An Empirical Analysis of Climate-Conflict Cycles

The Syrian Civil War & The 2023 Earthquakes

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Abstract

In responding to calls for more empirical research on the climate-conflict nexus, this article contributes empirical findings from Syria and the 2023 Türkiye-Syria Earthquakes to assess one step of the vicious cycle theory. Specifically, it traces the cycle from natural hazard vulnerability, through the hazard impact, to the resulting change in armed conflict intensity. Through a comparison of two similar Syrian governorates, with differing levels of post-earthquake conflict intensity, I find modest support for a relationship between natural hazard vulnerability and an increase in conflict intensity. I further find support for a casual mechanism that sees high intensity impacts of the earthquake lead civilians to seek support from rebel groups, ultimately leading to increased recruitment and conflict. The similarities in the cases and the nature of earthquakes as exogenous, rapid onset events, allow for a strong research design that controls for reverse causality in the study. The article concludes by proposing a framework of analysis of rotational variables and scope conditions as a first step to creating a consistent and effective tool to empirically evaluate the climate-conflict cycle.

Key words: *Climate-Conflict Nexus, Syria, Earthquake, Vulnerability, Conflict Intensity, Rebel Groups*

Introduction

There is an increasingly dire call, from both academics and practitioners, to better understand the effects of climate hazards on armed conflict dynamics. Recent research suggests that the indirect effects of vulnerability, natural hazard impact, and armed conflict may compound to create an inescapable 'vicious cycle' (Buhaug & von Uexkull, 2021). We must, therefore, build empirical knowledge about this climate-conflict cycle to be able to help those entrapped in such spirals.

In responding to calls for more empirical research on the climate-conflict nexus (Buhaug & von Uexkull, 2021; Cappelli et al., 2024), this article contributes empirical findings from Syria and the 2023 Türkiye-Syria Earthquakes to assess the relationship between pre-hazard vulnerability and post-hazard conflict intensity; one step in vicious cycle theory. To do so, it asks the question: *Does high vulnerability to a natural hazard lead to an increase in post-hazard conflict intensity?* Through a comparison of two similar Syrian governorates, with differing levels of post-earthquake conflict intensity, I assess the relationship of natural hazard vulnerability on later increases in conflict intensity. I find modest support for the theory that higher hazard vulnerability can, in part, lead to higher intensity of conflict after the hazard's impact. The similarities in the cases and the nature of earthquakes as rapid onset events allows for a strong research design to analyze the relationship and a potential causal mechanism of the climate-conflict cycle.

This article begins with a review of previous research on this topic, outlines the theoretical expectations of this research, and then describes the research design. It goes on to conduct a case comparison and provide evidence that supports the proposed causal mechanism. The article concludes by suggesting an empirical framework to test the entire vicious cycle loop in future research.

Previous Research

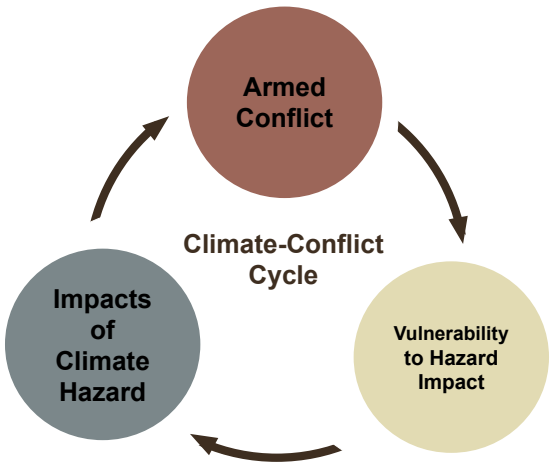
The empirical record of the last two decades has been inconsistent in demonstrating a causal link between climate change and conflict (Scheffran et al., 2012). Evidence supporting the relationship is often weak, data is difficult to capture and differences in definitions of variables vary widely between studies (Scheffran et al., 2012). In response, researchers have turned to studying the complex and indirect pathways through which climate change impacts conflict onset and dynamics (von Uexkull & Buhaug, 2021). This body of work demonstrates that climate change acts as a mediating factor of conflict outbreak and intensity by interacting with known conflict risk factors such as resource scarcity, migration, food and water access, and diminished economic outputs (Cappelli, 2024). To academics, this relationship of compounding and nonlinear variables is often called the climate-conflict nexus. For practitioners and policymakers, this research has translated into climate change being characterized as a "threat multiplier" (Goodman, 2024), in which climate change interacts with local social, political, economic, and environmental factors to exacerbate pre-existing risks and vulnerabilities to situations of insecurity and conflict (Rüttinger, 2017; Mobjörk et al., 2016).

Building on the work in climate-conflict pathways, Buhaug and von Uexkull (2021) were among the first to create an analytic framework for the climate-conflict nexus that brought together the literatures on vulnerability, climate change, and conflict. They theorized a "vicious cycle" in which conflict, climate vulnerability, and impact of natural hazards trap societies into an inescapable spiral (see figure 1). The theory argues that the socio-economic and political impacts of armed conflict, such as poverty and reduced state functionality, increase vulnerability to climate change and other environmental events. In turn, high vulnerability leads hazards to have widespread impacts on human livelihoods and security such as the destruction of infrastructure or desertification of agricultural lands. More vulnerability to climatic hazards, leads to a higher risk of intense and destructive hazard impacts. The cycle is completed as those impacts increase the likelihood of armed conflict by, for example, disrupting the economy or exacerbate patterns of marginalization in a disaster response.

Underlying the vicious cycle theory and

Figure 1

Visualization of the climate-conflict cycle, adapted from Buhaug & von Uexkull (2021, p.548)



climate-conflict pathways more generally is the relationship between vulnerability and impact. Broadly, vulnerability is the "susceptibility or predisposition to be adversely affected by a hazard" (CCVI, 2025) and has been conceptualized as the combination of sensitivity, adaptive capacity, and risks (Pearson & Newman, 2019). Vulnerability factors to both climate and conflict can include economic dependence on agriculture and natural resources, levels of development, levels of inequality or marginalization, access to technology, quality of governance, and gender, to name a few (Nagano & Sekiyama, 2023). Where present, vulnerability to a hazard's impact can be increased by both armed conflict and climate change.

Importantly, a natural hazard without vulnerability cannot become a disaster, as it would not have an impact on people or society. Environmental disasters occur where and when there is potential for socio-economic destruction as a result of the hazard's impact (Ide, 2023b). Therefore, hazards cannot impact local social, economic, or political dynamics on their own, including those of armed conflict, instead vulnerability mediates such pathways. Where vulnerability is high, the social and physical impacts of natural hazards are also higher (Choo & Yoon, 2024). In conflict-affected areas a high-intensity impact can affect conflict dynamics by emphasizing inequalities, providing opportunities for rebel advancement, and changing the opportunity costs for civilians to participate in or support rebel causes (Ide, 2023a; Barnett & Adger, 2007; Kalyvas & Kocher, 2007).

In the five years since Buhaug and von Uexkull's article, the research community has begun to contribute empirical knowledge to the vicious cycle theory (e.g. Ide, 2023b). Yet, more empirical research is needed to connect the three literatures of climate change, conflict, and vulnerability, and create a better understanding of these cycles (Cappelli et al., 2024). This article contributes to that research gap by empirically tracing one part of the vicious cycle, specifically from natural hazard vulnerability, through the hazard impact, to the resulting change in armed conflict intensity.

Hazard Vulnerability and Armed Conflict

Natural hazards are here understood as a physical event caused by geological, hydrological, or climatological processes (adapted from Chaudhary & Piracha, 2021). These events include earthquakes, droughts, floods, and extreme storms as examples. The impacts of these events on societies are shaped and intensified by vulnerability. In this research, natural hazard is used instead of disaster to emphasize the role of vulnerability in the ultimate outcome of the hazard's impact. Vulnerability to a natural hazard is de-

fined as the context-specific pre-event propensity, predisposition, and susceptibility to be adversely affected by a natural hazard (adapted from IPCC, 2023, TS.A.3; Buhaug & von Uexkull, 2021, p. 547; Cutter et al., 2008, p. 599). Vulnerability leads to physical, socio-economic, and political harm to which it is difficult to adapt or cope (ibid).

This definition serves three important theoretical functions. First, it aligns with industry standard models for assessing vulnerability by being context-specific (see DID, 2012, pp. 3-5; Cutter et al,. 2008, pp. 598-603; Chen et al., 2024, p. 5), while remaining generalizable to a variety of social and conflict settings. Secondly, it captures the dimensions of harm that are most commonly shared across the three individual literatures that this theory unites (Buhaug & von Uexkull, 2021). This ensures that the concept consistently captures the outcomes of vulnerability across each step in the cycle in a way most relevant to the theory. Finally, through the phrase "inability to adapt or cope," the concept of resilience is placed within vulnerability. Resilience differs from vulnerability in that it "is the ability of a social system to respond and recover from disasters," (Cutter et al., 2008, p. 599). This specific framing allows for the nuances of resilience to be captured within the theoretical assessment of vulnerability.

This research is specifically concerned with intensity of state-based armed conflict as the dependent variable. State-based armed conflict is defined as "a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths in a calendar year," (Höghladh, 2025, p.28). Further, intensity is defined as a (de-)escalation in violent events and/or activities by armed actors (Ide, 2023b).

Pathways From High Vulnerability to Increased Conflict Intensity

The theorized pathways from climate vulnerability to increased conflict intensity in civil war settings tend to focus on the aims and actions of governments and rebels in relation to the vulnerability civilians experience (Ide, 2023a; Ide 2023b; Barnett & Adger, 2007). When high hazard vulnerability is converted to more immense social and physical impacts, civilians need support for recovery. In civil war contexts, the government is often unable or unwilling to provide the resources or opportunities civilians need to recover from the impact, which further entrenches their pre-existing grievances (Ide, 2023b). A lack of alternative opportunities, especially when civilians perceive the situation will not improve in the future, can reduce the opportunity cost of joining rebel groups, driving rebel recruitment (Ide, 2023a, p. 29; Barnett & Adger, 2007, p. 644).

Additionally, the costs of non-participation in rebel groups increase when the government's hazard response is ineffective and as, simultaneously, rebels promise recovery resources and integrate disaster-related grievances into their conflict-related goals (Kalyvas & Kocher, 2007, p. 188; Ide, 2023a, pp. 29-30). As people join rebel groups, the groups become more capable and empowered to act, ultimately leading to more conflict compared to what would have been expected without the hazard impact (Ide, 2023a, p. 30).

Hypothesis and Scope Conditions

Given the above theory, I expect to find that high vulnerability to a natural hazard will increase the intensity of armed conflict in the months following the hazard's impact. More specifically, I expect to find that high levels of vulnerability cause large social and economic losses as a result of a hazard event. These losses compound on existing livelihood disruptions and lead civilians to turn to rebel groups for recovery of resources and income. This in turn brings about an increase in armed conflict intensity through increased recruitment (see figure 2).

This theory applies to cases that already experience at least two of the three cycle components. The society must experience some level of climate impact, conflict, and/or vulnerability in order for the theoretical cycle to wrap around itself and trap the society within. This scope condition, however, constrains the study by

Figure 2

Proposed Causal Mechanism

		Causal Mechanism				
	Independent Var.	*Moderating Var.*	Step 1	Step 2	Step 3	**Dependent Var.**
Theory	High vulnerability to natural hazard	*Ineffective, unequal, or non-existent government emergency response*	High intensity socio-economic impacts on the society	Economic and social losses compound on existing livelihood disruptions, further entrenching grievances	People turn to rebel groups for income, aid, and/or rebuilding, increasing rebel support and recruitment	Increased conflict intensity

creating space for confounders and potential reverse causality. Regardless of the outcome of analysis within the cycle, in this case it is armed conflict intensity, there will always be some level of the outcome measured in the independent variable of interest (i.e. increasing armed conflict gets captured in the vulnerability measures). That is the mere nature of a cycle. Nonetheless, research is warranted on these cycles and this research uses strategic research designs and measurement approaches to best manage these constraints. Finally, the theory treats all climate hazards as exogenous to human behaviour. While this underlying assumption about climate and natural hazards can be true in some cases (such as earthquakes), in other cases, this approach limits both the theory and the accuracy of any empirical findings. By focusing on earthquakes as exogenous events, I hope to build a foundation on which a more nuanced theoretical approach can be found to study endogenous events as well.

Research Design

To test the theory presented above, I employ the most-similar case study design on the conflict-related impacts of the 2023 Türkiye-Syria Earthquakes. A most-similar case comparison is one in which confounding variables are controlled through case selection similarities and causal criteria are established through finding covariation in the variables of interest (Gerring, 2007, p. 131). In this way, I make a comparison over time using the case of the Latakia Governorate, where there was a change in conflict intensity after the earthquake and a comparison over space by comparing Latakia to the

Table 1

Most-similar case comparison chart describing independent variable, dependents variable, and confounders in the cases

Most-Similar Case Comparison

	Indepdent Var.	**Dependent Variable**		**Confounders**[1]					
	Level of Pre-Earthquake Vulnerability	Conflict Deaths in previous year (Feb 7-Dec 7, 2022)	Conflict Deaths Post-Earthquake (Feb 7-Dec 7, 2023)	Experience of Conflict	Territorial Control Status	Socio-religious Diversity	Pre-Conflict Economic & Strategic Importance	Pre-Conflict IWI rating[2]	Conflict Actors Present in the Region
Latakia (inside impact zone)	?	13	106	Intra-State; Widespread; Average of 37 deaths/year in 2020-2022	Mostly controlled by Government of Syria	50% Alawite, 40% Sunni, 10% Christians	Major port city & agriculture	85.3	GoS, Opposition forces (HTS, SDF) Turkmen Militias
Rif Dimashq (outside impact zone)	?	16	38	Intra-State; Widespread; Average of 35 deaths/year in 2020-2022	Mostly controlled by Government of Syria	Majority Sunni, but highly diverse in north and west with ~10 other groups represented	Primarly argiculture land easily accessible to capital city	83.7	GoS, Opposition forces (HTS, SDF), Hezbollah (Iranian backed), Liwa Al-Areen (Russian backed), Israel, ISIL

[1] Based on Climate-Conflict-Vulnerability Index (CCVI 2024).

[2] (Smits and Steendijk 2015).

Rif Dimashq Governorate where there was little change in conflict intensity following the earthquake. These cases were chosen for having variation in the dependent variable across time (different conflict intensities before and after the earthquake) and space (one with higher conflict intensity and one with lower conflict intensity). This ensures that the impact of pre-hazard vulnerability could be assessed as a potential explanatory variable, as described by Gerring above (ibid). These cases hold constant variables that could affect both earthquake vulnerability and conflict intensity. These variables include previous experiences of conflict (Hegre et al., 2017), the presences of multiple armed groups and their levels of territorial control (Fjelde & Nilsson, 2012; Cunningham et al., 2025), socio-religious diversity as a proxy for ethnic divisions (von Uexkull et al., 2016), the strategic resources and importance of the area (Koren, 2019), and the International Wealth Index (IWI) as a proxy for socio-economic inequality (Buhaug & von Uexkull, 2021). The recency of this event has created new evidence to which the climate-conflict cycle can be applied. This is therefore an important case to study, to make use of the most modern causes and effects of the climate-conflict cycle.

The dependent variable, the level of conflict intensity, is operationalized as the change in the number of state-based conflict deaths and events that involved the Government of Syria (GoS) and a rebel group. The theory expects that rebel groups will become more active in conflict after a natural hazard occurs, therefore, I measure only violence that involves a rebel group. Using data from the Uppsala Conflict Data Program (UCDP, Davies et al., 2025) the conflict numbers are compared across the two governorates in the ten months following earthquakes to the same ten-month period of the year before (i.e. February 7 to December 7 in 2022 and 2023). Additionally, this measure is supplemented with qualitative data from news and NGO reports (such as EUAA, CSIS, Levant 24, The Guardian, and The Syrian Observatory for Human Rights) on civilian impressions and experiences of the conflict and new or changing opinions of conflict actors. This ensures the operationalization captures conflict intensity as it relates to the civilians who are vulnerable to the climate-conflict nexus, and captures whether their experiences may drive them to support rebel groups after the earthquake.

I increase the validity of this measure by comparing it to the previous calendar year, rather than the exact ten months before the earthquake. This accounts for potential annual variation such as holidays (Ramadan took place at similar times in both years) and weather patterns. In a search, I did not find other events that would more significantly impact the variables found in December 2022 or January 2023. Therefore, controlling for traditions and weather is the most effective approach for achieving measurement validity. Validity is further increased by capturing only the conflict events that involved the GoS and a rebel group, which ensures alignment with the casual story that has been proposed. The use of UCDP data provides this research with high reliability. UCDP systematically and transparently collects conflict-related events and deaths annually. UCDP is a conservative representation of actual events but gives my measurements consistency while aligning to an industry standard in peace and conflict research.

To measure vulnerability to natural hazards, I built a framework that draws on and simplifies several vulnerability and risk frameworks posited by both academics and practitioners (DID, 2012; Cutter et al., 2008; Cutter et al., 2000; IPCC, 2023). In this framework, vulnerability is operationalized through a limited series of case-specific indicators that capture the potential for impact on the state and population, including four categories of Exposure of Infrastructure and Population, Capacity to React to Hazard, Emergency Response and Preparedness (Resilience), and Demographic Characteristics. Each category contains two to three subcategories (see Appendix A), which are then assessed using a vulnerability rubric to standardize the assessment of each category (see Appendix B).

Through a structured and focused comparison (George & Bennett, 2005) NGO reports, news articles, and academic articles were used to draw conclusions on the level of vulnerability in each country, civilians' conflict experiences, and track the causal mechanism. These sources have a

moderate level of reliability. The recency of the events, the low access to information in the country, and the sheer vastness of the devastation has led to some variation across reports regarding the number of people affected and in what ways they were affected by the earthquake. Triangulation was used where possible to increase reliability of data collected. As discussed above, vulnerability measurements must be context specific, and as such, the indicators used are specific to Syria and earthquakes. They also specifically capture aspects of vulnerability relevant to the actors in the causal mechanism. This close alignment to case and theory increases measurement validity but reduces generalizability of the research. Validity is also reduced through the amalgamation of individual indicators, such as reducing the many facets of hazard exposure into one category of two subcategories, which means some elements of vulnerability were likely missed in data collection. This approach balances the need to measure vulnerability with the limited scope and timeframe of this article.

In addition to the measuring the key variables of interest, I also provide inductive evidence of the causal mechanism for the positive case. I do so to strengthen confidence in the relationship between pre-hazard vulnerability and post-hazard conflict intensity and not to formally test the causal mechanism. For the proposed casual mechanism to take place I expect to find: reports from civilians and INGOs about the misused or redirected aid; NGO or expert vulnerability assessments demonstrating high intensity and long-lasting impacts of earthquake impacts on people and the economy; news reports of civilians' frustration and grievances as a results of compounding vulnerability or government inaction; and expert reports or leaders' statement that rebel groups sizes have increase and/or that they are providing new recovery support for earthquake victims. I use a combination of NGO reports about the situation in Latakia after the earthquake, and the original sources of the UCDP data to infer if each step could have taken place. Evidence of the proposed causal mechanism steps will provide more support to the theorized relationships between my independent and dependent variable but will not draw conclusions about the accuracy of this or alternative causal mechanisms.

I manage the phenomenon of reverse causality discussed above through the context-specific definition of vulnerability and by being temporally explicit. The only vulnerability being captured should be the one which applies to the specific natural hazard of interest. All other dimensions of vulnerabilities (ex. to drought, gender inequality, etc.) must remain 'as if equal' across cases and time. This minimizes the possibility of armed conflict causing vulnerability to more armed conflict becoming the input in this leg of the cycle. Additionally, the conflict intensity level must be similar across compared cases *before* vulnerability is measured. In this way, pre-existing conflict at different time intervals can be controlled as a confounder. Finally, the concept of conflict intensity as the outcome must capture only conflict levels *after* the impact and only be compared to the original conflict measurement taken before vulnerability was measured (see figure 3). These steps will help manage the confounders created by the theoretical cycle framework.

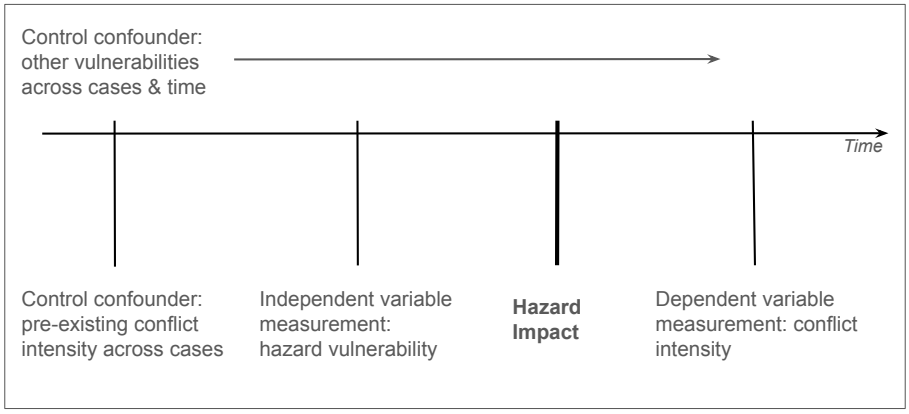
Similarly, Buhaug and von Uexkull (2021, p. 558) acknowledge that another way to manage this theoretically and empirically would be to study conflict onset, rather than changes in conflict intensity. However, they note the rarity with which new conflict outbreaks happen, making such a study harder to conduct.

Given the research design and case selection, to support my hypothesis, I expect to find higher vulnerability to the earthquake in Latakia than in Rif Dimashq before the impact, because Latakia had more intense conflict than Rif Dimashq after the earthquake. This would provide support to the theory that vulnerability to the hazard contributed to later conflict intensity. Within Latakia, I expect to find that high vulnerability to the earthquake led to higher state-based conflict involving rebel groups by tracing the causal mechanism against the observable implications above.

It is important to note that experts generally agree that natural hazards (or their vulnerability) do not have a direct causal relationship

Figure 3

Theoretical timeline of variable measurements to control confounders and manage potential reverse causality



with conflict, and that while natural hazards contribute to conflict onset or intensity, they are almost never the only or most important cause (Mach et al., 2019). To that end, my research design does not attempt to explain the entire phenomenon of conflict escalation after a natural hazard. Rather, this research aims to test the plausibility of the vicious cycles theory by assessing whether it is possible that hazard vulnerability is a contributing factor to later conflict escalation.

Case Descriptions

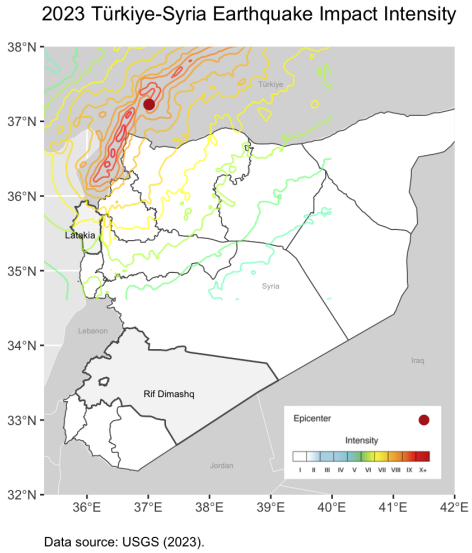
On February 6, 2023, two earthquakes occurred at the junction of Arabain, Antolian, and African tectonic plates, recording magnitudes 7.8 and 7.5 on the Richter scale (figure 4). The earthquakes caused immense devastation throughout southeastern Türkiye and northwestern Syria. Nearly one tenth of the 60,000 people who died in the earthquakes lived in Syria. 392,000 Syrian families were internally displaced (UNDP, 2023) most of whom faced harsh winter conditions without access to food, water, or shelter. It is expected to take several years for the region to fully recover from the impact (OCHA, 2023a).

Vulnerability & Conflict in Latakia

The Latakia Governorate is located in northwestern Syria on the Mediterranean Sea. Before the earthquake, it was home to approximately 1.27 million people (UNDESA, 2024), 54% of whom live in cities (EUAA, 2023a) and 35% of whom were already internally displaced or refugees (UN ESCWA, 2021). It has been a stronghold and of strategic importance to the GoS and the Assad regime throughout the civil war. Civilians in this governorate have previously shown high levels of support for the regime. The region is primarily under GoS control, though the Turkish border region is controlled by Turkish-backed opposition forces (EUAA, 2023a). To the immediate north, in the Idlib governorate, the armed group Hay'at Tahrir al-Sham (HTS) has acted as the de facto government since 2017 (Kassir, 2023), leading to frequent clashes between HTS and the GoS in the border area of the two governorates. Due to the governorate's proximity to geological fault lines, areas of the governorate are measured to have a seismic hazard intensity risk of between 0.55 and 0.9 PGA, meaning perceived shaking of any high intensity earthquake could be between "very strong" to "severe" and the potential for damage is between "moderate" to "heavy" (Johnson et al., 2023). In these same areas, the civil war has led to extensive damage to infrastructure and rebuilding projects are highly unequal, mostly funded by Iranian forces in the region (EASO, 2021). Half the population faces food insecurity (Amnesty International, 2023a) and 825,000 people are considered "vulnerable" to insecurity (UN ESCWA, 2021). Given these findings, Latakia was assigned

Figure 4

Map of 2023 Türkiye-Syria Earthquake impact intensity, featuring Latakia and Rif Dimashq governorates. Map created by author, data sourced from USGS (2023)



a "very high" vulnerability rating to potential earthquake impacts at the end of 2022 (see Appendix A for the detailed vulnerability measurement, and Appendix B for the vulnerability evaluation rubric).

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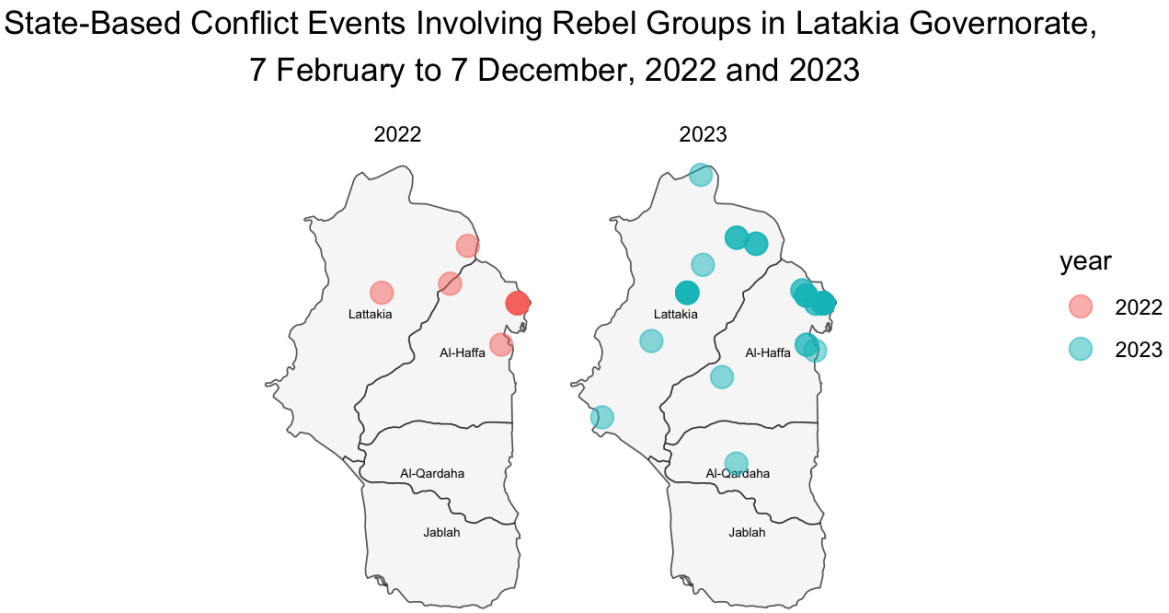
There were 13 deaths that resulted from conflict in the 10 months before the earthquake. All of these deaths resulted from battles between the GoS and HTS or their allied rebel forces (listed as "Syrian insurgents" under the UCDP dyad naming conventions). After the earthquake, conflict between these same actors lead to 106 battle deaths. This is a 715% increase in conflict-related deaths resulting from GoS and rebel groups battles in Latakia after the earthquake. It was also a 279% increase from the average of 28 deaths per year in the three years before (Davies et al. 2025). Further, the deadliness of the conflict events that took place in 2023 nearly doubled from the year before. This violence included frontline, direct attacks between HTS and GoS forces, such as heavy artillery shelling, drone attacks, gunfire by snipers, and infiltration operations. Civilians were frequently injured and killed in these events (SOHR 2023a, 2023b, 2023c).

Additionally, the EUAA (2023b) reported in their Country Guidance that most of the 2022 Latakia-based violence, including non-lethal violence, took place in the Al-Hafa district, whereas in the following year's guidance they note that violent incidents took place in Al-Hafa and Latakia districts, indicating a geographical spread of violence in the governorate (EUAA, 2024). This spread of violence is supported by the UCDP data as well (see figure 5).

Immediately following the earthquake, HTS' leader, Al-Julani, and several ministers within their de facto 'Salvation Government' in Idlib, made public appearances in response to the earthquake. They visited survivors in hospitals,

Figure 5

Maps displaying number of conflict events that involved a rebel group in Latakia in 2022 (left) and 2023 (right)



Darker coloured circles indicate a higher number of conflict events at that point. 13 events with a location precision score of more than 2 were excluded. Data source: UCDP (Davies et al., 2025)

formed an 'Emergency Response Committee' to help meet people's needs, and hosted several press conferences to create credibility and a performance of its governance abilities (Kassir, 2023). By 11 February, the appearances transitioned from being hosted on HTS-based media with a focus on Idlib, to international news (Michaelson & Tondo 2023) and a rhetoric expanded to include northwestern Syria as a whole - including Latakia. These messages intertwined disaster relief with the unification of the north under their government (Kassir, 2023; Creative Syrians 2023). In context of the Turkish president's support of the Assad regime, Jalani said, "The history of this region after the earthquake will be different to what it was before," (Michaelson & Tondo, 2023). This evidence points to the intent of HTS to expand their influence, opening up the possibility that they were using the earthquake as a mechanism to build support beyond their current area of control.

However, simultaneously, HTS were accused of blocking and diverting aid deliveries to all parts of north-western Syria, preventing civilians from accessing the little resources that were able to enter the country from abroad and building their own resource stockpiles to maintain supplies that allows them to continue to fight the GoS (Kayyali 2023; Salem 2023).

Taken together, this evidence demonstrates that there was an increase in conflict intensity between the GoS and HTS, where HTS exploited the pre-existing vulnerabilities of society to make strategic war-time advances, ultimately increasing conflict intensity and civilians' exposure to the climate-conflict nexus.

Causal Mechanism in Latakia

Given the description above, Latakia can be used to analyze the potential causal mechanism between vulnerability and conflict intensity. Again, the proposed causal mechanism is that civilians join armed groups for income and aid when the government's impact response is (really, perceived, or expected to be) ineffective. This leads to increased conflict in the area of hazard impact. In Latakia, I should find that there were intense impacts from the earthquake due to the vulnerability discussed above (Figure 2, step 1) mediated by an ineffective government response, which further entrenched grievances (step 2). I expect to then find rebel groups aiding in recovery efforts and increased support from civilians and recruitment (step 3), and finally I should find increased intensity in rebel-perpetrated conflict.

Step 1: Intense Impact, Mediated by Government Response

Empirically, nearly two thirds of the Latakia population were affected by the earthquake. 34,000 families were displaced, 63 water reservoirs were damaged (six of which were destroyed), 125 schools were damaged, and agriculture-based livelihoods were highly negatively affected by reduced capacity to distribute crops (OCHA, 2023b). The earthquake overwhelmed health care facilities, particularly in the days before international aid arrived (Ekzayez, 2023). The earthquake disrupted the regular flow of international aid by damaging the one available border crossing, killing humanitarian staff, and destroying critical humanitarian infrastructure (Marks & Lang, 2023). Ultimately, the impacts of the earthquake were widespread, long-lasting, and deeply altered hundreds of thousands of lives.

The GoS, under the Assad regime, did not seem to have the budget, capacity, or intent for their own extensive recovery interventions, even in territory under their control (UNICEF, 2023). They hampered the international aid response in several ways: they insisted that all international aid flow through Damascus and refused to open additional border crossings in northwest Syria. They later opened two additional crossings for six months but were criticised for the inadequate timeframe and for possibly diverting and obstructing aid (Marks & Lang, 2023; Amnesty International, 2023b). The GoS also nearly doubled the exchange rate on international money entering the country (IFRC, 2024). To conclude, the GoS reportedly hindered rather than improved the availability of resources for recovery immediately following the earthquake.

Step 2: Entrenching Grievances

The earthquake left families without income and destroyed social networks (IFRC, 2024). Those who were already internally displaced due to the war were displaced once again (El Deeb, 2023). Further, civilians in Latakia, who had long supported and benefited from the Assad regime, were losing trust in its leaders amid a failing economy and deteriorating living conditions. Some young men in Latakia were resisting recruitment into its military throughout 2023 and protests became more frequent in the governorate. Residents were experiencing increased war fatigue during this period, were becoming unwilling to risk their lives for the GoS and showed signs that they were ready for change (Levant 24, 2024; Haroon, 2023; Al-Meri, 2025; Arabic Post, 2023). These grievances were common across Syria even before the earthquake, however the earthquake provided further evidence of the shortfalls of the regime to people in Latakia.

Existing grievances were further exacerbated by the sense of abandonment by the international community. Where Türkiye saw immediate international response in the hours following the earthquake, Syrians waited three days or more to receive the same support for search and rescue and health care (Marks & Lang, 2023). Several sources argue that the international response in Syria failed to deliver on its duty of care (Marks & Lang, 2023; Free Press Unlimited, 2024). Ultimately, the immense impacts of the earthquake further intensified the already entrenched social and economic hardships faced by civilians (Ekzayez, 2023).

Step 3: Increasing Rebel Support and Recruitment

Since 2020, HTS has been reforming its organization to bolster its military force and improve its service provision capacity, primarily in Idlib, with ambitions to control all of Northwest Syria (Harmouch, 2024). When HTS leader Jolani publicly called for international aid and claimed the HTS intended to work with international organizations to support earthquake survivors, they did so with the intention to create credibility and transparency in the eyes of locals and gain their support (Kassir, 2023). In this way, they created opportunities for civilians to turn to them for support and resources.

Further, HTS created situations where people had little choice but to turn to them for resources. As stated above, HTS was also accused of preventing and diverting aid intended for earthquake victims (Kayyali 2023; Salem 2023). Instead, they monopolize resources such as tents for shel-

ters and other relief supplies to sell to civilians and local NGOs. An employee for the Salvation Government's Development Office stated, "the distribution mechanism is exclusive to certain people among the HTS," (Salem, 2023). By the end of February, only a small portion of supplies had been distributed to locals. This sort of coercion is a known recruitment tactic of HTS (Danish Immigration Service, 2022). As in the theory posited above, this has created a situation wherein the opportunity cost of not supporting HTS is possibly higher than it is to support them.

Notably, HTS has long had strong voluntary recruitment practices that were further enhanced in 2021. HTS provides economic incentives to all its fighters, at rates around 60 USD per month. They also provide food baskets and housing to its members (Danish Immigration Service, 2022). Such an incentive would have increased in value after the impact of the earthquake took away other opportunities for food and housing, again creating conditions that position joining HTS as an opportunity to recover from the impact. While this evidence supports the third step of the causal mechanism, it has the least inferential power and requires deeper investigation via methods such as process tracing to determine its accuracy.

Completing the Mechanism: From Rebel Recruitment to Increased Violence

Finally, the causal mechanism ends with the inference that increased support and recruitment for a rebel organization increases conflict intensity. This implies that as HTS and its allies got stronger, they attacked the GoS more often, which did seem to happen. In the ten months following the earthquake, the number of conflict events perpetrated by rebel groups, and the deadliness of those events nearly doubled from the year before. In the 2022 time period, Latakia experienced nine events causing nine deaths and in 2023 it increased to 44 events causing 89 deaths. In particular, HTS were responsible for over 50% of the rebel-perpetrated deaths following the earthquakes. This is a notable increase of violence perpetrated by HTS against GoS as they have generally not attempted military operations outside their area of control in Idlib in the previous five years (Holtz, 2023). This provides support for this step of the theory that increased recruitment at least in part led to increased violence.

Vulnerability & Conflict in Rif Dimashq

Rif Dimashq is the rural surroundings of the Syrian capital, Damascus. Located in the southwest of the country, it benefits from its undemarcated border with Damascus Governorate, and was often included in the capital's aid and development projects (NRC & Oxfam, 2020). It shares borders with other governorates in addition to Damascus, including Homs in the north and Daraa in the south. Approximately three million people lived in Rif Dimashq, two million of whom were in cities and about 55% were displaced peoples (EUAA, 2023a). While the GoS controlled most of the governorate, the regime was highly disengaged from its public administration. Rif Dimashq was highly dependent on agriculture-based income (EUAA, 2023a) and 40% of people described their access to health services as "poor" (EASO, 2021).

Rif Dimashq had a very similar vulnerability assessment as described in Latakia above, including high levels of damaged infrastructure, limited access to basic needs, and high numbers of internally displaced people. However, Rif Dimashq's earthquake risk assessment was a 0.05 - 0.2 on the PGA scale which is the equivalent of minimal damage and light shaking, due to its distance from a fault line. For this reason it was assigned a value of "Medium" in the exposure category and an overall assessment of "High."

Beyond the UCDP data, low levels of violence were present in Rif Dimashq both before and after the earthquake, with the number of non-lethal violent incidents remaining fairly consistent across the two time periods (EUAA, 2023b; EUAA, 2024). EUAA (2023b, 2024) reports that incidents of violence spread from taking place in only two districts in the 2022 time period to all districts in the governorate in 2023, however given low levels of rebel-perpetrated violence recorded by UCDP, it is unlikely this general violence can be attributed a change in rebel group influence in

the area. While grievances, related protests, and incidents of repression increased in Rif Dimashq during the-post earthquake period, it does not seem to have led to increased armed conflict in the governorate and was likely not exacerbated by earthquake impact (SNHR, 2024; Al-Homsi, 2023). Further, Rif Dimashq borders the Daraa governorate where GoS control is limited in some areas. In Daraa, anti-government armed groups, including HTS among others, caused 34 deaths in 2023 (Davies et al., 2025), and engaged in attacks on checkpoints, targeted killings and kidnappings, and IED attack (EUAA 2023b). However, this violence did not spread into Rif Dimashq after the earthquake.

Overall, the number of state-based conflict deaths involving a rebel group increased in the 2023 time period but the number of conflict events decreased. Given that the qualitative data shows there was little increase in other forms of violence, and the most significant death toll was from an IS bombing which is quite unique from the other forms of violence seen in these cases, I assess that Rif Dimashq's conflict intensity remained relatively low following the earthquake. Civilians and conflict actors in this case were mostly unaffected by the earthquake and experienced very light shaking and little to no damage (USGS, 2023), therefore the first step of the causal mechanism, conversion from hazard vulnerability to strong impact, did not take place.

Comparative Analysis

Table 2 provides a comparative overview of the findings and assessments of each case.

It shows support for the plausibility of the climate-conflict vicious cycles theory. The evidence found of the causal mechanism in this case provides further support for the theory and relationship between the variables, though it does not rule out other possible causal stories and should be tested further.

The spatial comparison of Latakia and Rif Dimashq also provides evidence that pre-hazard vulnerability may covary with increased conflict intensity. In Rif Dimashq, where pre-hazard vulnerability was lower, primarily due to its lower earthquake risk assessment, conflict intensity did not increase as much as it did in Latakia. It is highly unlikely that any violence experienced in Rif Dimashq was a result of earthquake vulnerability, while in Latakia the evidence finds support for the possibility of a climate-conflict cycle taking place. Further, it was not likely possible for the causal mechanism to take place in Rif Dimashq as it did in Latakia. In Latakia, violence became more widespread following the earthquake, demonstrating that rebels may have been using the earthquake as an opportunity to make progress on their strategic goals. However, violence in Rif Dimashq did not spread after the earthquake. While there are many reasons for this, one partial reason likely includes that the rebel groups were unable to capitalize on the earthquake to expand their sphere of influence because the impacts were not as severe.

This case comparison provides evidence that, in the context of violence between government and rebel forces, high vulnerability to a natural hazard likely led to increased conflict after the environmental shock. This lends support for my hypothesis and to the vicious cycles theory.

Table 2

See Appendix A for detailed table of indicators and data collected

Vulnerability Assessment Table

	Exposure of Infrastructure and Population	Capacity to React to Hazard	Emergency Response and Preparedness (Resilience)	Demographic Characteristics	**Total Vulnerability**
Latakia Govenorate (Inside Impact Zone)	*Very High*	*High*	*High*	*Very High*	***Very High***
Rif Dimashq Govenorate (Outside Impact Zone)	*Medium*	*High*	*High*	*Very High*	***High***

Applicability of the Framework

This empirical analysis has overcome some of the limits theorized by the original authors while also identifying new limits in the applicability and generalizability of the analysis.

Buhaug and von Uexkull (2021, p. 547) recognize the limitation of treating all hazards as exogenous events, even though their strength, duration, and impacts are often affected by human activities. The application of the earthquake in this analysis attempts to overcome this limitation. By studying a naturally exogenous event with similar ultimate impacts as endogenous hazards, I have explored the implications of the theory without concern of misrepresenting endogenous realities. In finding support for the theory, this analysis endorses future research that is inclusive of event endogeneity to better represent reality.

Yet, this empirical analysis is limited by its use of earthquakes in that it is only generalizable to rapid onset hazards (earthquakes, cyclones, tornadoes, forest fires) and not slow onset ones, in which the vulnerability grows vis-à-vis the strength of the impact of the hazard. In slow onset hazards, the causal chain has a longer timespan to take place, ultimately changing the potential outcomes and causes from what are discussed in this paper.

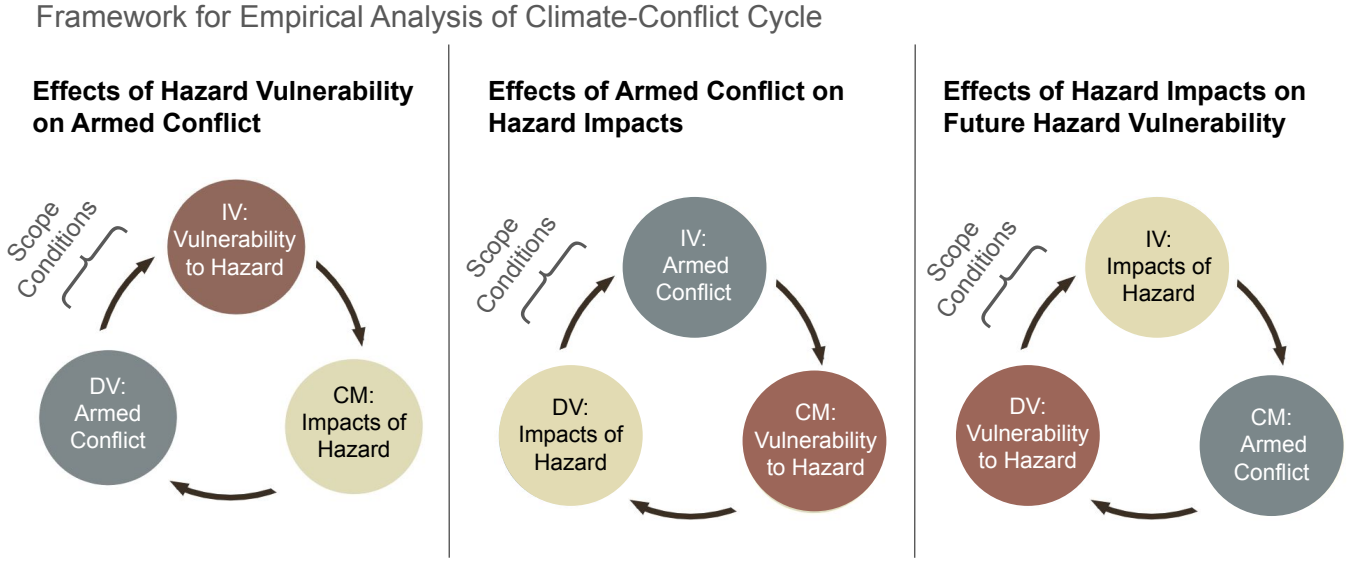
Additionally, to fit this case into the theoretical framework of a cycle, I have implicitly assumed the impact of armed conflict on vulnerability via my scope conditions, by selecting only cases that have recently experienced armed conflict. However, this assumption needs further testing to improve my evaluation of the theory. This could be done through a series of separate but simultaneous studies wherein each element of the cycle is assigned to hold the place of the independent variable, dependent variable, and causal mechanism in the same case (see figure 6). This would provide a more complete understanding of the theory.

If it is found that this approach to studying cycles is an effective method to test the climate-conflict cycle, it could answer Buhaug and von Uexkull's (2021, p. 557) call for a framework under which additional empirical cases can be analyzed.

Further, the issue of reverse causality was controlled in this analysis through two mechanisms. First, the measure of vulnerability was specific to the location and earthquake phenomenon. Resources used were as specific as possible to late 2022 and did not account for vulnerability created by the earthquake. Other types of vulnerability were held constant through case selection. Second, the temporal separation of each step in the causal mechanism analysis allowed for increased control by using data that

Figure 6

Proposed framework for an empirical analysis of the full climate-conflict cycle, wherein each element of the cycle takes on the independent variable (IV), dependent variable (DV), and causal mechanism (CM), in simultaneous studies. This ensures the assumptions made in the scope conditions are verified and confounders are controlled.



was only specific to the sequential order of the steps. This has strengthened the accuracy of this analysis. Still, concerns remain of the dependent variable affecting the independent.

Despite these mechanisms to control the direction of causality, one must consider that pre-existing conflict, rather than hazard vulnerability, led to increased conflict and that the severity of Syria's civil war was already too immense for this theory to be applicable. In September 2022, the chair of the UN COI raised concerns of Syria returning to larger-scale fighting as they faced the worst economic conditions since 2011 (Human Rights Watch, 2023) and exactly one year after the dates of this analysis the Assad regime fell to rebel forces (Hamdach, 2025). Compounded by crises in neighbouring countries and the Covid-19 pandemic, the dynamics of the war itself could be the independent variable causing an increase in conflict related deaths in 2023 across Syria. This raises the question of whether cases of civil wars should be scoped out of future research on this theory and, given the endogeneity of conflict and hazard vulnerability, whether these can be truly controlled for at all.

Conclusion

This paper has set the stage for a new and timely analysis of the climate-conflict cycle. Through the case of the 2023 Türkiye-Syria Earthquakes, it has found empirical support for the plausibility of the theory both across time and space. The findings increase the probability that high vulnerability to natural hazards is a pathway to increased armed conflict in places already experiencing state-based conflict.

Additionally, this paper has proposed a framework of analysis of rotational variables and scope conditions as a first step to creating a consistent and effective tool to empirically evaluate the climate-conflict cycle. Another research avenue this paper has opened is the possibility that there is a particular level of hazard vulnerability (perhaps related to potential hazard exposure) wherein the climate-conflict cycle will take hold. Before that point, however, the relationship between the variables is possibly not cyclic in nature. In this case, the seismic PGA rating was the indicator that likely activated the causal chain in Latakia but not Rif Dimashq. Future research must look for patterns in vulnerability to understand this conversion from a linear to cyclic relationship.

The evidence provided through this case study of the climate-conflict cycle has contributed to the early attempts to fill the empirical gap on this topic. It demonstrates that more efforts are needed to explore this phenomenon with empirical evidence so that it can be better understood. Building more knowledge on the underlying mechanisms between vulnerability, natural hazards, and armed conflict will provide academics, NGOs, and philanthropists the tools they need to help societies avoid and escape this trap.

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Appendix A: An Empirical Analysis of Climate-Conflict Cycles: The Syrian Civil War & The 2023 Earthquakes by Michaela Peters-Salah

Appendix A: Table 1a

Detailed Vulnerability Data Table: Latakia Governorate (Inside Impact Zone)

Category	Sub Category	Data	Vulnerability Assessment
Exposure of Infrastructure and Population			**Very High**
	Seismic Hazard PGA Rating	Mostly level VII with some areas in the east reaching levels between VIII - IX [1]	Very High
	% of Population Living in a City	Approximately 54%[1, 2]	Very High
Capacity to React to Hazard			**High**
	Presence & Capacity of Government or Non-governmental Bodies	References to IRCS responding to other emergencies in the region in 2020.[4] Humanitarian projects in the region include access to water and shelter capacity[7], health care, economic, and social services[8]	High
	Area of Government of Control	Mostly under GoS control except for northern areas on the Turkish border. GoS only controls one border crossing, opposition forces (backed by Russia) control the rest of the area. Rebel groups have had a strong hold in Latakia for the entirety of the civil war. Coastal regions (and ports) are controlled by regime president's brother.[2, 3]	Very High

Category	Sub Category	Data	Vulnerability Assessment
Emergency Response and Preparedness (Resilience)			**High**
	Existence of Disaster Response Policies	The governorate "has remained the tributary that supplies the army and the security services under the guidance of the ruling family through a policy that has neglected tourism, agriculture, and industry and provided poor services. The regime created chaos in the trade sector, apart from the domination of militias and gangs tied to the ruling family which spread terror so that the residents had no shelter or source of livelihood except joining the security forces and the army."[11]	Very High
	Current State of Buildings and Infrastructure	Extensive damage from 2019 GoS offensive and 2020 wildfires. 2020 reports of 56 road reconstruction projects. Some Shiite dominated neighbourhoods are being rebuilt by Iranian forces.[4]	High
Demographic Characteristics			**Very High**
	Level of Household Access to Food, Shelter, Health Resources	90% of health facilities were undamaged as of 2021 but in 2021 there were several attacks on health facilitators.[3, 4] Low level of indiscriminate violence, limits some movement.[3] At least 400,000 people in need of social service supports and 825,000 are considered vulnerable.[6] Increases in food and petrol prices and degradation of agriculture land.[7] Half the population facing food insecurity.[10]	Very High

Category	Sub Category	Data	Vulnerability Assessment
	Uprooted Population Hosted in Region (refugee, IDP, etc.)	Most people don't have access to official personal documents.[3] As of 2021, 449 317 IDPs were in the governorate.[3, 6] There were 12,000 Palestinian refugees in the governorate in an unofficial camp, only partially supported by UNWRA.[5] This equate an approximate 35% (conservative estimate) uprooted people in the governorate.	Very High
	Disruption of social support networks	60-70% of Alawaite young males died or were injured in the civil war.[3] Most Christians who lived on the coast left Syria.[3] Fewer and fewer men are able to work and women are taking on more bread-winning roles in their families but face prejudices for doing so.[9]	Very High
		Overall Vulnerability	**Very High**

Appendix A: Table 1b

Detailed Vulnerability Data Table: Rif Dimashq Governorate (Outside Impact Zone)

Category	Sub Category	Data	Vulnerability Assessment
Exposure of Infrastructure and Population			**Medium**
	Seismic Hazard PGA Rating	Mostly levels II and III.[1]	Low
	% of Population Living in a City	Approximately 66%[3, 4]	Very High
Capacity to React to Hazard			**High**
	Presence & Capacity of Government or Non-governmental Bodies	Explosive ordnance limits delivery of aid. WFP, WAO operational; supporting food needs.[4] UNHCR is active in support housing. [12] Often included in Damascus governorate projects, where many NGOs are consistently present though face significant challenges in delivering services in GoS areas.[13]	High
	Area of Government of Control	Under GoS control since 2018, opposition forces were completely absent by 2020, though attacks take place occasionally.[4] Except for 55km of Northern area that was US-declared exclusion zone.[3]	Medium
Emergency Response and Preparedness (Resilience)			**High**
	Existence of Disaster Response Policies	GoS is highly disengaged from administration an functioning of the governorate.[13]	Very High
	Current State of Buildings and Infrastructure	Extensive severe damage to buildings recorded between 2016 and 2020 throughout the governorate. 44% were living in damaged buildings.[4] GoS policies were created to support rebuilding but ultimately forced people out of the area.[4] Several projects to remove debris from roads and public areas and rebuilding of schools. [6, 12]	High
Demographic Characteristics			**Very High**

Category	Sub Category	Data	Vulnerability Assessment
	Level of Household Access to Food, Shelter, Health Resources	Explosive ordnance limits mobility of people. [4] 40% describe their access to health services as 'poor.' [4] 3 Million people classified as in need.[6] Low level of indiscriminate violence, limits some movement.[3] High level of dependence agricultural-based income.[3]	Very High
	Uprooted Population Hosted in Region (refugee, IDP, etc.)	Approximately 1.73 Million IDPs. GoS offensives in the governorate and later policy changes forced migration out of the region. Approximately 55% (conservative estimate) uprooted people in the governorate.[4]	Very High
	Disruption of social support networks	"There was a high level of extrajudicial detentions and abductions perpetrated.[4] High level of Violence against Civilians in 2020-2022.[4] Highly fragile security situations for people living in cities.[14]	Very High
		Overall Vulnerability	**High**

Notes: 1. (Johnson et. al., 2023) 2. (UN Department of Economic and Social Affairs, 2024) 3. (EUAA. 2023) 4. (EASO, 2021) 5. (UNRWA, n.d.) 6. (UN ESCWA, 2022) 7. (UN Habitat, 2014) 8. (AVSI, 2024) 9. (Hourani, 2019) 10. (Amnesty International, 2023a) 11. (Hamke, 2020) 12. (UNHCR, 2022) 13. (NRC and Oxfam, 2020) 14. (Adbin, 2017)

Appendix A: Table 2

Vulnerability Rubric

	Very High	High	Medium	Low	Very Low
Seismic Hazard GPA Rating	Rating of 0.8+ in region	Rating of 0.6-0.79 in region	Rating of 0.4-0.59 in region	Rating of 0.2-0.39 in region	Rating of 0-0.19 in region
% of Population Living in a City	51% or more of the governorate's population lives in a city	30-50% of the governorate's population lives in a city	20-29% of the governorate's population lives in a city	10-19% of the governorate's population lives in a city	Less than 10% of the governorate's population lives in a city
Presence & Capacity of Government or Non-governmental Bodies	Neither the government nor NGOs are present in the governorate	NGOs are present in the governorate and willing to support following a hazard but are already over capacity or otherwise limited in their ability to delivery aid	NGOs are present and have capacity and trusted to fulfill social service needs following a hazard.	Only one NGO or Government is present and trusted to provide relief following hazards	Both government and NGOS are regularly active, collaborative, and trusted to provide relief following hazards
Area of Government of Control	Rebels and government are in active conflict over the territory in the impact zone	Rebels and government are in non-active conflict over territory	There are non-violent disputes about territory	Government or the Rebels controls all territory in the governorate	Territory is divided between government and opposition cooperatively with little to no ongoing disputes

	Very High	High	Medium	Low	Very Low
Existence of Disaster Response Policies	No national or sub-national building policies. Extensive existing damage with no plan to fix it	No formal policies at the state level but clear evidence of existing networks of support from local or international organizations	Responsible policies exist but not transparent or available	Preparedness and response policies publicly available and transparent, backed by state institutional body; relies primarily on resources externally available to state.	Preparedness and response policies publicly available and transparent, backed by state institutional body; relies primarily on resources easily accessible within the state.
Current State of Buildings and Infrastructure	No national or sub-national building policies. Extensive existing damage with no plan to fix it	No official or unofficial seismic-resistant codes or policies but buildings follow some code or policy. Extensive existing damage with ongoing reconstruction	Strong seismic-resistant policies, building codes. Evidence of new buildings not following codes. Some existing damage that is being repaired	Unofficial seismic-resistant policies, building codes that people are following. Evidence of new buildings following codes and old buildings being upgraded. Minimal existing damage that is being repaired	Strong seismic-resistant policies, building codes. Evidence of new buildings following codes and old buildings being upgraded. No existing damage due to climate or conflict.

	Very High	High	Medium	Low	Very Low
Level of Household Access to Food, Shelter, Health Resources	Reports of high level of no access to at least 1/3 of these listed essentials. Poverty rate is more than 35%	People often can not access food, shelter, and health. Poverty rate is less than 30%	People have some but intermittent access to these essential services. Poverty rate is less than 25%	People can usually access these services with some people occasional concerns. Poverty rate is lower than 20%	Minimal concerns about access to essentials. Poverty rate is less than 15%
Uprooted Population Hosted in Region (refugee, IDP, etc.)	25.01% or more of population is an uprooted person	20.01 - 25% or more of population is an uprooted person	10.01-15% or more of population is an uprooted person	5.01-10% or more of population is an uprooted person	0-5% or more of population is an uprooted person
Disruption of social support networks	Evidence of immense and indiscriminate disruption of family and community network with no rebuilding	Evidence of immense disruption of family and community network in some regions or among some ethnic groups with no rebuilding	Evidence that at least 50% of the population have lost some form of social network or community connections in social, economic, or cultural realms	Some evidence of localized nonviolent conflicts between social groups but overall regional networks are intact	Social networks and connections are thriving and supportive across ages, industries, and social groups.