Do Natural Disaster Prolong Civil Conflict?

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Many of the countries experiencing civil conflict are also among those most vulnerable to extreme weather events. But how exactly do natural disasters effect the duration of conflicts?

Policymakers have long recognized climate change as a threat to national security. Indeed, military forces have already begun incorporating the anticipated effects into strategic planning initiatives. A primary concern is that an increasing incidence of destructive natural disasters will heighten the risk of political violence in fragile states. Though heavily debated, academic scholarship provides some supporting evidence. For example, researchers have argued that drought in the Eastern Mediterranean played a role in the Syrian Civil War, while other work has found disasters to increase the likelihood of conflict across a range of cases.

However, while these insights are important, the excessive emphasis placed on evaluating whether disasters *cause* civil conflict has led researchers to neglect an equally important question—how the impacts of these events can shape the tenure of conflicts already underway. This omission is surprising given that many of the countries most wracked by civil conflict are also among those most vulnerable to extreme weather events and other episodes of heightened resource scarcity.

Research in the sociology of humanitarian crises provides some cause for hope: when faced with a common threat, cooperation, rather than conflict, appears to be the norm. These insights also underpin a body of literature known as "disaster diplomacy," which evaluates disasters' effects on diplomatic interaction among rival states. Unfortunately, when it comes to

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armed organized violence within states, these dynamics are unlikely to apply. Rather than hastening their end, my research finds a key impact of natural disasters to be longer and more intractable civil wars.

Natural disasters and the duration of civil conflict

Natural disasters occur when natural phenomena adversely affect human populations. They can be categorized according to their speed of impact: "slow-onset" disasters—drought being the classic example—emerge over time and cause damage through their impact on food and water access. In contrast, "rapid-onset" events, which can include: floods, fires, storms, earthquakes, and eruptions, commence quickly and can also generate infrastructural damages. Disasters can also be divided according to their causal origins; those associated with climate change arise from climatological (drought, wildfire, extreme temperatures) or hydro-meteorological (floods, storms, wet mass movements) processes.

In order to assess how a disaster of any type might influence conflict duration, it is critical to consider their impact on the capabilities of combatants to wage war. Capabilities are important because they can influence whether groups choose to surrender, pursue negotiated settlement, or fight on. For insurgents, an ability to defend is especially important because state militaries often possess superior troop strength and firepower. Indeed, guerilla warfare is a hallmark of civil conflict precisely because it offers insurgents defensive advantages that enable them to eschew direct confrontation. For this reason, conflict duration analyses often cite the existence of geographic factors—mountainous and forested landscapes, proximity to international borders, or non-contiguous territory are among the most common—as reasons why some conflicts last longer than others.

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I argue that natural disasters, especially infrastructure-wrecking rapid-onset events, serve a similar function; they decrease the state's capacity to suppress conflict while enhancing the ability of insurgent groups to avoid losses and escape defeat. Although disasters rarely offer opportunities for one side to significantly enhance their relative offensive capabilities—if they did, then the outcome might be shorter wars—they can increase the likelihood of a mutually hurting stalemate, and thus prolong conflict.

First, disasters are expensive. The need to provide relief and reconstruction assistance requires governments to increase expenditures at the same time tax revenues decline due to lost productivity. While international humanitarian aid transfers can help offset these costs, only the largest and most noteworthy disasters tend to receive it. For example, a total of 373 disasters occurred in 2010. Of these, only two, the earthquake near Port-au-Prince, Haiti, and heavy flooding in Pakistan, received over 95% of all international donations. The remaining funds were allocated across fifty-four other disasters, while 317 received no support at all. The result for states embroiled in civil conflict is fewer funds available for counterinsurgency and nation-building in contested regions.

Second, the military's role in the aftermath of disaster can reduce its ability to suppress conflict. When a disaster strikes an uncontested region, soldiers can be redeployed away from the conflict zone to provide humanitarian assistance and support recovery operations. The result reduces military pressure on insurgents and provides them opportunities to regroup. When contested areas are affected, temporary ceasefires are often declared to ensure safe passage for military and civilian relief providers. Not only do ceasefires directly prolong hostilities, they too can provide insurgents with opportunities to escape, rearm,

and fight another day. If ceasefires are not on offer, attacking aid convoys and seizing relief goods can be an attractive strategy for those seeking to boost their staying power.

Finally, when disasters destroy infrastructure, military readiness suffers disproportionately. Infrastructure—bridges, roads, airports, power grids, and communication systems—is more essential to military forces than insurgents because it facilitates troop transport and resupply, and enables the use of mechanized battle implements such as planes, tanks, and armored personnel carriers. Damage to these systems reduces the military's capacity to project power, and increases the ability of insurgents to move about unimpeded. For this reason, forces such as the United States Army consider infrastructure restoration to be a central element in counterinsurgency operations.

Evaluating the argument

To evaluate these arguments, my research compares data on the annual incidence of natural disasters with those measuring the duration of 224 civil wars in 86 countries from 1946 – 2005. I categorize disasters according to their impact speed—rapid or slow—and whether they result from environmental processes associated with climate change. The findings are striking: states that endure just one rapid disaster per year during conflict fight an average of 20% longer than states that experience no disasters. States suffering an average of two disasters per year during conflict, or slightly less than the mean value of 2.3/year across all cases, fight wars that are 43% longer. In real terms, this translates to almost an additional 14 months of fighting. While slow-onset disasters do not appear to significantly prolong civil conflict, those related to climate change generate even stronger positive impacts on duration. These findings are true for both smaller conflicts and for larger civil wars.

Figure 1 provides a graphical depiction of this relationship. It displays the impact of *x* natural disasters on the predicted duration of a civil conflict, all else equal. As indicated, increasing the average number of disasters per year during conflict from zero to two increases the expected duration from 938 to 1,345 days. An average of five disasters per year—or slightly less than one standard deviation above the mean value of 5.9 disasters—increases predicted duration to 2,310 days—a 145% increase in duration over states that experience no disasters.

Figure 1. Natural Disasters and civil conflict duraction.

The Case of Pakistan

Experiences in Pakistan during the 2010 flooding of the Indus River Valley provide an instructive example. In July of that year, extreme monsoon rains pushed the Indus River beyond its banks, submerging 20% of Pakistani territory, killing 2,000 people, and affecting over 20 million. At the same time, the country was also embroiled in struggles with the Taliban and militants associated with the Haqqani network, both of whom were fighting against the US occupation in neighboring Afghanistan.

The costs of the disaster were high, estimated to be approximately US$10 billion. The government of Pakistan allocated approximately 1% of annual GDP —US$1.8 billion—for direct cash transfers to flood victims, and an additional US$2.2 billion for other reconstruction and relief support. Total international humanitarian assistance to the Pakistani government amounted to only US$1.3 billion in 2010 and US$1.6 billion in 2011. In the medium-term,

exports fell in key agricultural sectors; tax revenue declined from 10% of GDP in 2010 to 9% in 2011; and inflation rose from 11% in 2010 to 20% in 2011.

These costs, coupled with the lost tax revenue from the disaster's impact on economic and agricultural production and rising expenses to accommodate the re-displacement of approximately 2 million people who had already been dislocated by the fighting, required the Pakistani government to modify its budgetary priorities. In 2010, the year of the disaster, military spending constituted 19.6% of total government expenditures. In 2011, this total fell to 18.7%, and again to 18.5% in 2012.

The floods also required significant assistance from the Pakistani military to facilitate relief and recovery work, including a redeployment of approximately 70,000 troops and most of its helicopter fleet. These actions led the Pakistani Army to delay offensive operations that had been previously planned against Taliban and Haqqani militants in North Waziristan and the Federally Administered Tribal Areas. While the Army itself would not confirm the reason for these delays, Robert Gates, the US Secretary of Defense at the time, stated that the US would avoid placing pressure on Pakistan to conduct the missions in order to provide additional time for the Pakistani Army to assist with flood relief.

The impact on infrastructure was devastating, destroying more than 5,000 miles of roads, 400 bridges, 400 miles of railways, and approximately 3 gigawatts of power generation capabilities. Noting the impact of these losses on military readiness, Daniel Markey, a Senior Fellow for India, Pakistan, and South Asia at the Council on Foreign Relations, called the disaster "…a huge setback for the Pakistani military's efforts," arguing that "…it will also be more difficult for the Pakistani military in any reasonable amount of time to take the

fight up again," and that the floods "...will cause significant trouble...because in particular, the Haqqani network...will be able to continue to operate as it has without feeling significant military pressure on the Pakistani side of the border."

While the overall impact of the floods on the duration of these conflicts has yet to be determined, it's clear that the associated delays provided a significant impediment to combat operations, and potentially enabled groups like the Taliban and Haqqani network to prolong hostilities, which as of this writing, are still ongoing.

Implications

The arguments and evidence presented here provide robust support for those who consider climate change to be a powerful national security threat. Among scholars, this research also justifies a concerted shift towards understanding not just whether disasters cause people to fight, but also how these events can bear on the trajectory and outcome of existing conflicts. This is particularly important given that rising incidence and magnitude of natural disasters remains among the most pernicious effects of climate change, especially in states that are also predisposed to conflict.

Image credit: Save the Children/Flickr.

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