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THESIS

**CLIMATE AND DISASTER: ANALYZING MILITARY
FOREIGN DISASTER RELIEF IN A CHANGING
CLIMATE**

by

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December 2018

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**CLIMATE AND DISASTER: ANALYZING MILITARY FOREIGN DISASTER
RELIEF IN A CHANGING CLIMATE**

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ABSTRACT

The suspected impact of climate change on natural hazards, as identified by the Inter-governmental Panel for Climate Change, is expected to lead to a world where natural disasters are more frequent and severe in nature. This thesis investigates how climate change, in particular its effect on natural disasters, will impact the Department of Defense (DoD) mission to support stability worldwide through military Foreign Disaster Relief (FDR). To do that, it examines the question, why does the United States government (USG) authorize military FDR operations? The thesis develops 12 hypotheses pertaining to political and apolitical motivations and assesses them by conducting a qualitative comparative analysis of 12 recent hydrometeorological disasters. The findings of this research suggest, first, that military FDR operations are conducted to maintain stability of nations, regions, and the world order. Second, they suggest the USG is less likely to authorize military FDR in a consistent method due to the number of factors it takes into consideration. Lastly, the USG's decision to authorize military FDR operations is not constrained by resources—such as equipment or the federal budget. In terms of climate change, increases in the frequency and severity of natural disasters is likely not to have a significant impact on military FDR operations. Additionally, if increases in the number of military FDR operations do occur, the DoD is well equipped and funded to support those operations.

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LIST OF ACRONYMS AND ABBREVIATIONS

CJCS	Chairman, Joint Chiefs of Staff
CNA	Center for Naval Analyses
CRED	Center for Research on the Epidemiology of Disasters
DoD	Department of Defense
DoS	Department of State
DSCA	Defense Support to Civil Authorities
EM-DAT	Emergency Events Database
EXESEC	Executive Secretary Memorandum
FA	Foreign Assistance
FAA	Foreign Assistance Act
FDA	Foreign Disaster Assistance
FDI	Foreign Direct Investment
FDR	Foreign Disaster Relief
FHA	Foreign Humanitarian Assistance
HA	Humanitarian Assistance
HSM	Humanitarian Service Medal
IDA	International Disaster Assistance
IFPA	Institute for Foreign Policy Analysis
IGO	Intergovernmental Organization
IMET	International Military Education and Training
JTF	Joint Task Force
KSIL	Key Strategic Issues List
MITAM	Mission Tasking Matrix
NGO	Non-governmental Organizations
NSS	National Security Strategy
OFDA	Office of Foreign Disaster Assistance
OHDACA	Overseas, Humanitarian, Disaster, and Civic Aid
QCA	Qualitative Comparative Analysis
SIPRI	Stockholm International Peace Research Institute
USAID	United States Agency for International Development

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I. MILITARY FOREIGN DISASTER RELIEF OPERATIONS IN A CHANGING CLIMATE

A. MAJOR RESEARCH QUESTION

The primary goal of this research is to assess how climate change will affect Department of Defense (DoD) military Foreign Disaster Relief (FDR) operations. In order to assess this impact, I propose the following research question: Why does the U.S. government (USG) deploy military units as part of disaster relief efforts? By analyzing the factors leading to military FDR operations, a greater understanding can be established for determining when DoD units will deploy in a changing climate.

The DoD has a long history with environmental security. As an institution, the U.S. military takes the implications of a changing climate seriously when considering our country's future. In his most recent response to questions on the credibility of climate change as a threat to the United States, Secretary of Defense James Mattis described climate change as a possible "driver of instability," further noting that, as a threat, the "Department of Defense must pay attention to potential adverse impacts generated by this phenomenon."¹

It is a common belief among scholars that a changing climate will create instability around the world. Additionally, many academics and think tanks, such as the Center for Naval Analyses (CNA), identify increased requirements for military action as a likely consequence of climate change.² In 2017, the United States sustained a large number of billion-dollar natural disasters, tying the highest number in history.³ The DoD was tasked

¹ Caitlin Werrell and Francesco Femia, "Release: U.S. Military Leaders Applaud Secretary Mattis' Clear-Eyed View on Climate Change and Security," The Center for Climate & Security, last modified March 16, 2017, <https://climateandsecurity.org/2017/03/16/release-u-s-military-leaders-applaud-secretary-mattis-clear-eyed-view-on-climate-change-and-security/>.

² Ed McGrady, Maria Kingsley, and Jessica Stewart, *Climate Change: Potential Effects on Demands for U.S. Military Humanitarian Assistance and Disaster Response* (report, Alexandria, VA: Center for Naval Analyses, 2010), 83. <http://www.dtic.mil/docs/citations/ADA564975>.

³ "Billion-Dollar Weather and Climate Disasters: Time Series" National Centers for Environmental Information of the National Oceanic Atmospheric Administration, accessed February 17, 2018, <https://www.ncdc.noaa.gov/billions/overview>.

with responding to a significant number of those incidents. In terms of military FDR operations, the United States provides disaster-related assistance to between 70 and 80 foreign disasters annually. On average, the U.S. military plays a direct supporting role in 10–15% of those operations annually.⁴ If climate change creates more instability over time, these numbers could increase. This thesis is geared toward providing further clarity of the possible impact climate change will play in future military FDR operations.

B. SIGNIFICANCE OF THE RESEARCH QUESTION

The proposed research question is significant for several topics in international relations and security studies. The conclusions the thesis draws will further advance our understanding of the impact of climate change in the following focus areas: national security and homeland security. In addition, it will have implications for policy makers and the greater readiness of the DoD. Last, the proposed research question has been identified specifically as a priority for research by the U.S. Army War College.

(1) Climate Change and National Security

The proposed question will provide greater understanding of the effects of climate change on national security and homeland security. The conclusions established may provide further evidence for defining climate change as a national security threat. Additionally, the findings of this research may provide new motivations for continuing the investigation into how climate change will affect future uses of military forces. This is especially important today, as changes in presidential administrations have already led to a shift in focus away from climate change-related studies.

(2) Climate Change and the Use of Military Force in International Politics

A key focus in the study of international relations is the proper use of military force internationally. This research focus will provide greater understanding on the factors that lead to the deployment of military forces, in or out of accordance with international norms.

⁴ Department of Defense, *DoD Support to Foreign Disaster Relief (Handbook for JTF Commanders and Below)*, GTA 90-01030 (Washington, DC: Department of Defense, 2011), i. <https://fas.org/irp/doddir/dod/disaster.pdf>.

Additionally, the academic literature suggests a wide range of roles the military should play in response to climate change in the future. By evaluating today's military FDR operations, one can gain further understanding of how the United States deploys its forces and what factors dictate their use. Through this research, it will become discernable which suggested roles are most likely to play a part in future operations. Furthermore, by focusing on the driving factors leading to the authorization of a military FDR operation, this thesis will provide key insights toward measuring the effectiveness of current policies. For example, if the findings suggest that the factors driving the use of military forces are highly influenced by a changing climate, it could require policy makers to rethink or change the processes that lead to deploying FDR units. Another example can be derived from the legal guidelines established by the United Nations. The Oslo Guidelines prescribe the circumstances in which the use of military units in response to foreign disaster is acceptable internationally. Analysis of past operations may provide evidence that such guidelines lead to inefficient response and are found to be a hindrance to saving lives in disaster areas. Implications of this nature and others will be highlighted by the research findings.

(3) Priority Research Area

The proposed research question has been identified as a priority research area under the U.S. Army War College Key Strategic Issues List (KSIL). Topics found under KSIL are deemed "issues that must be addressed to ensure the Army of 2025 and beyond will continue to meet the needs of the nation."⁵ Research of a KSIL area of study is highly encouraged by the Army chief of staff.

C. LITERATURE REVIEW

As the implications of failing to mitigate the effects of climate change have become increasingly associated with natural disasters, national security experts, policy makers, and scholars have begun to research the impacts of those effects and their consequences. This literature review provides various vantage points to address the proposed research question

⁵ John Troxell, *United States Army War College Key Strategic Issues List 2015-2016* (Carlisle, PA, U.S. Army War College Press, 2015), 22, https://www.globalsecurity.org/military/library/report/2015/ssi_troxell_150807.pdf.

by reviewing four major themes: climate change, perspectives on climate change as a national security threat, the military's role in responding to climate change, and the factors driving the military's involvement in FDR.

1. Understanding Climate Change

Climate change (also known as global warming) is defined by the United Nations Framework Convention on Climate Change as “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.”⁶ The literature suggests that human contributions to climate change date back to the early Industrial Revolution; however, most scholarship focuses on its impacts since the mid-20th century.⁷ Leading scholarship suggests that anthropogenic climate change is “extremely likely to have been the dominant cause of the observed warming since the mid-20th century.”⁸

Unless mitigating factors are put in place, current estimates determine the global temperature on land and in the sea will increase between 1 and 5 degrees Celsius by the end of the century.⁹ In terms of observable changes, recent literature suggests that climate change has “caused impacts on natural and human systems on all continents and across the oceans.”¹⁰ The literature suggests the effects of climate change can be categorized in two distinct themes. The first, physical effects, are created by observable changes in the climate system and are quantifiable in areas such as sea-level rise, the melting of glaciers, permafrost, Arctic sea-ice and polar ice sheets, the acidification of the oceans, increased precipitation, and the increase in the severity of weather.¹¹ In the second category, social

⁶ Core Writing Team, *Climate Change 2014: Synthesis Report*, R. K. Pachauri, and L.A. Meyer, eds., Fifth Assessment Report (Geneva, Switzerland: Intergovernmental Panel on Climate Change, 2014), 120, http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf.

⁷ Core Writing Team 4.

⁸ Core Writing Team.

⁹ Core Writing Team, 10.

¹⁰ Core Writing Team, 6.

¹¹ Core Writing Team, 3-4, 7-8.

effects, climate scientists find that unmitigated climate change will affect human health, desertification of lands globally, lead to mass migration, and arguably increase conflict internationally and within countries.¹² The literature, written by security experts, suggests that these impacts will have significant effects on national security and global stability.

2. Climate Change as a National Security Issue

The *National Security Strategy* (NSS) plays an integral part in determining the nation's political and military response to perceived threats. The inception of the field of environmental security can be traced back to the early 1980s; however, it became widely established following the Cold War. The concept of environmental security can be identified in President George H. W. Bush's 1991 NSS.¹³ Subsequently, the monumental shift for the DoD stems from its expansion as a concept during President Bill Clinton's administration.¹⁴

In the early 2000s, climate change became an extension of environmental security. During President Barack Obama's administration, climate change was categorized as a threat in the NSS.¹⁵ It is important, however, to understand that the NSS is a partisan document "reflecting the ... views of the incumbent executive."¹⁶ In the political realm, there remains much debate on the proper categorization of climate change. Significant to the debate is the definition of national security and its traditional meaning.

a. Climate Change in Policy Documents

In recent years, the NSS has intermittently encompassed elements of environmental security. The identification of the environment as a security problem dates back to the early

¹² Core Writing Team, 16

¹³ George Bush, *National Security Strategy of the United States* (Washington, DC: White House, 1991), 22. <http://nssarchive.us/NSSR/1991.pdf>.

¹⁴ Kent Butts, "The Case for DoD Involvement in Environmental Security," in *Contested Grounds: Security and Conflict in the New Environmental Politics*, ed. Daniel H. Deudney and Richard A. Matthew (Albany: State University of New York Press, 1999), 110.

¹⁵ Barack Obama, *National Security Strategy* (Washington, DC: White House, 2010), 47. <http://nssarchive.us/NSSR/2010.pdf>

¹⁶ Edward Ericsson, "Climate Change and the Department of Defense: An Introduction," *Marine Corps University Journal* Special Issue, no. 1 (November 2016): 7-24, 10.21140/mcu.j.2016si01.

1980s where post–Cold War minds evaluated and expanded the notion of national security.¹⁷ This new form of inclusion ultimately led to the creation of the environmental security concept, which mainly focused on environmental degradation as a threat in the early 1990s. The concept of environmental security was first fully embraced by President Clinton’s administration.

Climate change, which has been added to the environmental security concept, was identified as a national security threat most prominently under President Barack Obama. The Obama administration believed that climate change was “an urgent and growing threat to our national security, contributing to increased natural disasters, refugee flows, and conflicts over basic resources like food and water.”¹⁸ The debate for and against including climate change in the NSS has existed since the debates on the establishment of environmental security. The most recent NSS, established by President Trump’s administration, has seen a purge of references to climate change as a national security threat.¹⁹

b. The Debate on Climate Change as a National Security Threat

The origins of the debate on climate change as a national security threat can be traced back to the 1990s. Peter Gleick was an early contributor to the debate who sought to highlight how environmental degradation could undermine national security.²⁰ Daniel Deudney also contributed to this early debate, arguing against the utility of environmental security and environmental degradation being identified as national security threats. Deudney noted the differing degrees of intention set environmental security apart from other threats. He explained that, while wars and other national security threats are intentional, “environmental degradation is largely unintentional, the side effect of many

¹⁷ Butts, “The Case for DoD Involvement in Environmental Security,” 110.

¹⁸ Obama, *National Security Strategy*, 12.

¹⁹ Donald Trump, *National Security Strategy of the United States of America* (Washington, DC: White House, 2017), 1–55. <http://nssarchive.us/wp-content/uploads/2017/12/2017.pdf>

²⁰ Peter Gleick, “Environment and Security: The Clear Connection” *Bulletin of the Atomic Scientists* 47, no. 3 (April 1991), 17. <https://doi.org/10.1080/00963402.1991.11459956>

other activities.”²¹ The transition from environmental security to climate change and security occurs in the early 2000s, when Nigel Purvis and Joshua Busby wrote one of the earliest pieces on the issue.²² In their report to the United Nations, the authors concluded that “climate change will trigger profound global change ... [posing] general risk to international peace and security.”²³

Today, the debate on climate change carries on. The two different themes of scholarship continue as those who believe climate change carries implications on U.S. national security and those who do not. Kim Holmes is one of the authors who does not see climate change as a national security threat. He argues the identification of climate change as a national security threat would redefine and undermine the very definition of national security.²⁴ Furthermore, he suggests that creating “an ‘all of the above’ definition of national security ... will only lead to confusion, waste, distractions, and possibly even military failures as the U.S. government is asked to do things that are beyond its capacity or, worse, tangential to the real mission of protecting the country from harm.”²⁵

Those who see climate change as a national security threat today have been evaluating how much the physical and social effects of climate change can create conflict in the international system. Joshua Busby believes that “even taking a narrow definition of national security, climate change already constitutes a national security threat to the U.S., both in terms of direct threats to the country as well as its broader extraterritorial interests.”²⁶ Building on Thomas F. Homer-Dixon’s original research that identified

²¹ Daniel Deudney, “Environment and Security: Muddled Thinking” *Bulletin of the Atomic Scientists* 47, no. 3 (April 1991), 24. <https://doi.org/10.1080/00963402.1991.11459956>.

²² Joshua W. Busby, “Climate Change and U.S. National Security: Sustaining Security Amidst Unsustainability” (unpublished book chapter, last modified 2016), 4. <https://www.tobinproject.org/sites/tobinproject.org/files/assets/Busby%20-%20Climate%20Change%20and%20US%20National%20Security.pdf>.

²³ Nigel Purvis and Joshua W. Busby, “The Security Implications of Climate Change for the UN System,” *Environmental Change and Security Program Report*, no. 10 (2004), 72. https://www.wilsoncenter.org/sites/default/files/ecspr10_unf-purbus.pdf.

²⁴ Kim R. Holmes, “What Is National Security?,” Heritage Foundation, accessed February 16, 2018, <http://index.heritage.org/military/2015/important-essays-analysis/national-security/>

²⁵ Holmes.

²⁶ Joshua W. Busby, “Who Cares about the Weather?: Climate Change and U.S. National Security,” *Security Studies* 17, no. 3 (September 2008): 468, <https://doi.org/10.1080/09636410802319529>.

greenhouse gas–induced climate change as a “plausible cause of violent intergroup conflict,”²⁷ scholars’ continued research now claims “several concerns, mostly related to the effects of extreme weather events on the United States and its strategic interests overseas, are of sufficient concern that they already constitute national security threat.”²⁸

3. The Military Role’s in Responding to Climate Change

The military has a long history of considering the impacts the environment would play in future operations. Its emphasis on climate change and environmental security has largely been driven by the partisan views relayed in the NSSs of Democratic presidents since the early 1990s. This section discusses the military’s role in response to climate change.

The origins of a military role can be traced back to May 1993, when the first undersecretary of defense for environmental security described the future role of the military. The undersecretary described the DoD’s environmental security mission as “ensuring responsible environmental performance” and “mitigating the impacts” bad environmental practices will have on international relations.²⁹ An early article by Kent Hughes Butts also perceived a role for the DoD as an environmental steward. As it pertains to environmental degradation, the author saw the DoD as a “local environmental” problem-solver, a key component in establishing pro-environmental research and development, and as an essential organization for developing capacity.³⁰ He additionally asserted that no other organization could “match the resources DoD can bring to bear on environmental problems.”³¹ Since this early emphasis on environmental security, there has been a plethora of roles pertaining to climate change that scholars suggest the military can and/or will play a significant role.

²⁷ Thomas F. Homer-Dixon. “Environmental Scarcities and Violent Conflict: Evidence from Cases.” *International Security* 19, no. 1 (Summer, 1994): 6, doi:10.2307/2539147

²⁸ Busby, “Who Cares about the Weather?” 470.

²⁹ Butts, “The Case for DoD Involvement in Environmental Security,” 110.

³⁰ Butts, 124.

³¹ Butts, 119.

More recent literature examines the role of military in response to climate change from many different lenses, reflecting the many social and physical effects of climate change. From the mass-migration lens, scholars suggest the military will play the role of a policing force “to deter or manage the human flows” caused by environmental migration internationally.³² Under the lens specific to Arctic ice melt, scholars suggest that the DoD will play a role in search-and-rescue operations and greater homeland security emphasis in response to the opening of shipping lanes and new avenues of approach to North America.³³ Viewing the role of the military from a “complex humanitarian emergencies” lens, a report conducted by CNA describes the DoD’s role of peacekeeper, suggesting the application of military force to ensure the security of non-governmental organizations responding to in fragile states.³⁴ The role of enforcer is suggested in the same report as well and is described as a consequence to the changing legal views of the international order, identifying “anything that tends to increase warming ... as a security threat” leading to military action.³⁵ Such action could include military responses “to reduce or control carbon emissions [of a threat], such as fire control.”³⁶ Shifting to the final lens of increased natural disasters, scholars suggest the military will continue to play a role in military FDR and Defense Support to Civil Authorities (DSCA), although this topic receives much debate inside DoD and U.S. political institutions.³⁷

³² Paul J. Smith, “Climate Change, Mass Migration and the Military Response,” *Orbis* 51, no. 4 (January 2007): 617, <https://doi.org/10.1016/j.orbis.2007.08.006>.

³³ Department of Defense, *National Security Implications of Climate-Related Risks and a Changing Climate* (Washington, DC: Department of Defense, 2015), 5, <http://archive.defense.gov/pubs/150724-congressional-report-on-national-implications-of-climate-change.pdf?source=govdelivery>. Although not directly stated, readers can also draw the same conclusions from Joshua W. Busby’s article, “Who Cares about the Weather?” 489–490.

³⁴ McGrady, Kingsley, and Stewart, *Climate Change*, 82.

³⁵ McGrady, Kingsley, and Stewart, 9.

³⁶ McGrady, Kingsley, and Stewart.

³⁷ Department of Defense, *National Security Implications of Climate-Related Risks and a Changing Climate*, 4-5; McGrady, Kingsley, and Stewart, 5-6, 50-51; Busby, “Who Cares about the Weather?: Climate Change and U.S. National Security,” 484-89.

4. Factors Driving the Military's Involvement in FDR

Authors have identified a number of factors that influence when the DoD will respond to disasters. These factors can be grouped into five categories: legal requirements, economic constraints, political pressures, strategic interests, and comparative advantages.

There are legal requirements internationally and within the United States that influence when the DoD will participate in disaster relief operations. Internationally, the United Nations established *The Guidelines on the Use of Foreign Military and Civil Defense Assets*, which provides direction for the use of foreign military assets in disaster relief.³⁸ Additionally, U.S. FDR operations are constrained by three criteria. The first requires that the disaster's impacts in the host nation "be beyond the ability" of that state's disaster response resources. The second is the formal request; this means that the host nation must request or agree to disaster assistance from the United States. The third is that the assistance provided must be within the strategic interest of the United States.³⁹

In terms of economic constraints, scholars suggest that DoD disaster relief can be limited by budget. A report by the Institute for Foreign Policy Analysis (IFPA) emphasized that current methods of funding have "proven to be inadequate for responding to the rising number of ... disasters of recent years."⁴⁰ The report suggests that any budget deficit would require supplemental funding requests in order to provide further disaster relief, and due to the uncertainty of approval, this factor therefore becomes a constraint on military disaster response.⁴¹

The third category scholars allude to that influences the use of the military in disaster response is political pressure. Per the IFPA report, the effectiveness of a response can be directly influenced by political pressure.⁴² The report does not discuss the driving

³⁸ This is also widely known as the Oslo Guidelines.

³⁹ Charles M. Perry et al., *Finding the Right Mix: Disaster Diplomacy, National Security, and International Cooperation* (Cambridge, MA: The Institute for Foreign Policy Analysis, 2009), 6. <http://www.ifpa.org/pdf/TheRightMix.pdf>

⁴⁰ Perry et al., 5.

⁴¹ Perry et al.

⁴² Perry et al., 14.

factors for political pressure; however, Elizabeth Ferris provides some insight. She suggests, “one of the effects of social media coverage of disasters is that it increases political pressure for rapid response.”⁴³ Additionally, scholars suggest that political pressure for the USG could manifest from “failure to act or to act with sufficient vigor.”⁴⁴ Joshua Busby suggests “the United States, as the architect of the liberal international order, would potentially face greater international condemnation than other countries if it decided it had to scale back its disaster response.”⁴⁵ In essence, the United States has no other option. The last form of political pressure suggested by scholars is personal political ties. In the report by the IFPA, scholars identified the existence of unofficial processes to request military disaster relief, which can be narrowed down to direct dialogue between the ambassador to the host nation and the United States’ geographical combatant commander. The personal relationship between those individuals can influence and even lead to the initiation of military FDR operations, circumventing official processes.⁴⁶

The fourth category suggested in academic literature is strategic interests. Scholars suggest that disaster relief operations are a military interest. The military conducts such operations to improve its image in the host nation.⁴⁷ The military’s action in disaster relief missions may also lead to increased access to a host nation by either strengthening military training ties to a friendly host nation or creating opportunities for future training and cooperation with a host nation of weak or strained ties.⁴⁸ Additionally, advocates of humanitarian intervention and scholars alike suggest that increased military participation in disaster relief is a direct response to fiscal constraint. Humanitarians suggest military

⁴³ Elizabeth Ferris, *Future Directions in Civil-Military Responses to Natural Disasters* (Washington, DC: Brookings Institution, 2012), 2. <https://www.brookings.edu/wp-content/uploads/2016/06/05-civ-mil-disasters-ferris.pdf>

⁴⁴ Busby, “Climate Change and U.S. National Security,” 22.

⁴⁵ Busby.

⁴⁶ Perry et al., *Finding the Right Mix*, 11.

⁴⁷ Busby, “Climate Change and U.S. National Security,” 22; Ferris, *Future Directions in Civil Military Responses to Natural Disasters*, 3; David Capie, “The United States and Humanitarian Assistance and Disaster Relief (HADR) in East Asia: Connecting Coercive and Non-Coercive Uses of Military Power,” *Strategic Studies* 38, no. 3 (April 2015): 316, <https://doi.org/10.1080/01402390.2014.1002914>.

⁴⁸ Ferris, 4.

FDR provides the DoD with a new way to show its “relevance” in a period of budget constraint.⁴⁹ By conducting FDRs at its own expense, the DoD provides politicians with a clear reason for budget increases. Alternatively, when DoD FDR is financed by another agency, the DoD obtains an additional source of funding in a period of fiscal constraint. Furthermore, scholars suggest there is a direct tie between disaster relief operations and the greater USG strategic interest of stability.⁵⁰ This suggests military involvement in disaster relief is directly linked to the global War on Terror by ensuring the survival of host nation governments, preventing challenges from violent non-state actors.⁵¹

Last, a number of academic literatures identify the comparative advantages the military has over other organizations as a factor influencing when the DoD will support disaster relief operations. The IFPA report loosely defines “comparative advantage” as the ability of the military to conduct a particular disaster relief activity or function more efficiently than non-governmental organizations or the host nation.⁵² A number of scholars suggest this is a driving factor, including Elizabeth Ferris, who states that the “reality is that military forces have specific assets that are needed in major disasters, they often respond more quickly and on larger scale than civilian actors.”⁵³ David Capie reiterates this belief in an article on FDR in east Asia, stating that “militaries have unequalled capabilities in transportation and logistics.”⁵⁴

D. PLAN OF THE THESIS

The focus of this thesis is on testing hypotheses that can explain why the USG deploys military assets in response to foreign disasters. This thesis examines 12 hypotheses

⁴⁹ Charles-Antoine Hofmann and Laura Hudson, “Military Responses to Natural Disasters: Last Resort or Inevitable Trend?” British Red Cross, accessed March 3, 2018, <https://odihpn.org/magazine/military-responses-to-natural-disasters-last-resort-or-inevitable-trend/>.

⁵⁰ Perry et al., *Finding the Right Mix: Disaster Diplomacy*, 2.

⁵¹ Perry et al., 32-36; Capie, “The United States and Humanitarian Assistance and Disaster Relief (HADR) in East Asia,” 313.

⁵² Perry et al., 9.

⁵³ Ferris, *Future Directions in Civil-Military Responses to Natural Disasters*, 3.

⁵⁴ Capie, “The United States and Humanitarian Assistance and Disaster Relief (HADR) in East Asia,” 314.

in total. Each hypothesis is either drawn from the literature or developed from my research on the subject of military FDR and other adjacent studies. The hypotheses being tested will examine three categories of determinates: disaster characteristics (apolitical motives), foreign policy interests (foreign political motives), and domestic political influences (domestic political motives). By testing a number of hypotheses in each of the three categories, I was able to develop the best assessment for understanding why the USG authorizes military FDR operations.

To test these 12 hypotheses, I conducted a qualitative comparative analysis (QCA) of foreign disaster cases. Case selection is limited to 12 foreign disasters; these disasters must feature a hydrometeorological event—in this case, either a tropical cyclone or flood. Additionally, of the 12 foreign disaster cases selected, six cases will be foreign disasters with an associated military FDR operation. The other six are foreign disasters without a military FDR operation. By utilizing the QCA methodology, I assessed the similarities and differences of all the cases to determine patterns through which I can answer the research question.

This thesis is presented in five chapters. As an overview, Chapter II begins by providing specific context to understanding the linkage between climate change and natural disasters. Second, the chapter presents an overview of U.S. FDA, which includes a brief history and a discussion on its three components. Last, the chapter presents an overview of military FDR. This includes a brief history of military FDR and is followed by discussions on the authorities, process of authorization, scope, and mission of military FDR operations.

Chapter III presents the hypotheses to be tested. In this chapter, I present the three categories in detail: disaster characteristics, foreign policy interests, and domestic political influences. After each category's presentation, a number of hypotheses are presented. Encompassed in the presentation of every hypothesis is a brief discussion on the logic of the hypothesis and is followed by a short discussion on the methodology for testing the hypothesis.

In Chapter IV, detailed information is presented on the case selection criteria utilized to identify the 12 foreign disaster cases. This is followed by a brief discussion of

the QCA methodology utilized to test the hypotheses. Most importantly, this chapter contains the findings of my research. It includes a restatement of the tested hypotheses, a presentation of the data being analyzed, and the findings of that data as it pertains to the hypotheses. At the end of the document is a review of the findings for all 12 hypotheses.

Chapter V presents the conclusions rendered after the culmination of the research. The chapter begins by reexamining the research question and is followed by a deep discussion on what the findings mean, particularly for military FDR and for the DoD's role in response to climate change. Last, I present a number of policy recommendations specific to military FDR and conclude with the recommendation of a future research topic.

II. AN OVERVIEW: U.S. FOREIGN DISASTER ASSISTANCE AND MILITARY FOREIGN DISASTER RELIEF

A. INTRODUCTION

In order to fully understand why the USG authorizes military FDR operations, it is first necessary to review how the interaction between climate change and natural disasters could lead to increased calls for military FDR. Second, a review of the greater USG FDA framework is necessary because in order to authorize the use of military assets in response to a host nation's disaster, the USG must go through an interagency process to determine if the use of military assets is necessary and within the nation's interest. It is important to establish that the use of military assets is only one of many options that the USG can utilize to respond to a foreign disaster. Additionally, the deployment of USG military assets in response to foreign disasters is advised as an option of last resort, per official government documents and per the norms established internationally, such as the Oslo Guidelines.⁵⁵

The purpose of this chapter is threefold: first, to provide further clarity on the relationship between natural disasters, climate change, and military FDR. Second, to provide an understanding of the greater U.S. FDA framework and how military FDR fits into it. Last, to provide clear linkages to the logic guiding a number of the hypotheses discussed in Chapter III.

This chapter begins with a brief discussion on the linkages between natural disasters and climate change. Next is a review of the terminology used to describe the levels of USG Foreign Assistance, followed by a brief overview of the U.S. FDA framework, which encompasses all forms of disaster relief. Last, I present a broad overview of military FDR, which includes the history, authorization process, mission, legal authority, and financing.

⁵⁵ The Oslo Guidelines serve as guidance in the use of military assets in response to foreign disasters. In 1994, the USG served as one of many state governments that helped established the original guidelines. The Oslo Guidelines were revised in 2007 and are still in effect as guidance to the international community on the use of military assets in response to foreign disasters today. For more information, see United Nations, Office for the Coordination of Humanitarian Affairs, *Oslo Guidelines: Guidelines on The Use of Foreign Military and Civil Defense Assets in Disaster Relief* (New York: United Nations Office for the Coordination of Humanitarian Affairs, 2007), 8, https://www.unocha.org/sites/unocha/files/OSLO%20Guidelines%20Rev%201.1%20-%20Nov%2007_0.pdf.

B. NATURAL DISASTERS AND THE LINKAGE TO CLIMATE CHANGE

To begin, it is best to start by defining two terms: natural hazards and natural disasters. A natural hazard is a

naturally occurring physical phenomena caused either by rapid or slow onset events—which can be geophysical (earthquakes, landslides, tsunamis and volcanic activity), hydrological (avalanches and floods), climatological (extreme temperatures, drought and wildfires), meteorological (cyclones and storms/wave surges) or biological (disease epidemics and insect/animal plagues).⁵⁶

A natural disaster occurs when a natural hazard is introduced to a vulnerable population and the state or government lacks enough resources to mitigate its effects.⁵⁷ As suggested by the definition of natural hazard, there are two distinct ways in which natural disasters can manifest: rapidly or slowly. Rapid-onset disasters occur from “hazards that arise suddenly, or whose occurrence cannot be predicted far in advance.”⁵⁸ Earthquakes, hurricanes, and tornadoes are examples of rapid-onset disasters. Slow-onset disasters are the result of exposure to a hazard over a long period, which leads to a disaster. Drought is the most common hazard leading to slow-onset disaster.⁵⁹

Annually, natural disasters impose large impacts around the globe. The Centre for Research on the Epidemiology of Disasters (CRED), analyzing the 1995–2015 period, found that 90% of all disasters—a compilation of both man-made and natural disasters—were weather related, totaling 6,457 total events.⁶⁰ The impact of this was staggering; in this period, 606,000 deaths can be attributed to natural disasters. The disasters also left 4.1

⁵⁶ “Types of Disasters: Definitions of Hazard,” International Federation of Red Cross and Red Crescent Societies, accessed October 25, 2018, <http://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/definition-of-hazard/>.

⁵⁷ “What Is a Disaster?,” International Federation of Red Cross and Red Crescent Societies, accessed July 3, 2018, <https://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/what-is-a-disaster/>.

⁵⁸ John Twigg, “Slow-Onset Disasters,” in *Disaster Risk Reduction: Mitigation and Preparedness in Development and Emergency Programming* (London: Overseas Development Institute, 2004), 248–249, <https://www.preventionweb.net/educational/view/8450>.

⁵⁹ Twigg, 248.

⁶⁰ “The Human Cost of Weather-Related Disasters 1995–2015,” Centre for Research on the Epidemiology of Disasters and United Nations Office for Disaster Risk Reduction, accessed July 1, 2018, 7, https://www.unisdr.org/files/46796_cop21weatherdisastersreport2015.pdf

million people displaced and injured in their wake.⁶¹ The economic cost associated with natural disasters is also significant. Drawing on the Emergency Events Database (EM-DAT), CRED reported that the total economic impact of natural disasters was approximately \$1.9 trillion globally.⁶² Needless to say, the impact of natural disasters is vast and likely to grow even larger in the future as populations worldwide continue to move toward coastal areas.

Climate scientists believe that natural hazards are impacted by climate change in two distinct ways. The first is frequency; that is to say, that scientists believe climate change is increasing the likelihood of certain types of natural hazards.⁶³ The second impact is intensity. Scientists believe, with varying levels of confidence, that certain natural hazards are increasing in intensity due to climate change.⁶⁴ Since climate change is predicted to impact the intensity and frequency of a variety of natural hazards, there is a higher likelihood of natural hazards interfacing with vulnerable populations. This is not only likely to increase the number of natural disasters around the globe but also the likelihood that local governments will find themselves unable to provide the essential services necessary to conduct local disaster relief operations.

In all, increases in the frequency and intensity of natural hazards are likely to lead to larger and more frequent disasters. With this in mind, it is logical to believe that the number of natural disasters will exceed the capacity of host nations and humanitarian organizations to respond. These circumstances will lead to increased calls for military

⁶¹ Centre for Research on the Epidemiology of Disasters and United Nations Office for Disaster Risk Reduction, 7.

⁶² Centre for Research on the Epidemiology of Disasters and United Nations Office for Disaster Risk Reduction, 23.

⁶³ “The Science Connecting Extreme Weather to Climate Change,” Union of Concerned Scientists, 2018, <https://www.ucsusa.org/sites/default/files/attach/2018/06/The-Science-Connecting-Extreme-Weather-to-Climate-Change.pdf>

⁶⁴ Currently, the predictions of climate change’s effect on natural hazards comes at varying levels of confidence and dependence on the type of natural hazard. Today’s scientific methods, particularly the modeling of climate systems, are used for examining the effects of climate change on natural hazards globally. To do so, scientists utilize models and other scientific methods to analyze previous natural disasters for aspects attributional to climate change. Generally speaking, these scientific methods find signs of attribution on climatological, meteorological, and hydrological natural hazards, with varying levels of confidence. For more information on the level of confidence of current predictions please see Union of Concerned Scientists, “The Science Connecting Extreme Weather to Climate Change.”

responses to natural disasters as an option of last resort and could even challenge today's rules and norms that govern the use of military assets in support of foreign disasters.

C. TERMINOLOGY OF FOREIGN ASSISTANCE

Due to lack of consistency of the USG's definitions, the literature presents a number of terms with similar or identical meanings.⁶⁵ For this reason, I define the following terms: foreign assistance, humanitarian assistance, foreign disaster assistance, foreign humanitarian assistance, and foreign disaster relief.

(1) Foreign Assistance (FA)

The term "foreign assistance" encompasses all forms of assistance to a foreign nation by the USG, including humanitarian assistance. Within the USG, there are two versions of this term that are similar but differ slightly in meaning. The DoD defines foreign assistance as

assistance to foreign nations ranging from the sale of military equipment to donations of food and medical supplies to aid survivors of natural and man-made disasters; that may be provided through development assistance, humanitarian assistance, and security assistance.⁶⁶

The Department of State (DoS) defines FA as

any tangible or intangible item provided by the United States Government to a foreign country or international organization under [the Foreign Assistance Act] or any other Act, including but not limited to any training, service, or technical advice, any item of real, personal, or mixed property, any agricultural commodity, United States dollars, and any currencies of any foreign country which are owned by the United States Government; and provided by the United States Government—foreign assistance provided by means of gift, loan, sale, credit, or guaranty.⁶⁷

⁶⁵ See Department of Defense, *DoD Support to Foreign Disaster Relief*, 1-1, for a note on the lack of consistency in terminology.

⁶⁶ "United States Government Glossary of Interagency and Associated Terms," United States Government, last modified July 2017, 366, <https://www.hsdl.org/?abstract&did=802757>.

⁶⁷ The term "foreign assistance" is defined by U.S. law in a different manner. I found the definition to be relevant to subjects within the United States Code only. For additional information, please see United States Government, "United States Government Glossary of Interagency and Associated Terms," 365.

In all, the essence of both definitions is the same; the USG considers the general gifting of any commodity to a foreign government as foreign assistance. The DoS definition discusses foreign assistance from the broadest prospective of the USG. The DoD definition uses the same logic but discusses it from the lens of DoD capabilities and training. For the purpose of this thesis, both terms are used. When I discuss the process from the USG prospective, the DoS term is being used. Conversely, when I discuss the process for DoD, I am using the DoD term.

(2) Humanitarian Assistance (HA)

The term “humanitarian assistance” has a plethora of meanings within the USG and DoS. All definitions encompass a wide range of actions the USG could employ. For the purpose of this thesis, I use the broadest DoS definition of humanitarian assistance, which is defined as “assistance to meet humanitarian needs, including needs for food, medicine, medical supplies and equipment, education, and clothing.”⁶⁸

(3) Foreign Disaster Assistance (FDA)

Currently, the USG lacks a term to describe the wide range of actions the USG can provide to a host nation in response specific to a disaster. In light of this fact, I propose a new term to describe the whole-of-government response to foreign disasters by the USG, including DoD activities. Borrowing from recent literature on this subject,⁶⁹ I propose the term “foreign disaster assistance,” which I define as: the providing of financial donations, grants, material, personnel, and services provided by the USG to an affected state and humanitarian organizations to meet the needs of those affected by a disaster.⁷⁰ FDA, which is coordinated by United States Agency for International Development (USAID) and the

⁶⁸ United States Government, 426.

⁶⁹ Please see the following article for details; Julia F. Irwin, “The Origins of U.S. Foreign Disaster Assistance,” *The American Historian*, no. 15 (February 2018): 43-47.

⁷⁰ I derived some of the definition for Foreign Disaster Assistance, from the internationally accepted term International Disaster Relief Assistance. For more information, please see United Nations, Office of the Coordination of Humanitarian Affairs, *Oslo Guidelines*, 7.

Office of Foreign Disaster Assistance (OFDA), encompasses eight different types of actions, including military FDR.⁷¹

(4) Foreign Humanitarian Assistance (FHA)

FHA, a practice exclusive to the DoD, is defined as “Department of Defense activities conducted outside the United States and its territories to directly relieve or reduce human suffering, disease, hunger, or privation.”⁷² As with HA, the term FHA can encompass a broad spectrum of DoD actions. When the DoD conducts FHA, this includes four different mission types: Foreign Disaster Relief Missions, Dislocated Civilian Support Missions, Security Missions, and Technical Assistance and Support Functions.⁷³

(5) Foreign Disaster Relief (FDR)

The term FDR is defined by both the DoS and the DoD as

assistance that can be used immediately to alleviate the suffering of foreign disaster victims that normally includes services and commodities as well as the rescue and evacuation of victims; the provision and transportation of food, water, clothing, medicines, beds, bedding, and temporary shelter; the furnishing of medical equipment, medical and technical personnel; and making repairs to essential services.⁷⁴

In general, the term FDR is used in the broadest sense but the DoD uses it exclusively. This fact becomes confusing when reviewing reports and literature discussing DoD actions during a foreign disaster. Furthermore, the fact that FHA is an action exclusive to the DoD and because FDR is a subset of FHA, it can be hard to understand the difference between USG disaster relief actions with or without DoD support. In order to ensure I clearly articulate when I am discussing the DoD’s role in Foreign Disaster Relief, I refer to it as “military FDR.”

⁷¹ For a comprehensive list of options, please see the Department of Defense, *DoD Support to Foreign Disaster Relief*, 2-3, 2-4, 2-5, 2-6.

⁷² United States Government, “United States Government Glossary of Interagency and Associated Terms,” 368.

⁷³ Joint Chiefs of Staff, *Foreign Humanitarian Assistance*, JP 3-29 (Washington, DC: Joint Chiefs of Staff, 2014), I-6, I-7, I-8, http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_29.pdf

⁷⁴ Joint Chiefs of Staff, GL-7.

D. AN OVERVIEW OF U.S. FOREIGN DISASTER ASSISTANCE

In this section, I discuss the topic of U.S. FDA, a topic that includes the process, history, and logic of military FDR today. This discussion is important because the use of military assets in response to a foreign disaster is an option that is encompassed in the greater framework of U.S. FDA. Due to this fact, a review of U.S. FDA is necessary in order to provide key insights into why and under what circumstances the USG has engaged in foreign disaster assistance in the past and present. This section begins with a quick history of U.S. FDA and is followed by a presentation of the entities that make up the framework for U.S. FDA today.

1. History of U.S. FDA

The USG's first act of foreign disaster assistance dates back to March 1812 when it provided foreign disaster assistance to the government of Venezuela in an effort to relieve the human suffering caused by an earthquake.⁷⁵ From this time to the early 1900s, the USG was limited by its lack of economic and logistic capabilities to provide resources to affected states.⁷⁶ Furthermore, the early United States viewed disaster relief as a concern "better left to the private citizen."⁷⁷ In essence, the USG had no formal policy or conception of the nation that it would come to be the world's largest donor of international aid. Additionally, this explains why the USG prefers to use humanitarian organizations as its primary method of providing international disaster aid today.

In the 1900s, a shift occurred in USG views of international disaster aid. The appointed officials at the time recognized the benefits of providing international disaster aid. This newfound appreciation manifested under three different views. First, international disaster aid was seen as a way to "bolster the United States' image abroad."⁷⁸ Second, the elected officials saw the provision of international disaster aid as a way to reestablish "order and stability" in affected states in order to restore the economic benefits gained from

⁷⁵ Irwin, "The Origins of U.S. Foreign Disaster Assistance," 44.

⁷⁶ Irwin.

⁷⁷ Irwin.

⁷⁸ Irwin.

“foreign trade, investment, and property holdings abroad.”⁷⁹ Last, the early signs of American exceptionalism were reflected in its view that the USG has a “moral obligation to improve the world.”⁸⁰ This shift in views led to a formal change in the conduct of U.S. foreign policy—which manifested in State Department policy—and led to a change in roles and responsibilities of U.S. officials stationed overseas. It became common practice for U.S. officials, to report disasters, request USG or private sector assistance, and supervise the distribution of aid supplied.⁸¹ It is this shift that serves as the foundation for USG agencies’ involvement in foreign disasters today.

A second important shift in U.S. FDA occurred at the end of World War II. It was during this time that the USG began to institutionalize the provision of international disaster aid. The quintessential factors that drove the process of institutionalization were the change in the United States’ place in the global order—its superpower status—and the challenges created in the postwar period, such as the “Cold War, decolonization, and international development.”⁸² As a consequence of this shift, the United States established a number of organizations to further institutionalize FDA as a formal part of U.S. foreign policy. The most notable legislation created during this period—the Foreign Assistance Act (FAA)—was enacted on November 3, 1961, by Congress.⁸³ This particular piece of legislation led to the creation of USAID.⁸⁴ With the creation of USAID, the USG established one agency under which all foreign assistance was to be supervised. From 1960 to 1970, further changes to the structure of foreign assistance occurred, most notably the creation of the Office of Foreign Disaster Assistance (OFDA).⁸⁵ Today, USAID serves as the lead federal agency for all forms of FDA while the OFDA serves as the lead

⁷⁹ Irwin.

⁸⁰ Irwin.

⁸¹ Irwin, 45.

⁸² Irwin, 47.

⁸³ “USAID History,” United States Agency for International Development, accessed July 1, 2018, <https://www.usaid.gov/who-we-are/usaaid-history>.

⁸⁴ United States Agency for International Development.

⁸⁵ Irwin, “The Origins of U.S. Foreign Disaster Assistance,” 46.

coordinator, within the USAID, of the USG response to declared foreign disasters, including those with military FDR operations.⁸⁶

2. The Components, Roles, and Responsibilities of U.S. FDA

Today, the USG response to foreign disasters is best explained as a package made up of three components. The first component consists of the USG's civilian offices that support responses to foreign disasters.⁸⁷ The agencies and civilian offices reside in the DoS and in its member entities: U.S. embassies, USAID, and the OFDA. These agencies and civilian offices are the supervisory and coordination elements for the provisioning of U.S. aid to foreign disasters. The role of the State Department is to globally advance the USG's foreign policy interests through the development and implementation of the president's foreign policy goals; this includes the supervision of foreign aid to achieve foreign policy goals.⁸⁸ Additionally, the secretary of state plays a key role in the authorization of military FDR operations. The next entity, USAID, directly reports to and receives guidance from the secretary of state. The USAID serves as the "lead federal agency for USG FDR."⁸⁹ When the USG responds to a foreign disaster, the OFDA, an office within USAID, coordinates the government's actions.⁹⁰ OFDA's role consists of three functions: providing relief supplies, funding humanitarian organizations, and managing the overarching USG response to a disaster.⁹¹

The second component of FDA consists of private sector partners such as Google, intergovernmental organizations (IGO) like the United Nations Office for the Coordination of Humanitarian Affairs, and non-governmental Organizations (NGO) such as the Red Cross and Red Crescent Societies. These entities, known as humanitarian organizations, serve as the first line of response to foreign disasters as established in the Oslo Guidelines.

⁸⁶ Joint Chiefs of Staff, *Foreign Humanitarian Assistance*, II-4.

⁸⁷ Joint Chiefs of Staff, I-1.

⁸⁸ Joint Chiefs of Staff, II-2.

⁸⁹ The term "FDR" in this sentence is meant to signify general disaster relief/assistance by the USG and should not specially be taken to mean military FDR operations, Joint Chiefs of Staff, I-8

⁹⁰ Joint Chiefs of Staff, II-4.

⁹¹ Joint Chiefs of Staff, II-4.

The USG partners with humanitarian organizations by directly supporting their relief efforts through grants and/or other means, such as logistical assistance.⁹² It is important to highlight that the USG must understand the capabilities and gaps in capabilities of the second component, as they are essential to considering the authorization of military FDR assets in response to a foreign disaster. In other words, the use of DoD assets is contingent on the inabilities of humanitarian organizations to respond to foreign disasters. It is the responsibility of the DoS and USAID/OFDA to assess the requirements of each foreign disaster and, through coordination with the host nation and humanitarian organizations, identify gaps in resources “that can be most effectively met by DoD.”⁹³

The third component of the FDA package is the DoD. The role of the DoD when responding to foreign disasters is to support the lead federal agency, which is USAID/OFDA. The purpose of DoD response to a foreign disaster is to fill gaps. This means the DoD is a provider of assets that cannot be requisitioned internationally and are deemed essential by the USG and the host nation where the foreign disaster occurred.⁹⁴ When a capability is requested by a host nation but is not available through host nation capabilities, humanitarian organizations, or select USG agencies, assistance from the DoD can be requested in the form of military FDR.⁹⁵ Within DoD, the secretary of defense serves as the key decision point for the authorization of a Joint Task Force (JTF) to conduct a military FDR operation in a host nation.⁹⁶

E. AN OVERVIEW OF MILITARY FDR

This section provides an overview of the circumstances that lead to the deployment of military FDR assets. It encompasses five different topic areas: a brief discussion on the history of military FDR operations, an overview of the authorities involved in legal execution of military FDR, the authorization process for military FDR operations, the

⁹² Department of Defense, *DoD Support to Foreign Disaster Relief*, 2-3.

⁹³ Department of Defense, 2-5.

⁹⁴ Joint Chiefs of Staff, “*Foreign Humanitarian Assistance*,” I-15.

⁹⁵ Department of Defense, *DoD Support to Foreign Disaster Relief*, 2-5.

⁹⁶ In lieu of the secretary of defense, the undersecretary of defense and other officials in the Office of the Secretary of Defense may have the authority to authorize foreign disaster relief operations.

components of a military FDR mission, and an overview of the funding of these types of operations, noting that military FDR operations can be affected by fiscal constraints.

1. The History of Military FDR

During my research, I have found that the subject of military FDR is generally a neglected research topic. There are likely three reasons for this. First, the view of the environment/climate as a concern for national security is best described as a relatively new area of focus in security studies. Second, the increase in natural disasters is a relatively new area of measure for researchers. In other words, the USG may not have had any reason to suspect increases in natural disasters were a likely concern for the DoD. Last, and most intuitively, a report—researching the topic of disaster assistance—suggests that the lack of research is due to scholars assuming that the process “is as advertised—nonpolitical.”⁹⁷ In other words, through the close connection between disaster assistance and military FDR assistance, the belief that disaster assistance is a nonpolitical process has also led to a lack of research for military FDR.

Additionally, I have noticed during my research that the general topic of military FDR is also an under-documented topic by the USG, leading me to believe the reasons are generally the same for this problem. Due to this, I was unable to find a comprehensive history of military FDR operations in the literature. The following history is my attempt at producing such in support of future research on the topic.

Military responses to foreign disasters date back to the period between the inception of the early republic and the early 1900s. During this period, records indicate that naval ships were utilized as logistical assets to move “privately donated aid supplies” in support of “local American communities [conducting] relief work” inside foreign disaster areas.⁹⁸ Although military support to foreign disasters was not yet a formal foreign policy action of the USG, these actions fall in line with what is considered military FDR today.

⁹⁷ A. Cooper Drury, Richard S. Olson, and Douglas A. Van Belle, “The Politics of Humanitarian Aid: U.S. Foreign Disaster Assistance, 1964-1995,” *The Journal of Politics* 67, no. 2 (May 2005): 454, <https://doi.org/10.1111/j.1468-2508.2005.00324.x>

⁹⁸ Irwin, “The Origins of U.S. Foreign Disaster Assistance,” 44.

As discussed in the history of U.S. FDA, the period between the early 1900s and 1945 serves as the first historical transition toward a formal recognition of U.S. FDA as a part of U.S. foreign policy. This time period also serves as the point of origin for formal military FDR operations. Common roles during this period range from transportation of supplies via naval vessels or army aircraft—which would have been assigned to the Army Air Corp—to more direct support operations such as “search and rescue operations, debris clearance, and other short-term emergency assistance”⁹⁹ Julia Irwin describes support to 10 different host nations between the period of 1900 and 1945 in response to three different types of natural disasters: floods, earthquakes, and tropical storms.¹⁰⁰

During this period, disaster relief was being institutionalized in the DoD where “new policies and procedures ... clarified and formalized [its] respective duties in the event of international catastrophes.”¹⁰¹ As with FDA, the FAA of 1961 serves as the most important legislation during the period, by serving as the “principal authority for DoD to conduct [military] FDR.”¹⁰² The precise number of missions executed by the DoD in support of foreign disasters between the post–World War II period to the mid-1970s is unavailable due to the scarcity of information on the subject. However, we know that by the mid-1970s, the United States was the international leader in bilateral aid to the rest of the world, including military support.¹⁰³ From this information, we can intuit that military FDR operations likely trended upward when compared to the number of military FDR operations in previous years.

From the 1970s to the present, U.S. military support of foreign disasters has continuously increased. A report by the Center for Strategic Studies found that 252 military

⁹⁹ Irwin, 45.

¹⁰⁰ Irwin.

¹⁰¹ Irwin, 46.

¹⁰² Department of Defense, *DoD Support to Foreign Disaster Relief*, A-1

¹⁰³ Irwin, “The Origins of U.S. Foreign Disaster Assistance,” 46.

FDR operations were conducted in the period from 1970 to 2000.¹⁰⁴ In a separate report by the Center for the Study of Intelligence, between 1989 and 1993 disaster relief operations made up 11% of named U.S. military operations abroad, which was equivalent to all offensive military operations during the period.¹⁰⁵ In 1994, the United Nations established the Oslo Guidelines in response to the growing number of foreign military deployments in support of foreign government disaster relief operations worldwide.¹⁰⁶ In 2005, the Oslo Guidelines were updated by the United Nations in response to an “unprecedented” number of military FDR deployments involved in both humanitarian assistance and disaster relief missions.¹⁰⁷ In a study by the Stockholm International Peace Research Institute (SIPRI), the USG was cited as the largest deployer of military assets in response to foreign disasters between 2003 and 2006.¹⁰⁸ In conclusion, recent history suggests that military FDR operations have been and will continue to be a staple of U.S. foreign policy.

2. The Authorities of Military FDR

There are two additional documents—beyond those of the Foreign Assistance Act of 196—that serve as the legal basis for the DoD to engage in military FDR operations. The first document, Title 10 of the United States Code, allows the president to use DoD as a foreign policy tool as s/he sees fit. Under Section 404, the president is authorized to “direct the Secretary of Defense to provide disaster assistance outside the United States to respond to manmade or natural disasters when necessary to prevent loss of lives or serious

¹⁰⁴ In the report, the number of military FDR operations is encompassed in the total number for Humanitarian Assistance and Disaster Relief number, a total of 366. I found, via analogy count, that out of the 366 total missions conducted, 114 were humanitarian assistance missions and 252 were disaster relief missions. Please see the following for more information: W. Eugene Cobble, H. H. Gaffney, and Dmitry Gorenburg, *For the Record: All U.S. Forces' Responses to Situations, 1970-2000 (with Additions Covering 2000-2003)*, CIM D0008414.A3/1 (Alexandria, VA: Center for Strategic Studies, 2005), 8, <http://www.dtic.mil/dtic/tr/fulltext/u2/a574366.pdf>.

¹⁰⁵ G. Ted Constantine, *Intelligence Support to Humanitarian-Disaster Relief Operations* (Springfield, VA: Center for the Study of Intelligence, 1995), 9, http://altgov2.org/wp-content/uploads/CIA-CSI_intelligence-support-relief.pdf

¹⁰⁶ United Nations, Office of the Coordination of Humanitarian Affairs, *Oslo Guidelines*, 4.

¹⁰⁷ United Nations, Office of the Coordination of Humanitarian Affairs.

¹⁰⁸ Sharon Wiharta et al., *The Effectiveness of Foreign Military Assets in Natural Disaster Response* (Solna, Sweden: Stockholm International Peace Research Institute, 2008), x, <https://www.sipri.org/sites/default/files/files/misc/FMA/SIPRI08FMA.pdf>.

harm to the environment.”¹⁰⁹ The document also defines assistance under the broadest of terms, as “transportation, supplies, services, and equipment.”¹¹⁰

The second document is DoD Directive 5100.46, under which DoD defines its policy guidance for the conduct of military FDR operations. The document establishes that the DoD “shall respond to foreign disasters in support of the USAID.”¹¹¹ In addition, the directive establishes guidance in four additional ways, two of which are worth explaining. First, it stipulates that prior to the execution of a military FDR operation, the president, secretary of state, and the secretary of defense must all concur with the action.¹¹² Second, it authorizes military commanders, “near the immediate scene of a foreign disaster,” the authority to conduct a military FDR operation for up to 72 hours without formal approval from the USG. After the expiration of the 72-hour window, the combatant commander must receive authorization from the secretary of defense or deputy secretary of defense in order to continue.¹¹³

3. The Authorization of Military FDR

Authorizing a military FDR operation is a non-linear process that includes “nearly simultaneous activities of several key officials and agencies within the DoS, USAID, and the DoD.”¹¹⁴ The following description explains one method of formally authorizing a military FDR operation; however, it is important to note that the process could occur somewhat differently, depending on the circumstances of the foreign disaster. Additionally, the description only discusses the formal process of authorizing a military FDR operation; as previously mentioned, a military FDR operation can begin with a combatant commander authorizing an immediate response to a foreign disaster for up to

¹⁰⁹ Foreign Disaster Assistance Act, 10 U.S.C. § 404 (1995). <https://www.law.cornell.edu/uscode/text/10/404>.

¹¹⁰ Foreign Disaster Assistance Act.

¹¹¹ Department of Defense, *Foreign Disaster Relief*, DoD Directive 5100.46 (Washington, DC: Department of Defense, 2012), 1, <http://www.dtic.mil/whs/directives/corres/pdf/510046p.pdf>.

¹¹² Department of Defense, 1-2.

¹¹³ Department of Defense, 2.

¹¹⁴ Department of Defense, *DoD Support to Foreign Disaster Relief*, 2-1.

72 hours. This could then be followed by the official authorization process described as follows.

The formal authorization process for a military FDR operation begins with a host nation's response to the disaster within its borders.¹¹⁵ When the host nation's capabilities are overwhelmed, one option open to the host nation is to request USG assistance.¹¹⁶ The host nation's request is relayed through the U.S. Embassy inside the affected state to the DoS via a disaster declaration cable.¹¹⁷ This serves as the legal precursor to the authorization of USAID/OFDA disaster assistance.¹¹⁸

Upon receipt of the disaster declaration cable, the secretary of state confirms the necessity of a USG response to the foreign disaster, through the U.S. Embassy in the affected state.¹¹⁹ Upon approval from the secretary of state, the DoS and USAID/OFDA begin to determine the level of USG assistance required to support the host nation's relief requirements.¹²⁰ When responding to a foreign disaster, USAID/OFDA can utilize a number of response methods to meet the requested needs of the host nation. However, "if USAID/OFDA identifies a requirement within an affected state that can be most effectively met by DoD, DoS will initiate a request through the Office of the Secretary of Defense."¹²¹ This request is transmitted through an executive secretary (EXESEC) memorandum.¹²² After weighing a number of factors, which are discussed in greater detail in the following text, the secretary of defense will approve the DoD to execute the military FDR mission and order the mission's execution through an executive order to the Chairman of the Joint Chiefs of Staff (CJCS).¹²³ The mission begins once the CJCS has ordered the geographical

¹¹⁵ Todd Forsman, "Joint Humanitarian Operations Course" (presentation, ME Auditorium, Naval Postgraduate School, Monterey, CA, October 5, 2018).

¹¹⁶ Forsman.

¹¹⁷ Forsman.

¹¹⁸ Joint Chiefs of Staff, *Foreign Humanitarian Assistance*, II-17.

¹¹⁹ Forsman, "Joint Humanitarian Operations Course."

¹²⁰ Department of Defense, *DoD Support to Foreign Disaster Relief*, 2-5.

¹²¹ Department of Defense.

¹²² Department of Defense.

¹²³ Department of Defense, 2-6.

combatant commander (GCC) to execute the mission.¹²⁴ The GCC assembles a force to conduct the mission, typically in the form of a JTF (see Figure 1).

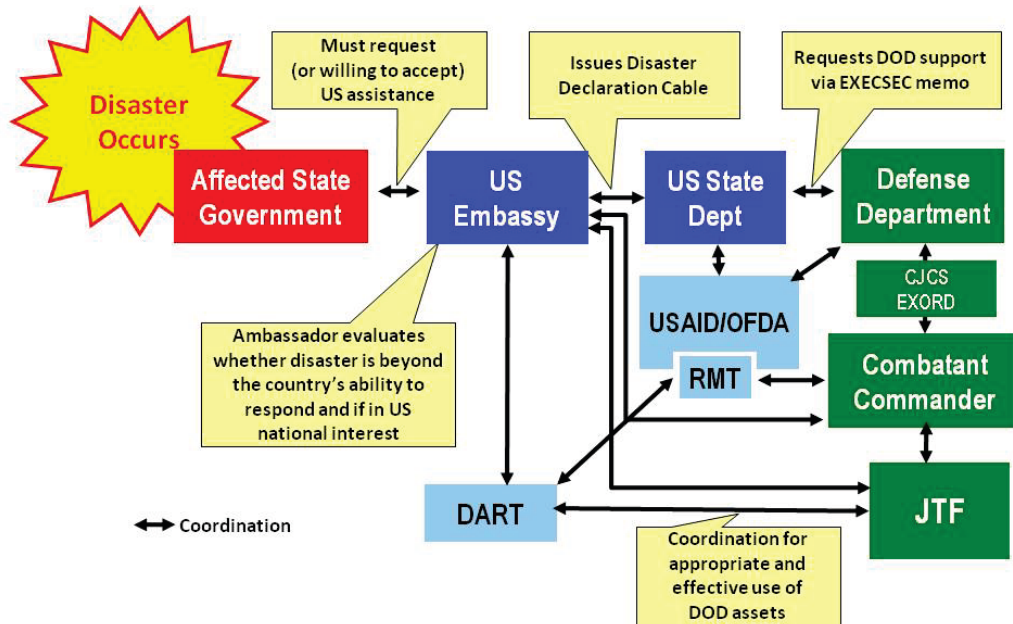


Figure 1. Interagency Flow Chart for Authorizing Military FDR¹²⁵

4. Considerations for Authorization

Inside the authorization process lay three sets of considerations, one per respective group; DoS, USAID/OFDA, and DoD. These are conditions that must be met in order for the group to authorize action from their respective entity or to further seek support from other USG agencies.

The DoS has three conditions that must be met in order for the secretary of state to authorize the USG's actions in response to a host nation's disaster declaration cable. The first is the affected state's willingness to request support from the USG. The second is a need for disaster assistance that is greater than the capacity of the host nation. Third, the

¹²⁴ Department of Defense.

¹²⁵ Source: Department of Defense, 2-1.

DoS must believe that responding to the foreign disaster is “in the interest of the USG.”¹²⁶ With the approval of the disaster declaration cable, the USAID/OFDA can then access the proper level of USG involvement.

When determining the necessity of DoD in support of a foreign disaster, the USAID/OFDA must also consider three factors. First, are all other response capabilities, including the local government and the international community, overwhelmed? Second, have all “commercial options have been exhausted”?¹²⁷ Third, are there no comparable civilian alternatives to the requested military capabilities? If all three of these conditions are validated by OFDA, then the secretary of state may approve the request for DoD support to a foreign disaster.¹²⁸

The last set of considerations is made by the DoD, once the secretary of state has requested DoD support for a foreign disaster. When authorizing a military FDR operation, the secretary of defense considers factors already discussed, such as magnitude of the disaster, the USG response, the international community response, and requirements requested by USAID. The other, most important consideration made by the DoD is “that there are no overriding military mission requirements elsewhere” for the requested resources.¹²⁹ If DoD support is deemed “appropriate and feasible,” then the secretary of defense may approve the request for a military FDR operation.¹³⁰

5. The Scope of Military FDR

As described in the definition of foreign disaster relief, the general mission of the military is to alleviate human suffering.¹³¹ This principle is used to define, in general, the actions of any USG actor in providing disaster relief. However, the specific mission requirements that DoD is asked to fulfill differ for every foreign disaster, because no two

¹²⁶ Department of Defense, 2-2.

¹²⁷ Perry et al., *Finding the Right Mix*, 11.

¹²⁸ Perry et al.

¹²⁹ Department of Defense, *Foreign Disaster Relief*, 6.

¹³⁰ Joint Chiefs of Staff, *Foreign Humanitarian Assistance*, II-18.

¹³¹ Joint Chiefs of Staff, GL-7.

disasters are alike. Due to this, military FDR operations can be executed at different capacities. These capacities include the smallest operations, which generally involve logistical support requirements, such as one C-17 transport aircraft and the contained crew to support its flight. On the other end of the spectrum, FDR missions may consist of thousands of military personnel, a large assortment of vehicles, supplies, and services executed, in order to support host nation requirements.

When conducting military FDR operations, the DoD can execute its mission support requirements in three different roles: direct assistance, indirect assistance, and infrastructure support. In a direct assistance role, the DoD is providing services in a face-to-face capacity with the affected population.¹³² In an indirect role, the DoD supports in a manner that is considered at least one step removed from the affected state's population.¹³³ This can include the movement of supplies to host nation relief groups or the transport of host nation assets. When conducting infrastructure support, the DoD is serving in a role that focuses on efforts to repair a host nation's critical infrastructure while minimizing its visibility and abstaining from a direct support role. When DoD responds, it should, per the Oslo Guidelines, minimize its direct assistance role during military FDR operations.¹³⁴

Military FDR operations are widely diverse in terms of the services provided by the military (see Figure 2). The assignment of missions to units on the ground—elements of the JTF—is accomplished through the use of a Mission Tasking Matrix (MITAM). The MITAM is a document used to prioritize, coordinate, and ensure the military capabilities on the ground are used in the most efficient manner possible.¹³⁵ The MITAM is maintained by both the JTF staff and OFDA personnel on the ground—known as civilian-military coordinators (CMC). Individual mission requests for the MITAM can come from the host nation, humanitarian organizations, and other USG agencies. Each request is validated by the CMC and then transmitted to the JTF for action.¹³⁶

¹³² Joint Chiefs of Staff, III-8.

¹³³ Joint Chiefs of Staff, III-9.

¹³⁴ Joint Chiefs of Staff.

¹³⁵ Department of Defense, *DoD Support to Foreign Disaster Relief*, C-1.

¹³⁶ Department of Defense.

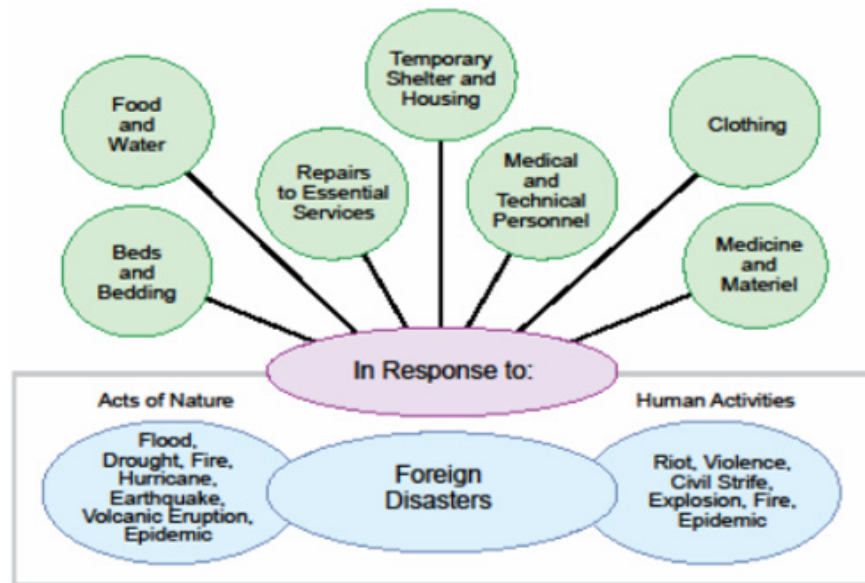


Figure 2. Foreign Disaster Relief Services Chart¹³⁷

It is worth noting that military FDR operations differ from other forms of USG FDA, especially in terms of duration and conditions for mission termination. When authorized, military FDR operations respond at the earliest stages of a foreign disaster—termed the “relief phase”—when the requirement for assistance is greatest. Unlike other government agencies and international organizations, which have long-term relief and recovery roles in the host nation, the DoD’s response to foreign disasters should always be “limited in time and scale.”¹³⁸ This means the DoD’s role in a foreign disaster is likely to end at the time of transition from the relief phase to the recovery phase. During the recovery phase, the residual need for assistance can likely be met by the international community.¹³⁹ The best indication of when a military FDR operation is in a period of transition is when “DoS, DoD, or the affected state declares that U.S. forces are no longer required.”¹⁴⁰

¹³⁷ Source: Joint Chiefs of Staff, *Foreign Humanitarian Assistance*, I-6.

¹³⁸ Joint Chiefs of Staff, III-8.

¹³⁹ Perry et al., *Finding the Right Mix*, 73.

¹⁴⁰ Department of Defense, *DoD Support to Foreign Disaster Relief*, 5-13.

6. The Funding of Military FDR

Due to the fact that the DoD, like all USG agencies and offices, is authorized a finite amount of money in a designated timeframe to achieve its goals, the financing of military FDR is an important area to know. By understanding the method of funding military FDR, one can better appreciate how to evaluate the role money plays in the approval and execution of such operations.

Guidance for funding military FDR operations is derived from DoD Directive 5100.41, which establishes three different methods of financing military FDR operations.¹⁴¹ The first is non-reimbursable financing, which comes from the DoD's Overseas Humanitarian, Disaster, and Civic Aid (OHDACA). The OHDACA account serves as the primary source of funding for a number of DoD FHA operations, including three activity types: Humanitarian Assistance, Humanitarian Mine Action, and military FDR.¹⁴² The second method of financing military FDR operations is through the redirection of up to \$100 million from other allocated DoD funds. This action is authorized by Title 22 of the Foreign Assistance Act and is commonly referred to as the "Presidential Drawdown Authority." This form of funding is not guaranteed to be reimbursed. In order for a reimbursement to be authorized, Congress must first authorize a special supplemental appropriation: an action that occurs after the redistribution of funds.¹⁴³ The last method of funding military FDR operations is through reimbursement. This means that other USG agencies, such as USAID, can agree to reimburse the DoD for the execution of a military FDR operation in a host nation.¹⁴⁴

¹⁴¹ Department of Defense, *Foreign Disaster Relief*, 2.

¹⁴² Perry et al., *Finding the Right Mix*, 22-24.

¹⁴³ Perry et al., 24-25.

¹⁴⁴ Perry et al., 24.

III. CONSIDERATIONS FOR AUTHORIZING MILITARY FDR

A. INTRODUCTION

The process of military FDR is, at first glance, a straightforward procedure, in which USG officials make non-political decisions on supporting a foreign disaster response. This perspective has been challenged, however, in more recent literature. In recent works, scholars have hinted at a plethora of variables that can influence the USG's decision to respond to a foreign disaster.¹⁴⁵

The purpose of this chapter is to identify and discuss a number of hypotheses that could explain why the USG decides to authorize a military FDR operation. I have identified 12 hypotheses, all of which I argue fall under three general categories: disaster characteristics, foreign policy interests, and domestic political influences. The categories and the hypotheses were derived either from recent literature or through my analysis of the current strategic environment.

This chapter begins with the identification of the most intuitive area of consideration: disaster characteristics. Under this category, a definition and description of disaster characteristics is presented. This is followed by the presentation of hypotheses and indicators specific to the category. I utilize the same structure for both the foreign policy interest and domestic political influence areas of consideration, prior to concluding the chapter.

B. DISASTER CHARACTERISTICS AND MILITARY FDR DECISIONS

The disaster characteristics category refers to the characteristics and impact of a disaster, such as the severity of the disaster and the type and amount of damage caused by the disaster. A disaster's characteristics are the most intuitive explanation for why the USG initiates a military FDR operation. As discussed in Chapter I, a disaster occurs when a vulnerable population is affected by a hazard. However, the size and level of devastation

¹⁴⁵ The following reports present a case for a number of political and non-political factors; Perry et al., *Finding the Right Mix*, 1-5 and Drury, Olson, and Van Belle, "The Politics of Humanitarian Aid," 454-73.

each disaster leaves behind is not universal and can differ widely from one case to another. In order to be categorized as a foreign disaster by the USG, the aftermath of the disaster must outweigh the capacity of a host nation. In light of a foreign disaster, the USG must account for the disaster characteristics and the host nation's support requirements. This is due to the fact that the deployment of assets is costly. This is especially true when the assets arrive in a host nation where they are not needed.¹⁴⁶ It is therefore logical to believe that in cases where the USG authorizes a military FDR operation, the characteristics of each of those foreign disasters are likely to be considered. In the following section, I present three hypotheses to test this argument.

1. Hypothesis 1

The USG is more likely to authorize a military FDR operation when the destructiveness of the disaster is severe. In the aftermath of a disaster, a host nation is most likely to request international assistance when its local assets are overwhelmed or incapable of response. Due to this fact, the more destructive a foreign disaster, the more likely the request and subsequent requirement for a military FDR operation will be.

In a handbook titled *Department of Defense Support to Foreign Disaster Relief*, former Secretary Defense Chuck Hagel describes past deployments of assets for military FDR operations. He explains that the use of military assets occurs when the disasters are “crises of the largest magnitude and/or greatest complexity.”¹⁴⁷ This suggests there is a likely correlation between the destructiveness of a disaster and the deployment of military FDR assets.

To test this hypothesis, I assessed three natural-disaster characteristics: the number of deaths that occurred, the number of people affected, and the amount of infrastructure damage. Taking these measures into account, it can be expected that the United States will be more likely to engage in military FDR operations when there are a higher number of deaths, people affected, and damage to infrastructure.

¹⁴⁶ The report that follows provides a general example of the cost associated with FDR; Perry et al., *Finding the Right Mix*, 14.

¹⁴⁷ Department of Defense, *DoD Support to Foreign Disaster Relief*, Forward.

2. Hypothesis 2

The USG is more likely to authorize a military FDR operation when there have been a large number of foreign disasters globally. When this happens, it is logical to believe that the number of civilian resources available to respond to foreign disasters may be outweighed by the number of requests for assistance from host nations. In light of this, the USG is more likely to authorize a military FDR operation as an option of last resort. A key decision point that is suggested by the Oslo Guidelines and the literature is that the use of military assets in response to disaster “should only [occur] where there is no comparable civilian alternative and only the use of military ... assets can meet a critical humanitarian need.”¹⁴⁸ This means that military assets should only be used when the military has an asset that fills an identified gap in the relief effort or when humanitarian organizations are unable to fully fulfill the requirements associated with a response to a foreign disaster.¹⁴⁹

As just discussed, when attempting to determine periods of last resort—where the requirements for disaster relief assets exceed the capacity/availability of humanitarian organizations—there are two ways in which this may occur. The first is when humanitarian organizations are unable to provide services to the host nation due to asset unavailability. The second happens when a gap—best understood as a set of equipment, area of expertise, or capability—must be filled in order to execute a service requested by the host nation, but is not currently available through means other than the U.S. military.¹⁵⁰ To determine the validity of this hypothesis, I focused on the former measure.

It is important to recognize that there is not a standard data set or method one can use to identify when the assets of humanitarian organizations are overwhelmed. However, it is logical to think that the more disasters that occur globally in a specified period, the more humanitarian organizations will be stretched for resources to respond to foreign disasters. This, in turn, leads to gaps in the disaster response capabilities of humanitarian organizations, which is when periods of last resort will occur. In light of this, I assessed

¹⁴⁸ United Nations, *Oslo Guidelines*, 9.

¹⁴⁹ Perry et al., *Finding the Right Mix*, 1.

¹⁵⁰ Joint Chiefs of Staff, *Foreign Humanitarian Assistance*, I-14–I-15.

the number of disasters globally, during the 90 days before each of the selected cases, as an indicator for determining if humanitarian organizations were potentially overwhelmed before each case.

3. Hypothesis 3

The USG is more likely to authorize a military FDR operation when a disaster location is easily accessible. The logic behind this hypothesis is that the USG is less likely to deploy military assets that require an excessive amount of time, money, or logistics in order to reach a foreign disaster area. Additionally, the same reasoning could be applied if the DoD response time is equivalent to the response of a humanitarian organization or if the response time is likely to render the relief operation ineffective in the host nation.

Within the literature, there seems to be evidence to support this claim. When a foreign disaster occurs, the effectiveness of any response/relief effort is directly correlated to the time and speed of the relief effort. This factor is, in essence, the driving force behind the allowance of combatant commanders “near or at the immediate scene of a foreign disaster” to take immediate action for up to 72 hours.¹⁵¹ Thus, the accessibility of a disaster, relative to DoD assets, can influence decisions to support foreign disasters.

To test the validity of this hypothesis, I measured the distance from each of the chosen cases to a known U.S. military base or pre-positioned stock. The USG has arguably the world’s largest global military footprint. The military footprint is made up of a number of bases with forward-deployed assets.¹⁵² Additionally, there are stores of supplies around the world for contingency operations. These stores are generally referred to as pre-positioned stocks. These bases and stores allow the USG to launch all types of operations with little effort when the objective is within a logical range.

¹⁵¹ Jennifer D. P. Moroney et al., *Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region*, RR-146-OSD (Washington, DC: RAND Corporation, 2013). 5.

¹⁵² In particular to the Disaster Relief supply stocks, the United States maintains warehouses in Albany, Georgia; Okinawa, Japan; and Livorno, Italy; Moroney et al., 8.

C. FOREIGN POLICY INTERESTS AND MILITARY FDR DECISIONS

The second category of hypotheses is the foreign policy interests of the United States. The use of military FDR as a means to pursue foreign policy interests has been widely cited as a reason for U.S. involvement in foreign disasters.¹⁵³ As a particular example, Richard Olson and Douglas Van Belle found in their analysis of 40 years of U.S. FDA “that foreign policy and domestic factors not only influence disaster assistance allocations but that they are the overriding determinant” of support.¹⁵⁴ Their findings support a claim that FDR operations also conform to the same determinants.

A successful military FDR operation creates windows of opportunities that can be later exploited by the USG to advance its foreign policy objectives. As an example, the Pew Research Center’s Global Attitude Project found an improvement in the USG’s image in both Pakistan and Indonesia was associated with recent provisions of U.S. FDA, including military FDR operations, in response to a foreign disaster in each country.¹⁵⁵ It is logical to believe that, within a certain time period, the improvement in image may help advance foreign policy objectives of the USG, like economic trade agreements or military basing rights in the host nation. Therefore, it is logical to assume that USG authorization of military FDR operations is more likely to occur when the support of USG can lead to the attainment of foreign policy interests.

In order to present this category, it is important to start with a discussion establishing from where foreign policy interests are derived. There are two terms that are important to understanding this. The first is national interests. For clarity, a working definition of national interest is the “perceived needs and desires of one sovereign state in relation to other sovereign states comprising the external environment.”¹⁵⁶ In general

¹⁵³ Drury, Olson, and Van Belle, “The Politics of Humanitarian Aid,” 454-455; Perry et al., *Finding the Right Mix*, 1-4.

¹⁵⁴ Drury, Olson, and Van Belle, 454.

¹⁵⁵ Richard Wike, “Does Humanitarian Aid Improve America’s Image?,” Pew Research Center, last modified March 6, 2012, <http://www.pewglobal.org/2012/03/06/does-humanitarian-aid-improve-americas-image/>.

¹⁵⁶ Donald E. Nuechterlein, “National Interests and Foreign Policy: A Conceptual Framework for Analysis and Decision-Making,” *British Journal of International Studies* 2, no. 3 (October 1976): 246-52, JSTOR.

terms, there are four broad national interests that the United States pursues.¹⁵⁷ The first interest is defense of the homeland. The second is the economic advancement of the United States in relation to other self-interested states. The third is the interest of maintaining the world order. This is simply “the maintenance of an international political and economic framework in which the nation-state may feel secure, and in which its citizens and commerce are protected abroad”¹⁵⁸ Last is the category of ideological interest: in other words, the protection and furtherance of the values that are shared by constituency of the USG.

The second term important for understanding the origins of a foreign policy interest is foreign policy. As a general definition, foreign policy is the strategy by which a sovereign state’s government interacts with other states in order to achieve its desired national interest. I describe each specific goal the United States wants to achieve as an individual interest. Therefore, a foreign interest is simply an international goal the USG wants to accomplish to advance its national interest. As one can see from this explanation, advances of foreign policy interests can serve as a logical reason for the initiation of military FDR operations. To test this theory, I have established six hypotheses (hypotheses 4–10).

1. Hypothesis 4

The USG is more likely to authorize a military FDR operation if it has a long history of military cooperation with the host state. There are three logical reasons for this claim. First, a history of cooperation can provide the USG with a greater understanding of shortfalls or gaps in a host nation’s capability. This knowledge may allow for quicker decisions by the USG to authorize military FDR. Second, when the USG has a history of cooperation with a host nation, it is simply logical to believe that the USG may feel pressured to provide support to a nation it has consistently cooperated with. Third, a history of cooperation between a host nation and the USG is likely an indicator of the country being of some form of importance to the USG. In other words, the USG should have

¹⁵⁷ Nuechterlein, 248.

¹⁵⁸ Nuechterlein.

stronger incentives to support a host nation it cooperates with because it is important to the United States.

To test the validity of this hypothesis, I looked for a history of military FDR operations between the U.S. and each host nation. This course of action is best because, by limiting the type of military cooperation, I was able to avoid being overwhelmed by the number options available for testing.

2. Hypothesis 5

The USG is more likely to intervene when a country is strategically important. A country of strategic importance is defined as a country that has significant military importance to the United States. The most logical reason for the USG to support a host nation that is strategically important is the threat of a deteriorating relationship with the host nation. If this occurs, the USG may lose the military advantages the state has to offer. This could include but is not limited to the loss of military basing rights in the host nation, the loss of strategically important logistical hubs—an example of which occurred in Pakistan in 2010, and the loss of a key military alliance that could shift the balance of power in a region.¹⁵⁹ In all, the loss of a strategically important host nation threatens the United States' national interest of homeland security and therefore makes the use of military FDR operations to support a strategically important host nation a foreign policy interest.

When assessing the strategic importance of a host nation, I argue that there are three indicators to take into consideration. The first, and most logical, is a standing alliance. A standing alliance is defined as a pre-established formal military agreement between the host nation and the USG. A second indicator is the presence of U.S. military bases in the affected country, signifying military importance to the USG. The last indicator deals with proximity of the host nation to declared combat zones of the USG. Simply put, historically the USG has relied on nations adjacent to declared combat zones for the purpose of staging

¹⁵⁹ Frederik Pleitgen, Larry Shaughnessy, and Barbara Starr, "U.S.: Only One Supply Route Shut Down by Pakistan," CNN, September 30, 2010, <http://www.cnn.com/2010/WORLD/asiapcf/09/30/pakistan.military.post.attack/index.html>.

and resourcing its operations. It can, therefore, be argued that the proximity of a host nation to a declared combat zone is a sign of strategic importance.

3. Hypothesis 6

The USG is more likely to authorize a military FDR operation if assistance to the host nation is likely to result in advances in diplomatic relations with the host nation. In terms of logic, it is within the USG's interest to get the most bang for its buck. In other words, the authorization of a military FDR operation is logical if the USG believes that it can achieve an additional goal through its use. This claim is supported in recent studies in which scholars have alluded to improvements in relations between the USG and supported host nations as a consequence of military FDR operations and disaster relief training. In a report published by the CNA, scholars explain that "HA/DR projects help to build forward access and pre-positioned support that can be utilized for a wide range of U.S. military operations," all of which is an indication of increased relations.¹⁶⁰ Furthermore, the CNA report explains that such operations can also be utilized to initiate or renew military relations between states whose "cooperation remains limited or has faltered."¹⁶¹ In terms of foreign interest, advances in diplomatic relations are likely to affect three of the national interests—economic, defense, and world order—in turn certifying that the hypothesis is a logical foreign policy interest.

In order to test this hypothesis, I must be able to assess the pre-disaster and post-disaster relationship between the USG and the host nation. In cases where there is a large divergence between the two dispositions within a reasonable period of time after the disaster, it is logical to believe the USG used the support provided to the host nation as a window of opportunity to advance the diplomatic relationship. To measure this hypothesis' applicability, I assessed two areas. First, I assessed changes in the number of military cooperation events between the host nation and the U.S. military. Second, I assessed the number of new or renewed bilateral agreements between the USG and the host nation. In

¹⁶⁰Perry et al., *Finding the Right Mix*, 3.

¹⁶¹ Perry et al.

particular, I assessed property agreements—which are used to allocate host nation lands to the USG trade agreements—and defense agreements.

4. Hypothesis 7

The USG is more likely to authorize a military FDR operation if the host nation is vulnerable to the threat of political instability. In general, disasters can be a destabilizing force politically when the host nation lacks the capacity to support its citizens or fails to respond to the event in a sufficient or timely manner. A failed or inept local response could leave a nation politically vulnerable to regime change and is likely to be undermined by political adversaries or violent non-state actors (such as terrorist groups) inside the state or region. For the USG, the political stability of a single nation becomes a topic of relevance for three reasons: if the host nation is important to the stability of a region, is in danger of regime change that would erode political relations with the USG, and is likely to be undermined by non-state actors impacting greater global efforts the USG supports against terrorism. In addition, in 2009, the USG reaffirmed the DoD's role of providing support to USG efforts worldwide through stability operations.¹⁶² It is for these reasons that the USG is compelled to support a foreign disaster in a country where the threat of political instability is likely to occur in the aftermath of a disaster.

When assessing the validity of this hypothesis, there are three indicators that can be utilized: data from political stability indices, evidence of terrorist activity, and evidence of civil war/unrest. In terms of the country's overall stability rating, a number of data sets contain a stability rating. It is logical to believe that the lower the host nation's rating, the more at risk it would be for political instability during a disaster. In terms of terrorist activity, the larger the number of terrorist events in the host nation, the greater the chance for political instability. Last, evidence of civil war/unrest prior to a disaster occurring is suggestive of a politically unstable state. Additionally, it would suggest domestic political opposition and is therefore a logical measure of political instability.

¹⁶² Department of Defense, *Stability Operations*, DoD Instruction 3000.05 (Washington, DC: Department of Defense, 2009), 2.

5. Hypothesis 8

The USG is more likely to authorize military FDR operations if the host nation is of economic importance to the United States. When disasters occur, the damage to a host nation's economic infrastructure may lead to sharp decreases in economic activity. With the global nature of today's market, when a foreign disaster occurs in a host nation of economic importance, the USG may feel compelled to support it in order to quickly reestablish that state's economic infrastructure and limit the impact sustained globally by making the country a useful supplier again. It is therefore logical to assume that the USG is more likely to authorize FDR operations in states of economic importance.

When testing this hypothesis, I believe that two indicators served as logical areas of measure: trade and foreign direct investment (FDI). In terms of trade, if the host nation has a large trade relationship with the U.S., then it is logical to consider the country as one of economic importance to the USG. Additionally, in terms of FDI, if U.S. businesses have significant investments in a host nation then it is also logical to believe the USG may consider that the country to be economically important.

6. Hypothesis 9

The USG is more likely to authorize a military FDR operation if failure to support the host nation is likely to lead it to seek closer ties with revisionist states. Historically speaking, the United States has utilized disaster assistance as a means of influencing the alliances of states. The Cold War is a well-cited example of such actions.¹⁶³ Since the early 21st century, China has been noted as a near-peer competitor. This gained further recognition under President Obama when he shifted the United States' military focus to the Asia-Pacific.¹⁶⁴ As of late, the reemergence of Russia and the rapid buildup of China have received much recognition, most specifically in the 2017 *National Security Strategy*. In this strategically important document, China and Russia are both labeled as revisionist

¹⁶³ The following research articles discuss the Cold War as a factor in Foreign Aid which is a precursor to Foreign Disaster Relief: Drury, Olson, and Van Belle, "The Politics of Humanitarian Aid," 475 and Irwin, "The Origins of U.S. Foreign Disaster Assistance," 46.

¹⁶⁴ Kenneth G. Lieberthal, "The American Pivot to Asia," Brookings Institute, last modified December 21, 2011, <https://www.brookings.edu/articles/the-american-pivot-to-asia/>.

states. Additionally, in more recent academic literature, the relationship between China and the United States is at times referred to as the “New Cold War.”¹⁶⁵ Considering the similarities to the strategic environment of the past, the United States could logically see these nations as a threat to all four components of its general national interests. Understanding this, the provision of support for a host nation in order to avoid any chance of the host nation increasing ties with a revisionist state becomes a logical foreign policy interest.

The best indicator for measuring this hypothesis is to identify if the host nation is adjacent to or in a sphere of influence of a revisionist state. To do so, I first defined the areas of influence under which each revisionist state operates. Second, I identified which of the cases fall in the areas of influence of the revisionist states identified. From there, it is logical to believe that the USG is more likely to respond to disasters when the host nation is closer to a sphere of influence of a revisionist state.

D. DOMESTIC POLITICS AND MILITARY FDR DECISIONS

The domestic political influence of the United States serves as the last area of consideration. Domestic political influence is best defined as any internal influence group or political interest that applies pressure to the USG in order to affect a foreign policy decision. The logic behind this category can be derived from a number of examples. There are many situations where a domestic circumstance, policy, or pressure group, internal to the United States, has played a role in U.S. foreign policy decisions. For example, the first thing that comes to mind is the will of the American people. By that, I mean that elected government officials are vulnerable to the concerns of the people they serve. Another example of domestic political influence can be derived from special interest groups that utilize money and influence to apply pressure on government officials in order to achieve goals in either the domestic or foreign policy arena. In the following section, I identify and discuss three additional hypotheses (hypotheses 10–12) for assessing the applicability of

¹⁶⁵ “Trump in a New Cold War,” National Interest, April 13, 2018, <https://nationalinterest.org/feature/trump-new-cold-war-25389>.

this category. Within each hypothesis, I identify indicators through which I test their applicability.

1. Hypothesis 10

The USG is more likely to authorize a military FDR operation if domestic pressure to support a foreign disaster is present. In terms of logic, it is within reason to believe that domestic pressure can influence the foreign policy arena. It is rational to believe that almost every government official wants to stay in power. In order to do so, officials must maintain popular support domestically. The need to maintain power and therefore popular support provides government officials with great incentive to respond to the political pressures of the American people. Providing further support for this hypothesis is a description of the duties of a former director of the OFDA. Former Director Andrew Natsios explains that the director of OFDA was required to “deal regularly with news media, given that disasters are major news events, and ... Congress, which is innately drawn to visible and potentially controversial events.”¹⁶⁶ From this description, and due to the fact that the OFDA is the lead federal agency for military FDR operation, it is logical to assume that domestic pressure plays a role in the initiation of a military FDR operation.

There is a multitude of indicators one could use to test for domestic political pressure. In this thesis, I argue it is best to measure political pressure through the national media and through analysis of the demographic makeup of the United States. In terms of national media, I argue that the more attention a foreign disaster receives in the media, the more likely the constituency of political leaders are to apply domestic pressure on government officials. This, in turn, should then affect the priorities of those political leaders. This is commonly cited or known as the “CNN effect.”¹⁶⁷ In terms of the second indicator, demographics, it is logical to believe that the more ties constituents have to the host nation, the more pressured the political leaders should feel to authorize a military FDR operation. For example, states with higher numbers of Filipino immigrants are more likely

¹⁶⁶ Andrew S. Natsios, *U.S. Foreign Policy and the Four Horsemen of the Apocalypse: Humanitarian Relief in Complex Emergencies* (Westport, CT: Praeger, 1997), xix.

¹⁶⁷ Natsios, 124.

to implement political pressure through their political official when a foreign disaster is declared in the Philippines, due to ethnic and familial ties.

2. Hypothesis 11

The USG is less likely to engage in military FDR operations when it cannot afford to financially. The USG, like all nations, is limited in fiscal expenditure by a federal budget. Furthermore, the USG has been in a period of budgetary constraint since the early 21st century, a fact that is regularly cited as a problem today. It is rational to believe that political leaders look at every expenditure the USG authorizes with skepticism and scrutiny in order to wisely account for and conserve every dollar. Therefore, it is logical to believe that the authorization of a military FDR operation must be evaluated for its affordability prior to its approval.

An indicator of this hypothesis are budgets used for FDA. In a report by the Institute for Foreign Policy Analysis, scholars explain that, in light of a growing number of disasters occurring each year, the United States has found it hard to support all disaster types on a budget meant to support the “occasional large-scale foreign disasters.”¹⁶⁸ This means government officials prioritize FDR missions in terms of the limited amount of money allocated for such operations. Therefore, it is logical to believe that the USG should engage in fewer FDR operations when the budget for FDA is more constrained.

3. Hypothesis 12

The USG is less likely to engage in military FDR operations when there is competition for its military resources domestically. Military resources are defined as personnel, equipment, and supplies. The USG, like all nations, has a limited number of military resources to apply toward maintaining its interests in both the foreign and domestic arenas. The pool of military resources to conduct contingency operations, such as military FDR operations, are likely units left in reserve by the USG. Today, units not in reserve are likely forward-deployed, conducting a number of planned operations such as supporting regional stability through training exercises in a foreign nation, supporting presidential

¹⁶⁸ Perry et al., *Finding the Right Mix*, 5.

directives through the execution of freedom of navigation operation on the high seas, or deploying in support of combat operations in Afghanistan and Iraq. Understanding this, it is logical to believe that the USG must consider the impact of deploying military units in reserve to support a military FDR operation. This is especially true when the military has more contingency operations than resources.

To test this hypothesis, domestic disasters are the best indicator for assessing military resource competition. An abnormal number of domestic disasters in the USG is likely to require DoD involvement. These actions could place constraints on the availability of DoD military resources, which could lead to a decision not to support a military FDR operation. Therefore, it can be expected that the United States will be less likely to engage in FDR operations when there are an abnormal number of domestic natural disasters.

E. CONCLUSION

To conclude, the previously listed factors have been discussed in great detail. The three classifications established (disaster characteristics, foreign interest, and domestic interest) are segregated to differentiate the origins that influence the USG's decision to authorize a military FDR operation. The 12 hypotheses presented are all logically explained as individual influencers that could either lead to a "go" or "no-go" decision when a foreign disaster occurs. In the next chapter, a full discussion of the methodology, controls, and findings is presented.

IV. CASE SELECTION, METHODOLOGY, AND FINDINGS

A. INTRODUCTION

The purpose of this chapter is to test the hypotheses and indicators discussed in Chapter III. This chapter is structured in two parts. First, I discuss my methodology by presenting the criteria used to select the 12 cases tested. This is followed by a discussion on the dependent variables used in the study. Last, I discuss the approach I used to test the hypotheses: qualitative comparative analysis. The second half of this chapter presents my findings in which I restate each hypothesis, identify the data used to test the hypothesis, and discuss my findings for each hypothesis.

B. CASE SELECTION

In order to test the hypotheses, I examined 12 foreign disasters, all of which occurred outside of the United States or its territories. By analyzing 12 cases, I was able to better assess the validity of each hypothesis through qualitative analysis. My case selection was guided by four sub-criteria; each is discussed in the following sections (see also Table 1).

(1) Criteria 1: Disaster Type

The first criteria for selection of each foreign disaster was for the disaster to be caused by a hydrometeorological event. In this instance, I required each case to be a foreign disaster that was caused either by a tropical cyclone or monsoon cloudburst. There are three reasons for selecting only hydrometeorological natural disasters. First, the main focus of this thesis is to examine the impact of climate change on military FDR. With that in mind, by selecting hydrometeorological disasters, I was able to remove manmade disasters from the pool. Second, hydrometeorological disasters are one of the types of disasters that are most likely to be affected by climate change. Due to this, I was able to link the findings from my analysis to likely impacts from climate change. Last, I picked hydrometeorological disasters because they are rapid-onset disasters. This is important because rapid-onset disasters are more likely to lead to a military FDR operation than slow-onset disasters.

(2) Criteria 2: Timeframe

The second criteria used to pick the case studies was for the disaster to have occurred between the years of 2000 and 2016. By limiting my selections to this period, I reduced variations in presidential administrations, as all of the disasters occurred either under President George W. Bush or President Barack Obama. By testing these hypotheses under two presidential administrations, I could determine whether my findings are consistent across different political parties and administrations.

(3) Criteria 3: Dependent Variable

The third criteria used to identify the selected cases is variations in the dependent variable: the presence of a military FDR operation. Of the 12 cases to be presented, six of the cases are foreign disasters without a military FDR operation. Three of these cases occurred in each presidential administration. The other six cases are foreign disasters with a military FDR operation. Those six cases are also split between the two presidential administrations, in order to provide equal representation. By testing my hypotheses against this distribution of cases, I was able to understand why the USG authorizes military FDR operations.

(4) Criteria 4: Operation Length

The fourth criteria utilized to select cases is the requirement for the military FDR operation to be longer than 72 hours. This is important for the purpose of identifying valid military FDR operations. That is to say, it allows me to identify military FDR operations that were authorized through the formal interagency coordination process. Conversely, without the 72-hour response requirement, the military FDR operations utilized could be a military FDR operation that did not require a formal authorization. As discussed in Chapter III, a combatant commander is authorized, under DoD Directive 5100.46, to conduct up to 72 hours of response time to a foreign disaster before requiring a formal request to conduct such operations from the USG.

Table 1. Summary: Case Selection Criteria¹⁶⁹

Name of Disaster	Disaster Type	Country (Year)	Disaster Start Date	Administration	Military Response
Mozambique Flood	Flood	Mozambique (2000)	26-Jan	Bush	Yes
Algeria Flood	Flood	Algeria (2001)	10-Nov	Bush	No
Cyclone Galifo	Tropical Cyclone	Madagascar (2004)	7-Mar	Bush	No
Hurricane Stan	Tropical Cyclone	Mexico (2005)	1-Oct	Bush	No
Hurricane Stan	Tropical Cyclone	Guatemala (2005)	1-Oct	Bush	Yes
Cyclone Sidr	Tropical Cyclone	Bangladesh (2007)	15-Nov	Bush	Yes
Cyclone Nagris	Tropical Cyclone	Myanmar (2008)	2-May	Obama	Yes
Pakistan Flood	Flood	Pakistan (2010)	28-Jul	Obama	Yes
Thailand Flood	Flood	Thailand (2010)	10-Oct	Obama	No
Cyclone Phailin	Tropical Cyclone	India (2013)	12-Oct	Obama	No
Typhoon Haiyan	Tropical Cyclone	Philippines (2013)	8-Nov	Obama	Yes
Cyclone Winston	Tropical Cyclone	Fiji (2016)	20-Feb	Obama	No

C. DEPENDENT VARIABLE

The dependent variable of this analysis is the presence of a military FDR operation. In Chapter II, I provide the reader with an in-depth explanation of what military FDR operations can consist of. The standards for what are considered a military FDR operation are generally broad. However, for the purpose of this thesis, I used two criteria to define a military FDR operation: the presence of more than 50 personnel in response to the foreign disaster and a response length of greater than 72 hours. The requirement for the presence of more than 50 personnel allows me to eliminate minor responses to foreign disasters. This is important because by excluding minor responses in the analysis of the selected cases, I was able to assess deployments that are of significant impact to the USG. Additionally, the requirement for responses to be greater than 72 hours in duration allows me to exclude military FDR operations that were not formally authorized by the USG. This ensures my analysis of the dependent variable cases is applicable to the research question at hand.

To identify the six cases that are being examined with a military FDR operation, I used two different types of documents. The first is the Humanitarian Service Medal (HSM) list. The HSM list serves as the only comprehensive record, with dates, for all types of

¹⁶⁹ Adapted from EM-DAT, The International Disaster Database, (2000-12, 2001-0620, 2004-0103, 2005-0567, 2007-0556, 2008-0184, 2010-0341, 2010-0552, 2013-0401, 2013-0433, 2016-0041; accessed October 1, 2018), https://www.emdat.be/emdat_db/.

foreign and domestic humanitarian operations from 1975 to 2018—including military FDR operations.¹⁷⁰ This list is insufficient, however, when examining the size of the military FDR operation because it does not provide details on the size of each military response. For this reason, I also used either reports or news articles that discuss each military response to the foreign disaster in order to determine response size (see Table 2).

Table 2. Summary: Dependent Variable Selection Criteria

Name of Operation	Country (Year)	Size of Response ^a	Length of Response (in days) ^b
Atlas Response	Mozambique (2000)	~ 900	37
Hurricane Stan	Guatemala (2005)	~ 100	21
Sea Angel II	Bangladesh (2007)	~ 1000	20
Caring Response	Myanmar (2008)	~ 1800	40
Pakistan Flooding	Pakistan (2010)	~ 600	279
Damayan	Philippines (2013)	~ 850	21

^a The approximate number of military personnel was derived from the cited news articles.¹⁷¹

^b The length of each response was derived from the HSM list.¹⁷²

D. METHODOLOGY

In this chapter, I used qualitative comparative analysis (QCA) in order to determine why or under what circumstances the USG authorizes military FDR operations. I chose this method because it serves as the middle ground between a case-oriented approach, which is an approach that is narrow in scope but in-depth in its review of each case, and a variable-oriented approach, which is an approach that is broad in terms of the number of

¹⁷⁰ “Humanitarian Service Medal (HSM)—Approved Operations” Department of Defense, last modified February 16, 2018, https://prhome.defense.gov/Portals/52/Documents/MRA_Docs/MPP/OEPM/HSM%20Approved%20Operations%20-%202018%2002%2016.pdf?ver=2018-02-16-151652-180.

¹⁷¹ Adapted from Deborah Zabarenko, “US Sends 900 Elite Troops to Mozambique,” Independent, last modified March 2, 2010, <https://www.iol.co.za/mercury/world/us-sends-900-elite-troops-to-mozambique-29822>; Kathleen T. Rhem, “Joint Task Force Bravo Spearheads Central America Security Efforts,” Department of Defense, last modified December 1, 2005, <http://archive.defense.gov/news/newsarticle.aspx?id=18667>; Peter R. Miller, “Marine Unit Provides Cyclone Relief in Bangladesh,” Department of Defense, last modified November 26, 2007, <http://archive.defense.gov/news/newsarticle.aspx?id=48217>; Moroney et al., *Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region*, 15-40; “Military Reaches Pakistan Flood Relief Milestone,” Department of Defense, last modified October 28, 2010, <http://archive.defense.gov/news/newsarticle.aspx?id=61461>; “Fact Sheet: U.S. Response to Typhoon Haiyan,” The White House, 2013, <https://obamawhitehouse.archives.gov/the-press-office/2013/11/19/fact-sheet-us-response-typhoon-haiyan>.

¹⁷² Department of Defense, “Humanitarian Service Medal (HSM)—Approved Operations.”

cases but shallow in terms of the understanding of each case.¹⁷³ The methodology of QCA—also referred to as a diversity-oriented approach—is a holistic comparison of a medium-sized number of cases and allows us to clearly identify patterns in the similarities and differences of each case.¹⁷⁴

Setting up the QCA approach began with identifying the theoretical interest; in this case, why the USG authorizes military FDR operations.¹⁷⁵ I then selected 12 hypotheses, which represented 12 causal conditions that are relevant to the authorization of military FDR. Last, I chose the 12 cases—six with the dependent variable and six without—to be utilized in the cross-case comparison. When testing each case, I looked for support or challenges to each hypothesis presented. In hypotheses with multiple indicators, I evaluated and coded each individual indicator and then combined them into an index. This allowed me to clearly understand which hypotheses do and do not apply to USG decisions to authorize military FDR operations.

E. FINDINGS

In this section, I discuss in detail the findings for each hypothesis. This is done by first restating each hypothesis and is followed by a brief discussion of the indicators and data utilized to test the validity of each hypothesis. I then discuss the findings and within each findings section, I discuss the level of impact each hypothesis may have on the USG's decision to authorize a military FDR operation. The impact of each hypothesis is determined by comparing the results of cases without military FDR with the results of cases with military FDR. The impacts are graded on a four-part scale: no impact (no difference), low impact (1%–25% difference), moderate impact (26%–50% difference), high impact (greater than 50% difference).

¹⁷³ Charles C. Ragin, "The Logic of Qualitative Comparative Analysis," *International Review of Social History* 43, no. 6 (1998), 105-108, doi:10.1017/S0020859000115111.

¹⁷⁴ Ragin, 108-114.

¹⁷⁵ Ragin, 108-109.

1. Hypothesis 1

This hypothesis proposes that the USG is more likely to authorize a military FDR operation when the destructiveness of the disaster is severe.

a. Data (H1)

I used three indicators to test the destructiveness of a disaster: number of deaths, number of displaced, and amount of economic damage. I combined these three indicators into an index variable and each indicator is ranked on 1–3 scale: low (1), medium (2), and high (3). My data for this hypothesis is taken from the Emergency Events Database (EM-DAT).¹⁷⁶

The first indicator is the number of deaths caused by a foreign disaster. For this indicator, deaths between 0 and 500 are identified as a low level of severity. When a disaster exceeds 500 deaths but did not exceed 5,000 deaths, the disaster was of medium severity. Any disaster that exceeded 5,000 deaths is a disaster of high severity (see Table 3).

Table 3. Data: Number of Deaths by Case Country¹⁷⁷

Disaster Type	Country (Year)	Number of Deaths	Deaths Score	Military Response
Flood	Mozambique (2000)	800	2	Yes
Flood	Algeria (2001)	921	2	No
Tropical Cyclone	Madagascar (2004)	363	1	No
Tropical Cyclone	Mexico (2005)	36	1	No
Tropical Cyclone	Guatemala (2005)	1,513	2	Yes
Tropical Cyclone	Bangladesh (2007)	4,234	2	Yes
Tropical Cyclone	Myanmar (2008)	138,366	3	Yes
Flood	Pakistan (2010)	1,985	2	Yes
Flood	Thailand (2010)	250	1	No
Tropical Cyclone	India (2013)	47	1	No
Tropical Cyclone	Philippines (2013)	7,354	3	Yes
Tropical Cyclone	Fiji (2016)	45	1	No

The second indicator is the number of people affected by the foreign disaster. The total number of affected is defined as the total number of people injured, left homeless, or

¹⁷⁶ EM-DAT, The International Disaster Database.

¹⁷⁷ Adapted from EM-DAT, The International Disaster Database.

requiring assistance to achieve their basic needs due to the disaster.¹⁷⁸ For this indicator, a low severity score consisted of any disaster that resulted in fewer than 500,000 persons affected. A medium severity disaster affected between 500,000 and 5 million persons. A disaster that exceeded 5 million persons affected is considered a disaster of high severity (see Table 4).

Table 4. Data: Number of Affected by Case Country¹⁷⁹

Disaster Type	Country (Year)	Number of Affected	Affected Score	Military Response
Flood	Mozambique (2000)	4,500,000	2	Yes
Flood	Algeria (2001)	45,423	1	No
Tropical Cyclone	Madagascar (2004)	988,139	2	No
Tropical Cyclone	Mexico (2005)	1,954,571	2	No
Tropical Cyclone	Guatemala (2005)	475,314	1	Yes
Tropical Cyclone	Bangladesh (2007)	8,978,541	2	Yes
Tropical Cyclone	Myanmar (2008)	2,420,000	2	Yes
Flood	Pakistan (2010)	20,359,496	3	Yes
Flood	Thailand (2010)	8,970,653	3	No
Tropical Cyclone	India (2013)	13,230,000	3	No
Tropical Cyclone	Philippines (2013)	16,106,870	3	Yes
Tropical Cyclone	Fiji (2016)	540,558	2	No

The last indicator used to measure each disaster's severity was the amount of damage caused by the disaster, measured in U.S. dollars. Under this indicator, a disaster that caused less than \$1 million in damage is considered a disaster of low severity. Disasters that caused \$1,000,001 to \$5 million in damage were considered disasters of medium severity. Disasters that exceed \$5 million in damage were considered disasters of high severity. To identify the severity of each disaster, the three scores were added up. Each disaster therefore scores between three and nine points, three being the lowest level of severity and nine being the highest (see Table 5).

¹⁷⁸ "Explanatory Notes," EM-DAT, The International Disaster Database, accessed October 12, 2018, <https://www.emdat.be/explanatory-notes>.

¹⁷⁹ Source: EM-DAT, The International Disaster Database, (2000-12, 2001-0620, 2004-0103, 2005-0567, 2007-0556, 2008-0184, 2010-0341, 2010-0552, 2013-0401, 2013-0433, 2016-0041).

Table 5. Data: Amount of Damage by Case Country¹⁸⁰

Disaster Type	Country (Year)	Amount of Damage	Damage Score	Military Response
Flood	Mozambique (2000)	\$419,200.00	1	Yes
Flood	Algeria (2001)	\$300,000.00	1	No
Tropical Cyclone	Madagascar (2004)	\$250,000.00	1	No
Tropical Cyclone	Mexico (2005)	\$2,500,000.00	2	No
Tropical Cyclone	Guatemala (2005)	\$988,300.00	2	Yes
Tropical Cyclone	Bangladesh (2007)	\$2,300,000.00	2	Yes
Tropical Cyclone	Myanmar (2008)	\$4,000,000.00	2	Yes
Flood	Pakistan (2010)	\$9,500,000.00	3	Yes
Flood	Thailand (2010)	\$332,000.00	1	No
Tropical Cyclone	India (2013)	\$633,471.00	2	No
Tropical Cyclone	Philippines (2013)	\$10,000,000.00	3	Yes
Tropical Cyclone	Fiji (2016)	\$600,000.00	2	No

a. Findings (H1)

Overall, the findings support the hypothesis. On average, the cases with military FDR operations scored an average of seven points. The cases without a military FDR operation averaged five points. Therefore, I find that the USG is more likely to authorize a military FDR operation when the destructiveness of the disaster is severe. When comparing the two totals, I found a difference of ~22%. In light of this, I find the severity of a disaster to have a low impact on the USG's authorization of military FDR operations (see Table 6).

Table 6. Index: Disaster Severity by Case

Disaster Type	Country (Year)	Deaths Score	Affected Score	Damage Score	Severity Score	Military Response
Flood	Mozambique (2000)	2	2	1	5	Yes
Flood	Algeria (2001)	2	1	1	4	No
Tropical Cyclone	Madagascar (2004)	1	2	1	4	No
Tropical Cyclone	Mexico (2005)	1	2	2	5	No
Tropical Cyclone	Guatemala (2005)	2	1	2	5	Yes
Tropical Cyclone	Bangladesh (2007)	2	3	2	7	Yes
Tropical Cyclone	Myanmar (2008)	3	2	2	7	Yes
Flood	Pakistan (2010)	2	3	3	8	Yes
Flood	Thailand (2010)	1	3	1	5	No
Tropical Cyclone	India (2013)	1	3	2	6	No
Tropical Cyclone	Philippines (2013)	3	3	3	9	Yes
Tropical Cyclone	Fiji (2016)	1	2	2	5	No

¹⁸⁰ Adapted from EM-DAT, The International Disaster Database.

2. Hypothesis 2

This hypothesis proposes that the USG is more likely to authorize a military FDR operation when the number of foreign disasters, in the 90 days prior to the request for host nation assistance, outweighs the number of civilian resources necessary to support them.

a. Data (H2)

The indicator used to measure for periods when the civilian capacity is overwhelmed is the number of disasters that occur 90 days before each of the selected cases.¹⁸¹ To do so, I analyzed an average number of disasters that occurred quarterly between the years 2000 and 2016.¹⁸² The average quarterly number of disasters—98—logically serves as the normal threshold expected by civilian services when attempting to plan relief resource requirements within a 90-day period. Next, I counted the number of disasters that occurred 90 days before each selected case. If the number of disasters prior to a selected case exceeds 98, the case is marked “yes,” which represents the civilian capacity being overwhelmed. If the number of disasters prior to the selected cases fails to exceed 98 disasters, then the case is marked “no.” My source for the number of global foreign disasters is the Emergency Events Database (EM-DAT).¹⁸³

b. Findings (H2)

After assessing each case, the findings do not support the hypothesis. Utilizing the method explained in the previous section, I found that five out of six disasters with a military FDR operation were assessed to be above average. Conversely, I assessed four of the six disasters without a military response to be above the selected average. In all, these

¹⁸¹ Per the EM-DAT website, a disaster includes any disaster that has a minimum of one of the following criteria: 10 deaths, 100 people affected, state declaration of emergency, a call for international assistance; “Frequently Asked Questions,” EM-DAT, The International Disaster Database, accessed October 12, 2018, <https://www.emdat.be/frequently-asked-questions>.

¹⁸² Utilizing the EM-DAT website, I assessed 6295 disasters had occurred in these years. When assessing the list of disasters, I excluded biological disasters, extraterrestrial disasters, and manmade disasters in order to more accurately account for disasters that would likely require the response elements associated with a military FDR operation due to a hydrometeorological natural disaster; EM-DAT, The International Disaster Database.

¹⁸³ EM-DAT, The International Disaster Database.

findings would suggest that the capacity of the international community is less of a factor overall than the literature would suggest. Due to this, I find no support for the hypothesis (see Table 7).

In terms of understanding why this hypothesis is incorrect, the findings could also suggest that assessing the number of disasters before a foreign disaster is an ineffective measure to understand when a gap in resources or capacity will occur within the humanitarian organization community. Additionally, the selected method may fail to capture circumstances when the military is requested for its unique capabilities. As suggested in Chapter III, the USG authorization of a military FDR operation can also occur when there is a unique capability (i.e., the ability to logistically move materials rapidly or the ability to mass produce water). Regardless, the method used to assess this hypothesis is not capable of taking these unique capabilities into account.

Table 7. Data: Civilian Capacity Overwhelmed¹⁸⁴

Disaster Type	Country (Year)	Number of Disasters 90 Days Prior	Above Average	Military Response
Flood	Mozambique (2000)	99	Yes	Yes
Flood	Algeria (2001)	100	Yes	No
Tropical Cyclone	Madagascar (2004)	89	No	No
Tropical Cyclone	Mexico (2005)	142	Yes	No
Tropical Cyclone	Guatemala (2005)	142	Yes	Yes
Tropical Cyclone	Bangladesh (2007)	139	Yes	Yes
Tropical Cyclone	Myanmar (2008)	70	No	Yes
Flood	Pakistan (2010)	110	Yes	Yes
Flood	Thailand (2010)	130	Yes	No
Tropical Cyclone	India (2013)	116	Yes	No
Tropical Cyclone	Philippines (2013)	105	Yes	Yes
Tropical Cyclone	Fiji (2016)	77	No	No

3. Hypothesis 3

This hypothesis proposes that the USG is more likely to authorize a military FDR operation when the disaster location is easily accessible.

¹⁸⁴ Adapted from EM-DAT, The International Disaster Database.

a. Data (H3)

The indicator used to measure each disaster's accessibility is the amount of distance between each selected case and the closest U.S. military base. When assessing this indicator, I first identified the closest military base through the review of the DoD's annual *Base Structure Reports*. It is important to highlight that when selecting the closest base, I used two criteria: the requirement for there to be more than 200 military personnel assigned to the post and a requirement for the base to be housed on more than 10 acres of land. This selection criteria is important because the USG has a number of bases that are used for specific strategic, operational, or tactical functions that are likely incapable of supporting enough equipment or supplies to serve as hubs for a military FDR operation (i.e., the use of small bases for special forces to train indigenous soldiers or the use of a base as a communications hub). By utilizing those criteria, I was able to sift out smaller bases that are used for special missions and are likely inadequate in personnel or supplies needed to respond to foreign disasters. After reviewing the DoD *Structure Report* for each of the years associated with a selected case, I used Google Maps to determine the straight-line distance from the closest base identified to the closest border of each case country. To identify the accessibility of each disaster at the end of testing, the distances were added up and divided by the number of cases with or without a military FDR operation. The results of this function were then compared to determine which category had the least number of miles.

b. Findings (H3)

The findings of this analysis support the hypothesis. Utilizing the method previously explained, I found the average distance from cases with military FDR operations were approximately 400 miles closer to a U.S. military base than cases without. Therefore, the USG is more likely to authorize a military FDR operation when the disaster's location is easily accessible. A 26% difference was identified between the average of cases with and without a military FDR operation. Due to this, I find the accessibility of a disaster to have a moderate impact on the USG's authorization of military FDR operations (see Table 8).

Table 8. Data: Accessibility of Case Country Disasters

Disaster Type	Country (Year)	Closest U.S. Military Base ^a	Distance in Miles ^b	Military FDR
Flood	Mozambique (2000)	NSF Diego Garcia, Diego Garcia	2,197	Yes
Flood	Algeria (2001)	Aviano Air Base, Italy	683.8	No
Tropical Cyclone	Madagascar (2004)	NSF Diego Garcia, Diego Garcia	1,576	No
Tropical Cyclone	Mexico (2005)	Fort Bliss, USA	5	No
Tropical Cyclone	Guatemala (2005)	JTF Bravo, Honduras	144	Yes
Tropical Cyclone	Bangladesh (2007)	Bagram Air Base, Afghanistan	1,283	Yes
Tropical Cyclone	Myanmar (2008)	Bagram Air Base, Afghanistan	1,646	Yes
Flood	Pakistan (2010)	Bagram Air Base, Afghanistan	114	Yes
Flood	Thailand (2010)	Seoul, South Korea	1,952	No
Tropical Cyclone	India (2013)	Seoul, South Korea	1,751	No
Tropical Cyclone	Philippines (2013)	Navy Base Guam, Guam	1,359	Yes
Tropical Cyclone	Fiji (2016)	JB Pearl Harbor-Hickem, USA ^c	3,157	No

^a The closest base was derived from DoD *Base Structure Report* that coincide with the year of each case's disaster. The following *Base Structure Reports* were used: 2001, 2004, 2005, 2008, 2010, 2013, 2017.¹⁸⁵

^b All distances were derived using Google Maps "Measure Distance" tool.

^c The fiscal year 2016 *Base Structure Report* was unavailable, in light of this, I used fiscal year 2017 *Base Structure Report*.

4. Hypothesis 4

This hypothesis proposes that the USG is more likely to authorize a military FDR operation if it has a long history of military cooperation with the host state.

a. Data (H4)

The indicator used to analyze which cases had a long history of military cooperation is the number of previous military FDR operations in each case's country prior to the

¹⁸⁵ Adapted from Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2001 Baseline* (Washington, DC: Department of Defense, 2001), <https://archive.defense.gov/news/Aug2001/basestructure2001.pdf>; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2004 Baseline* (Washington, DC: Department of Defense, 2004), https://archive.defense.gov/pubs/20040910_2004BaseStructureReport.pdf; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2005 Baseline* (Washington, DC: Department of Defense, 2005), https://archive.defense.gov/pubs/20050527_2005BSR.pdf; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2008 Baseline* (Washington, DC: Department of Defense, 2008), https://www.globalsecurity.org/military/library/report/2007/070930_fy08_baseline_dod_bsr.pdf; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2010 Baseline* (Washington, DC: Department of Defense, 2010), https://www.globalsecurity.org/military/library/report/2009/090930_fy10_baseline_dod_bsr.pdf; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2013 Baseline* (Washington, DC: Department of Defense, 2013), https://www.globalsecurity.org/military/library/report/2012/120930_fy13_baseline_dod_bsr.pdf; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2017 Baseline* (Washington, DC: Department of Defense, 2017), <https://www.acq.osd.mil/eie/Downloads/BSI/Base%20Structure%20Report%20FY17.pdf>;

selected case's disaster. To assess this indicator, I identified the number of military FDR operations held in each country within a 10-year period of the selected disaster cases. Once identified, I added up the total number of military FDR operations conducted. If there were more than two military FDR operations prior to the disaster of a selected case, then the selected case was deemed to have a long history of military cooperation. To interpret my findings, a score of 1 was assigned to cases with a long history of military cooperation. Conversely, a score of 0 was assigned to cases that did not. The findings were determined by totaling up the scores for each group—those cases with a military FDR operation and cases without. The impact of this indicator was assessed by analyzing the divergence between the two case type's totals. My source for understanding which countries had a history of military FDR operations is the Humanitarian Service Medal list.¹⁸⁶

b. Findings (H4)

The findings of this analysis support the hypothesis. Of the cases with military FDR operations, two were found to have a long history of cooperation. Conversely, of the cases without a military FDR operation, none was found to have a long history of cooperation. The numbers suggest that the USG is more likely to authorize a military FDR operation if there is a long history of cooperation. In terms of impact, cases with military FDR operations were 33% more likely to have a long history of cooperation. With that in mind, I find this hypothesis to have a moderate impact on the USG's decision to authorize a military FDR operation (see Table 9).

¹⁸⁶ Department of Defense, "Humanitarian Service Medal (HSM)—Approved Operations."

Table 9. Data: Presence of a History of Cooperation¹⁸⁷

Disaster Type	Country (Year)	Number of Previous Responses	History of Cooperation	Military Response
Flood	Mozambique (2000)	0	No	Yes
Flood	Algeria (2001)	0	No	No
Tropical Cyclone	Madagascar (2004)	1	No	No
Tropical Cyclone	Mexico (2005)	1	No	No
Tropical Cyclone	Guatemala (2005)	0	No	Yes
Tropical Cyclone	Bangladesh (2007)	2	Yes	Yes
Tropical Cyclone	Myanmar (2008)	0	No	Yes
Flood	Pakistan (2010)	1	No	Yes
Flood	Thailand (2010)	0	No	No
Tropical Cyclone	India (2013)	1	No	No
Tropical Cyclone	Philippines (2013)	6	Yes	Yes
Tropical Cyclone	Fiji (2016)	0	No	No

5. Hypothesis 5

This hypothesis proposes that the USG is more likely to authorize a military FDR operation when a country is strategically important to it.

a. Data (H5)

I used three indicators to test the strategic importance of each case's country to the USG: standing alliances, bases in country, and adjacency to a declared U.S. conflict zone. I combined these three indicators into an index variable. Each case is marked "yes" for the presence of the criteria for each indicator or "no" for the absence of the criteria for each indicator. Case countries must have one "yes" mark in the index column in order to be deemed strategically important.

The first indicator is the presence of a standing alliance between each case's country and the USG. For this indicator, I utilized the formal alliance data set established by *The Correlates of War Project*, which identifies countries that share a defense pact, neutrality treaty, or non-aggression treaty with the USG. I identified the applicability of this indicator to each case by determining which country has an alliance with the USG prior to the start date of each case's disaster. Case countries with this criterion present for this indicator were deemed to be strategically important to the USG (see Table 10).

¹⁸⁷ Department of Defense.

Table 10. Data: Standing Alliances with the USG¹⁸⁸

Disaster Type	Country (Year)	Standing Alliance	Index	Military Response
Flood	Mozambique (2000)	No	No	Yes
Flood	Algeria (2001)	No	No	No
Tropical Cyclone	Madagascar (2004)	No	No	No
Tropical Cyclone	Mexico (2005)	Yes	Yes	No
Tropical Cyclone	Guatemala (2005)	Yes	Yes	Yes
Tropical Cyclone	Bangladesh (2007)	Yes	Yes	Yes
Tropical Cyclone	Myanmar (2008)	Yes	Yes	Yes
Flood	Pakistan (2010)	Yes	Yes	Yes
Flood	Thailand (2010)	Yes	Yes	No
Tropical Cyclone	India (2013)	Yes	Yes	No
Tropical Cyclone	Philippines (2013)	Yes	Yes	Yes
Tropical Cyclone	Fiji (2016)	No	No	No

The second indicator is the presence of a U.S. military base in each case's country. For this indicator, I utilized DoD *Base Structure Reports* to determine which countries had bases one year prior to the disaster. Case countries with the criteria of this indicator present were deemed to be strategically important (see Table 11).

Table 11. Data: U.S. Bases in Case Country¹⁸⁹

Disaster Type	Country (Year)	Bases in Country	Index	Military FDR
Flood	Mozambique (2000)	No	No	Yes
Flood	Algeria (2001)	No	No	No
Tropical Cyclone	Madagascar (2004)	No	No	No
Tropical Cyclone	Mexico (2005)	No	No	No
Tropical Cyclone	Guatemala (2005)	No	No	Yes
Tropical Cyclone	Bangladesh (2007)	No	No	Yes
Tropical Cyclone	Myanmar (2008)	No	No	Yes
Flood	Pakistan (2010)	No	No	Yes
Flood	Thailand (2010)	No	No	No
Tropical Cyclone	India (2013)	No	No	No
Tropical Cyclone	Philippines (2013)	No	No	Yes
Tropical Cyclone	Fiji (2016)	No	No	No

¹⁸⁸ Douglas Gibler, "Formal Alliances version 4.1," Correlates of War Project, April 11, 2003, <http://www.correlatesofwar.org/data-sets/formal-alliances>.

¹⁸⁹ Adapted from Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2001 Baseline*; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2004 Baseline*; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2005 Baseline*; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2008 Baseline*; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2010 Baseline*; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2013 Baseline*; Department of Defense, *Base Structure Report (A Summary of DoD's Real Property Inventory) Fiscal Year 2017 Baseline*.

The last indicator is the physical adjacency of each case's country to a USG designated conflict zone. For this indicator, I used the "Armed Forces Tax Guide" to determine which areas were deemed combat zones and corresponded that information with each case's disaster year. Once identified, I used Google Maps to determine the straight-line distance between each case's country and the designated combat zones. If a country was found to be within 500 miles of a combat zone then it was deemed to be strategically important. When identifying which cases are of strategic importance to the USG at the end of testing, I added up the scores. Cases that score one or more points will be considered strategically important to the USG (see Table 12).

Table 12. Data: Adjacency to a U.S. Combat Zone.¹⁹⁰

Disaster Type	Country (Year)	Near Conflict Zone	Index	Military Response
Flood	Mozambique (2000)	No	No	Yes
Flood	Algeria (2001)	No	No	No
Tropical Cyclone	Madagascar (2004)	No	No	No
Tropical Cyclone	Mexico (2005)	No	No	No
Tropical Cyclone	Guatemala (2005)	No	No	Yes
Tropical Cyclone	Bangladesh (2007)	No	No	Yes
Tropical Cyclone	Myanmar (2008)	No	No	Yes
Flood	Pakistan (2010)	Yes	Yes	Yes
Flood	Thailand (2010)	No	No	No
Tropical Cyclone	India (2013)	Yes	Yes	No
Tropical Cyclone	Philippines (2013)	Yes	Yes	Yes
Tropical Cyclone	Fiji (2016)	No	No	No

¹⁹⁰ Adapted from "Publication 3: Armed Forces' Tax Guide 2000," Department of the Treasury, accessed October 1, 2018, 6, <https://www.irs.gov/pub/irs-prior/p3--2000.pdf>; "Publication 3: Armed Forces' Tax Guide 2001," Department of the Treasury, accessed October 1, 2018, 7, <https://www.irs.gov/pub/irs-prior/p3--2001.pdf>; "Publication 3: Armed Forces' Tax Guide 2004," Department of the Treasury, accessed October 1, 2018, 7, <https://www.irs.gov/pub/irs-prior/p3--2004.pdf>; "Publication 3: Armed Forces' Tax Guide 2005," Department of the Treasury, accessed October 1, 2018, 7, <https://www.irs.gov/pub/irs-prior/p3--2005.pdf>; "Publication 3: Armed Forces' Tax Guide 2007," Department of the Treasury, accessed October 1, 2018, 8, <https://www.irs.gov/pub/irs-prior/p3--2007.pdf>; "Publication 3: Armed Forces' Tax Guide 2008," Department of the treasury, accessed October 1, 2018, 8, <https://www.irs.gov/pub/irs-prior/p3--2008.pdf>; "Publication 3: Armed Forces' Tax Guide 2010," Department of the treasury, accessed October 1, 2018, 9, <https://www.irs.gov/pub/irs-prior/p3--2010.pdf>; "Publication 3: Armed Forces' Tax Guide 2013," Department of the Treasury, accessed October 1, 2018, 9, <https://www.irs.gov/pub/irs-prior/p3--2013.pdf>; "Publication 3: Armed Forces' Tax Guide 2016," Department of the Treasury, accessed October 1, 2018, 13-14, <https://www.irs.gov/pub/irs-prior/p3--2016.pdf>.

b. Findings (H5)

Altogether, the findings support the hypothesis. Of the cases with military FDR operations, five were found to be strategically important to the USG. Conversely, three cases without a military FDR operation were found to be of strategic importance to the USG. The numbers suggest that the USG is more likely to authorize a military FDR operation if the country is strategically important. In terms of impact, cases with military FDR operation were ~33% more likely to be strategically important to the USG. Due to this fact, I find the hypothesis to have a moderate impact on the USG's decision to authorize a military FDR operation (see Table 13).

Table 13. Index: Strategic Importance of Each Case Country to the USG

Disaster Type	Country (Year)	Standing Alliances	Bases in Country	Near Conflict Zone	Strategically Important	Military Response
Flood	Mozambique (2000)	No	No	No	No	Yes
Flood	Algeria (2001)	No	No	No	No	No
Tropical Cyclone	Madagascar (2004)	No	No	No	No	No
Tropical Cyclone	Mexico (2005)	Yes	No	No	Yes	No
Tropical Cyclone	Guatemala (2005)	Yes	No	No	Yes	Yes
Tropical Cyclone	Bangladesh (2007)	Yes	No	No	Yes	Yes
Tropical Cyclone	Myanmar (2008)	Yes	No	No	Yes	Yes
Flood	Pakistan (2010)	Yes	No	Yes	Yes	Yes
Flood	Thailand (2010)	Yes	No	No	Yes	No
Tropical Cyclone	India (2013)	Yes	No	Yes	Yes	No
Tropical Cyclone	Philippines (2013)	Yes	No	Yes	Yes	Yes
Tropical Cyclone	Fiji (2016)	No	No	No	No	No

6. Hypothesis 6

This hypothesis proposes that the USG is more likely to authorize a military FDR operation if assistance to the host nation is likely to result in advances in diplomatic relations with the host nation.

a. Data (H6)

I used two indicators to test each case for increases in diplomatic relations: the signing of bilateral agreements—in particular economic, property, and military bilateral agreements—and increases in military cooperation. I combined these two indicators into an index variable. There are two sources for establishing increases in diplomatic relations between each of the selected cases and the USG: The U.S. DoS *Treaties in Force* report and the Security Assistance Monitor Trainee Dataset for Security Assistance.

The first indicator is the signing of new or renewed bilateral agreements between each case country and the USG. For this indicator, I used the State Department’s *Treaties in Force Report* to identify which countries signed new bilateral agreements under the defense, property, and trade categories. I chose these categories, in particular, because each signifies a substantial gain for the USG in terms of relations. In terms of applicability criteria, the signing of the bilateral agreement must occur within two years of the start date of each case’s disaster. This criterion is assigned to represent the limited window of opportunity created by a military FDR operation. The signing of bilateral agreements after two years is more than likely due to other outside forces. The presence of a new or renewed bilateral agreement in the designated timeframe is deemed to have increased diplomatic relations with the USG and are marked “yes” under the index (see Appendix A, Table 24).

The second indicator is the presence of increased military cooperation between each case country and the USG. For this indicator, I used the Security Assistance Monitoring Trainees Database to identify which case countries conducted increased military training with the USG. In particular, I assessed the total number of personnel trained under two different programs: the International Military Education and Training (IMET) Program and the Non-Security Assistance of the Unified Command. Looking at both programs is logical

because it allows for the perspective from two different lenses. IMET, a training program normally held in the United States, serves as a lens for increased training with each case country inside the United States. The Non-Security Assistance training serves as the lens for U.S. military training outside the United States, which includes disaster response training (see Appendix A, Table 25).

When accessing the applicability of this indicator to each case country, I identified the number of host nation personnel trained by the USG in both programs during the calendar year of the disaster. I then compared this number to the average number of host nation personnel trained two years after the military FDR operation. Once complete, I combined the two indicators into an index. Case countries (in either indicator) with an increase in the number of personnel trained two years after the military FDR operation are deemed to be cases with increased diplomatic relations with the USG.

b. Findings (H6)

The findings of my analysis do not support this hypothesis. Of the cases with military FDR operations, only two had increased diplomatic relations with the USG after the military FDR operation. Conversely, four of the cases without a military FDR operation were found to have increased diplomatic relations with the USG after the case disaster. The numbers suggest that the chance for increased diplomatic relations has no impact on the authorization of a military FDR operation (see Table 14).

When assessing why this finding does not support the hypothesis, I believe the most logical reason is due to an inability by the host nation to support the training of an increased number of personnel. This can be due to three reasons: the case country cannot spare the personnel, the host nation or the USG lacks the number of linguists required to train a sizeable contingent, and the host nation's personnel lack the linguistic skills to receive the training in English.

Table 14. Index: Presence of Increase Diplomatic Relations with USG

Disaster Type	Country (Year)	New or Renewed Bilateral Agreements	Increased Military Cooperation	Increase Diplomatic Relations	Military Response
Flood	Mozambique (2000)	No	No	No	Y
Flood	Algeria (2001)	No	Yes	Yes	N
Tropical Cyclone	Madagascar (2004)	No	Yes	Yes	N
Tropical Cyclone	Mexico (2005)	Yes	No	Yes	N
Tropical Cyclone	Guatemala (2005)	Yes	No	Yes	Y
Tropical Cyclone	Bangladesh (2007)	No	No	No	Y
Tropical Cyclone	Myanmar (2008)	No	No	No	Y
Flood	Pakistan (2010)	No	No	No	Y
Flood	Thailand (2010)	No	No	No	N
Tropical Cyclone	India (2013)	No	Yes	Yes	N
Tropical Cyclone	Philippines (2013)	Yes	Yes	Yes	Y
Tropical Cyclone	Fiji (2016)	No	No	No	N

7. Hypothesis 7

This hypothesis proposes that the USG is more likely to authorize a military FDR operation if the host nation is vulnerable to the threat of political instability.

a. Data (H7)

In Chapter III, I determined that there were three indicators requiring analysis to determine the validity of this hypothesis: political instability, terrorism, and civil war/unrest. However, during my research I found that one of the World Bank governance indicators encompassed all three categories under one index. Due to this, I used the World Bank's "Political Stability and Absence of Violence" index in place of the initial indicators.

Using this data, I determined the political stability of each case's country during the year of the foreign disaster by first identifying the pre-established stability percentile of each case. Once identified, I used the criteria of being below the 25th percentile in stability to identify states that are at the highest risk of political instability after a foreign disaster. Cases that scored below the 25th percentile received a score of 1 point. Cases above the 25th percentile received a score of 0 points. The totals were then added up under the two tested categories—cases with and cases without a military FDR operation. The total scores were then compared to establish the validity of the hypothesis (see Table 15).

b. Findings (H7)

The findings of this analysis suggest that my hypothesis is correct. Of the cases with military FDR operations, five were found to be in the highest risks for instability. Conversely, of the cases without a military FDR operation, three were found to be within the threshold for highest risk of instability. The numbers suggest that the USG is more likely to authorize a military FDR operation if the country is politically unstable. In terms of impact, cases with military FDR operation were ~33% more likely to be in the threshold for high risk of instability. Therefore, I find the hypothesis to have a moderate impact on the USG's decision to authorize a military FDR operation.

Table 15. Data: Political Stability Rating¹⁹¹

Disaster Type	Country (Year)	Stability Percentile	High Risk of Instability	Military Response
Flood	Mozambique (2000)	41%	No	Yes
Flood	Algeria (2001) ^a	9%*	Yes	No
Tropical Cyclone	Madagascar (2004)	54%	No	No
Tropical Cyclone	Mexico (2005)	33%	No	No
Tropical Cyclone	Guatemala (2005)	22%	Yes	Yes
Tropical Cyclone	Bangladesh (2007)	9%	Yes	Yes
Tropical Cyclone	Myanmar (2008)	15%	Yes	Yes
Flood	Pakistan (2010)	0%	Yes	Yes
Flood	Thailand (2010)	10%	Yes	No
Tropical Cyclone	India (2013)	12%	Yes	No
Tropical Cyclone	Philippines (2013)	16%	Yes	Yes
Tropical Cyclone	Fiji (2016)	79%	No	No

^a Data for 2001 was not available; the Algeria stability rating is the average of the 2000 and 2002 calendar years combined.

8. Hypothesis 8

This hypothesis proposes that the USG is more likely to authorize military FDR operations if the host nation is of economic importance to the United States.

a. Data (H8)

I used three indicators to test the economic importance of each case: the total value of U.S. Foreign Direct Investments (FDI) in each case country, the value of all exports

¹⁹¹ Daniel Kaufman, Aart Kraay, and M. Mastruzzi, "World Governance Indicators: Political Stability and Absence of Violence/Terrorism," The World Bank Group, accessed October 15, 2018, <http://info.worldbank.org/governance/wgi/index.aspx#reports>.

from each case country to the United States and the value of all imports to each case country from the United States. After assessing all three indicators, I combined them into an index variable in order to more broadly assess each country's economic importance to the USG. The sources used to interpret how economically important a case country is to the USG are from two different websites. For the FDI data, I used the U.S. Department of Commerce's Bureau of Economic Analysis data under each case's country profile. The import and export trade data are derived from the U.S. Census Bureau website under each case's country statistics. In terms of methodology, I utilized a universal system for analysis of each indicator. When assessing the value of each indicator, I chose to use the fiscal data for the year prior to each case's disaster. By utilizing this criterion, I was able to analyze whether a host nation was important to the USG prior to the year of each disaster's occurrence.

As indicated, I identified the total value of all three indicators one year prior to each of the selected case disasters. For this hypothesis, I identified the actual value of U.S. FDI in the case country, the total imports from the case country to the United States, and the total exports from the case country to the United States. This is followed by a determination of what percentage each case made up of the total value of U.S. FDI, U.S. imports, and U.S. exports, as it refers to the designated fiscal year. I did this by identifying each indicator's value for each of the cases in the desired year and divided it by the total value. For all the indicators, I used a criterion of 1% to determine if the case study country was important to the USG. By that I mean, when a country was found to be above 1% of the USG's total value in the selected indicator, it was marked "yes" for being economically important. If the value was below 1%, the selected case was marked as not being economically important to the USG. Any case marked "yes" in any one indicator was deemed a country of economic importance to the USG (see Appendix B, Tables 26, 27 and 28, for indicator specific data).

b. Findings (H8)

After totaling the scores in an index variable, I found that the findings do not support my hypothesis. Of the cases with military FDR operations, none were found to be

economically important to the USG. Conversely, of the cases without a military FDR operation, three were found to be economically important to the USG. The numbers suggest that the economic importance of a country is likely not a key consideration of the USG when determining to authorize a military FDR operation. This finding is likely due to the fact that countries that are economically important to the United States have larger economies, which could also translate to a larger capacity to handle disasters within a host nation (see Table 16).

Table 16. Index: Economic Importance of each Case Country to the USG

Disaster Type	Country (Year)	U.S. Foreign Direct Investment	Exports to U.S.	Imports from U.S.	Economically Important	Military Response
Flood	Mozambique (2000)	No	No	No	No	Yes
Flood	Algeria (2001)	No	No	No	No	No
Tropical Cyclone	Madagascar (2004)	No	No	No	No	No
Tropical Cyclone	Mexico (2005)	No	Yes	Yes	Yes	No
Tropical Cyclone	Guatemala (2005)	No	No	No	No	Yes
Tropical Cyclone	Bangladesh (2007)	No	No	No	No	Yes
Tropical Cyclone	Myanmar (2008)	No	No	No	No	Yes
Flood	Pakistan (2010)	No	No	No	No	Yes
Flood	Thailand (2010)	No	No	Yes	Yes	No
Tropical Cyclone	India (2013)	Yes	Yes	Yes	Yes	No
Tropical Cyclone	Philippines (2013)	No	No	No	No	Yes
Tropical Cyclone	Fiji (2016)	No	No	No	No	No

9. Hypothesis 9

This hypothesis proposes that the USG is more likely authorize a military FDR operation if failure to support the host nation is likely to lead it to seek closer ties with revisionist states.

a. Data (H9)

I used two indicators to test the closeness of each case country to a revisionist state: physical adjacency to a revisionist state's maritime claim and a land proximity of 500 miles from the revisionist state. I combined these two indicators into an index variable and used Google Maps to measure proximity.

As discussed earlier, there are two states worthy of the title “revisionist”: China and Russia. During my research for this hypothesis, I found Russia as a whole was inapplicable to the indicators and criteria selected. Due to this, I have focused all my analysis on China as a revisionist state.

The first indicator is an analysis of which cases border a Chinese maritime claim. In particular, I focused this analysis on states that border the South China Sea. If a selected case bordered the South China Sea, the case was marked “yes.” Conversely, if it was not bordering the South China Sea, then it was marked “no” (see Table 17).

Table 17. Data: Adjacency to Chinese Maritime Claim¹⁹²

Disaster Type	Country (Year)	Adjacent to Chinese Maritime Claim	Index	Military Response
Flood	Mozambique (2000)	No	No	Yes
Flood	Algeria (2001)	No	No	No
Tropical Cyclone	Madagascar (2004)	No	No	No
Tropical Cyclone	Mexico (2005)	No	No	No
Tropical Cyclone	Guatemala (2005)	No	No	Yes
Tropical Cyclone	Bangladesh (2007)	No	No	Yes
Tropical Cyclone	Myanmar (2008)	Yes	Yes	Yes
Flood	Pakistan (2010)	No	No	Yes
Flood	Thailand (2010)	No	No	No
Tropical Cyclone	India (2013)	No	No	No
Tropical Cyclone	Philippines (2013)	Yes	Yes	Yes
Tropical Cyclone	Fiji (2016)	No	No	No

The second indicator is a measurement of states within 500 miles of the Chinese state borders. For this indicator, any state that was within the established proximity is marked “yes.” Any case that does not fall within the established proximity is marked “no” (see Table 18).

¹⁹² “China Map,” Google Maps, accessed October 15, 2018, <https://www.google.com/maps/@35.8968764,106.6223258,3.86z>.

Table 18. Data: Proximity to Chinese State Borders¹⁹³

Disaster Type	Country (Year)	Proximity to Chinese State	Index	Military Response
Flood	Mozambique (2000)	No	No	Yes
Flood	Algeria (2001)	No	No	No
Tropical Cyclone	Madagascar (2004)	No	No	No
Tropical Cyclone	Mexico (2005)	No	No	No
Tropical Cyclone	Guatemala (2005)	No	No	Yes
Tropical Cyclone	Bangladesh (2007)	Yes	Yes	Yes
Tropical Cyclone	Myanmar (2008)	Yes	Yes	Yes
Flood	Pakistan (2010)	Yes	Yes	Yes
Flood	Thailand (2010)	Yes	Yes	No
Tropical Cyclone	India (2013)	Yes	Yes	No
Tropical Cyclone	Philippines (2013)	Yes	Yes	Yes
Tropical Cyclone	Fiji (2016)	No	No	No

b. Findings (H9)

After totaling the indicators by case type (those with or without a military FDR operation), the findings suggest that my hypothesis is correct. Of the six cases with military FDR operations, four were found to be within China’s area of influence. Conversely, of the six cases without a military FDR operation, only two cases were found to be in the Chinese areas of influence. The numbers suggest that the United States is more likely to authorize a military FDR operation when the country is within the area of influence of a revisionist state—in this case, China.

This discovery is particularly interesting because the findings coincide with the pre-presidential claims of President Obama to shift focus to the Pacific.¹⁹⁴ Additionally, the findings also suggest that the decision to authorize military FDR operations could coincide with the regional focus of each presidential administration. In terms of impact, I found cases with military FDR were ~33% more likely to be within the area of influence of a revisionist state. Therefore, I find this hypothesis to have a moderate impact on the USG’s decision to authorize a military FDR operation (see Table 19).

¹⁹³ “China Map”

¹⁹⁴ Lieberthal, “The American Pivot to Asia.”

Table 19. Index: Revisionist State Threat

Disaster Type	Country (Year)	South China Sea	Chinese State	Revisionist State Threat	Military Response
Flood	Mozambique (2000)	No	No	No	Yes
Flood	Algeria (2001)	No	No	No	No
Tropical Cyclone	Madagascar (2004)	No	No	No	No
Tropical Cyclone	Mexico (2005)	No	No	No	No
Tropical Cyclone	Guatemala (2005)	No	No	No	Yes
Tropical Cyclone	Bangladesh (2007)	No	Yes	Yes	Yes
Tropical Cyclone	Myanmar (2008)	Yes	Yes	Yes	Yes
Flood	Pakistan (2010)	No	Yes	Yes	Yes
Flood	Thailand (2010)	No	Yes	Yes	No
Tropical Cyclone	India (2013)	No	Yes	Yes	No
Tropical Cyclone	Philippines (2013)	Yes	Yes	Yes	Yes
Tropical Cyclone	Fiji (2016)	No	No	No	No

10. Hypothesis 10

This hypothesis proposes the USG is more likely to authorize a military FDR operation if domestic pressure to support a foreign disaster is present.

a. Data (H10)

The indicator I chose to assess domestic pressure is the amount of media coverage associated with each selected case. There are a number of forms of media; for the purpose of this indicator, I reviewed *New York Times* articles to assess the amount of media coverage. The reasoning behind selecting the *New York Times* as the consulted database is twofold: first, the *New York Times* is one of the largest newspapers (in terms of readers) in the United States. Second, the *New York Times*' database is presented as one of the most in-depth archives of newspaper articles. In order to assess the amount of media coverage associated with each case, I first identified the start date of each case's disaster. I then referenced the *New York Times* article database for articles written five days prior to the start of the foreign disaster and 10 days after the start date of the foreign disaster in order to provide ample time for domestic pressure to build through the media. In terms of identifying the domestic pressure factor, I used the criteria of identifying five or more articles to signify cases of high media or extensive coverage. The overall impact of the hypothesis is determined by the disparity between the total number of cases with high media coverage by case type.

b. Findings (H10)

After comparing the averages, the findings suggest that my hypothesis is correct. Of the cases with military FDR operations, five cases were found to have periods of extensive media coverage. Conversely, among the cases without military FDR operations, only two cases were found to have periods of extensive media coverage. The numbers suggest the USG is more likely to authorize a military FDR operation when there is a significant amount of media coverage on the disaster which, in turn, becomes domestic pressure to act. In terms of impact, cases with military FDR operations were 50% more likely to have periods of extensive media coverage. This finding suggests that the amount of media coverage a foreign disaster receives has a high impact on the USG's authorization of a military FDR operation (see Table 20).

Table 20. Data: Presence of Domestic Pressure

Disaster Type	Country (Year)	Total Number of Articles ^a	Extensive Coverage	Military Response
Flood	Mozambique (2000)	0	No	Yes
Flood	Algeria (2001)	1	No	No
Tropical Cyclone	Madagascar (2004)	2	No	No
Tropical Cyclone	Mexico (2005)	6	Yes	No
Tropical Cyclone	Guatemala (2005)	6	Yes	Yes
Tropical Cyclone	Bangladesh (2007)	7	Yes	Yes
Tropical Cyclone	Myanmar (2008)	20	Yes	Yes
Flood	Pakistan (2010)	7	Yes	Yes
Flood	Thailand (2010)	0	No	No
Tropical Cyclone	India (2013)	7	Yes	No
Tropical Cyclone	Philippines (2013)	66	Yes	Yes
Tropical Cyclone	Fiji (2016)	2	No	No

^a The total number of articles was identified by using the *New York Times* article database. Tropical storms were researched using the tropical cyclone name. When searching for articles referring to floods, I utilized a combination of the words “flood,” “deployment,” and “disaster relief” to establish the article count.

11. Hypothesis 11

This hypothesis proposes that the USG is less likely to engage in military FDR operations when it cannot afford to financially.

a. Data (H11)

The indicator I chose to assess the affordability for military FDR operations is the combination of the DoD budget for such operations, the Overseas Humanitarian, Disaster,

and Civic Aid appropriation (OHDACA), as well as the USAID budget utilized to supplement DoD military FDR operations, the International Disaster Aid appropriation. I established the total budget for each fiscal year by referring to the budget request for the DoD for that year. In particular, I identified the desired information by referring to the actual OHDACA budget appropriation presented in the OHDACA budget estimate for the fiscal year of each case's disaster. When identifying the yearly appropriation for the International Disaster Aid account, I used the annual congressional budget justifications of the USAID. I identified the actual appropriation for each case by referencing the budgetary justification for the fiscal year after each case's disaster. Upon identification of all the desired information for all the selected cases, I added and averaged the OHDACA and International Disaster Aid appropriations for all cases with military FDR operations as well as all the cases without a military FDR operation. Afterward, the results of those calculations were compared. The hypothesis is supported if the total average budget of the cases with military FDR operations were larger than the total average budget of the cases without military FDR operations. If the hypothesis is supported, the impact of that hypothesis is assessed by how much disparity there is between the total average budgets.

b. Findings (H11)

The findings of my analysis do not support this hypothesis. Utilizing the method explained in the previous section, I found the average yearly appropriation for cases with a military FDR operation was \$41 million less than the average yearly appropriation of cases without a military FDR operation. This finding suggests that budgetary restriction is not likely a major factor for the authorization of a military FDR operation (see Table 21).

When assessing why my analysis did not support the hypothesis, I believe there are two logical reasons: the use of supplemental appropriations and the unique ability for the DoD and USAID/OFDA to retain appropriated funds after the close of a fiscal year. During my review of the DoD OHDACA budget estimates, I found that in cases where a military FDR operation exceeded the budget of the DoD, a supplemental appropriation was authorized to pay the DoD. This would strongly suggest that the budget is less of a concern to the USG. Second, when reviewing the budget estimates for USAID/OFDA, I found that almost every fiscal year had a surplus of funds that was created out of the carryover function established within the

International Disaster Aid appropriation. This further suggests that the budget is likely never a strong consideration for authorizing a military FDR operation. This is especially true if USAID continues to supplement the DoD for military FDR operations.

Table 21. Data: Affordability of Foreign Disaster Assistance

Disaster Type	Country (Year)	OHDACA Budget ^a	IDA Budget ^b	Total Budget	Military Response
Flood	Mozambique (2000)	\$76 Million	\$227 Million	\$303 Million	Yes
Flood	Algeria (2001)	\$65 Million	\$299 Million	\$364 Million	No
Tropical Cyclone	Madagascar (2004)	\$92 Million	\$254 Million	\$346 Million	No
Tropical Cyclone	Mexico (2005)	\$176 Million	\$367 Million	\$543 Million	No
Tropical Cyclone	Guatemala (2005)	\$176 Million	\$285 Million	\$537 Million	Yes
Tropical Cyclone	Bangladesh (2007)	\$63 Million	\$526 Million	\$589 Million	Yes
Tropical Cyclone	Myanmar (2008)	\$133 Million	\$430 Million ^c	\$563 Million	Yes
Flood	Pakistan (2010)	\$585 Million	\$845 Million	\$1,430 Million	Yes
Flood	Thailand (2010)	\$585 Million	\$845 Million	\$1,430 Million	No
Tropical Cyclone	India (2013)	\$111 Million	\$800 Million	\$911 Million	No
Tropical Cyclone	Philippines (2013)	\$111 Million	\$800 Million	\$911 Million	Yes
Tropical Cyclone	Fiji (2016)	\$108 Million	\$875 Million	\$982 Million	No

^a The budget figures for this indicator were derived from the OHDACA section of the DoD's annual budget request report to congress for fiscal years: 2002, 2003, 2006, 2008, 2009, 2012, 2015, 2018.¹⁹⁵

^b The budget figures for this indicator were derived from the USAID's annual congressional budget justifications for fiscal years: 2002, 2003, 2006, 2007, 2009, 2010, 2012, 2015, 2018.¹⁹⁶

^c The 2008 actual IDA budget value was unavailable; in light of this, I utilized the budget estimate found in the 2009 DoS congressional budget request.

¹⁹⁵ Adapted from "Fiscal Year 2002 Amended Budget Submission: Overseas Humanitarian, Disaster, and Civic Aid," Department of Defense, accessed October 15, 2018, 8; "Fiscal Year 2003 Budget Estimates: Overseas Humanitarian, Disaster, and Civic Aid," Department of Defense; "Operations and Maintenance Overview Fiscal Year 2006 Budget Estimates," Department of Defense; "Fiscal Year 2009 Budget Estimates: Overseas Humanitarian, Disaster Assistance, and Civic Aid," Department of Defense; "Fiscal Year 2012 Budget Estimates: Overseas Humanitarian, Disaster Assistance, and Civic Aid," Department of Defense; "Fiscal Year 2015 Budget Estimates: Overseas Humanitarian," Department of Defense; "Fiscal Year 2018 Budget Estimates: Overseas Humanitarian, Disaster Assistance, and Civic Aid," Department of Defense.

¹⁹⁶ Adapted from "Congressional Budget Justification: Foreign Operations, Fiscal Year 2002," United States Agency for International Development, accessed October 15, 2018; "United States Agency for International Development Budget Justification to the Congress Fiscal Year 2003," United States Agency for International Development, accessed October 15, 2018; "United States Agency for International Development Budget Justification to the Congress Fiscal Year 2006," United States Agency for International Development; "United States Agency for International Development Budget Justification to the Congress Fiscal Year 2007," United States Agency for International Development, accessed October 15, 2018; "Congressional Budget Justification Foreign Operations Fiscal Year 2009," Department of State, accessed October 15, 2018; "Congressional Budget Justification Volume 2: Foreign Operations, Fiscal Year 2012," Department of State; "Congressional Budget Justification: Department of State, Foreign Operations, and Related Programs, Fiscal Year 2015," Department of State; "Congressional Budget Justification: Department of State, Foreign Operations, and Related Programs, Fiscal Year 2018," Department of State.

12. Hypothesis 12

This hypothesis proposes that the USG is less likely to engage in military FDR operations when there is competition for its military resources domestically.

a. Data (H12)

To measure resource competition, I chose to look at the number of domestic disasters in the United States as an indicator. I identified each case's disaster start date utilizing EM-DAT. Upon identification of each disaster's start date, I again consulted the EM-DAT to identify the number of disasters that occurred in the United States within the 60 days prior to the disaster start date. In order for the hypothesis to be supported, the number of domestic disasters prior to the start of a foreign disaster with a military FDR operation must be less than the number of domestic disasters that occur prior to disasters without military FDR operations. To determine the impact of the hypothesis, I identified the percentage of disparity between the total budgets of cases with military FDR operations and cases without.

b. Findings (H12)

After assessing the data, the findings of my analysis do not support this hypothesis. Utilizing the method explained previously, I found the number of domestic disasters occurring 60 days prior to either category of cases to be almost equal. The number of domestic disasters prior to cases with military FDR operations totaled 17. The number of domestic disasters prior to cases without military FDR operations totaled 20. This would suggest that this hypothesis has no impact on the USG's decision to authorize military FDR operations (see Table 22. Data).

When assessing why this finding is insignificant, I believe there are two logical reasons. First, the U.S. military is a robust animal and has the ability to support most, if not all, contingencies. This belief is drawn from the fact that the USG response to Guatemala overlapped with two significant domestic disaster responses—Hurricanes Katrina and Rita—which required the response of large numbers of active duty personnel and equipment. Second, although the DoD utilizes a number of active component assets to

respond to domestic disasters, the National Guard of each state is the first line of response for disasters inside the United States. These entities are only further supported by federal personnel upon a governor’s request for further support from the president.

Table 22. Data: Resource Competition for DoD Assets¹⁹⁷

Disaster Type	Country (Year)	Domestic Disasters	Military Response
Flood	Mozambique (2000)	3	Yes
Flood	Algeria (2001)	5	No
Tropical Cyclone	Madagascar (2004)	3	No
Tropical Cyclone	Mexico (2005)	3	No
Tropical Cyclone	Guatemala (2005)	3	Yes
Tropical Cyclone	Bangladesh (2007)	2	Yes
Tropical Cyclone	Myanmar (2008)	4	Yes
Flood	Pakistan (2010)	2	Yes
Flood	Thailand (2010)	2	No
Tropical Cyclone	India (2013)	3	No
Tropical Cyclone	Philippines (2013)	3	Yes
Tropical Cyclone	Fiji (2016)	4	No

F. CONCLUSION

The analysis of the 12 cases has indicated/rendered that one hypothesis—domestic political pressure—has a high impact on the USG’s decision to authorize military FDR operations. Five hypotheses—the accessibility of the foreign disaster, a history of military cooperation, strategic importance, high risk of political instability, and the proximity of the case country to revisionist states—were found to have a moderate impact on the USG’s decision to authorize military FDR operations. One hypothesis—the severity of the disaster—was found to have a low impact on the USG’s decision to authorize military FDR operations. Last, five hypotheses were not supported (see Table 23).

In terms of the overarching categories—disaster characteristics, foreign policy interests, and domestic political influences—the findings suggest that the USG’s decision to authorize a military FDR operation is most influenced by foreign policy interests. This finding emerges from the fact that four of the seven supported hypotheses were from the foreign policy interest category. This finding is interesting because it seems to mirror and

¹⁹⁷ EM-DAT, The International Disaster Database.

confirm the finding of other research on the subject of foreign disaster aid.¹⁹⁸ The category in second place is the disaster characteristics category. This finding would suggest that the USG’s humanitarian nature, driven by its moral standards and exceptionalism, is the next most likely factor for the authorization of a military FDR operation. Last, and seemingly contradictory, is the category of domestic political influences. Although the category houses the only hypothesis of high impact, the finding would suggest that without there being some domestic political pressure factor, the category has little to no impact on the authorization of a military FDR operation.

Table 23. Impacts: Hypotheses and the USG’s Decision to Authorize Military FDR Operations

	High Impact	Moderate Impact	Low Impact	No Impact
Hypothesis 1			✓	
Hypothesis 2				✓
Hypothesis 3		✓		
Hypothesis 4		✓		
Hypothesis 5		✓		
Hypothesis 6				✓
Hypothesis 7		✓		
Hypothesis 8				✓
Hypothesis 9		✓		
Hypothesis 10	✓			
Hypothesis 11				✓
Hypothesis 12				✓

Note: Hypotheses 1–3 fall under the disaster characteristics category; hypotheses 4–9, the foreign policy interest category, and hypotheses 10–12, the domestic political influence category.

¹⁹⁸ Drury, Olson, and Van Belle, “The Politics of Humanitarian Aid,” 454-73.

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V. CONCLUSION

This thesis examined the question: Why does the USG deploy military units as part of some foreign disaster relief efforts? After providing an overview of the current literature, I clearly articulate how the USG conducts FDA and military FDR. This was followed by the identification of 12 hypotheses that could potentially answer that research question. I group these hypotheses into three categories the USG is likely to consider when deciding to authorize a military FDR operation. With the first, disaster characteristics, I argue that the severity or physical characteristics of a disaster is a logical set of reasons for the consideration of a military FDR operation. In the second category, foreign political interests, I argue that it is logical for the USG to consider how the authorization of a military FDR operation could advance its own foreign policy and national interests. For the last category, domestic political influences, I argue that circumstances within the United States and the USG—such as demographics and media coverage—could pressure political leaders to act on foreign policy issues.

A. FINDINGS

In my QCA of 12 cases, seven of the 12 hypotheses present a high, moderate, or low impact on the USG's decision to authorize a military FDR. Of the seven hypotheses with impacts, domestic pressure to support the foreign disaster (hypothesis 10) is the only one to be of high impact on the USG's decision to authorize a military FDR operation. Under the moderate impact category, five hypotheses impact the USG's decision to authorize a military FDR operation: the accessibility of the host nation experiencing the foreign disaster (hypothesis 3), a history of military cooperation with the host nation (hypothesis 4), the strategic importance of the host nation to the USG (hypothesis 5), how high the risk of political instability is for the host nation (hypothesis 7), and the proximity of the host nation to the revisionist state of China (hypothesis 9). Last, the severity of the foreign disaster in the host nation has a low impact on the USG's decision to authorize a military FDR operation (hypothesis 1). Conversely, of the 12 hypotheses tested, five have no impact on the USG's decision to authorize a military FDR operation. This suggests that

the capacity of civilian agencies to respond to foreign disasters (hypothesis 2), the advancement of diplomatic relations with the host nation (hypothesis 6), the economic importance of a host nation to the USG (hypothesis 8), the affordability of military FDR operations (hypothesis 11), and internal competition for DOD military resources (hypothesis 12), are of little to no impact to the USG decision process.

B. IMPLICATIONS

After reviewing the findings, I believe a number of conclusions can be drawn from the findings of the 12 hypotheses about why the USG authorizes military FDR and how climate change may impact military FDR in the future. In terms of military FDR, I believe there are three clear conclusions that can be drawn. First, the USG's execution of military FDR operations is as advertised in support of maintaining stability worldwide. I draw this conclusion from the fact that the hypotheses dealing with stability—such as a history of military cooperation (maintaining military relations), the political instability of a country, the strategic importance of a country, and the proximity of the host nation to a revisionist state are all identified as having an impact on the USG's decision to authorize a military FDR operation. Additionally, I draw this conclusion from the fact that the advancement of diplomatic relations with the host nation had no impact on the USG's decision to authorize a military FDR operation, further supporting the binary nature of military FDR as a tool for stability.

Second, I conclude that the authorization of military FDR operations is an inconsistent practice and is heavily scrutinized. This conclusion is drawn from the fact that all three decision categories—disaster characteristics, foreign policy interest, and domestic political influences—were found to have an impact on the USG's decision to authorize such actions. In light of these findings, one can assume that the authorization of military FDR operations is likely a practice that will have an inconsistent application. This conclusion explains why there are clear inconsistencies in characteristics of cases with responses to military FDR operations and also accounts for the fact that most of the hypotheses fell between the range of moderate to low impact—signaling a low consistency

rate. If the USG had a clear and consistent application for the authorization of military FDR operations, the impacts of the findings would have been well defined and of higher impact.

Last, the findings suggest that the USG's decision to authorize a military FDR operation is not limited by resource constraints of the DoD. This conclusion is drawn from the fact that budgetary constraints and internal resource competition within the DoD—such as personnel and equipment—were found to have no impact on the USG's decision to authorize a military FDR operation. Therefore, one can conclude the USG's authorizations of military FDR operations are below the financial and operational capacity of the DoD, which undermines the belief that the impacts of climate change on natural disasters may cause the military to overstretch itself via military FDR. Additionally, I perceive this to be a sign of the USG's cautiously moderate use of military FDR, which further represents the effects an extremely rigorous decision process for authorizing military FDR operations can have.

Moving forward, I find that two conclusions can be drawn from the findings in relation to climate change. First, the USG may not find increases in frequency of disasters a significant motivator for increasing the number of military FDR operations it conducts annually. As the findings suggest, the authorization of military FDR is not an apolitical decision motivated by humanitarianism. In light of this, believe it is fair to conclude that increases in the number of disasters or increases in the severity of disasters by themselves are not significant enough to lead to an increased number of responses. The authorization of such operations will likely have to have strategic implications or counter a threat to stability in order for the USG to consider the operation. As stated in the literature review, USG policy requires the provision of assistance to be within the United States' interest as one of three criteria for the authorization of any form of USG FDA. Additionally, the findings suggest that the USG generally considers the characteristics of a foreign disaster to be second tier to its own national and foreign policy interest. This leads me to conclude that increases in the frequency of disasters will have a low impact on the deployment of military assets in the future.

Second, I conclude that the DoD is unlikely to be overwhelmed by the increases in the frequency and impact of foreign disasters. I find this claim to be supported by the fact

that the USG's decision to authorize a military FDR operation is not an apolitical process, meaning the USG is likely to consider the benefits of supporting a host nation with military assets prior to its authorization. Additionally, the fact that internal resource competition and budgetary constraint are of no impact on the USG's decision to authorize such actions suggest the DoD has significant wiggle room to increase FDR operations if necessary. Therefore, one can conclude the impact of climate change on military FDR operation is less significant than claimed by some literature.

C. POLICY CRITIQUE, RECOMMENDATIONS, AND FUTURE RESEARCH

This section seeks to clearly articulate the effectiveness of current policy in a changing climate, to provide recommendations pertaining to improving the tracking of military FDR operations and the clarity of current terminology, and to provide clear guidance for future research. To begin, I believe the current policies and procedures for authorizing and funding a military FDR operation are sufficient for dealing with the implications of climate change. I base this assessment on three topic areas: the thoroughness of the authorization process, the flexibility of authorizing and funding military FDR operations, and the clearly defined end date for military FDR operations.

When examining thoroughness, current policy for the use of military FDR requires DoS to consider both political (the responsibility of the ambassador) and apolitical factors (the responsibility of OFDA) prior to a request for military support to a foreign disaster in order to ensure it is in the nation's interest. Prior to authorizing a DoS request for military support, a mission assessment by the DoD is conducted (the responsibility of the secretary of defense) to ensure the DoD can provide the right tools for the job. If this assessment is found to be outside the interest of the DoD, the secretary of defense maintains the ability to reject the mission. The thoroughness of this process is particularly important for the likely impacts of climate change because the level of scrutiny placed on the authorization of a military FDR operation will likely continue to limit adverse effects—such as overstretch and resource competition—on the DoD and USG, which has been discussed in a number of academic works listed in the literature review.

Second, I find current policy to be very flexible, which is important to the predicted impacts climate change may have on natural disasters. The two areas of flexibility I believe are the most important are the ability for combatant commanders to respond to a foreign disaster for up to 72 hours without presidential approval—as identified in DoD Directive 5100.46—and the multi-source method of funding military FDR operations, as designated in Title 22 of the Foreign Assistance Act. For GCCs to authorize short-term military FDR operations is particularly important because it provides the USG with the ability to quickly respond to a foreign disaster even during periods where the authorization process may take days. This is important when assessing the likely impacts of climate change. If there are an increased number of foreign disasters, the USG process for authorizing a military FDR operation is likely to become more rigorous, which will extend the total time to get to an answer. This mechanism allows the USG to maintain its positive humanitarian image around the world by avoiding the tarnish caused by a slow or inept U.S. response that could be caused by a slowed decision process. Next, the ability to fund military FDR operations through DoD funding, partnered USG agencies’ funding, and through presidential drawdown ensure the DoD will maintain the financial ability to support greater U.S. FDA efforts in a changing climate and limits the impact that would likely come from a single budget each fiscal year.

Last, I conclude that current procedures for limiting the impact of responding to military FDR operation are sufficient for a changing climate. That is to say, the clear guidance for limiting the military role in responses to foreign disasters will continue to prevent the erosion of military readiness, even if the number of responses increases. It is clear that the USG does not like to rely on the military for long-term support for foreign disasters. This belief limits DoD involvement in a foreign disaster to weeks and months—known as the relief period—and prevents their use for long recovery periods, which can take years. Additionally, due to the fact that each military FDR operation requires concurrence from the president, secretary of state, and secretary of defense before being authorized to execute, the DoD maintains an ability to ensure the resources requested are

“appropriate and feasible”¹⁹⁹ and “that there are no overriding military mission requirements elsewhere.”²⁰⁰ This ability is extremely important to a changing climate because it ensures the USG will not erode its military readiness in response to an increased number of foreign disasters.

In terms of recommendations, I have identified two pertaining to military FDR and the greater USG Foreign Assistance framework. First, government officials should consider developing a better system for tracking military FDR operations. Although such operations have been conducted by the military since the early 1900s, I found there to be no official method for tracking military FDR operations. Currently, the HSM serves as the only system of record maintained by the USG for military FDR operations. This method is faulty however, due to the fact that the HSM is dependent on unit commanders to apply and their units’ actions to be found worthy of the award in order for the operation be recorded. In light of this, the HSM list only accounts for some of the military FDR operations conducted since the 1970s. In all, without a consistent method of tracking military FDR operations, the research on the subject area by the USG, DoD, or academics will be significantly hampered and limited due to the inability to accurately survey all military FDR operations.

Second, government officials should consider implementing the term “Foreign Disaster Assistance,” which describes the many options the USG can use to provide assistance to a foreign disaster. As discussed in Chapter II, the USG utilizes a modulate system, made up of nine different response mechanisms, to respond to foreign disasters. The nine response mechanisms include the authorization of a military FDR operation. Currently, the USG lacks a term that describes this function accurately. However, when reviewing literature on the subject, I found there were a number of terms used to describe the assistance provided by the USG in response to a foreign disaster. In light of this, I recommend the USG implement the term “Foreign Disaster Assistance” in order to create consistency in reports and research on the subject area.

¹⁹⁹ Joint Chiefs of Staff, *Foreign Humanitarian Assistance*, II-18.

²⁰⁰ Department of Defense, *Foreign Disaster Relief*, 6.

In closing, with regard to future research, this thesis focused on determining why the USG authorized military FDR as it pertained to rapid-onset disasters. This analysis, however, is only a partial analysis of the climate change threat as it refers to the authorization of military FDR. Climate change, as noted in many climate studies, also has the potential to increase slow-onset disasters. With this in mind, I suggest future research on the implications of climate change on military FDR with a focus on understanding why or under what circumstances the USG has authorized such operations in the past for slow-onset disasters. The shift in analysis from rapid-onset to slow-onset disasters will provide the security studies community with the fullest analysis of the implications of climate change on the deployment of military assets to foreign disasters.

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APPENDIX A. DATA TABLES FOR HYPOTHESIS 6

Table 24. Data: Presence of New or Renewed Bilateral Agreements²⁰¹

Disaster Type	Country (Year)	Bilateral Trade Agreements	Bilateral Property Agreements	Bilateral Defense Agreements	Index	Military Response
Flood	Mozambique (2000)	No	No	No	No	Y
Flood	Algeria (2001)	No	No	No	No	N
Tropical Cyclone	Madagascar (2004)	No	No	No	No	N
Tropical Cyclone	Mexico (2005)	Yes	No	Yes	Yes	N
Tropical Cyclone	Guatemala (2005)	Yes	No	No	Yes	Y
Tropical Cyclone	Bangladesh (2007)	No	No	No	No	Y
Tropical Cyclone	Myanmar (2008)	No	No	No	No	Y
Flood	Pakistan (2010)	No	No	No	No	Y
Flood	Thailand (2010)	No	No	No	No	N
Tropical Cyclone	India (2013)	No	No	No	No	N
Tropical Cyclone	Philippines (2013)	No	No	Yes	Yes	Y
Tropical Cyclone	Fiji (2016)	No	No	No	No	N

²⁰¹ Source: Department of State, Treaty Affairs Staff; *Treaties in Force, 2018* (Washington, DC: Government Printing Office, 2018), 4–6, 2729, 57–59, 149–150, 188–191, 208–2013, 291–292, 305–320, 327–329, 359–363, 459–459. <https://www.state.gov/documents/organization/282222.pdf>.

Table 25. Data: Presence of Increased Military Cooperation²⁰²

Disaster Type	Country (Year)	# of Personnel Trained the Year of Disaster	2 Year Average # of Personnel Trained After Disaster	Index	Military Response
Flood	Mozambique (2000)	96	68.5	No	Yes
Flood	Algeria (2001)	14	57	Yes	No
Tropical Cyclone	Madagascar (2004)	61	74	Yes	No
Tropical Cyclone	Mexico (2005)	140	59	No	No
Tropical Cyclone	Guatemala (2005)	122	82	No	Yes
Tropical Cyclone	Bangladesh (2007)	268	185.5	No	Yes
Tropical Cyclone	Myanmar (2008)	0	0	No	Yes
Flood	Pakistan (2010)	276	126.5	No	Yes
Flood	Thailand (2010)	654	46.5	No	No
Tropical Cyclone	India (2013)	207	359	Yes	No
Tropical Cyclone	Philippines (2013)	62	71.5	Yes	Yes
Tropical Cyclone	Fiji (2016)	14	12	No	No

²⁰² Source: “Trainees Dashboard,” Center for International Policy, accessed October 15, 2018, <http://securityassistance.org/content/trainees-dashboard>

APPENDIX B. DATA TABLES FOR HYPOTHESIS 8

Table 26. Data: U.S. Foreign Direct Investments in each Case Country²⁰³

Disaster Type	Country (Year)	U.S. FDI in Case Country	Total U.S. FDI	Country Percentage of Total	Index	Military Response
Flood	Mozambique (2000)	\$1,000,000	\$1.21 Trillion	~ 0.0%	No	Yes
Flood	Algeria (2001)	\$2,333,000,000	\$1.31 Trillion	0.2%	No	No
Tropical Cyclone	Madagascar (2004)	\$500,000	\$1.76 Trillion	~ 0.0%	No	No
Tropical Cyclone	Mexico (2005)	\$63,384,000,000	\$2.16 Trillion	2.9%	Yes	No
Tropical Cyclone	Guatemala (2005)	\$410,000,000	\$2.16 Trillion	~ 0.0%	No	Yes
Tropical Cyclone	Bangladesh (2007)	\$365,000,000	\$2.47 Trillion	~ 0.0%	No	Yes
Tropical Cyclone	Myanmar (2008)	\$500,000	\$2.99 Trillion	~ 0.0%	No	Yes
Flood	Pakistan (2010)	\$624,000,000	\$3.56 Trillion	~ 0.0%	No	Yes
Flood	Thailand (2010)	\$9,457,000,000	\$3.56 Trillion	0.3%	No	No
Tropical Cyclone	India (2013)	\$25,413,000,000	\$4.41 Trillion	0.6%	No	No
Tropical Cyclone	Philippines (2013)	\$3,988,000,000	\$4.41 Trillion	0.1%	No	Yes
Tropical Cyclone	Fiji (2016)	\$144,000,000	\$5.28 Trillion	~ 0.0%	No	No

²⁰³ “International Trade and Investment Country Facts” Department of Commerce, accessed October 15, 2018, <https://apps.bea.gov/international/factsheet/factsheet.cfm>;

Table 27. Data: Total Imports to the USG by Case Country

Disaster Type	Country (Year)	Total Exports to U.S. ^a	Total U.S. Imports ^b	Country's Percentage of Total	Index	Military Response
Flood	Mozambique (2000)	10.4	1,024,615.5	0.0%	No	Yes
Flood	Algeria (2001)	2,624.2	1,218,022.6	0.2%	No	No
Tropical Cyclone	Madagascar (2004)	383.7	1,257,121.3	0.0%	No	No
Tropical Cyclone	Mexico (2005)	170,108.6	1,469,705.0	11.6%	Yes	No
Tropical Cyclone	Guatemala (2005)	3,154.0	1,469,705.0	0.2%	No	Yes
Tropical Cyclone	Bangladesh (2007)	3,271.4	1,853,938.0	0.2%	No	Yes
Tropical Cyclone	Myanmar (2008)	0.0	1,956,961.0	0.0%	No	Yes
Flood	Pakistan (2010)	3,162.8	1,559,624.8	0.2%	No	Yes
Flood	Thailand (2010)	19,082.5	1,559,624.8	1.2%	Yes	No
Tropical Cyclone	India (2013)	40,512.6	2,276,267.1	1.8%	Yes	No
Tropical Cyclone	Philippines (2013)	9,580.5	2,276,267.1	0.4%	No	Yes
Tropical Cyclone	Fiji (2016)	202.6	2,248,811.4	0.0%	No	No

^a The export data for each case country was derived from the cited case country profiles.²⁰⁴

^b The USG total imports for each year was derived from the cited profile.²⁰⁵

²⁰⁴ “Trade in Goods with Mozambique,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c7870.html>; “Trade in Goods with Algeria,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c7210.html#2000>; “Trade in Goods with Madagascar,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c7880.html>; “Trade in Goods with Mexico,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c2010.html>; “Trade in Goods with Guatemala,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c2050.html>; “Trade in Goods with Bangladesh,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c5380.html>; “Trade in Goods with Burma,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c5460.html>; “Trade in Goods with Pakistan,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c5350.html>; “Trade in Goods with Thailand,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c5490.html>; “Trade in Goods with India,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c5330.html>; “Trade in Goods with Philippines,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c5650.html>; “Trade in Goods with Fiji,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c6863.html>

²⁰⁵ “Trade in Goods with World, Not Seasonally Adjusted,” United States Census Bureau, accessed October 15, 2018, <https://www.census.gov/foreign-trade/balance/c0015.html>.

Table 28. Data: Exports from the USG to the Case Country

Disaster Type	Country (Year)	U.S. Imports to Case Country ^a	Total U.S. Exports ^b	Country's Percentage of Total	Index	Military Response
Flood	Mozambique (2000)	34.7	\$695,797	0.0%	No	Yes
Flood	Algeria (2001)	861.8	\$781,918	0.1%	No	No
Tropical Cyclone	Madagascar (2004)	46.3	\$724,771	0.0%	No	No
Tropical Cyclone	Mexico (2005)	110,731.3	\$814,875	13.6%	Yes	No
Tropical Cyclone	Guatemala (2005)	2,551.3	\$814,875	0.3%	No	Yes
Tropical Cyclone	Bangladesh (2007)	333.0	\$1,025,968	0.0%	No	Yes
Tropical Cyclone	Myanmar (2008)	8.7	\$1,148,199	0.0%	No	Yes
Flood	Pakistan (2010)	1,618.0	\$1,056,043	0.2%	No	Yes
Flood	Thailand (2010)	6,918.4	\$1,056,043	0.7%	No	No
Tropical Cyclone	India (2013)	22,105.7	\$1,545,821	1.4%	Yes	No
Tropical Cyclone	Philippines (2013)	8,087.4	\$1,545,821	0.5%	No	Yes
Tropical Cyclone	Fiji (2016)	56.9	\$1,503,328	0.0%	No	No

^aThe import data for each case country was derived from the cited case country profiles.²⁰⁶

^bThe total USG export value for each year was derived from the cited profile.²⁰⁷

²⁰⁶ United States Census Bureau, “Trade in Good with Mozambique”; United States Census Bureau, “Trade in Good with Algeria.” United States Census Bureau, “Trade in Good with Madagascar”; United States Census Bureau, “Trade in Good with Mexico”; United States Census Bureau, “Trade in Good with Guatemala”; United States Census Bureau, “Trade in Good with Bangladesh.” United States Census Bureau, “Trade in Good with Myanmar”; United States Census Bureau, “Trade in Good with Pakistan”; United States Census Bureau, “Trade in Good with Thailand”; United States Census Bureau, “Trade in Good with India”; United States Census Bureau, “Trade in Good with Philippines”; United States Census Bureau, “Trade in Good with Fiji.”

²⁰⁷ United States Census Bureau, “Trade in Goods with World, Not Seasonally Adjusted.”

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