

States and Nature: The Effects of Climate Change on Security
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The concentration of carbon dioxide, the main greenhouse gas, has reached levels not seen for 800,000 years.¹ Over the next 100 years, concentrations could reach levels not observed on earth for 200 million years.² While the future is uncertain, we appear to be on track for temperature increases of at least 2 degrees Celsius (3.6°F) above pre-industrial levels. Even higher temperatures would put us in to strange territory. Three million years ago, when the earth was 4 to 6 degrees Fahrenheit hotter than it is today, Canada had camels.³ While there are historical analogues from ancient history of the planet, we are entering in to uncharted territory for the modern era for our species.

Eighteen of the nineteen warmest years on record have occurred since 2000.⁴ While the specific ways that climate change will manifest in different places around the world is not fully understood, we have already begun to observe striking changes in temperature and rainfall patterns around the world that have profound implications for human societies. For example, in winter 2016, Arctic temperatures spiked more than 50 degrees Fahrenheit above normal for several days. Temperatures for the entire month of November averaged 20 degrees above normal.⁵ Summer sea ice in the Arctic has been in retreat for years, and already shipping routes and access to hydrocarbons appear to be viable propositions,

¹ CBS News 2014.

² Foster, Royer, and Lunt 2017.

³ Wagner and Weitzman 2015, 10–11.

⁴ Samenow 2019.

⁵ Samenow 2016.

accelerating jockeying between states over control and ownership of the region. More worrisome is what these weather anomalies mean for the climate system, that climate change may be occurring faster and with far-reaching effects beyond what climate scientists thought possible in the short- to medium run.

In early 2017, warm temperatures led to an early spring, making it the hottest February on record in the United States.⁶ On the other side of the world, one fifth of Australia faced temperatures in excess of 104°F (40°C) in an unusually hot February, even for Australian summers.⁷ Off-shore, spiking water temperatures for the second consecutive year led to massive coral bleaching off the coast, threatening the survival of coral populations on the much celebrated Great Barrier Reef.⁸

Similar patterns of weather anomalies have been observed for rainfall with cycles of little to no rain punctuated by extreme rainfall. California's experience is illustrative; a six-year severe drought beginning in 2010 affected much of the state. In 2017, the drought gave way to serious flooding that caused evacuations of hundreds of thousands, some \$600 million in damage to highways, with repairs to damaged dams potentially requiring as much as \$50 billion.⁹ In 2018, California would experience the most deadly wildfire in its history with the Camp Fire leading to more than \$16.5 billion in damages and some 86 deaths.¹⁰

Around the world, other countries have endured similar hardships. In India, two seasons of weak monsoons led to drought affecting more than 330 million in

⁶ Fisher 2017.

⁷ Australian Associated Press 2017.

⁸ Robertson 2017.

⁹ Associated Press 2017.

¹⁰ Associated Press 2019; Los Angeles Times 2018.

2016. Accompanying high temperatures of 113°F (45°C) forced school closures in parts of the country and led to the deaths of hundreds.¹¹ By the latter part of the year, concerns about drought had been eclipsed as the arrival of monsoon rains brought “unprecedented” flooding along the Ganges River.¹² In 2019, drought and overextraction of groundwater led the southern city of Chennai of nearly 10 million inhabitants to nearly run out of water.¹³ That was soon followed by seasonal monsoon flooding, more than 150 dead, and hundreds of thousands displaced in other parts of the country, with worries that climate change was making rainfall more erratic and prone to extremes, even if total rainfall remained roughly the same.¹⁴

These episodes on their own are not evidence of climate change. Weather anomalies happen all the time, often accentuated by natural processes like El Niño and La Niña.¹⁵ However, the accumulation of record-breaking hot years and new developments like unprecedented temperatures at the poles suggest a broader change is well underway.¹⁶ A decade ago, the safe bet for those commenting on individual weather events was to say that scientists could not say any individual event was caused by climate change, but these were the kinds of effects one would expect to see with climate change. In recent years, however, we have seen the growth of so-called “attribution” studies that have increasingly been able to assess the extent to which individual events such as the 2011 Syrian drought, 2012

¹¹ Agence France-Presse 2016.

¹² Wright 2016.

¹³ Sengupta and Cai 2019; Pashak 2019.

¹⁴ Perrone 2019.

¹⁵ Real Climate 2017.

¹⁶ Northon 2017.

superstorm Sandy, and the 2013 supertyphoon Haiyan were made more likely by climate change.¹⁷

While scientists continue to learn more about how climate change will manifest in different parts of the world, the general contours are clear, more warming of the earth's surface, more high temperature extremes during the day with little respite at night, and more erratic rainfall, with periods of little or no rain followed by heavy rainfall events in many parts of the world.¹⁸ Scientists talk about the end of "stationarity," that our climate conditions remain more or less within a "static envelope of variability defined by past extremes."¹⁹ But, with changes in mean temperatures and rainfall, we are also witnessing what are fatter tail effects. As mean temperatures shift to the right, more of the distribution of temperatures lies in the extreme territory of very hot temperatures. We see similar effects on the distribution of rainfall with more heavy rainfall events and more extreme periods of prolonged drought.²⁰ The journalist David Wallace-Wells captured the dynamism of a climate system that is characterized by more extremes: "The truth is actually much scarier. That is, the end of normal; never normal again. We have already exited the state of environmental conditions that allowed the human animal to evolve in the

¹⁷ Kelley et al. 2015; Fountain 2015; BMAS 2014; Climate Central 2014; Fountain 2017. The field of attribution, whereby scientists seek to connect individual weather events to climate change, is a young and somewhat controversial field, but increasingly scientists are able to tease out whether climate change enhanced the likelihood and severity of individual weather events.

¹⁸ IPCC Working Group I 2014; IPCC 2011.

¹⁹ Busby et al. 2012, 7.

²⁰ Wagner and Weitzman 2015.

first place, in an unsure and unplanned bet on what just what that animal can endure.”²¹

What does climate change then potentially mean for security? Answers to this question hinge on what we mean by “security” and our understanding of how the physical effects of climate change are likely to manifest in economic and social consequences like our ability to grow food, to access water, to power our homes and industries, and, indeed, our ability to live along coastlines and rivers. Negative effects on these might contribute to security outcomes of interest, but we also have to have an appreciation of whose security we are talking about. Are we talking about relations between states, the status of particular countries of concern, or the well-being of individuals or communities within particular countries?

Since the mid-2000s, there has been a vigorous discussion both in the policy community and academia about the security consequences of climate change. In the United States, policymakers have examined this question largely through the lens of direct harms to the United States and indirect consequences for the country’s overseas interests. The emphasis is in a sense parochial, but the consequences that decision-makers worry about are rather broad, encompassing everything from direct threats to military bases and critical infrastructure, effects on the operational environment for war-fighting, increased demands for humanitarian intervention, extending to concerns about state failure and the emergence of conflict in countries strategically important to the United States.²² Policymakers from other countries such as the UK, Germany, and the European Union have issued similar reports of

²¹ Wallace-Wells 2019, 18.

²² Busby 2008; Busby 2007; Busby 2016; Department of Defense 2014.

their own,²³ and the issue has been elevated to become an item of conversation at the UN Security Council in a number of different forums.²⁴

The academic community, for its part, has largely focused on a narrow set of questions related to whether climate change will lead to a variety of kinds of civil conflict. The reasons for this more circumscribed vision are largely methodological. Social scientists ask questions they can answer with available evidence. Many are uncomfortable talking about the future as it quickly lends itself to prognostication rather than evidence-driven analysis. Nils Petter Gleditsch, a leading scholar of environment and conflict, warned of this problem in the late 1990s:

Environmental organizations and other advocacy movements are prone to argue that we are now at a turning point in human history...In saying this, one may easily slip into prophesy. 'There will be water wars in the future' is no more a testable statement than the proverbial 'The End of the World is at Hand,' unless terms such as 'the future' and 'at hand' are clearly specified."²⁵

What this means is that social scientists generally look to the past to try to understand the implications for the future. Many use historic evidence of droughts, temperature change, rainfall volatility, and other physical phenomena to assess whether they historically contributed to negative security outcomes such as armed conflict. On some level, this book is no exception. Rather than try to imagine what a world of more climate extremes some of which have no modern equivalent mean for security, I too look to how states have responded in the recent past to climate-related extreme weather. Future extremes may be beyond what we have observed, but this analysis of the recent past gives us a historically and theoretically grounded

²³ Morisetti 2014; WBGU 2007; Solana 2008.

²⁴ UN Security Council 2007.

²⁵ Gleditsch 1998, 394.

account of how countries respond to climate threats. This book, however, does something a little different from much of the existing literature which has narrowly defined security in terms of violent conflict. To understand what I do differently, we need to know a bit about the intellectual history of the field.

Since wars between states are rare and became more rare in the latter half of the 20th century, most of the academic discussion has focused on civil wars and other lower-level violence and social conflict within states, though there has been a fair amount of work dedicated to competition and cooperation over transnational river basins. There are two waves of scholarship worth mentioning. An older literature from the 1990s began to assess the relationship between environmental change and security largely through case studies. While important scholarship, it was difficult to generalize from the limited set of cases to the wider world. Moreover, much of the foundational work in this space consisted of single case studies that traced the path from some environmental harm to violent conflict. As Marc Levy noted, this approach had its limits:

The more logical research strategy under the circumstances would be to compare societies facing similar environmental problems but exhibiting different levels of violent conflict. That would permit some precision in identifying the conditions under which environmental degradation generates violent conflict and when it does not...²⁶.

In the 2000s, with the arrival of better, more fine-grained data on climate hazards and violence, a second generation of scholarship on environmental security, much of it quantitative, emerged to test the statistical relationships between climate factors and conflict outcomes. This newer literature has the virtues of being able to

²⁶ Levy 1995, 57.

make more generalizable claims across many cases. However it has also struggled to pin down precise causal mechanisms between diverse climate phenomena (too little rain, too much rain, unpredictable rain, high temperatures) and different forms of conflict. Moreover, the emphasis on conflict has come at a cost to other legitimate security concerns that worry policymakers such as humanitarian emergencies that may endanger as many if not more people and require military mobilization to address.

Alongside these quantitative studies have been a handful of case studies that have sought to surface the connections between climate change and specific conflicts, mostly notably the civil conflict in Darfur, Sudan²⁷ and the Syrian civil war,²⁸ all of which have been offered as examples of conflicts where climate processes have been an important conflict accelerant or multiplier. While some of this work has been careful in its claims, the cases tend to suffer from the same problems of the earlier literature of the 1990s, single case studies of climate-conflict links in the absence of paired cases to identify the scope conditions for when climate processes lead to conflict and when they do not.

This book seeks to address key deficiencies in both generations of scholarship on environmental security. By exploring paired cases of comparable physical exposure that have different social and political effects, I seek to identify the conditions under which climate hazards lead to negative security outcomes.²⁹ In the process, I try to provide more insight in to the causal mechanisms piece

²⁷ Faris 2007; Faris 2009; Ki-Moon 2007.

²⁸ Werrell and Femia 2013; Kelley et al. 2015; Gleick 2014; Fountain 2015.

²⁹ This echoes a call in Koubi for more micro-level case studies. Koubi 2019.

neglected or unsatisfyingly addressed in the quantitative literature. I also am more inclusive in the scope of security outcomes of interest, moving beyond studies of violent conflict to include humanitarian emergencies. Chapters 4 to 6 take paired cases in different regions, Africa, the Middle East, and Asia to demonstrate the promise and challenges of case-based analysis in this space.

While the book is intended to contribute to these two generations of scholarship on environmental security, I also, in chapter 7, back out and ask the more general question why more distant countries such as the United States and those in Europe should care about the security consequences of climate change in other countries. Chapter 7 provides my theoretically-informed account and how the insights of this book may inform foreign policy practice going forward.

In what follows, I summarize the main argument and the contributions of each chapter.

In chapters 2 and 3, I develop a more theoretically driven account for what constitutes threats to security and the conditions when climate change is likely to lead to negative security outcomes, including but not limited to conflict.

In brief, the argument is that the national security threats historically encompassed armed attack by foreign countries. Of course, that failed to encompass security threats emanating from within countries like rebel movements. With problems like terrorism, we can appreciate that non-state actors, not just state actors, can also cause security problems. What about harms that lack human agency like pandemics or climate change? Is there anything that makes them “security” problems and not simply very important problems?

The familiar (and still contested) claim is that some climate-related physical process like droughts under certain circumstances can lead to conflict. Here, climate factors become causal factors in the breakdown of internal security within countries (with potential ramifications for other countries that might be affected by that situation). A more expansive way to think about climate change as a security threat is in terms of the gravity of harms and how this compares to an armed external attack. Are the level of damages posed by climate change equivalent to what could be imposed by an armed attack by a foreign adversary? Pandemics and climate change can rise to the level of security problems if they become disasters, that is if they can cause such grave harms (in terms of loss of life and damage to the economy) that if an adversary were to threaten such damages, a state would be willing to wage war to stop them. While the extent of the damage is one reason to consider humanitarian emergencies as security challenges, they also frequently require military mobilization to deliver emergency supplies, conduct search and rescue, and restore order. The diversion of military assets for humanitarian relief thus imposes opportunity costs and means those assets at least temporarily cannot be used for other purposes. For this and other reasons, we can consider climate change a security challenge. I expand on this logic in chapter 2.

Not every climate hazard leads to equally bad outcomes. In other words, not every storm is a natural disaster. While some swift-onset climate hazards such as cyclones pose direct and immediate short-run threats because they occur quickly, other slow-onset hazards such as droughts develop over longer periods of time. Whether or not these events lead to large-scale loss of life is thus even more

dependent on the preparedness of the country in question and the nature of the domestic response.

Populations buffeted by natural hazards are not passive. They respond to such hazards by drawing down savings, making use of emergency reserves, drawing on familiar help and community resources, and even move from inhospitable areas to ones that may offer better chances for survival. They also make claims upon institutions in a position to help them, including national, provincial and local governments; aid agencies; faith groups and charities; and, companies. If their pleas for assistance are not honored, this can lead to demands for redress through peaceful protest that can escalate into looting or more violent confrontation if initial requests are rebuffed. That timetable of escalation can be truncated if hazards arrive in the midst of on-going conflict, where combatants are already organized, though these hazards may also affect their capacity to continue the fight. Thus, the range of security outcomes of concern range from large-scale loss of life due to exposure, famine, and thirst through to escalating violent conflicts from protests, to small scale civil conflict, to civil war. Under what conditions might such security consequences occur?

The first dimension that matters is *government capacity*. While the field has a variety of definitions of state capacity, I use it here to reflect bureaucratic and administrative capacity³⁰ or what Fukuyama describes as the ability to execute policy.³¹ States need capacity to deliver services. At the most basic level, a state has to have sufficient capacity to protect itself from armed attacks, both those that come

³⁰ Hendrix 2010.

³¹ Fukuyama 2013, 349.

externally and within. A state too weak to protect itself from invasion will cease to exist, and a state without sufficient capacity will be subject to constant coup attempts from within.

In the face of climate hazards, a state needs to have some infrastructural power to respond, as states are expected to provide for the needs of their citizens. Even if leaders possess limited preoccupation with the fate of their citizens, climate hazards may ultimately lead to more far-reaching consequences that threaten regime survival by making it impossible for the state to retain the loyalty of its citizens or repress violence. Those with weak institutions lack the organizational capacity to respond to climate-related hazards. While this is likely correlated with wealth, some polities may have capacity for functions related to emergency preparedness and response, despite being poor.

While state capacity determines whether states *can* respond to climate hazards, other factors shape whether they *will*. Following work by Colin Kahl, Daren Acemoglu and James Robinson, Douglass North among others, the second dimension of relevance is the *degree of political inclusion*.³² According to Acemoglu and Robinson, inclusive institutions are characterized by “power broadly distributed in society and [institutions that] constrain its arbitrary exercise.”³³ If we think of politics as elite pacts between groups to share power and resolve differences through law and politics rather than by force, then political inclusion implies

³² Kahl 2006; Acemoglu and Robinson 2013; North, Wallis, and Weingast 2009. This approach also has some affinities with selectorate theory with exclusive regimes have small selectorates that provide few public goods Bueno de Mesquita et al. 2003.

³³ Acemoglu and Robinson 2013, 82.

incorporation of all politically and militarily relevant sub-groups in government decision-making and “fair” apportionment of resources and programs.³⁴

As Cullen Hendrix notes, institutional inclusivity in practice includes federalism, efforts to devolve power regionally, an independent judiciary, and checks on executive power such as votes that require supermajorities and policies that give minorities voice opportunities.³⁵ These constraints on leaders and institutional practices to resolve conflicts are two reasons why inclusive institutions are less likely to suffer from top-down violent oppression or the emergence of conflicts that burble up from dissatisfied groups.³⁶

Polities with exclusive political institutions are likely to respond to climate-related hazards with measures largely limited to the political base of the regime such as co-ethnics or the leader’s home region.³⁷ This leaves less favored regions with meager to no access to resources that would protect them from harm or respond to climate shocks such as emergency provisions, food aid, water, shelter, medical attention, transport, and cash. On some level, this is consistent with Amartya Sen’s observation, based on the Indian experience, that there has never been a famine in a functioning democracy.³⁸ However, as chapter 3 details, while democratic governments are generally inclusive by design, other regimes may be inclusive without being democracies. All else equal, my expectation is that states

³⁴ For similar thinking, see North, Wallis, and Weingast 2009.

³⁵ Hendrix 2016, 3.

³⁶ Ibid.

³⁷ Kahl 2006; Acemoglu and Robinson 2013.

³⁸ Sen 1981.

with more inclusive governments will be more willing to come to their citizens' aid in the wake of exposure to climate hazards.

While state capacity limits the ability of governments to respond in the midst of crisis, a third dimension – *international assistance* – can partially compensate for state weakness, both in the lead up and the aftermath of hazard exposure. While much of the literature on environment and security has sought to grapple with the role played by domestic institutions, the international connections have been understudied.³⁹ While state responses are hugely important, international assistance can help compensate for capacity constraints, indeed by building capacity over time and by responding in emergency settings with food aid, humanitarian response, conflict mediation, peacekeepers, or other measures to address human suffering, extend state authority to restore order, or to quell conflicts.⁴⁰ In studies of disaster risk reduction, there are fears that international aid might encourage moral hazard, where states rely on international aid rather use their own resources to prepare for climate hazards. In work on sub-Saharan Africa, however, Bussell and her collaborators found these fears were overblown.⁴¹

However, in the study of aid and civil wars, moral hazard has been found to be more of a concern: aid may extend civil wars as warring parties fear the end of conflict will see those resources dry up. Moreover, in that literature, aid flows can extend civil wars by providing lootable assets to one side of a conflict. Aid flows may pose a threat to rebel groups by providing the state with assets to strengthen its

³⁹ Exceptions are work by Baechler 1999; Baechler 1998.

⁴⁰ On the role of aid in conflict mitigation, see de Ree and Nillesen 2009; Findley 2018.

⁴¹ Bussell 2014.

power. As a consequence, aid project themselves may become targets if perceived as a threat to rebel authority.⁴²

Here, I make a different argument. I emphasize first whether a country receives or permits external aid in the midst of an emergency. This matters more in countries with weak capacity, as they may lack the means to prepare for and independently respond to climate hazards. A second aspect is whether the external resources are distributed in a manner that is broadly based on necessity or is captured by exclusive political institutions or sectarian forces that might be favored by the aid provider based on ideology, diaspora affinity groups, religion, formal alliances, etc.

To the extent that some groups receive aid in a crisis and not others, then we should expect to see groups with limited to no access to aid in such circumstances suffer, potentially die, and nurture that memory of deprivation as a source of grievance. By aid or assistance, I do not simply mean overseas development assistance (ODA). Emergency relief or humanitarian aid often is not counted by donors as ODA. Moreover, though aid can come in the form of money, other forms of assistance are important including in-kind contributions of material support and even weapons. If those external resources are provided or distributed in a one-sided manner, then this can mean large-scale loss of life in the event of exposure to a climate hazard, with favored groups receiving assistance while others suffer. Alternatively, one-sided external support can also provide one group of actors the resources to fight or serve as a source of grievance for others largely excluded from

⁴² Findley 2018.

access to those resources. Aid that is allowed in and distributed based in a broad-based manner will likely diminish the risk of humanitarian suffering and follow-on security consequences.

We should expect the worst security consequences to occur in settings where there are weak capacity, exclusive political institutions, and no or one-sided provision of international assistance. We should expect the best security outcomes (that is limited death from exposure to climate hazards and limited conflict) to occur in polities with strong capacity, inclusive political institutions, and broad-based provision of aid. In between, there are a number of other possibilities, which are elaborated in chapter 3.

In chapter 4, I examine the paired cases of Ethiopia and Somalia, comparing them to each other and each to themselves over time. In 2011, Somalia suffered a devastating famine, in which an estimated 250,000 people were estimated to have died above and beyond normal rates of expected mortality. By contrast, Ethiopia, which faced similar exposure, did not face a comparable famine. This was quite a different outcome from the mid 1980s when northern Ethiopia faced a drought that took the lives of 400,000 to 600,000. The suffering in Ethiopia became a cause célèbre with the 1985 Live Aid concert, Band Aid, and led to an outpouring of public demands for assistance. However, by 2015, the country was able to avoid large-scale loss of life when again faced with a severe drought.

What set these two countries apart? Between 1992 and 2016, Somalia languished without a functioning government. Meanwhile, Ethiopia developed considerable government capacity since the 1980s in the decades after the

Ethiopian People's Revolutionary Democratic Front seized power from the socialist Derg government in 1991.

However, these differences in state capacity on their own do not fully explain the differences between the two countries. Somalia faced numerous severe droughts since the 1980s; only two – 1992 and 2011 – that resulted in famine. What explains the difference in outcomes? In 1992 and 2011, international assistance was not permitted in to the country until late stages of the famine after large numbers of people died. In the other two episodes, in the mid 1990s and the mid 2000s, aid was allowed in to the country and local groups were in a position to assist in modest self-governance even in the absence of a functioning state. Ethiopia, despite arguably having an authoritarian government, has increased state capacity and been amenable to foreign aid and humanitarian assistance, which has helped to alleviate famine risk. In 2015, Ethiopia faced another extreme drought, and again, the government was up to the challenge, avoiding large scale-loss of life. However, on the heels of this famine, a protest among the Oromo, a large but marginalized ethnic group, suggested that Ethiopia's government had strong state capacity but lacked a fully inclusive government, suggesting the long-run stability of the country could be in doubt (see Table 1 for thumbnail comparison).

Table 1: Somalia and Ethiopia

Country	Hazard Events	Capacity	Institutions	International Assistance	Outcomes
Somalia	Droughts 1992, 2000, 2004, 2005, 2008, 2010- 2011	Weak	Exclusive	Limited access 1992, 2011 Broad-based aid delivery	Two famines 1992, 2010- 2011 No famine 2000, 2004, 2005, 2008
Ethiopia	Droughts 1984, 2000, 2002, 2010 2015	Weak 1984 → Improved state capacity 2000, 2002, 2010, 2015	Exclusive → Increasing Inclusivity but still somewhat exclusive	Limited access 1983-1985 Broad-based aid delivery	Famine 1984 No famine 2000, 2002, 2010, 2015

Chapter 5 explores a different set of paired cases, examining the five-year drought in Syria that began in 2006 and the multi-year drought that Lebanon faced around the same time. The drought in Syria has been implicated in the emergence of protests and the subsequent civil war. I argue that Syria possessed some state capacity but mismanaged water policy in the lead up to the drought that made its effects worse. Moreover, because the government is characterized by exclusive political institutions that rewarded groups most loyal to the Assad family (namely, the minority Alawite group), other less favored groups suffered considerably in the wake of the drought. The drought was especially severe in northeast of the country in the provinces of Hassakeh, Raqqa, Deir al-Zor but also affected other areas. The government failed to adequately respond to those affected.

What followed was accelerated migration to the cities, which had already been occurring before the drought. The pressure from migrants, in turn, put a strain on social services and led to demands for redress that emanated from major cities such as Dar`a and Homs. The government repressed that protest activity, which

ultimately escalated in to a civil war. Thus, the route to conflict in Syria is indirect, and one can ask the legitimate question whether a different source of tinder would have ignited protest activity and contributed to civil war in any case. Here, the evidentiary chain requires us to connect drought and water mismanagement to migratory pressures that in turn give rise to grievances and protest activity, with insufficient insensitivity to citizens’ grievances and repression being the final links in the causal chain to conflict in Syria.

By contrast, neighboring Lebanon, which also faced many of the same pressures from drought and is perhaps the most suitable comparison case, did not experience conflict after its own multi-year drought. Though drought created problems and pressures for the populace to demand redress, the Lebanese government had more capable and responsive governance. In addition, this package of services to its citizens was supported through foreign finance that was distributed in a way that was relatively egalitarian, without favoring a particular group (see table 2 for thumbnail comparison).

Table 2: Syria and Lebanon

Country	Hazard Events	Capacity	Institutions	International Assistance	Outcomes
Syria	Droughts 2006-2010	Intermediate capacity → Diminished capacity (2007)	Exclusive	Limited access	Civil war 2011-
Lebanon	Droughts 2006-2009	Intermediate capacity	Somewhat inclusive	Broad-based aid delivery	Protest activity but no civil war

Chapter 6 provides a different set of paired cases, taking several states in south Asia that all face high cyclone risks – Myanmar, Bangladesh, and India.

Cyclone risk coupled with low elevation coastal zones radiates from Odisha and

West Bengal in India through Bangladesh to Rakhine State in Myanmar. In May 2008, a major cyclone devastated the Ayeyarwady Delta in Myanmar and left 700,000 homeless. Three quarters of the delta's livestock was killed. Half of the fishing fleet sank, and a million acres of rice paddies were inundated with saltwater.⁴³ With a referendum pending on a new constitution, Myanmar's authoritarian regime was reluctant to allow much humanitarian aid in to the country and rebuffed efforts by outside parties like the United States to offer assistance. The U.S. Navy, having made fifteen unsuccessful attempts to receive authorization to deliver aid, ultimately ordered its ships to depart in early June.⁴⁴ In the end, some 140,000 people died.⁴⁵ Myanmar had exclusive political institutions, limited government capacity, and resisted outside assistance.

Bangladesh provides a different portrait. Like Myanmar, it has suffered large-scale loss of life in the wake of cyclones, but the most deadly occurred in 1970, before it was an independent country and at a time when the international humanitarian aid architecture was limited in its geographic reach. As an independent country, Bangladesh has continued to struggle with natural disaster preparedness. In 1991, a category 5 cyclone, killed nearly 140,000 people, a reflection, in part, of limited government capacity. More would have died had not the American military assisted with large-scale mobilization of humanitarian aid.⁴⁶ By the 2000s, though Bangladesh would continue to suffer from governance challenges, its disaster preparedness and response capacity had improved

⁴³ The New York Times 2009.

⁴⁴ The New York Times 2008.

⁴⁵ Zarni and Taneja 2015.

⁴⁶ Berke 1991.

considerably, assisted in no small part due its receptiveness to foreign assistance, which have bolstered both state capacity and civil society and been able to provide broad-based support to vulnerable populations. In November 2007, Cyclone Sidr, a category 5 cyclone, hit coastal Bangladesh, especially affecting Satkhira, Khulna, Barguna, Patuakhali, and Bagerhat, amongst other districts in the southwest. The cyclone's effects were felt as far inland as Dhaka. More than 4,200 deaths were associated with the storm and as many as 8 million were affected. On some level, this represented progress in adaptive capacity and resilience compared to earlier decades when large numbers of people died in the wake of comparable cyclones. Here, foreign aid and international disaster response compensated for a government with weak capacity.

India provides another portrait improvement in adaptive capacity over time, though arguably, the country has been less reliant on donor assistance for disaster preparedness and response. In 1999, a devastating category five cyclone smashed into Odisha state in eastern India on the Bay of Bengal. 10,000 people were killed. In 2013, another category five hurricane struck the same state. Only 50 people died, as the country evacuated more than 500,000 people from low-lying areas, the largest such evacuation in more than 23 years.⁴⁷ While donors like the US Agency for International Development (USAID) worked with India on early warning systems and disaster preparedness, India did not rely much on disaster aid for preparedness or recovery (see Table 3 for a thumbnail comparison).⁴⁸ By 2019, when another

⁴⁷ Press Trust of India 2013.

⁴⁸ Konyndyk 2013.

powerful storm smashed into Odisha state, there were limited casualties as in 2013, despite population growth.

Table 3: Bangladesh, India, and Myanmar

Country	Hazard Events	Capacity	Institutions	International Assistance	Outcomes
Bangladesh	Cat 5- Cyclones 1970, 1991, 2007	Weak capacity	Exclusive→ Become more inclusive	Broad-based aid delivery by 2000's	Mass death 1970, 1991 Limited death 2007
India	Cat 5 - Cyclones 1999, 2013, 2019	Intermediate and increasing capacity	Somewhat inclusive	Limited reliance on aid	Significant death 1999 Small death totals 2013, 2019
Myanmar	Cat 4 Cyclone - 2008	Limited capacity	Exclusive	Limited aid delivery	Significant deaths

While the previous chapters focus on internal security challenges within states, chapter 7 steps back from cases like these and assesses the conditions under which climate security consequences in one part of the world constitute potential security challenges for other countries, particularly advanced industrialized countries such as the United States, that might have the resources to support climate resilience, disaster risk reduction, early warning systems, and other measures to reduce the risks of large-scale negative security consequences. These countries will also likely be called upon in the event of large-scale humanitarian emergencies and potentially where conflicts emerge.

While countries will be generally be most concerned about the direct effects of climate change on their homelands, many countries have international interests that could be affected by climate change, starting with effects on proximate neighbors and international waters near their own shores but extending to a range

of other concerns. These include the effects of climate change on countries that are sources of important raw materials or are links in vital supply chains, countries that control access to vital sea lanes, or where overseas military bases and diplomatic outposts are stationed. They extend to allies and potentially to countries where a country has active military operations. In chapter 7, I provide a more complete discussion of these concerns and how these have materialized in policy development, with particular emphasis on how the United States government has understood climate security concerns.

The critical challenge external actors face is where states of concern have weak capacity and/or exclusive political institutions how to build capacity and encourage more inclusion. In the wake of hazard exposure, regimes that otherwise might not be eligible or desirable locations for development or humanitarian assistance may require infusions of aid to forestall large-scale loss of life. Whether such assistance can facilitate more capable and just governance or provides a lifeline for exclusionary regimes to survive is a persistent dilemma for external actors.

In the concluding chapter 8, I return to the questions raised in chapter 2 about where the literature on climate and security is and should be headed, the direction of the climate security practitioner community, and how productive links between research and policy communities could be structured. I emphasize the importance of more research on the causal mechanisms connecting climate processes to security outcomes through indirect pathways such as economic

growth, migration, and food prices as important steps forward.⁴⁹ In addition, efforts to focus more tightly on specific climate-related physical hazards that are thought related to particular security consequences are also important developments (such as focusing on the relationship between growing season droughts and conflict onset rather than drought over the entire course of a year). Coupling econometric work with paired qualitative cases would offer both generalizability and insights on specific pathways connecting climate processes to security outcomes.⁵⁰

The climate practitioner community has focused on a more diverse set of security outcomes than conflict, the policy orientation has been largely been directed to resilience and adaptation, particularly to shore up the resilience of military installations in the advanced industrialized world and of fragile states in the developing world. While the attention to adaptation is welcome, the policy community has only slowly come to recognize that the mitigation agenda of reducing emissions is central to ensuring that the resultant climate changes are manageable. Going forward, I argue that the academic community would be well-served if it could help develop a more robust and coherent set of recommendations for how to reduce the likelihood and duration of climate-fueled security consequences, including conflict and humanitarian emergencies. That agenda includes both adaptation to emergent climate threats but also decarbonization and a transition to cleaner energy sources, cognizant that the responses to climate change might be as if not more important in triggering conflict as the physical effects of climate change itself.

⁴⁹ For important early work in this direction, see Koubi et al. 2012; Smith 2014; Buhaug et al. 2015.

⁵⁰ A good example is work by von Uexkull et al. 2016.

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