range of conventional and non-conventional means to attack, coerce, intimidate, and weaken their opponents to induce widespread terror. Among the list of tactics adopted by VEOs, the use of the environment and its natural resources as either a target or a weapon to pursue strategic aims requires greater attention as climate change intensifies. Targeting or weaponizing the environment and its related infrastructure as a strategy has a long history in both conventional and asymmetric conflicts.³⁶ The majority of research in this topic area focuses on water resources and systems and offers a guiding framework.³⁷ The capture, control, destruction, sabotage, and/or looting of the environment, more broadly, is growing into a more serious threat as climate change continues to compound environmental risks.

As the strategic importance of vital environmental resources grows so does their appeal to VEOs. VEOs may exploit the effects of climate change as a means to coerce populations by exercising tactics that

“The threat of VEOs targeting or weaponizing the environment is considered more dangerous as the results tend to be more widespread and long lasting.”

cause physical and economic harm to infrastructure and services or choose to strategically control such resources. Furthermore, the threat of VEOs targeting or weaponizing the environment is considered more dangerous as the results tend to be more widespread and long-lasting.³⁸ For example, between 2013 and 2015 the Islamic State (IS) captured large dams at Falluja, Mosul, Samarra, and Ramadi to strategically control critical water supplies.³⁹ IS chose to flood or disrupt water supplies of areas and populations that opposed them and reallocate to areas and populations that offered IS support. Thus, it is clear that the environment and its resources can be used as both a weapon and a target in the strategic and tactical considerations of VEOs.

To best evaluate the threat of environmental tactical considerations it is important to examine the *intent* of VEOs actors for potentially using the environment and its resources as a tactic or target relative to the *capability* for actors to do so. Intent pertains to why and to what purpose VEOs would use or target the environment whereas capability refers to the characteristics of the environment where VEOs operate. In other words, the *motives* and *means* to carry out terrorism must align. The increased severity and frequency of climate change may offer more opportunities for VEOs to decide to strategically use or target the environment as a means to exploit or control populations. VEOs' motives and decision-making in fragile climate contexts can be divided into three broad, yet interrelated categories:

- ▶ **Operational or strategic motives:** instrumental decisions whereby the use of the environment or environmental conditions allow the pursuit of strategic and tactical ends. For instance, capturing or destroying environmental resources to undermine political and socioeconomic structures.
- ▶ **Organizational motives:** structural decisions which enhance the groups' position, legitimacy, and authority relative to their opponents. For example, manipulating weakened government capacity to respond to a climate shock by fostering radicalization narratives of alienation and abandonment.

³⁶ Hastings, Tom H. *Ecology of war & peace: Counting costs of conflict*. University Press of America, 2000.

³⁷ Gleick, Peter, and Matthew Heberger. 2014. "Water conflict chronology." In *The world's water*, pp. 173-219. Island Press, Washington, DC; Gleick, Peter. 1993. "Water in crisis." *Pacific Institute for Studies in Dev., Environment & Security*. Stockholm Env. Institute, Oxford Univ. Press. 473(9): 1051-076.

³⁸ Spadaro, Paola Andrea. 2020. "Climate change, environmental terrorism, eco-terrorism and emerging threats." *Journal of Strategic Security* 13(4): 58-80.

³⁹ von Lossow, Tobias. 2016. "Water as a Weapon: IS on the Euphrates and Tigris. The Systematic Instrumentalisation of Water Entails Confronting IS Objectives", *Stiftung Wissenschaft Und Politick*, SWP Comments 3(2).

- ▶ **Psychological motives:** decisions based on group or individual extremist ideology aimed to generate fear and anxiety. For instance, exploiting increased livelihood insecurity as a means of recruitment or to induce terror.

The decision-making process for VEOs' to target the environment and/or resources and related infrastructure depends on a range of physical characteristics such as the level of scarcity or abundance of a resource in a given area, location of resources, vulnerability to attack as well as the impact of the attack (i.e. capacity for regeneration).⁴⁰ The more essential the resource is in supporting human systems the greater its target value becomes. Additionally, this point extends to ancillary resource-related targets such as people associated with resource management and infrastructure (e.g., dams, pipelines, computing systems, etc.).

Targeting the environment or resources is not only a devastatingly destructive act aimed to spread fear, but it also functions to undermine government capacity and legitimacy. For instance, in 2014 Al-Shabaab cut water supplies to cities liberated by the African Union Mission in Somalia (AMISOM) and Somali troops and forced residents to walk to nearby Al-Shabaab-controlled cities.⁴¹ The increasing frequency and severity of climate change will become more complex and more difficult to manage with the growing possibility that VEOs not only strive to target the environment as a means to coerce populations and undermine governments but also seek to weaponize it to foster control, demonstrate power, and earn profit.⁴²

If VEOs can successfully exploit increasing levels of scarcity and more pronounced vulnerability of environmental resources, then it is likely that the weaponization of the environment will become more attractive as a strategic, tactical, and coercive practice. Put simply, the scarcer (or more abundant) certain environmental resources become, the more power is given to those who control them. As such, three types of weaponization can be identified:⁴³

- ▶ **Strategic weaponization** entails the actual use of the environment or environmental conditions to consolidate power and exert control and influence over a territory and its population or as an asset to fund operational functions. For example, in October 2014, IS acted to divert the Khalis tributary of the Tigris River to flood large areas of Mansouriya and Diyala provinces and collected (extorted) taxes on the water in areas under IS control.⁴⁴
- ▶ **Tactical weaponization** entails acts that target the environment to further contribute to socioeconomic or political insecurities, like the purposeful destruction or contamination of vital resources. Often tactical weaponization refers to actions taken by VEOs to target the environment in ways that intentionally disrupt counterterrorism practices. For instance, the Taliban cut electricity lines and destroyed telecommunications infrastructure to slow United States (U.S.) and allied troops.⁴⁵ Unfortunately, this type of weaponization often entails significant collateral damage as populations are caught in the middle.

⁴⁰ Kohler, Christina, Carlos Denner Dos Santos, and Marcel Bursztyn. 2019. "Understanding environmental terrorism in times of climate change: Implications for asylum seekers in Germany." *Research in Globalization* 1.

⁴¹ Public Radio International, "Al-Shabaab's 'Water Terrorism' is Yielding Results and Tragedy in Somalia's Civil War," April 12, 2014, <https://www.pri.org/stories/2014-08-08/how-alshabaab-using-water-tool-terrorism> (accessed March 4, 2022).

⁴² CNA, "The Role of Water Stress in Instability and Conflict," 2017, https://www.cna.org/CNA_files/pdf/CRM-2017-U-016532-Final.pdf (accessed January 31, 2022).

⁴³ King 2016.

⁴⁴ Hubbard, Benn 2014. "Life in a Jihadist Capital: Order with a Darker Side, ISIS Puts its Vision into Practice in a Syrian City," *The New York Times*, last modified, http://www.nytimes.com/2014/07/24/world/middleeast/islamic-state-controls-raqqa-syria.html?_r=0.

⁴⁵ Kohler et al. 2019, 5.

- ▶ **Coercive weaponization** entails acts that use the environment or environmental conditions as an instrument of subjugation. On one hand, VEOs may threaten to target the environment or essential resources to coerce populations to submit to their objectives. On the other hand, VEOs may use the control of key essential resources to enhance their local authority and incentivize or reward populations to submit to their objectives. For example, Boko Haram has been known to offer food security to populations with high levels of food insecurity as a means of subjugation and recruitment.⁴⁶

The weaponization of the environment and resources is more likely to occur in contexts and areas with higher climatic and political fragility and vulnerability. However, that does not preclude contexts and areas with high levels of climate resilience and strong political institutions. For example, in 2000 a nefarious hack of the Maroochy Shire, Queensland Australia waste management system caused millions of liters of raw sewage to contaminate parks, rivers, and canals.⁴⁷ Of significant future concern is whether or not environmental and climate change activists will evolve strategies and tactics that weaponize the environment for the protection of the environment or against entities perceived to be harming the environment or contributing to climate change.

In all, it is clear that VEOs understand the benefits (and risks) of actively targeting or weaponizing the environment and that these will continue to play a highly strategic and tactical role in VEOs operational pursuits across the globe. Regrettably, climate change will contribute to the complexity and danger of weaponizing and targeting the environment at the same time the actions of weaponizing and targeting the environment will contribute to increased climate vulnerability.

⁴⁶ Hendrix and Anderson 2021.

⁴⁷ Tony Smith, "Hacker Jailed for Revenge Sewer Attacks," The Register, October 31, 2001.
https://www.theregister.co.uk/2001/10/31/hacker_jailed_for_revenge_sewage/ (accessed March 12, 2022).

Bottom Line Summary

Overall, VEOs may exploit the effects of climate change as a means to exert influence over populations by exercising a range of strategic and tactical (capture, control, sabotage, and/or looting) practices to recruit new members and build sympathetic broader publics or subjugate and weaken perceived enemies. Experts in climate change need to understand how climate impacts can influence power dynamics and worsen environmental, political, and socioeconomic vulnerability, while terrorism and conflict experts must grasp the impacts of climate change on local contexts and how violence shapes climate vulnerability, and thus climate resilience and adaptation. Certainly, investigating how and why terrorism forms is a vital approach to preventing future terrorism which may be significantly impacted by climate change.

Recommendations

- ▶ A limited number of studies have engaged climate change in relation to radicalization into violent extremism models. Thus, further research is needed to understand which push, pull, and personal factors contribute to an escalation towards violence (and acts of terror) in climate fragile contexts.
- ▶ Evidence of the weaponization of the environment by VEOs exists in regions already experiencing political instability and violent conflict. Future scenario planning models should be employed to determine if, and how, the weaponization of the environment could occur in other contexts.
- ▶ As climate activism rises across the globe, more research is necessary to determine potential underlying conditions, drivers, and enabling factors that could trigger climate activism groups and actors to radicalize and develop a potentially violent climate change motivated extremism.

Suggested Data Sources

- ▶ Asaka, Jeremiah O. "Climate Change-Terrorism Nexus? A Preliminary Review/Analysis of the Literature." *Perspectives on Terrorism* 15, no. 1 (2021): 81-92.
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- ▶ Chaturvedi, Sanjay, and Timothy Doyle. *Climate terror: A critical geopolitics of climate change*. London: Palgrave Macmillan, 2015.
- ▶ Rosa, Eugene A., Thomas Dietz, Richard H. Moss, Scott Atran, and Susanne Moser. "Managing the risks of climate change and terrorism." *Solutions* 3, no. 2 (2012): 59-65.
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This research was supported by Pool Re Solutions. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of Pool Re Solutions or START.

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CITATION

To cite this rapid review, please use this format:

Henkin, Samuel. "A Climate of Terror? Climate Change as a Means for Terrorist Exploitation," College Park, MD: START, 2022.