

Climate Shockwaves: The Impact on Political Instability from Natural Disasters

Haedam Lee

Branksome Hall Asia, 70, Global edu-ro 145beon-gil, Daejeong-eup, Seogwipo-si, Jeju-do, 63644, Republic of Korea;
haedam0913@gmail.com
Mentor: Cesar Martinez Espinosa

ABSTRACT: This paper explores the relationship between climate change-induced natural disasters and the rise of political instability within affected local communities. As climate events increase in frequency and intensity, understanding their political consequences is crucial now more than ever. The study categorizes disasters into three types: atmospheric, hydrological, and geological. Then, it investigates how each uniquely influences political sentiment and institutional trust. Through case studies and secondary analysis of existing comparative research, the paper analyzes both the direct and indirect impacts of such disasters on political landscapes, comprehensively analyzing not just the direct consequences but the impact of governmental or community-level action. While assessing contrasting scholarly opinions on the political ramifications of such disasters, it provides an evaluation of whether these events exacerbate pre-existing political tensions or catalyze new forms of instability. Ultimately, the research highlights that while there are significant correlations between certain types of climate events and political instability, it largely depends on pre-existing conditions. Hence, the paper offers insights into preventive strategies and governance reforms to mitigate these socio-political risks.

KEYWORDS: Earth and Environmental Sciences, Climate Sciences, Climate Change, Natural Disasters, Political Instability.

■ Introduction

Political instability, though a widely used term in both academic and policy discourses, remains multifaceted in its definitions. Broadly, it refers to the proneness of a government or political system to collapse through conflicts or challenges faced.¹ However, political instability is less seen through its definition but more in its signs, demonstrated in our society. Such indicators can be both institutional breakdowns and the eruption of violent internal conflicts that fundamentally disrupt state authority. Thus, political instability cannot be defined by a singular event such as a regime overthrow but rather should be defined by an array of socio-political conditions that threaten governmental continuity, policy effectiveness, and the security of its citizens. Not only is defining political instability crucial for this analysis, but measuring the extent to which instability was seen is important. While events like the current party in power losing the following election can be seen as less disruptive indicators of political instability, more extreme events can be violent outbreaks like armed conflicts. Hence, the range in which political instability can be experienced can be identified by how much impact or threat the event poses to its people, with less effect being on the low extent, while the greatest effect is on the high extent. Table 1 below has been supplied to support such a range of understanding:

Table 1: The Political instability range was created using a political science literature review, aiming to categorize disasters into quantitative measures of severity.

No impact	Low extent -----High extent				
0	1	2	3	4	5
No adverse political effect	Party in power loses next election/loses support seen in approval ratings/minor civilian disruptions	Government in charge gets thrown out through established means (impeachment or vote of no confidence)	Demonstrations and protests (non violent)	Government falls through non established means (coup)	Violence such as armed conflicts

The rapid increase in both the frequency and intensity of climate-related natural disasters underscores the need to explore their political consequences. According to data from the United Nations, there was an average of 335 weather-related disasters annually between 2005 and 2014, marking a 14% increase compared to the previous decade.² This escalation raises a vital question regarding the relationship between natural disasters and their role in catalyzing political extremism and polarization. As US President Joe Biden has said, "The climate crisis is about human security, economic security, environmental security, national security, and the very life of the planet."³ Hence, it is clear that climate change has surpassed the stage of just being an environmental concern but something overarching for global safety. And it is no secret that this extension of impact is caused by the increasing intensity of such climate-triggered disasters, seen by examples such as the US East Coast storms Harvey, Irma, and Maria, causing \$250 billion in damages and thousands of deaths.⁴

Existing research on the topic has found a diverse relationship between climate change-triggered natural disasters and political instability. Canavan and Ide⁵ offer a systematic review revealing that disasters, many of which are intensified by climate change, have been found in most studies to increase risks of political conflict, particularly low-intensity forms such as protests and communal violence. However, they mention that this connection between disaster and conflict is deeply controlled and impacted by political, socioeconomic, and institutional contexts. They note that state weakness and hardship often become the backbone for heightened conflict risks as disasters exacerbate grievances over uneven relief distribution or strain government capacities, hence undermining the legitimacy and security provision provided. Interestingly, a significant minority of studies also highlight the need for disaster diplomacy, where shared hardships and challenges generate cooperation rather than conflict. Therefore, the study concludes by suggesting that the relationship between natural disasters and political instability is neither linear nor universal but contextually contingent and multifaceted.

Busby⁴ takes a broader climate security lens, underlining how climate change-induced disasters destabilize societies by threatening livelihoods through ways like inducing migration and amplifying humanitarian crises. While his analysis extends beyond the disaster-conflict dynamic, it understands climate hazards as catalysts for political instability, particularly where fragile states are unable to manage the compounded risks of food insecurity, resource competition, and displacement. Adding on, Busby argues that although links between climate disasters and violent conflict are now widely recognized in policy discourse, effective prevention remains uncovered, hence leading to structural vulnerabilities and governance failures to mediate these risks. Busby's stance, therefore, is that climate change-triggered disasters do contribute to the political instability of the area but only exacerbate existing risks rather than create new ones.

The IMF working paper by Cevik and Jalles⁶ further nuances this discussion by establishing corruption as a determinant of disaster outcomes and subsequent political stability. Their econometric analysis across 135 countries finds that corruption significantly increases natural disaster-related fatalities, particularly in developing states where institutional weakness is combined with infrastructural vulnerability. Though the paper focuses primarily on mortality, it indirectly uses corruption-induced humanitarian failures as drivers of political instability, as ineffective governance and lack of accountability undermine public trust and social cohesion post-disaster. The implication here is that natural disasters do not automatically translate to political instability; rather, it is the combination of institutional quality, socioeconomic resilience, and governance capacity that shapes such relationships.

Omeličeva⁷ investigates the presumed causal links between natural disasters and political instability through a reassessment of the relationship between disasters and conflict. Drawing on the Political Instability Task Force model alongside EM-DAT disaster data, she finds only minor support for disasters as independent triggers of political instability. While rapid and

unexpected disasters such as floods, storms, and earthquakes were weakly associated with increased risks in some models, these effects disappeared when controlling for regime type, state capacity, and socioeconomic conditions. Her findings underscore that disasters function less as external shocks creating conflict and more as catalysts within states already exposed to instability. In particular, divided, transitional, and poorly governed states remain vulnerable, not due to the disaster itself but because such institutional weakness brings on pervasive corruption and low adaptive capacity that transform natural hazards into political crises. Omeličeva thus undermines the deterministic narrative of disasters generating violence, urging a reorientation towards examining how the regime's own stability controls the political implications of natural hazards.

It is clear through this literature review that there are many established opinions on the effects of climate change-triggered natural disasters on political instability. While some approaches offer insight that supports the link between the two factors, others disagree, citing existing conflicts as being contingent on the upbringing of conflict. However, the literature does reflect a consensus that climate change-induced natural disasters rarely function as a singular cause. Instead, these disasters interact with a range of political, socioeconomic, and institutional factors that determine whether and how instability materializes. This complexity underscores the need for a nuanced approach in analyzing the relationship, one that moves beyond simplistic causal models to incorporate multidimensional factors shaping disaster impacts. This paper hence seeks to contribute to this discourse by examining not only whether disasters increase political extremism and instability but also under what conditions and through what mechanisms these relationships are felt. Through a comparative analysis of atmospheric, hydrological, and geological disasters, it aims to unpack the multifaceted pathways through which climate change-triggered natural hazards intersect with political structures, shaping the trajectories of stability or conflict within affected societies.

■ Methodology

The main aim of this research is to look at the relationship between climate change-related natural disasters and the impact they have on political instability. To achieve this goal, this research categorizes disasters into atmospheric, hydrological, and geological events to better understand their social and political impacts. Atmospheric disasters include hurricanes and cyclones. Hydrological disasters encompass floods, droughts, and the gradual shrinkage of water bodies. Geological disasters, though not climate-induced, are included as a contrast to help identify what makes climate-related events politically distinct.

Selected case studies include Hurricane Katrina in the United States, Hurricane Otis in Mexico, and Cyclones Idai and Kenneth in Mozambique under the atmospheric category. Under hydrological disasters, the study examines the Kerala floods in India, Zimbabwean floods, the shrinkage of Lake Chad and Lake Poopó, Cape Town's "Day Zero" water crisis, and the Aral Sea Crisis. As for the control variable of geologi-

cal disasters, the 1985 Mexico City earthquake, the Myanmar earthquake in 2025, and the 2023 earthquakes in Turkey are included. These cases were chosen not only to look at a variety of types of natural disasters but also to analyze countries with different levels of development, democratic maturity, or institutional strength, allowing for more comprehensive research, not focusing only on the impacts on one type of political society.

The selection of cases focuses on the past couple of decades (2005 to present date) to provide with more recent analysis (the existing literature tends to focus on older disasters and most if it ends the analysis in the 2010s), especially when the level of information about the impacts of climate change is considerably more extended across the globe and across sectors of the population. Two exceptions to this range are included: the 1985 Mexico City earthquake (which is used as one of the control cases) and the Aral Sea crisis, which has developed over several decades, but where the main political action analyzed happened over the past two decades.

For each case, political impacts such as extremism, protest movements, and polarization are evaluated alongside socio-economic consequences like displacement and resource scarcity. The role of institutional responses is also analyzed, ranging from government action to external aid and community resilience. This dual-lens approach (considering both destabilization and resilience efforts) connects a combination of political behaviour studies and literature reviews.

■ Discussion

Atmospheric Disasters:

In the case of atmospheric disasters, Hurricane Katrina in 2005 serves as a stark example of how such events can expose systemic inequalities and prompt political polarization.⁸ As an immediate impact of the event, 2000 people lost their lives along with the displacement of 1.5 million people, communicating the large scope of impact the event had.⁹ Adding on, the disaster revealed significant institutional failures and racial inequities, leading to public outrage and a deepening of distrust in government. Polarization intensified, especially across racial and socioeconomic lines, as different groups adopted contrasting narratives of blame and responsibility. Specifically, the US government revealed that 1/5th of victims of displacement from the storm were those considered poor, while 44% of the storm victims were African American.¹⁰ A study by Nicholls and Picou¹¹ confirms this relationship through the survey conducted, demonstrating how regions affected by the hurricane showcased higher levels of distrust towards the government compared to regions that were not impacted. Though the paper identified that the correlation was not strong, it is still a clear indicator that, despite the recognition that natural disasters are inevitable, the people's distrust is based on the reaction and aftermath the government performed after experiencing such a disaster. In fact, the president at the time, George W. Bush, had his lowest approval rating after this time, communicating the hurricane's impact on political instability.¹² Conclusively, Hurricane Katrina demonstrates an instance of how, now, the

natural disaster itself, but the aftermath in handling the disaster by the government, is what impacts political stability.

Another atmospheric disaster, Hurricane Otis in 2023, highlighted the urban vulnerability but also the adaptability of Acapulco. Although the impact of the disaster was detrimental, being the fastest-strengthening tropical storm ever recorded in the Northeast Pacific, the damages incurred were resolved fairly quickly thanks to the government's rapid response.¹³ The Ministry of Welfare provided support to businesses affected by the disaster, including hotels, and electricity was restored in a mere 7 days after the hurricane hit. The government called for unification and centralized control in order to rapidly restore the state of the community, a method that has evidently worked, as seen by the rapid recovery of the area. This instance demonstrates that strong communication networks and unified action can mitigate the polarizing effects of governmental failure.

Continuing, Cyclones Idai and Kenneth, which devastated parts of Mozambique in 2019, resulted in extensive infrastructure damage and displacement. With the rising need for Humanitarian aid, with around 1.3 million children in desperate need of help, the cyclones seemed to have brought a disaster that would be difficult to mitigate.¹⁴ However, unlike the Katrina case, the response here fostered political unity. The Mozambican government, with international assistance, established a Disaster Management Fund and conducted transparent reporting through Post-Disaster Needs Assessments.¹⁵ The international pledging conference held in the city of Beira in Mozambique highlighted the need for resilience, especially for regions like Mozambique, where climate-induced disasters persist. Noura Hamladji, the UNDP Africa Bureau Regional Director, spoke of the need to "build back better", meaning to improve the broken-down infrastructure to prevent such disasters from happening again. Hence, Cyclones Idai and Kenneth demonstrated yet another way an atmospheric disaster led to a wake-up call for further resilience and collaboration.

Hydrological Disasters:

Moving on to hydrological disasters, the 2018 and 2020 Kerala floods in India, aggravated by mismanagement of dams and climate-driven monsoon intensity, had severe socio-economic impacts, leading to prolonged and structural political shifts. At the time, Kerala, India, was going through repetitive outbreaks of floods, mostly attributed to accelerated urbanization and climate change.¹⁶ While the citizens were grateful and well supported by the response of the government after the disaster, they were placing blame on the lack of preparatory measures the government took to prevent such a disaster in the first place. Such suggests that government performance in disaster management could either rally or repel public support depending on the perceived effectiveness, as seen here by the contrasting reaction in the preceding and following actions of the government in managing the flood. In addition, the citizens' effort in forming initiatives and conducting community mobilization demonstrates how, while the political agenda may have been challenged, people were willing to act upon the challenges faced, communicating political strength and unity.

Therefore, the Kerala floods, as a climate-induced hydrological disaster, provide a unique perspective: while the government was challenged and consequently undermined by the people, the way in which the citizens collaborated to do so communicated both political strength and instability.

In Zimbabwe, the climate change-induced floods between 2016 and 2017 exposed the state's weak disaster response capabilities. Rural livelihoods were devastated, leading to displacement, diseases, malnutrition, and many more complications. Throughout such challenging circumstances, citizens actively sought measures to unify efforts for recovery and work in support of many external groups.¹⁷ However, not seen in this list of helpers is the government. Hence, following the flood in March, by late November, the president at the time, Robert Mugabe, resigned from office after a coup. While the coup cannot be seen as a direct result of the flooding, it surely represents how mismanagement of natural disasters due to corruption and the lack of democracy can lead to political instability.

The Lake Chad Basin provides a more extreme example. Having shrunk by 90% since the 1960s due to prolonged drought and overuse, Lake Chad's disappearance has significantly challenged the security of the region. One of the world's deadliest terrorist groups, the Boko Haram, associated itself with the conflicts that killed over 37,500 people near the lake, and around 3.6 million people were identified at crisis and emergency levels of food insecurity.¹⁸ In the International Conference in Abuja in February 2018, the conclusion was made that the only way to save Lake Chad was by "the full unification of Africa", with leaders such as President Muhammadu Buhari of Nigeria urgently calling to action, saying, "The time to show our humanity is now."¹⁹ Despite such identification of the need for a community-wide response, the region was already in turmoil before the lake's downfall. Due to inequality, underdevelopment, and high poverty levels, the drying of Lake Chad was only a catalyst for the region's downfall rather than the root cause. Since then, international communities, including the UN, have recognized that climate-related security risks are on the rise, noting government deficiencies as exacerbating factors of such challenges.¹⁹ Hence, what this case of Lake Chad demonstrates is how climate-induced natural disasters can severely worsen political instability to a point where violent conflicts are held even in international regions.

Similarly, the drying of Lake Poopó in Bolivia, accelerated by climate change and water mismanagement, displaced indigenous communities who relied on the lake for their livelihoods. Specifically, the Urus indigenous community suffered immensely from this loss, presenting to them yet another challenge from historic trends of marginalization.²⁰ While they originally relied on fishing as an alternative to the lost land they had to colonize, now, due to climate change-triggered drying of the lake, they have no way to sustain their living. The controversies surrounding the reaction of the Bolivian government in addressing the crisis effectively consisted of two viewpoints: one that argues fault is at the international trends of Western countries' contribution to climate change, and the other that puts blame on the national government for

water contamination and usage for industries like mining. The government's standpoint (the 1st viewpoint) can be seen as a political move in order to make them seem innocent victims and remove blame from their own decisions of water mismanagement.²⁰ Consequently, the drying of Lake Poopó and its surrounding controversies demonstrate how climate-triggered natural disasters can not only lead to political instability but to schemes of manipulation to remove themselves from fault, bringing on even more conflict.

A similar story is told in Cape Town's "Day Zero" water crisis. Many, including Warner and Meissner²¹, argue that the idea of Cape Town reaching "Day Zero," a day when water would run out, was a political manipulation. With the City Council providing such a countdown towards a supposed doomsday, the media amplified such messages, spurring anxiety and action within the community. Hence, it was a strategy by the government to force the middle class into conserving water, using the social behavior of people to participate in pro-social behaviors in the face of an imminent disaster as its backbone. Later, as the day approached, the supposed end was cancelled, citing reasons such as rainfall. While this strategy may have worked in this narrative with Cape Town, it is important not to misuse this construction of a disaster, as it may become ground for people to be in disbelief when a real disaster hits, like the folklore <The Boy Who Cried Wolf>.

The Aral Sea Crisis, though rooted in Soviet-era water diversion policies rather than climate change alone, parallels these themes. As the sea vanished, surrounding communities faced toxic dust storms, health crises, and economic collapse. Tensions among the five Central Asian republics that rely on the same water sources escalated, revealing how hydrological disasters can trigger regional disputes and foster long-term geopolitical instability.²² However, what is different about this crisis as compared to the drying of Lake Poopó or Chad is that the conflict was non-violent and that efforts were taken collaboratively to support the protection of the region. Agreements between the leaders of the region were made, with member states signing the "Agreement on Joint Actions for Addressing the Problems of the Aral Sea and its Coastal Area, Improving the Environment and Ensuring the Social and Economic Development of the Aral Sea". Therefore, while instability was generated due to the impact of the natural disaster itself, the integrated approach made such challenges trivial compared to regions where such peaceful methods were not used.

Geological Disasters:

Geological disasters here will be used as control variables of how non-climate-induced events impact the political instability of the affected region. This is because Geological disasters are loosely connected to climate change, being attributed more to the natural movement of the Earth. Linking back to the Cyclones Idai and Kenneth, an interesting perspective to note here is that a non-climate-induced event of the 1985 Mexico City earthquake also had a similar instance of bringing the community together rather than leading to political instability. After the devastating earthquake hit, the people, completely aware of the corruption and lack of support from the govern-

ment, took matters into their own hands. They provided relief for the people, becoming an inspirational pioneering action for the coming activism for governmental reform.²³ Hence, little instability was generated as the people acknowledged the prolonged unreliability of the government and unified themselves for recovery. Considering similar instances of unification of the people after a natural disaster, it can be argued that, in some cases, whether it be climate-induced or not, the political environment may be stabilized through the communal efforts of the people.

Another example is the earthquake that struck Myanmar in 2025. Despite its devastation, the disaster did not meaningfully alter the trajectory of the country's ongoing civil conflict. As Kurlantzick²⁴ notes, while Myanmar has a history of natural disasters prompting temporary political openings, such as Cyclone Nargis in 2008, leading to a brief relief through international cooperation, the recent earthquake failed to catalyze either cooperation or destabilization. The military junta continued its repressive operations, and there were no significant shifts in rebel activity or public mobilization. Thus, this instance suggests that geological disasters, unlike certain climate-induced events, may at times merely reinforce existing political dynamics rather than serving as triggers for either instability or reconciliation.

The 2023 earthquakes in Turkey provide a similar example. While these earthquakes caused widespread devastation, killing over 50,000 people and displacing millions, they had minimal immediate political destabilization. As Radlinsky *et al.*²⁵ suggest, although public anger rose against President Erdoğan's government for inadequate building code enforcement and a delayed disaster response, his administration retained power in the subsequent elections. This was partly achieved through the strategic spread of narratives blaming external actors for allegedly destabilizing Turkey. Thus, like the Myanmar case, the Turkish earthquakes demonstrate that geological disasters do not inherently undermine political regimes; rather, they may become politicized crises through which governments deflect criticism and consolidate authority, ultimately reinforcing existing power structures rather than destabilizing them. Such use of the disaster as a political tactic can also be seen in Lake Poopó and Cape Town's Day Zero incidents, explained above, hence communicating a link between the non-climate-induced and the climate-triggered natural disasters in the government's use of such disasters as strategic schemes.

■ Conclusion

This research set out to investigate the relationship between climate change-triggered natural disasters and political instability, examining atmospheric, hydrological, and geological disasters to identify their respective political impacts. The findings indicate that while climate-induced natural disasters have the capacity to catalyze political instability, the relationship is not deterministic. Instead, disasters interact with pre-existing institutional, socioeconomic, and political contexts, shaping whether stability is reinforced or undermined.

Atmospheric disasters demonstrated mixed effects. Hurricane Katrina revealed that political instability is not embedded in the disaster itself but emerges from governmental failure to effectively respond, leading to public distrust and intensified polarization. In contrast, Hurricane Otis in Mexico showed how rapid governmental action and unified communication could mitigate potential instability, with the population rallying behind centralized responses. The Mozambican cyclones Idai and Kenneth similarly fostered political unity rather than extremism, as transparent governance, international collaboration, and a focus on "building back better" enhanced societal resilience.

Hydrological disasters displayed a broader spectrum of impacts. The Kerala floods revealed how perceived governmental inaction prior to disasters can undermine trust, yet also how citizen-led initiatives can transform instability into a demonstration of communal political strength. Zimbabwe's floods exposed state weaknesses and mismanagement, indirectly contributing to regime overthrow, highlighting how institutional failures amid disaster intensify vulnerability to political shocks. The Lake Chad crisis exemplified how climate-induced environmental degradation exacerbates existing regional insecurities, serving as a catalyst for violent extremism by groups like Boko Haram, while Lake Poopó's drying showcased governmental manipulation to deflect accountability, fostering further societal division. Cape Town's Day Zero illustrated how governments may construct disasters politically, using them to manipulate public behavior, yet risking long-term credibility erosion if crises are perceived as manufactured. Finally, the Aral Sea crisis demonstrated that despite significant environmental challenges, cooperative regional governance can reduce the likelihood of violent instability, instead fostering peaceful conflict resolution mechanisms.

Geological disasters, used as control variables, highlighted that non-climate-induced events similarly function not as direct triggers but as catalysts contingent on existing political dynamics. The 1985 Mexico City earthquake united citizens to acknowledge the negligent government, while Myanmar's 2025 earthquake had negligible effects on its already ongoing civil conflict, merely maintaining the status quo. Turkey's 2023 earthquakes underscored how disasters can be politicized to reinforce existing power structures, as governmental blame deflection and narrative control preserved regime stability despite public anger.

In conclusion, the relationship between natural disasters and political instability is deeply contextual and mediated by governance capacity, institutional integrity, socioeconomic resilience, and public trust. Climate change-triggered disasters do not inherently produce instability or extremism but rather exacerbate underlying vulnerabilities or provide opportunities for political unity and resilience. Furthermore, the research finds that government responses and strategic communication play defining roles in shaping political outcomes, with similar manipulative tendencies identified across both climate-induced and geological disasters. Overall, the lack of unity in the political or social climate in the event of a disaster, such as conflicts between racial groups, socio-economic levels, or

nationalities, led to more severe impacts compared to those that did not have such divisive factors. While in some cases the lack of reliable governance led to collaboration and mitigation of political instability through the people's efforts, the major dialogue suggests that when national or even international communities were able to come together in mitigation, political instability was reduced. Table 2 below summarizes the findings across disaster types, finding that political instability and climate-triggered disasters do not portray a deterministic relationship but rather depend on contextual factors:

Table 2: Summary of disasters and political impact in relation to the categorization in Table 1, containing explanations to reason for the results.

Disaster type	Political impact	Political Instability Range Result	
Atmospheric	Hurricane Katrina (US)	Exposed systemic inequalities and failures, prompting political polarization = induced distrust by the people	Low (1)
	Hurricane Otis (Mexico)	Highlighted urban vulnerability but also the adaptability and flexibility of the government	None (0)
	Cyclones Idai and Kenneth (Mozambique)	Extensive infrastructural damage and displacement still led to political unity with prompt responses and international cooperation	None (0)
Hydrological	Kerala floods (India)	Aggravated through mismanagement of dams and had significant impact in the socio-economic dynamic = led to lasting political shifts but also community mobilization	Low (1)
	Floods from 2016-2017 (Zimbabwe)	Rural environments proved to be prone to damages and impacts to which the people supported each other = lack of government support became one of the indirect factors contributing to the following coup against the president at the time	Moderate (2)
	Shrinking of Lake Chad (Nigeria, Niger, Chad, and Cameroon)	Heightened challenges in the surrounding region along with direct violent conflicts surrounding terrorist groups, exacerbated by inequality and poverty in the area = worsened political instability to a point of violence	High (5)
	Drying of Lake Poopó (Bolivia)	Displaced indigenous communities and lost a means for living, with the government using it as a political move to remove blame from themselves	Low (1)
	Cape Town's "Day Zero" (South Africa)	Impact of media in upbringing and forcing anxiety and behavioural changes, disproportionate impact to the middle class	Low (1)
	Aral Sea Crisis (Uzbekistan, Afghanistan, Iran, Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan)	Regional disputes triggering long term instability, though non violent and efforts for collaboration taken	Low (1)
	Geological	1985 Mexico City earthquake (Mexico)	Fostered unity within the people after the anticipation of the lack of support from the ineffective government
Earthquake in 2025 (Myanmar)	Null impact on the ongoing civil conflict (violent)	Low (1)	
Earthquakes in 2023 (Turkey)	Though significant casualties incurred, administration maintained power in subsequent elections through blame being placed in other political actors	Low (1)	

Limitations:

While this research does offer significant insight into the complicated relationship between natural disasters and political instability, the limitations must be acknowledged. First, this analysis operates under the assumption that many of the atmospheric and hydrological disasters explored are triggered or exacerbated by climate change. However, it is not deterministic that these events are solely the result of climate change. Natural variability, such as shifts in oceanic and atmospheric circulation patterns, continues to play a significant role in disaster occurrence and intensity, as evident in Table 2. For instance, while hurricanes like Katrina have been linked to warmer sea surface temperatures attributed to climate change, it is scientifically challenging to isolate climate change as the singular cause of any specific event without comprehensive attribution studies.²⁶

This limitation thus raises caution against generalizing causal claims, as it simplifies the complex relationships.

Adding on, while this study categorizes disasters into atmospheric, hydrological, and geological types to find different impacts, the boundaries between these categories are often blurred. Many disasters emerge from multiple interacting factors that cannot be neatly classified into singular causes, which potentially limits the analytical depth of this research.

In sum, while this research provides a grounded and comparative perspective on the intersection between climate-related natural disasters and political instability, its limitations remind us that such relationships are not universal nor deterministic. Rather, they are embedded within deeply contextual factors that require continued interdisciplinary examination.

Policy Recommendations:

Based on the conclusions made, it is clear that the response from the government significantly impacts the instability incurred in the region. Hence, policy responses must be contextually embedded rather than universally generalized.

Firstly, as seen in the cases of Hurricane Otis in Mexico and Cyclones Idai and Kenneth in Mozambique, rapid and transparent governmental responses are crucial in mitigating the damage from disasters. Both instances highlighted how strong communication networks and coordination, both international and domestic, not only quickened recovery but also fostered public trust and unity. Governments should therefore prioritize developing robust disaster response frameworks that integrate clear communication strategies and pre-plan logistical coordination, creating a multi-level governance system to ensure that immediate relief efforts reach all affected most efficiently.

Second, institutional resilience and accountability are essential in preventing disasters from exacerbating. In instances such as Hurricane Katrina and the Zimbabwe floods, ineffective governance and perceived negligence intensified political distrust, contributing to polarization and vulnerability of the regime. Therefore, it is recommended that governments strengthen institutional transparency by implementing mechanisms such as Post-Disaster Needs Assessments and publicly reporting on recovery processes. This would foster social cohesion by reducing perceptions of corruption or exclusion, particularly among marginalized populations who often experience disproportionate disaster impacts.

Third, long-term resilience planning must be prioritized over short-term reactive measures. The Mozambican emphasis on "building back better" after Cyclones Idai and Kenneth highlights the importance of using disasters as catalysts for sustainable development rather than merely restoring pre-existing vulnerabilities. Integrating resilience-building into reconstruction efforts, including strengthening infrastructural standards and investing in climate adaptation measures, will mitigate future risks while enhancing political stability through visible governmental commitment to public welfare.

Finally, governments must avoid the politicization and manipulation of disaster narratives for strategic gain, as seen in the cases of Cape Town's Day Zero, Lake Poopó, and the 2023 Turkish earthquakes. While narrative control may temporarily

preserve stability of the government, such strategies risk eroding public trust over time, particularly if communities perceive crises to be manufactured or exploited. Transparent and evidence-based communication, along with inclusive governance, should be adopted to ensure that disaster management processes are not leveraged as tools for political manipulation.

Overall, while climate change-induced natural disasters may be inherently environmental, their political repercussions are governed by human actions. Therefore, proactive governance, institutional integrity, and community-centered resilience building remain the keys to transforming disasters from catalysts of instability into opportunities for equitable development and political cohesion. While the fact that a disaster is attributed to climate change might not be, by itself, a determinant of political instability, the fact that the number of disasters attributed to climate change continues to grow puts some pressure on the government. People expect change and improvement, meaning that as climate change exacerbates and these disasters repeat themselves, the government's ability to respond will be tested further, hence adding to the pressure to correctly handle such patterned disasters.

■ Acknowledgments

Sincere gratitude is given to my mentor, Cesar Martinez Espinosa, who has supported me throughout this journey.

■ References

- AG Global Strategies. Governmental Instability. <https://www.ag-globalstrategies.com/governmental-instability> (accessed Aug 7, 2025).
- Centre for Research on the Epidemiology of Disasters; United Nations Office for Disaster Risk Reduction. *The Human Cost of Weather-Related Disasters 1995–2015*; UNDRR: Geneva, 2015. <https://www.undrr.org/publication/human-cost-weather-related-disasters-1995-2015> (accessed Aug 7, 2025).
- World Economic Forum. COP27: What Climate Leaders Are Saying Right Now. <https://www.weforum.org/stories/2022/11/cop27-quotes-climate-leaders/> (accessed Aug 7, 2025).
- Busby, J. W. Beyond Internal Conflict: The Emergent Practice of Climate Security. *J. Peace Res.* 2021, 58 (1), 186–194. Published online Dec 28, 2020. <https://doi.org/10.1177/0022343320971019> (accessed Aug 7, 2025).
- Canavan, C.; Ide, T. Contention, Cooperation, and Context: A Systematic Review of Research on Disasters and Political Conflicts. *Int. J. Disaster Risk Reduct.* 2024, 108, 104558. <https://doi.org/10.1016/j.ijdr.2024.104558> (accessed Aug 7, 2025).
- Cevik, S.; Jalles, J. T. Corruption Kills: Global Evidence from Natural Disasters. *IMF Working Paper No. 2023/220*, 2023. <https://doi.org/10.5089/9798400257315.001> (accessed Aug 7, 2025).
- Omeliheva, M. Y. Natural Disasters: Triggers of Political Instability?. *Int. Interact.* 2011, 37 (4), 441–465. <https://doi.org/10.1080/03050629.2011.622653> (accessed Aug 7, 2025).
- Dyson, M. E. *Come Hell or High Water: Hurricane Katrina and the Color of Disaster*; Basic Books: New York, 2006.
- Rhodes, J., Chan, C., Paxson, C., Rouse, C. E., Waters, M., & Fussell, E. (2010). The impact of Hurricane Katrina on the mental and physical health of low-income parents in New Orleans. *American Journal of Orthopsychiatry*, 80(2), 237–247. <https://doi.org/10.1111/j.1939-0025.2010.01027.x>
- Gabe, T.; Falk, G.; McCarty, M.; Mason, V. W. *Hurricane Katrina: Social-Demographic Characteristics of Impacted Areas*; Congressional Research Service Report for Congress, RL33141; Library of Congress: Washington, DC, 2005.
- Nicholls, K.; Picou, J. S. The Impact of Hurricane Katrina on Trust in Government. *Soc. Sci. Q.* 2013, 94 (2), 344–361. <https://www.jstor.org/stable/42864424> (accessed Aug 7, 2025).
- Murray, M. Bush Approval at Lowest Level of His Presidency. *NBC News*, Sept 14, 2005. <https://www.nbcnews.com/id/wbna9332076> (accessed Aug 11, 2025).
- Niño-Gutiérrez, N. S. Resilience in Adversity: Acapulco and the Aftermath of Otis Hurricane Category 5 of October 25, 2023. *South Asian J. Soc. Stud. Econ.* 2023, 20 (4), 209–224. <https://journalsajsse.com/index.php/SAJSSE/article/view/753> (accessed Aug 7, 2025).
- UNICEF. Cyclone Idai and Kenneth. UNICEF Mozambique. <https://www.unicef.org/mozambique/en/cyclone-idai-and-kenneth> (accessed Sept 21, 2025).
- United Nations Development Programme. Mozambique Cyclone Idai Post-Disaster Needs Assessment. May 30, 2019. <https://www.undp.org/publications/mozambique-cyclone-idai-post-disaster-needs-asesment-pdnadna> (accessed Aug 10, 2025).
- Mugambiwa, S. S.; Makhubele, J. Anthropogenic Flash Floods and Climate Change in Rural Zimbabwe: Impacts and Options for Adaptation. *Technium Soc. Sci. J.* 2021, 21, 809–819. https://www.researchgate.net/publication/353123575_Anthropogenic_flash_floods_and_limate_change_in_rural_Zimbabwe_Impacts_and_options_for_adaptation (accessed Aug 7, 2025).
- De Coning, C.; Krampe, F. Multilateral Cooperation in the Area of Climate-Related Security and Development Risks in Africa. 2020, Mar 2. <https://reliefweb.int/report/world/multilateral-cooperation-area-climate-related-security-and-development-risks-africa> (accessed Aug 10, 2025).
- Campbell, H. G. Saving Lake Chad and the Unification of Africa: Lessons from the International Conference to Save Lake Chad (ICLC), Abuja, Nigeria. February 2018. *J. Afr. Foreign Aff.* 2020, 7 (1), 71–110. <https://www.jstor.org/stable/26976618> (accessed Aug 7, 2025).
- Mishra, V. Deadly Floods Show Need for Faster, Wider Warnings, UN Agency Says. *UN News*, July 21, 2025. <https://news.un.org/en/story/2025/07/1165455#:~:text=At%20the%20same%20time%20glacier,%C2%A9%20WMO/Arya%20Manggala> (accessed Aug 7, 2025).
- Perreault, T. Climate Change and Climate Politics: Parsing the Causes and Effects of the Drying of Lake Poopó, Bolivia. *J. Lat. Am. Geogr.* 2020, 19, 26–46. <https://www.jstor.org/stable/48618950> (accessed Aug 7, 2025).
- Warner, J. F.; Meissner, R. Cape Town's "Day Zero" Water Crisis: A Manufactured Media Event? *Int. J. Disaster Risk Reduct.* 2021, 64, 102481. <https://doi.org/10.1016/j.ijdr.2021.102481> (accessed Aug 7, 2025).
- Climate Diplomacy. Conflict over Water in the Aral Sea. <https://climate-diplomacy.org/case-studies/conflict-over-water-aral-sea> (accessed Aug 7, 2025).
- Santos-Reyes, J. Factors Motivating Mexico City Residents to Earthquake Mass Evacuation Drills. *Int. J. Disaster Risk Reduct.* 2020, 49, 101661. <https://doi.org/10.1016/j.ijdr.2020.101661> (accessed Aug 7, 2025).
- Kurlantzick, J. Will the Earthquake Affect Politics and War in Myanmar? Council on Foreign Relations, April 1, 2025. <https://www.cfr.org/blog/will-earthquake-affect-politics-and-war-myanmar> (accessed Aug 10, 2025).

-
25. Radlinsky, J.; Helupka, G.; Flanagan, D.; Ritscher, S.; Dorland, J.; Khalife, M. Political Implications of Earthquakes and Disinformation on Turkey Post-Election. The Counterterrorism Group, June 2, 2023; updated November 22, 2024. <https://www.counterterrorismgroup.com/post/political-implications-of-earthquakes-and-information-on-turkey-post-election> (accessed Aug 7, 2025).
26. Climate Signals. Hurricane Katrina (2005). <https://www.climate-signals.org/events/hurricane-katrina-2005#:~:text=Hurricane%20Karina%20was%20one%20of,limited%20access%20to%20medical%20care> (accessed Aug 7, 2025).

■ Author

Haedam Lee is a student from Jeju Island, South Korea, pursuing the International Baccalaureate Diploma. She has experience in government, diplomacy, and community initiatives, including work with the National Assembly and the Embassy of Ecuador. Her leadership spans youth advocacy, cultural preservation, and international academic competitions.