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Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region

Jennifer D. P. Moroney, Stephanie Pezard, Laurel E. Miller, Jeffrey Engstrom, Abby Doll

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Preface

The U.S. Department of Defense (DoD) has long been able to play a major role in international disaster relief thanks to its budget, manpower, and forward-deployed resources. The Office of the Under Secretary of Defense for Policy asked RAND to help DoD and the broader U.S. policymaking community underline the key lessons from major humanitarian assistance/disaster response (HA/DR) operations in which DoD played a key role based on four cases: Cyclone Nargis in Burma (2008); the Padang earthquake in Indonesia (2009); monsoon floods in Pakistan (2010); and the earthquake, tsunami, and nuclear disaster in Japan (2011).

This report highlights key lessons for DoD involvement in HA/DR with regard to communication with the affected country, coordination with other state and non-state actors, regional best practices with regard to HA/DR coordination, and prospects for security cooperation and building partner capacity (BPC) programs for disaster response capacity. This report should interest military leaders and staff concerned with increasing the effectiveness of U.S. HA/DR interventions and HA/DR–focused engagement activities.

This research was sponsored by the Office of the Under Secretary of Defense for Policy and conducted within the International Security and Defense Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community.

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Summary

This report analyzes recent humanitarian HA/DR operations to identify useful lessons for the U.S. government (USG) and the Department of Defense (DoD). DoD has long been able to play a major role in international disaster relief thanks to its budget, manpower, and forward-deployed resources. The Asia-Pacific region is of particular importance to the United States because it bears the brunt of more than half of the world's natural disasters and is home to numerous key U.S. allies. This report analyzes recent HA/DR operations in the region to take stock of lessons that have emerged and ensure greater success in the future.

The United States is only one of many disaster assistance providers in the Asia-Pacific region. Other governments, international and regional organizations, and international and local nongovernmental organizations (NGOs) intervene as well, often with capabilities that complement those of the United States. Further, some countries have invested major resources in improving their disaster response capacity over the past few years. Future efforts will require, first and foremost, the ability to leverage the comparative advantages of our allies and partners in the region to help cope with HA/DR challenges and the ability to cooperate with these partners during disaster responses. Exploring ways to improve coordination and communication with these different assistance providers will enable DoD to respond more efficiently to disasters; use its unique capabilities where they are most needed; and limit the costs of interventions, which are likely to become even more numerous in the future.

Study Purpose and Approach

This report seeks to assist DoD and the broader U.S. policymaking community in understanding the key lessons from major HA/DR operations in which DoD played an important role in the response. This report focuses on lessons identified from four relatively recent HA/DR events in Burma, Indonesia, Pakistan, and Japan.

It identifies, in particular, lessons in the following areas:

- interagency coordination
- communication with the affected country
- coordination with other state and non-state actors, including at the regional level
- prospects for U.S. security cooperation and BPC for disaster response
- prospects for the increased involvement of regional organizations in HA/DR.

In addition to developing overarching lessons from the four case studies, this report identifies some of the complementary and unique capabilities and comparative advantages that exist around the region. It also presents options for best leveraging these capabilities to deal with future disasters and assesses various crisis management mechanisms and processes used with allies and partners that can be applied to other contingencies.

The findings and recommendations in this report were informed by DoD after-action and lessons-learned reports, academic and think tank reports, media reporting, and numerous focused discussions with U.S. and foreign officials, representatives of international organizations (IOs) and NGOs, and academics and think tank researchers.

Case Studies

Our case studies were chosen to illustrate a wide range of contingencies with different types of disasters, levels of damage, levels of access, and variance in the affected country's capabilities. The diversity of these

cases highlights lessons that may be applicable to similar future disasters (e.g., in countries reluctant to accept U.S. aid, as in the cases of Pakistan and Burma), as well as lessons that cut across cases and should be applicable to any contingency the United States will have to respond to in the future.

Cyclone Nargis, Burma

In May 2008, a cyclone devastated the Irrawaddy Delta region of Burma, affecting 2.4 million people. The response to this disaster illustrates the difficulty of providing HA/DR to a population whose government restricts access to foreign assistance providers. For the United States, this event was nonetheless an opportunity to engage with Burma. It also gave the Association of Southeast Asian Nations (ASEAN) a chance to be operational for the first time on the HA/DR front and to play a key role in the negotiations that opened up the country, at least to some extent, to external assistance.

Padang Earthquake, Indonesia

The earthquake that struck Indonesia in September 2009 was one of many natural disasters affecting the region at that time, prompting the United States and the Indonesian government to quickly redirect their assets towards Padang, one of the most affected cities. This event was an opportunity for Indonesia to put its recently created National Agency for Disaster Management to the test and for the United States to deploy, for the first time, a Humanitarian Assistance Rapid Response Team (HARRT), an Air Force field hospital that can be set up quickly to provide care to populations.

Monsoon Floods, Pakistan

When abnormally intense monsoon rains resulted in the flooding of one-fifth of Pakistan's territory in the second half of 2010, the international community's response was massive—and the United States was its greatest single contributor. Although the United States filled an important niche requirement for airlift support, some Pakistani officials, fearful of encroachments on Pakistani sovereignty, accepted U.S. assistance only reluctantly. This case highlights the importance of stra-

tegic communication in HA/DR, even when humanitarian objectives are successfully met, and illustrates the challenges of conducting HA/DR in an insecure environment.

The Great East Japan Earthquake, Japan

The response to the unprecedented earthquake, tsunami, and subsequent nuclear disaster that occurred in Japan in March 2011 involved 24,000 U.S. servicemembers, 189 aircraft, 24 naval ships, and cost $90 million. This disaster response illustrates the wide array of capabilities the United States can bring to bear on an incredibly complex disaster and also illustrates the special role the United States assumes in a disaster that directly affects its forward-based forces. As a capable and key ally, Japan was generally able to respond to this disaster, with the exception of the nuclear incident at the Fukushima power plant, where considerable U.S. expertise and capabilities were required.

While some common themes emerged from the case studies, many of the lessons were case-study specific. The response to the Japanese disaster was the largest and most complex HA/DR and consequence management operation, and was far from the norm in the region. Some cases, such as that of Indonesia, illustrate the importance of working with civilian humanitarian organizations and intergovernmental organizations. In other cases, such as that of Japan and Pakistan, the military was necessarily relied upon to provide relief. We found that it is important to unpack each case individually to better understand its context, politics, the nature of the response effort, challenges, and overall lessons, as well as to identify ways in which DoD could have been more effective and efficient.

Findings and Recommendations

The analysis set forth in this report suggests that DoD can improve its proficiency in HA/DR and its ability to coordinate with other assistance providers by implementing key lessons from past interventions. The research team broke down these key lessons and their associated recommendations along six imperatives: (1) improving DoD's effi-

ciency as an HA/DR provider, (2) enhancing interagency coordination, (3) improving coordination with affected countries, (4) working more effectively with the United Nations (UN) and NGOs, (5) aligning security cooperation activities and regional HA/DR capabilities, and (6) building goodwill through HA/DR.

Improving DoD's Efficiency as an HA/DR Provider

Case studies offer contrasting views of the quality of DoD's internal coordination in HA/DR missions. In complex disasters, such as that of the Japan case study, the lack of a single military point of contact (POC) made it difficult for civilian U.S. agencies and IOs to identify the most effective channels of communication with the U.S. military. What all case studies show, however, is the importance of personal connections between individuals involved in the disaster response. Such connections considerably facilitate coordination.

Recommendations:

- Whenever possible, select personnel with previous HA/DR experience to lead disaster response.
- Encourage the participation of senior military in the U.S. Agency for International Development (USAID) Joint Humanitarian Operations Course.
- Explore making HA/DR a qualification or special skill identifier for individuals with such experience, or ensure that DoD keeps track of individuals with direct HA/DR experience.

Enhancing Interagency Coordination

Our case studies suggest that, while the quality of interagency coordination has generally improved, it depends greatly on the specific circumstances of each disaster. Factors that facilitate or hamper interagency coordination include the following: (1) prior experience in disaster response and knowledge of interagency coordination mechanisms by the individuals in charge; (2) the extent to which individuals in leadership positions have prior personal connections that facilitate communication; and (3) the degree of media exposure of a given disas-

ter, which, when high, can add considerable pressure to act quickly and visibly, sometimes to the detriment of coordination.

Recommendations:

- Consider having one or more representatives from the Office of the Under Secretary of Defense for Policy (OSD/P) or the Joint Staff on the embassy team during an HA/DR crisis in which there is a significant U.S. response involving multiple USG agencies.
- Clarify authorities and simplify the use of annual Overseas Humanitarian, Disaster Assistance, and Civic Aid (OHDACA) funds, especially in foreign consequence management (FCM)/ chemical, biological, radiological, and nuclear (CBRN) cases.
- Develop templates for funding requests that can facilitate and expedite this process.
- Develop exercises that help improve interagency coordination (e.g., Special Operations Capability Exercise [SOCEX]).
- Set standards for operating and living in a CBRN environment.
- Integrate civilians in the planning and coordination structure (e.g., consider a civil-military operational center rather than a Bilateral Coordination Council [BCC] structure in FCM cases).

Improving Coordination with Affected Countries

Several of our case studies suggest that a lack of standard operating procedures between the United States and affected countries created delays in HA/DR responses. Creating or improving standard operating procedures with potential HA/DR recipients requires a solid institutional and cultural knowledge of these countries. Such knowledge also facilitates almost every aspect of HA/DR interventions and minimizes both tensions with the affected country's government and potential blunders with the population.

Recommendations:

- Capture key lessons regarding the institutions, bureaucracy, infrastructure, and key individuals in charge in potential HA/DR recipient countries.
- Articulate a new strategy and doctrine (or at least establish the "business rules") for HA/DR with first-tier, capable allies, as compared with less capable partners.
- Develop institutional relations and contingency planning with national disaster agencies early on; if possible, set up coordination cell structures with these agencies.
- Improve foreign disclosure expertise during HA/DR deployments; ensure that NOFORN classification is kept to a minimum so as to maintain the highest possible degree of communication with affected countries.
- Reach an early agreement with affected countries on the information-sharing platform to be used.

Working More Effectively with the UN and NGOs

While communication between the military and IOs/NGOs has considerably improved in the past 20 years, further means of sharing operational details could be developed through targeted exercises at the operational level. Moreover, finding a commonly accepted platform for communicating with nonmilitary organizations is an issue requiring early resolution.

Recommendations:

- Develop exercises that focus on joint planning between the U.S. military and IOs/NGOs.
- Develop shorter events (2–3 days) to optimize participation from understaffed civilian agencies and NGOs.
- Explore how other countries facilitate collaboration between their military and NGOs (e.g., the UK and Australia).

- Improve knowledge of the supply standards between DoD and civilian agencies and make lists available of the commercial providers of supplies that meet these standards.

Aligning Security Cooperation Activities and Regional HA/DR Capabilities

Security cooperation is a primary vehicle to prepare affected countries to respond better to their own disasters, as well as those of their neighbors. It is also a prime mission area in which to improve interoperability and facilitate future HA/DR cooperation. Based on our four case studies, a few countries in the Asia-Pacific region appear particularly promising in terms of HA/DR capabilities. It is also worth noting that the participation of international militaries outside of the Pacific Command (PACOM) area of responsibility (AOR) is infrequent and unreliable. Consequently, HA/DR capacity–building efforts within the PACOM AOR will likely be most effective for Asia-Pacific area disaster response. ASEAN's institutional progress with regards to HA/DR has yet to translate into operational capability. Regional rivalries and tensions are also likely to make some countries prefer outside interveners to regional responders.

Recommendations:

- Tailor whole-of-government exercises for practicing HA/DR and FCM in a complex environment.
- Build partner capacity with Indonesia, Malaysia, Thailand, and Bangladesh, whose militaries have shown a willingness to engage in HA/DR.
- Encourage greater contributions from South Korea and India, which both have the capacity to do more to support HA/DR operations.

Building Goodwill Through HA/DR

All four case studies clearly show that, although HA/DR is commonly presented as a relatively benign form of foreign military intervention,

affected countries do not always perceive it as such and are acutely aware of potential political repercussions, both internally and externally.

In light of this perspective, foreign assistance should always be seen as being in support of the affected country's greater effort.

Recommendations:

- Plan for each contingency what degree of visibility the U.S. response should have in comparison with the affected country's institutions.
- Emphasize the importance of delivering unified USG messages, because conflicting messages can undermine the confidence-building benefits of HA/DR interventions.
- Identify clearly who in the affected country should be the focus of the strategic communication effort.

In addition to these proposed changes, the four case studies highlighted a number of good current practices that should be continued:

- Relationship-building through professional military education (PME) and liaison officers (LNOs), as well as senior-level engagement activities, such as the Pacific Air Chiefs Conference and the Executive Observer Program in Red Flag.
- Flag officer attendance at USAID's Joint Humanitarian Operations Course, which enables them to gain more detailed knowledge of humanitarian principles and USAID's mode of operation.
- HA/DR capacity–building and disaster risk prevention.
- The use of airborne intelligence, surveillance, and reconnaissance (ISR) (a U.S. niche capability) in HA/DR contexts and imagery-sharing with other assistance providers.
- Negotiations toward a model contingency arrangement within the ASEAN Regional Forum to cover military personnel participating in HA/DR.

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Abbreviations

AADMER	ASEAN Agreement on Disaster Management and Emergency Response
ADB	Asian Development Bank
AFB	Air Force Base
AHA	ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management
AOR	area of responsibility
APAN	All-Partners Area Network
ASEAN	Association of Southeast Asian Nations
BACC	Bilateral Assistance Coordination Cell
BCC	Bilateral Coordination Council
BNPB	*Badan Nasional Penanggulangan Bencana* (Indonesian National Agency for Disaster Management)
BPC	building partner capacity
CBIRF	Chemical-Biological Incident Response Force
CBRN	chemical, biological, radiological, and nuclear
CENTCOM	U.S. Central Command
CENTRIX-J	Collaborative Enterprise Regional Information Exchange-Japan Network
CONOP	concept of operations
DART	disaster assistance response team
DLA	Defense Logistics Agency

DoD	Department of Defense
DoE	Department of Energy
DoS	Department of State
DSCA	Defense Security Cooperation Agency
DTRA	Defense Threat Reduction Agency
ERAT	Emergency Rapid Assistance Team
FCM	foreign consequence management
FHA	foreign humanitarian assistance
FOUO	For Official Use Only
GAO	Government Accountability Office
GoI	Government of Indonesia
GoJ	Government of Japan
GoP	Government of Pakistan
GPS	Global Positioning System
HA/DR	humanitarian assistance/disaster response
HARRT	Humanitarian Assistance Rapid Response Team
HAST	humanitarian assessment survey team
HTMS	His Thai Majesty's Ship
IGO	intergovernmental organization
IMET	international military education and training
IO	international organization
ISAF	International Security Assistance Force
ISR	intelligence, surveillance, and reconnaissance
JGSDF	Japan Ground Self-Defense Forces
JSDF	Japan Self-Defense Forces
JSF	Joint Support Force
JTF	Joint Task Force
JTF-CR	Joint Task Force Caring Response
LHD	Landing Helicopter Dock
LNO	liaison officer

MEU	Marine Expeditionary Unit
MITAM	Mission Tasking Matrix
MRE	meal ready to eat
MTM/D	million ton miles per day
NATO	North Atlantic Treaty Organization
NDMA	National Disaster Management Authority (Pakistan)
NEO	noncombatant evacuation operation
NGO	nongovernmental organization
NOFORN	No Foreign Nationals
NRC	Nuclear Regulatory Commission
OCHA	Office for the Coordination of Humanitarian Affairs
ODRP	Office of the Defense Representative to Pakistan
OFDA	Office of Foreign Disaster Assistance
OHDACA	Overseas Humanitarian, Disaster Assistance, and Civic Aid
OSD	Office of the Secretary of Defense
OSD(C)	Office of the Secretary of Defense Comptroller
OSD/P	Office of the Under Secretary of Defense for Policy
PACAF	Pacific Air Forces
PACOM	Pacific Command
PDMA	Provincial Disaster Management Authorities (Pakistan)
PME	professional military education
POC	point of contact
PONJA	Post-Nargis Joint Assessment
RAAF	Royal Australian Air Force
SALIS	Strategic Airlift Interim Solution

SOG	Special Operations Group
TCG	Tripartite Core Group
TEPCO	Tokyo Electric Power Company
TNI	*Tentara Nasional Indonesia* (Indonesian National Armed Forces)
UAE	United Arab Emirates
UN	United Nations
UNHAS	United Nations Humanitarian Air Service
UNICEF	United Nations Children's Fund
USAF	U.S. Air Force
USAID	U.S. Agency for International Development
USFJ	U.S. Forces Japan
USJFCOM	U.S. Joint Forces Command
USG	U.S. government
USMC	U.S. Marine Corps
USN	U.S. Navy
USNS	U.S. Naval Ship
USTRANSCOM	U.S. Transportation Command
WFP	World Food Program

CHAPTER ONE

Introduction

Over 60 percent of the world's natural disasters occur in the Asia-Pacific region. The United States is the most capable, most prepared, and best-equipped nation to respond to these crises. The Department of Defense's (DoD's) niche assets include air and sealift capabilities to transport large numbers of personnel and humanitarian supplies; distribution and supply-chain management logistics capabilities with professional logisticians specially trained in disaster relief; extensive debris-clearing and infrastructure-reconstruction capabilities, including engineering support; communications infrastructure for both military and nonmilitary counterparts; and an abundance of emergency medical support.

Consequently, DoD has participated in more than 40 humanitarian assistance/disaster response (HA/DR) operations in or near the Pacific Command (PACOM) area of responsibility (AOR) over the past two decades.[1] Most commonly, DoD aid is lifted by cargo airplanes, but, on several occasions, DoD helicopters have played a major role in distributing aid to those affected by major disasters. DoD participation spans the gamut of humanitarian and natural disaster types, including earthquakes, fires, tsunamis, floods, volcanoes, landslides, and food shortages. Such involvement is only likely to increase in the future, as climate change will further affect populations who rely largely on agri-

[1] Based on U.S. Agency for International Development, *Office of U.S. Foreign Disaster Assistance Annual Report*, 1992–2009.

culture and live along extensive coastlines in the Asia-Pacific region, which has become DoD's prime strategic region for engagement.[2]

Study Objectives

This report aims to take stock of lessons that have emerged from DoD's HA/DR operations in the Asia-Pacific region in order to ensure greater success of such operations in the future. The ability to communicate and coordinate effectively with other assistance providers—whether other U.S. government (USG) actors, foreign militaries or aid agencies, international or local nongovernmental organizations (NGOs), or the disaster response agencies of affected countries—is of particular importance, especially as some countries in the region have recently invested major resources in improving their disaster response capacity and intend to take a lead role both domestically and in the region.

This report focuses on lessons identified from four relatively recent HA/DR events in which DoD forces played a significant role: Cyclone Nargis in Burma (May 2008), the Padang earthquake in Indonesia (September 2009), monsoon floods in Pakistan (July–September 2010), and the earthquake and subsequent nuclear disaster in Japan (March 2011). In addition to developing overarching lessons from the four case studies, this report identifies and describes the array of complementary capabilities and comparative advantages that exist around the region. It also presents options for best leveraging these capabilities to deal with future disasters and assesses various crisis-management mechanisms and processes used with allies and partners that can be applied in future HA/DR operations and possibly other contingencies.

The following section offers a brief background description of the mechanisms through which DoD takes part in HA/DR operations, and presents the analytical approach we adopted to develop key rec-

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[2] E. D. McGrady, Maria Kingsley, and Jessica Stewart, *Climate Change: Potential Effects for Demand for U.S. Military Humanitarian Assistance and Disaster Response*, Center for Naval Analyses, November 2010, pp. 81–82; U.S. Department of Defense, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, January 2012, p. 2.

ommendations for DoD's planning and execution of HA/DR in the future.

DoD's Role in HA/DR Operations

The Department of State has the primary responsibility for initiating and coordinating foreign humanitarian assistance. The U.S. Agency for International Development (USAID) Office of Foreign Disaster Assistance (OFDA) is the lead federal agency that administers and directs foreign disaster relief, with DoD assets viewed as a supplement. OFDA may deploy a disaster assistance response team (DART), consisting of specialized personnel, to manage the disaster relief process.[3]

Official federal guidance documents, outlined below, detail a structured, linear process that coordinates the decisions of DoD, State Department, and USAID to intervene in a foreign disaster. Once a disaster strikes, the affected country must either request or be willing to accept USG assistance.[4]

Despite such linear guidance, the often fast-paced and unique situations presented by major disasters have resulted in many informal practices as well. Thus, coordination between DoD, the Department of State, USAID, and international and non-governmental partners for disaster relief remains a constantly evolving process. Disaster relief coordination is often a combination of official and ad hoc processes occurring in parallel. Often, ambassadors may request assistance directly from DoD, either to expedite the process or because they are unaware of the procedures. In addition, although State Department officials officially create the needs assessment, frequently DoD humani-

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[3] An OFDA representative is embedded within each Combatant Command, which has proven beneficial in coordinating lines of effort between DoD and State. U.S. Department of Defense Inspector General, "Most Geographic Combatant Commanders Effectively Planned and Executed Disaster Relief Operations, but Improvements Could Be Made," Report No. DODIG-2012-119, Washington, D.C., August 14, 2012.

[4] For more details on these processes, see U.S. Department of Defense, *Department of Defense Support to Foreign Disaster Relief (Handbook for JTF Commanders and Below)*, GTA 90-01-030, July 13, 2011.

tarian assessment survey teams (HASTs) from forward-deployed units are the first on the scene and make initial recommendations.[5]

Guidance and Funding Authorities

Formal DoD participation in USG foreign disaster relief activities is codified within statutory and DoD formal guidance. The foundation of structured USG involvement rests in the Foreign Assistance Act of 1961, which designated USAID as the key administrator of foreign, nonmilitary humanitarian activities. Further establishing DoD's supporting role, several Title 10 authorities provide basic execution stipulations for authorization of DoD foreign disaster assistance and its use of transportation and supply assets (Table 1.1).

Most recently, DoD Directive 5100.46 updated DoD policy and component responsibilities for foreign disaster relief to align more fully with U.S. Code Title 10 sections 404 and 2561.[6] In particular, DoD states that military commanders near or at the immediate scene of a foreign disaster may take prompt action without higher DoD or State Department guidance, though the combatant commander must secure approval for continued assistance within 72 hours of initiating relief.[7]

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[5] In fact, DoD, through unofficial channels such as email exchanges, has shown considerable influence in shaping State Department requests for assistance by identifying less expensive or more convenient alternatives. For example, in March 2007, DoD determined that the shipment of supplies by Federal Express would be less expensive than a DoD airlift from USAID's Miami-based warehouse to flood-stricken Bolivia (Institute for Foreign Policy Analysis, *Finding the Right Mix: Disaster Diplomacy, National Security, and International Cooperation*, January 1, 2009, p. 12). For more details on formal and informal coordination and deliberation processes between DoD and OFDA, see Charles M. Perry and Marina Travayiakis, "The U.S. Foreign Disaster Response Process: How It Works and How It Could Be Better," The Institute for Foreign Policy Analysis, May 2008.

[6] U.S. Department of Defense, DoD Directive No. 5100.46, "Foreign Disaster Relief," July 6, 2012b.

[7] Chairman of the Joint Chiefs of Staff Instruction 3214.01C echoes the Title 10 authorities and DODD 5100.46 sentiments on prompt action by commanders within immediate vicinities, though it particularly addresses consequence management for chemical, biological, radiological, and nuclear (CBRN) incidents. See U.S. Department of Defense, "Military Support to Foreign Consequence Management Operations for Chemical, Biological, Radiological, and Nuclear Incidents," Chairman of the Joint Chiefs of Staff Instruction 3214.01C, January 11, 2008a.

Table 1.1
Title 10 Authorities for Foreign Disaster Relief

Section	Authority
10 U.S.C. § 401	Authorizes DoD to engage in humanitarian and civic assistance activities in conjunction with authorized military operations
10 U.S.C. § 402	Authorizes DoD to transport, without charge, supplies furnished by a nongovernmental source for use in humanitarian assistance
10 U.S.C. § 404	Authorizes DoD to execute disaster assistance only at the direction of the President, with concurrence of the Secretary of State, or in emergency situations in which immediate action without prior consultation is warranted
10 U.S.C. § 2557	Authorizes DoD to utilize nonlethal excess supplies for humanitarian relief purposes
10 U.S.C. § 2561	Authorizes DoD to use appropriated funds for the purpose of transporting humanitarian relief and other humanitarian purposes, only if no other source is readily available

Requests for and the use of DoD assets for disaster assistance should be couched within the Oslo Guidelines, which state that military personnel must be identifiable through uniform and military assets "should be requested only where there is no comparable civilian alternative."[8] This last point is stressed within Joint Publication 3-29, which states that many "assume the military has an inexhaustible resource reservoir" and that special consideration must be made before resorting to military support.[9]

Concerning funding, DoD activities may take place on a reimbursable (by the requesting authority) or non-reimbursable basis. If labor, supplies, and transportation are agreed to on a non-reimbursable basis, the funds for such activities will come out of the Overseas Humanitarian, Disaster Assistance, and Civic Aid (OHDACA) funds,

[8] UN Office for the Coordination of Humanitarian Affairs, "Guidelines on the Use of Foreign Military and Civil Defence Assets in Disaster Relief ('Oslo Guidelines')," Revision 1.1, November 2007.

[9] U.S. Department of Defense, *Foreign Humanitarian Assistance*, Joint Publication 3-29, March 17, 2009a, pp. II–29.

which are overseen by the Defense Security Cooperation Agency (DSCA). Military commanders may also use the Combatant Commander Initiative Fund, which, in addition to force training, joint exercises, and longer-term humanitarian assistance, can be used for "urgent and unanticipated humanitarian relief and reconstruction assistance."[10] If insufficient funds are available, the Office of the Secretary of Defense Comptroller (OSD[C]) may seek to reprogram unobligated funds with the approval of Congress.

Within DoD, most of the combatant commands have a "strategic concept plan" for foreign disaster relief operations, though most lack a formal, concise document that outlines procedures and lines of authority.[11] The only combatant command, as of August 14, 2012, that had a formal, command-approved procedural document was PACOM.[12] This short document outlines timelines, processes, and team compositions, as well as strategic/operational frameworks through the context of the PACOM AOR.

Overview of DoD Capabilities and Resources in Disaster Relief Operations

DoD has a variety of different capabilities used for general military requirements that can also be used for disaster relief operations. These include air and sealift capacity, logistics management, engineering support, communications, and medical assistance capabilities. The decision to deploy these assets depends upon the availability of nonmilitary resources and whether the requested assets are being used for current operations.

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[10] United States Code, Title 10, Section 166a, Combatant Commands: Funding Through the Chairman of Joint Chiefs of Staff, January 7, 2011.

[11] According to U.S. Department of Defense Inspector General, 2012. In the PACOM AOR, U.S. Pacific Command (USPACOM) CONPLAN 5070-02, "Foreign Humanitarian Assistance (FDR) and Peacekeeping (PK)/Peace Enforcement (PE) Operations" (undated) provides guidelines for conducting foreign disaster relief.

[12] This document exists as a PowerPoint presentation: Joe Goodrich, "Foreign Disaster Relief (FDR) Operations Procedures and Lessons Learned," U.S. Pacific Command, Security Assistance Budget Division, August 16, 2011.

A frequently requested asset, DoD air and sealift capability, often provides the majority of aerial transportation support for disaster relief operations. Large cargo aircraft, including C-130, C-17, and C-5 platforms, flown by the U.S. Air Force (USAF) are the primary DoD means of transporting humanitarian supplies, palletized cargo, and medical evacuees, though the largest of these aircraft require a runway length of at least 3,500 feet. For example, over 130 U.S. military aircraft were utilized for search and rescue, as well as personnel and supply transport, in response to the 2011 Japan earthquake.

Often, a disaster renders landing zones impermissible, so rotary-wing aircraft, such as the Army CH-47 Chinook, U.S. Navy (USN) H-53 Sea Stallion and H-60 Sea Hawk, and U.S. Marine Corps (USMC) MV-22 Osprey and CH-46 Sea Knight helicopters, are also important platforms. Maritime assets, such as the USN's large-deck amphibious ships, can provide sea-based platforms for both small fixed-wing aircraft and helicopters to move supplies to shore. When a reduced footprint within the country is warranted, littoral and maritime assets are particularly essential as offshore platforms. They also further minimize the permissions required to operate within the affected country. For example, because of Burma's unease at allowing a significant international presence within its territory, Joint Task Force Caring Response (JTF-CR) conducted much of its supply airlift using the USS *Essex* Amphibious Ready Group, in addition to the U-Tapao Thai Royal Navy Airfield in Thailand.

DoD also has considerable distribution and supply-chain management logistics capabilities. Because other organizations may lack professional logisticians specially trained in disaster relief, DoD is typically tasked to coordinate the vast majority of logistics support through the DSCA, the Defense Logistics Agency (DLA), and the U.S. Transportation Command (USTRANSCOM). In addition to expertise and management infrastructure, DoD may utilize excess DoD nonlethal

supplies through DSCA from three warehouse facilities in Albany, Georgia; Okinawa, Japan; and Livorno, Italy.[13] After first consulting with DSCA, DoD may augment necessary humanitarian supplies from DLA stock though a DoD policy that stresses that "all potential supply sources should be considered, including affected country, commercial, multinational, and pre-positioned supplies."[14] Coordinating with the involved organizations, the Joint Deployment and Distribution Operations Centers within each of the combatant commands helps link the deployment and distribution process to the humanitarian functions on the ground.

Many foreign disasters require extensive debris clearing and infrastructure reconstruction, and, often, DoD assets are the only available entities capable of assessing and executing large-scale, resource-intensive engineering support. In particular, these assets may include units from the Seabees' naval mobile construction battalions, which are often forward-deployed and equipped for expeditionary missions, as well as the Army Corps of Engineers, which can establish forward engineer support teams for deployment overseas within a few days.

Though DoD classification policies and restricted networks have occasionally hampered the sharing of information, in general, DoD communications infrastructure offers many capabilities for nonmilitary counterparts. In particular, PACOM's All-Partners Area Network (APAN), an open-source website maintained by the command, has become an important information and coordination portal for nonmilitary, international, and nongovernmental partners in the PACOM AOR.[15] The military may also assist in coordinating the interoperabil-

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[13] The warehouse at Marine Corps Logistics Base in Albany, Georgia, primarily services U.S. Central Command (CENTCOM), U.S. Northern Command, and U.S. Southern Command. The warehouse at Torii Station (U.S. Army) in Okinawa, Japan, primarily services PACOM. Leghorn Army Depot in Livorno, Italy, primarily services U.S. Africa Command and U.S. European Command. See Defense Security Cooperation Agency, "Information Paper: Programs Directorate Humanitarian Assistance, Disaster Relief & Mine Action Division," July 2012.

[14] Joint Publication 3-29, 2009, IV-1. The DLA has 17 distribution centers within the continental United States and eight located outside the continental United States.

[15] See Joint Publication 3-29, B-9.

ity of communications equipment and frequency management between various actors.[16]

Improving coordination and integration has also been a focus area for the logistics community, as can be seen through the recent development of the Joint Logistics Enterprise concept, which recognizes the diversity of logistics providers and the need to better optimize their cooperation. Joint Logistics Enterprise members include DoD, the military services, USG agencies, combatant commands, multinational partners, international governmental organizations, the United Nations (UN) and its agencies, NGOs, and private industry.[17] The 2013–2017 guidance on this domain recommends, in particular, establishing "nontraditional partnerships" and increasing collaboration and information sharing, both before and during emergencies.[18]

Analytical Approach

Given DoD's vast capabilities to support HA/DR operations and its extensive involvement in many recent HA/DR events around the world, there is a need to identify and capture lessons to apply going forward. RAND was asked by the Office of the Secretary of Defense for East Asia Affairs, within the Office of the Under Secretary of Defense for Policy (OSD/P), for assistance in identifying relevant lessons from U.S. experiences in providing humanitarian assistance and disaster relief to the people of Burma, Indonesia, Pakistan, and Japan in recent disasters.

These four cases illustrate very diverse contingencies, from a natural disaster taking place in a closed country (Cyclone Nargis in Burma)

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[16] DoD is occasionally tasked to aid with medical evacuation, logistics, and support, though this capability can entail a lengthy, involved deployment and setup process. The use of naval ships, such as the hospital ships USNS *Mercy* and *Comfort*, can provide platforms for medical evacuation aircraft and also a site for medical assistance.

[17] Joint Staff J-4 Logistics and Joint Staff J-7 Joint Force Development, "Operations of the Logistics Enterprise in Complex Emergencies," July 11, 2012, pp. I–2 and I–3.

[18] Joint Staff Logistics Directorate, "Joint Logistics Enterprise: Strategic Direction 2013–2017," undated, pp. 7–8.

to a significant secondary disaster happening to a close U.S. ally (the 2011 nuclear incident in Japan). Overall, the cases differ in terms of the scale of the disaster, the type of contingency—foreign humanitarian assistance (FHA) or foreign consequence management (FCM),[19] the affected country's level of preparedness, and the affected country's degree of openness, all of which present various challenges for DoD (see Table 1.2).

The four cases provided us with lessons on which of the processes and mechanisms in place proved most beneficial to the successful delivery of aid and what challenges DoD encountered along the way.

Based on these cases, we were asked specifically to identify DoD lessons learned with regard to the following areas:

- interagency coordination
- communication with the affected country
- coordination with other state and non-state actors, including at the regional level
- prospects for U.S. security cooperation and building partner capacity (BPC) for disaster response capacity
- prospects for the increased involvement of regional organizations in HA/DR.

These five areas are particularly critical to ensuring that DoD operates most efficiently with other assistance providers (including at the USG level) during HA/DR operations and helps partner countries best prepare for future disasters. The study team sought to obtain data on all five areas. While each is addressed in the respective case study chapters, we found some to be more relevant than others. We focused

[19] FHA is defined as "Department of Defense (DOD) activities, normally in support of the United States Agency for International Development (USAID) or Department of State (DOS), conducted outside the United States, its territories, and possessions to relieve or reduce human suffering, disease, hunger, or privation." FCM is "DOD assistance provided by the USG to a HN [Host Nation] to mitigate the effects of a deliberate or inadvertent chemical, biological, radiological, nuclear, and high-yield explosives attack or event and to restore essential government services." (Joint Publication 3-29, 2009, pp. ix and xi).

Table 1.2
Case Study Comparison

Affected Country	Event	Date	Scale of Disaster	Type of Contingency	Affected Country Preparedness	Affected Country Openness
Burma	Cyclone Nargis	May 2008	Large	FHA	Low	Low
Indonesia	Padang (Sumatra) earthquake	September 2009	Medium	FHA	High	High
Pakistan	Monsoon floods	July–September 2010	Large	FHA	Medium	Medium
Japan	Tsunami and nuclear crisis	March 2011	Large	FHA/FCM	High	High

our case study discussions on those areas in which the most significant lessons could be identified.

In terms of data sources, the team utilized DoD after-action and lessons-learned reports, academic and think tank reports, media reporting, and numerous focused discussions with U.S. and foreign officials, representatives of international organizations (IOs) and NGOs, and academics and think tank researchers, some of whom we met during research trips to Thailand, Japan, and Hawaii. Other individuals with direct experience in the HA/DR missions were tracked down to other locations. These discussions focused on the bilateral and multilateral response to each crisis, including decisionmaking, information sharing and communications, and the identification of requirements.

This study was completed in four phases, or "tasks." Task One involved a review of literature on the four case studies and DoD's involvement in HA/DR. The sources consulted for this task include official USG reports, reports of U.S. and foreign academic institutions and think tanks, IO and NGO reports and press releases, and media reports. Our goal was to map the different U.S. and non-U.S. contributions to each disaster response and highlight the specificities and challenges of each case from DoD's perspective.

Task Two involved meeting with U.S. officials, specifically within the Department of State, DoD, and USAID, as well as academics and think tanks. These discussions focused on decisionmaking, the identification of requirements, and coordination and cooperation both at the interagency level and with non-U.S. partners.

Task Three captured the view from "the other side" through focused discussions with foreign officials, representatives of international and regional organizations, and representatives of NGOs. These discussions focused on foreign and international involvement in HA/DR, and communication and cooperation with the United States. Most of these discussions were conducted during two research trips to Thailand and Japan in January and February 2012.

Finally, Task Four focused on highlighting a list of key lessons from each case study in terms of interagency coordination, coordination with the recipient country, and coordination with international and regional actors. Based on these lessons, we developed recommendations to improve DoD's efficiency as an HA/DR provider, enhance interagency coordination, improve coordination with affected countries, work more effectively with the UN and NGOs, align security cooperation activities and regional HA/DR capabilities, and build goodwill through HA/DR.

Organization of This Report

Chapters Two through Five present each of our four detailed case studies: Cyclone Nargis in Burma, the Padang earthquake in Indonesia, the 2010 monsoon floods in Pakistan, and the earthquake and nuclear disaster in Japan in 2011. The chapters discuss DoD's involvement in each HA/DR response; its coordination with the affected country, key allies, and other nongovernmental entities; other unique but pertinent issues that arose; and how security cooperation might be tailored to address some of the more pressing lessons.

Chapter Six presents our key findings from and recommendations based on the four case studies. In addition, the report includes an appendix that supports the analysis, findings, and recommendations

found in Chapter Six. The appendix provides an overview of emerging HA/DR capabilities in the Asia-Pacific region, specifically focusing on key U.S. partners and allies.

CHAPTER TWO

Cyclone Nargis (Burma)

The DoD relief operation prompted by Cyclone Nargis in Burma in May 2008 represents an extreme case of the challenges HA/DR providers encounter when the affected country has an autocratic regime wary of international interference. All foreign assistance providers—state and non-state—experienced major obstacles in obtaining visas to enter the country. Once in Burma, they encountered additional bureaucratic hurdles in obtaining the travel authorizations necessary to reach affected populations in the Irrawaddy Delta.

While access was the primary concern of all HA/DR providers, DoD faced particular challenges because tensions were high between the Burmese junta and the United States. When the cyclone hit, Burma had been under U.S. sanctions for 18 years.[1] Top Burmese officials harbored a deep-seated fear of invasion that made the use of military assets for HA/DR purposes an extremely sensitive issue.[2]

Cyclone Nargis, however, also presented an unprecedented opportunity to engage Burma. DoD seized this opportunity in a way that created, at times, tensions with the other U.S. agencies involved. Burma's reluctance to open up to the international community also provided an opportunity for the Association of Southeast Asian Nations (ASEAN) to play a key diplomatic role through the creation of a tripartite struc-

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1 For a recent summary of U.S. sanctions on Burma, see Michael F. Martin, *U.S. Sanctions on Burma*, Washington, D.C.: Congressional Research Service, February 7, 2012.

2 On this issue, see, for instance, Andrew Selth, "Even Paranoids Have Enemies: Cyclone Nargis and Myanmar's Fears of Invasion," *Contemporary Southeast Asia*, Vol. 30, No. 3, December 2008, pp. 383–386.

ture that opened access to many relief workers. Emboldened by this success, ASEAN later amplified its efforts to build its own HA/DR mechanisms, a project originally initiated in the aftermath of the 2004 tsunami but that had made only slow progress until then. At the regional level, Nargis also illustrated the potential for successful collaboration between the United States and Thailand, as well as the rising role of China in HA/DR.

Accordingly, our analysis of the Nargis case study focuses particularly on interagency coordination, communication with Burmese authorities, coordination with other state and non-state actors, and prospects for the increased involvement of ASEAN in HA/DR contingencies. Considering the specific challenges of U.S.-Burma relations at the time, it also examines the potential security cooperation value of the U.S. humanitarian intervention during Nargis.

Background

On May 2, 2008, Cyclone Nargis hit the Irrawaddy Division of Burma at approximately 132 miles per hour before moving on to Rangoon the following day (see Figure 2.1). The Irrawaddy Delta, an important rice-producing region, is home to about one-eighth of Burma's population of 53 million. Many of them live on land that is barely above sea level.[3] About 9,000 square miles of the delta were devastated by the winds and a tidal wave.[4] Official newspapers reported that only one in four buildings in the towns of Labutta and Kyaik Lat were still standing after the passage of the cyclone. Rangoon also experienced serious, but lesser, damage.[5] Two months after the disaster, an estimate set the

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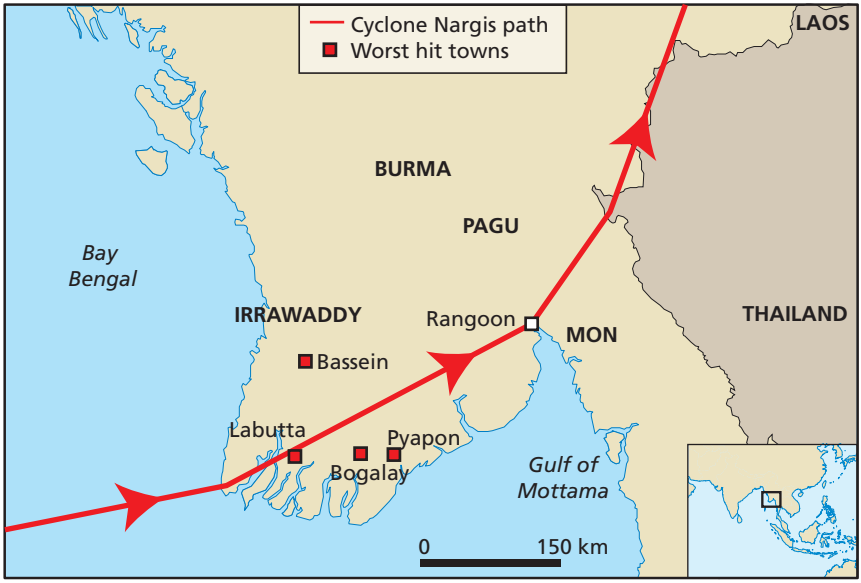
3 Ian McKinnon, "How Geography and Politics Made a Cyclone So Destructive," *The Guardian*, May 6, 2008.

4 Emma Larkin, *Everything is Broken: A Tale of Catastrophe in Burma*, London: Penguin Press, 2010, p. 24. This is equivalent to approximately the size of New Jersey.

5 Aung Hla Tun, "Aid Agencies Struggle to Assess Burma Cyclone Damage," Reuters, May 5, 2008.

Figure 2.1
Map of Cyclone Nargis's Path



RAND *RR146-2.1*

death toll at 130,000, with 2.4 million people having been affected by the cyclone.[6]

The extent and nature of the destruction sustained by Burma was initially difficult to assess. The HA/DR community considered the figures Burmese authorities made public in the first days following the cyclone—more than 4,000 deaths and 93,000 displaced—as a likely underestimation.[7] Assessments were difficult to carry out, since the cyclone had taken down communications and blocked roads that were in poor condition to begin with.[8] Some areas had been only accessible

6 "'To Be Busy Helps Them Forget': Burma's Storm Survivors Cobble Together a Meager Future," *The Washington Post*, July 6, 2008.

7 U.S. Agency for International Development, "Burma – Cyclone," Fact Sheet #1, May 5, 2008a.

8 OCHA, "Myanmar Cyclone Nargis, OCHA Situation Report No. 2", May 5, 2008a; U.S. Government Accountability Office, "Burma: UN and U.S. Agencies Assisted Cyclone

by boat even before the cyclone hit.[9] Initially, foreign organizations were not allowed in the country, making it impossible for the ones that did not already have local staff in these areas to carry out their own assessments. Only over time did a more precise picture emerge, but a month after the cyclone the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) was still lamenting the absence of a "proper needs assessment," which is essential to determining the support required and when and by whom it should be provided, ideally in some kind of priority order.[10]

U.S. DoD Involvement and Interagency Coordination

Scale and Organization of DoD Effort

The U.S. Chargé d'Affaires in Burma, who was also the highest-ranking U.S. official in the country, declared Nargis a disaster on May 5. Consequently, USAID/OFDA deployed a DART and allocated funds to international agencies for emergency relief, including $250,000 to UN agencies for shelter, water, and sanitation on May 5 and $3 million to the American Red Cross and partner NGOs on May 6.[11] Overall, the U.S. effort in Burma amounted to a total of $84.6 million, $12.9 million of which was provided by DoD.[12] DoD's intervention led to the creation of a Joint Task Force that focused on logistics and provision of emergency non-food relief. The task force ceased operations on May 22 (see Table 2.1).[13]

At the time Cyclone Nargis hit, the United States already had numerous military assets deployed in the area for the 27th edition of

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Victims in Difficult Environment, but Improved U.S. Monitoring Needed," GAO-11-700, July 2011, p. 36.

9 Larkin, 2010, p. 21.

10 OCHA, "Myanmar Cyclone Nargis, OCHA Situation Report No. 26," June 2, 2008b.

11 U.S. Agency for International Development, "Burma – Cyclone Fact Sheet #22," June 25, 2008b.

12 U.S. Government Accountability Office, 2011, p. 11.

13 U.S. Government Accountability Office, 2011, p. 16.

Table 2.1
Chronology of U.S. Military HA/DR Operations in Response to Cyclone Nargis

Date	Significant Events
May 2	Cyclone Nargis hits Irrawaddy Delta in Burma
May 3	Marine Corps Forces, Pacific, is tasked as the executive agent for JTF-CR
May 10	The Office of the Secretary of Defense (OSD) and PACOM issue executive orders USAID DART deploys
May 12	C-130 sorties start
May 23	JTF-CR moves from Cobra Gold 08 location to U-Tapao in Thailand and downsizes from approximately 250 people to 150
June 3	UN World Food Program (WFP) bridge is fully operational
June 7	Joint Task Force (JTF) Commander General Goodman returns to PACOM headquarters JTF-CR downsizes to 86
June 11–20	Essex Expeditionary Strike Group leaves the Gulf of Burma JTF-CR downsizes to 66
June 22	C-130 sorties end JTF-CR ceases operations

SOURCES: "JTF-Caring Response: Operational Orientation & Review," USARPAC briefing, undated; "USARPAC OSINT Support to Cyclone Nargis Relief Efforts in Burma 2008," USARPAC briefing, undated; phone conversation with U.S. government official (N), June 4, 2012.

the Cobra Gold exercise.[14] DoD created JTF-CR directly out of Cobra Gold to coordinate the military response to the crisis. Commander of the Marine Forces Pacific, LtGen. John F. Goodman, who had been leading the exercise, commanded the JTF. DoD announced that the USS *Essex* Amphibious Ready Group could be deployed to Burma within four days. It carried 23 helicopters that could be used to transport aid supplies. It also included several landing craft units, as well as

[14] U.S. Government Accountability Office, 2011, p. 18, footnote 24.

1,800 personnel who could participate in the relief effort. The United States also proposed to make available two aircraft carrier groups (led by the USS *Kitty Hawk* and the USS *Nimitz*), both of which had more helicopters on board, as well as medical teams and personnel that could be deployed to the affected areas.[15]

The Burmese government was highly reluctant to accept any foreigners in the country to assist in responding to the disaster. It took extensive discussions and a personal visit to Burma by PACOM Chief Navy ADM Timothy J. Keating and Director of Foreign Assistance and USAID Administrator Henrietta Fore for the United States to be allowed to fly supplies into Burma. The first C-130 flight that departed from U-Tapao Thai Royal Navy Airfield in Thailand and landed in Rangoon delivered 28,000 pounds of relief goods—mostly bottled water, mosquito nets, and blankets. The two following flights brought another 44,650 pounds of supplies.[16]

Once in Burma, U.S. personnel were not allowed to distribute relief supplies; Burmese officials off loaded them and took charge of distribution—a condition the Burmese had placed on the United States' assistance.[17] These initial supply deliveries fulfilled their intended objective: they built trust with Burmese authorities, who, after the first five flights, authorized the United States to consign supplies to NGOs, which then handled their distribution.[18]

Admiral Keating had prior experience with disaster relief, having been the Commander of U.S. Northern Command during Hurricane Katrina. He offered Burmese authorities further U.S. assistance, including the use of heavy-lift helicopters and landing crafts, which

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15 Merle David Kellerhals, Jr., "U.S. Provides $3.25 Million to Aid Burma Cyclone Victims," U.S. Government, May 6, 2008; Jim Garamone, "First of Three Planned U.S. Relief Flights Brings Aid to Burma," American Forces Press Service, May 12, 2008.

16 Garamone, 2008; Donna Miles, "PACOM Commander Accompanies Burmese Relief Mission, Appeals to Allow More Aid," American Forces Press Service, May 13, 2008.

17 Garamone, 2008; Larkin, 2010, p. 47.

18 U.S. Government Accountability Office, 2011, p. 18; phone conversation with U.S. government official (N), June 4, 2012; focused discussion with U.S. government official (A), Washington, D.C., June 5, 2012.

would have been particularly helpful for reaching isolated populations in the delta.[19] A dozen CH-53 Super Stallion heavy-lift helicopters and about the same number of CH-46 Sea Knight medium-lift helicopters were readily available.[20] The United States approached the Burmese with different confidence-building measures, including allowing some of their personnel to ride on helicopters or inviting them to Thailand to monitor what was being loaded on them. The Burmese leadership eventually rejected the U.S. offer after some back and forth.[21] The equipment and supplies pre-positioned at Mae Sot, Thailand, to serve as a forward operating base for rotary-wing operations were never used.[22] The United States was not the only country to experience such difficulties. Thailand and Singapore also saw their offers to send military helicopters denied.[23]

Another constraint to DoD's action was concern about the diversion of its aid. As a result, it did not provide any expensive supplies and turned down some Burmese requests for expensive equipment.[24] Accounts differ as to whether U.S. officials were able to monitor properly what happened to relief supplies once in Burma. Several accounts suggest that some of the U.S. aid was diverted,[25] but U.S. officials

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[19] U.S. Pacific Command Public Affairs, "USS Essex Group/31st MEU Returning to Previously Scheduled Operations," June 4, 2008.

[20] Miles, 2008.

[21] Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012.

[22] "JTF-Caring Response: Operational Orientation & Review," undated.

[23] "Unable to Help Myanmar Relief Effort, U.S. Navy Vessels Sailing Away," *New York Times*, June 4, 2008. This article notes "This has forced aid agencies to scour the world for privately owned military-grade helicopters and to bring them to the region at dramatically higher cost."

[24] Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012; U.S. Government Accountability Office, 2011, p. 21.

[25] Larkin, 2010, p. 48; Voravit Suwanvanichkij et al., *After the Storm: Voices from the Delta*, Emergency Assistance Team Burma and Johns Hopkins Bloomberg School of Public Health, May 2009, p. 33.

maintain that the few in-country U.S. personnel made an effort to track relief convoys to ensure that no large diversion took place.[26]

A number of DoD-provided supplies prompted severe criticisms. For instance, DoD sent medical kits with instructions in Thai rather than Burmese—a mistake that could have led to incorrect use and injury—and the kits had to be sent back to Thailand.[27] The provision of tarpaulins to be used for shelter also proved difficult, as the JTF made several unsuccessful attempts at purchase before identifying the type of supplies that conformed to UN specifications.[28] DoD also sent five-gallon containers of water weighing about 40 pounds, which proved difficult for the population to carry.[29]

When the U.S. air bridge ceased operations on June 22, 2008, the JTF had completed 186 C-130 sorties, transporting four million pounds of relief supplies for a cost of approximately $13 million.[30] These sorties supported 32 different international aid agencies. U.S. military distribution assistance ended when the UN WFP's air bridge reached full capacity and could take over from the JTF, which was not receiving any more requests for assistance from NGOs.[31] Admiral Keating reportedly undertook "15 separate attempts" to extend the U.S. assistance effort beyond the air bridge, to no avail, before ordering the USS *Essex* Strike Group to sail away from the Burma area.[32]

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26 Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012.

27 Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012.

28 Focused discussion with U.S. government officials (C), Bangkok, Thailand, January 24, 2012; Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012.

29 U.S. Government Accountability Office, 2011, pp. 64–65. This report mentions that DoD was not the only HA/DR provider who did not get supplies right. Some ready-made kits from IOs such as the Red Cross and the UN Food and Agriculture Organization proved inappropriate for the Burmese local context (p. 59).

30 Wai Moe, "Burma Drops New Operating Guidelines," *Irrawaddy*, June 24, 2008; U.S. Government Accountability Office, 2011, p. 18; "JTF-Caring Response: Operational Orientation & Review," undated.

31 "JTF-Caring Response: Operational Orientation & Review," undated.

32 "Unable to Help Myanmar Relief Effort, U.S. Navy Vessels Sailing Away," 2008.

Coordination with Other U.S. Actors

A 2011 U.S. Government Accountability Office (GAO) report concluded that Burma had been a case of less-than-optimal interagency coordination.[33] The White House sent conflicting signals, and the JTF experienced some tensions with USAID/OFDA.

While the JTF was trying to build confidence with the Burmese junta and convince its members that they could safely allow the United States to provide humanitarian aid, the White House was sending a very different message.[34] First Lady Laura Bush's public speech two days after the cyclone criticizing the Burmese junta for failing to warn its population in time before the impending disaster and for blocking foreign assistance compounded the trust issues of Burmese officials.[35] Strong rhetoric coming from Washington worked at cross-purposes with what DoD was trying to achieve in Burma, which was precisely to build confidence.[36] At the same time, there was intense pressure from the White House to act quickly and decisively in favor of the Burmese population after Cyclone Nargis. This dissonance only made it more difficult for DoD to convince the junta to open up the country to foreign assistance.

DoD's collaboration with USAID/OFDA proved challenging on several accounts. One key point of contention was measures of success. DoD's prime objective was to relieve suffering in Burma, but it also put a strong emphasis on engaging the Burmese and building confidence with the regime. From this perspective, merely being able to fly C-130s with supplies into Burma was a step in the right direction because it showed Burmese officials that the United States could bring in supplies quickly and efficiently and did not constitute a threat. Accordingly, the number of flights allowed by Burmese authorities was

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[33] U.S. Government Accountability Office, 2011.

[34] See, for instance, Michael Abramowitz, "First Lady Calls for U.N. Resolution Over Ongoing Strife in Burma," *Washington Post*, September 6, 2007.

[35] Dan Eggen, "First Lady Condemns Junta's Response to Storm," *Washington Post*, May 6, 2008; focused discussion with U.S. government officials (D), Honolulu, HI, January 10, 2012.

[36] Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012.

an important measure of success in terms of confidence-building. For USAID/OFDA, however, such a metric was meaningless because its focus was on what, not how much, was being delivered. By focusing on access rather than content, DoD was perceived as fulfilling the White House's instructions of leaning forward, albeit in ways that were not necessarily the most meaningful in terms of HA/DR.[37]

DoD and USAID experienced serious disagreement on some of the supplies to be sent. USAID objected to the sending of candy bars, for instance, which were sent anyway.[38] When USAID asked DoD to fly mosquito nets into Burma, this request was denied on the grounds that, according to the 2011 GAO report, "the nets were not dense enough to fill the airplanes to capacity," and DoD preferred to send larger items such as the five-gallon water bottles. Other coordination issues took place at the logistics level. USAID/OFDA and DoD used different tracking systems for the commodities that were sent to Burma.[39]

Other elements, however, went well. The JTF ensured that all its communications were unclassified so that they could be shared with USAID—a move that has become common practice for HA/DR operations.[40] Coordination between DoD and the State Department was good, with the JTF working closely with the Defense Attaché in Burma.[41]

DoD Coordination with the Recipient Country

The Burmese regime's history is one of diplomatic isolation. In line with its principles of achieving autarchy to the maximum extent possible, the government of Burma initially tried to tackle the disaster

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[37] Focused discussion with international organization representative (C), Bangkok, Thailand, January 24, 2012.

[38] Focused discussion with U.S. government official (A), Washington D.C., June 5, 2012.

[39] U.S. Government Accountability Office, 2011, pp. 64–65.

[40] Phone conversation with U.S. government official (N), June 4, 2012.

[41] Focused discussion with U.S. government official (A), Washington D.C., June 5, 2012.

without outside help. After the 2004 tsunami, it had set up a National Natural Disaster Preparedness Central Committee, chaired by Prime Minister General Thein Sein. This committee met on the morning of May 3 to coordinate a response, creating ten Emergency Disaster Response Sub-Committees and discussing relief plans.[42] Military and police personnel were deployed to assist survivors, but their effort was scattered and inefficient at best.[43]

The Burmese government formally accepted the sending of relief supplies by foreign assistance providers on the condition that it would be in charge of distribution; it also rejected offers of foreign search and rescue teams.[44] It took a visit by the UN Secretary General, Ban Ki-Moon—the first such visit in 44 years—on May 22 and intense diplomatic pressure from ASEAN to convince Burma to open its borders more widely to relief workers.[45] Even then, Burma's strict regulations and general bureaucratic inefficiency prevented part of the relief effort from reaching populations in need, with some food shipments experiencing delays of several months.[46]

It is difficult to assess to what extent the regime's poor ability to handle disaster relief was due to the lack of political will or the lack of organization and appropriate structures. One journalist notes that the Ministry of Social Welfare had only one fax machine to process the many requests for travel permits to the delta region it received over that period.[47] Within the Burmese junta, the decisionmaking process was autocratic, with country leader Senior General Than Shwe making all decisions.[48] This process, in itself, may be largely responsible for the

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42 Tripartite Core Group, *Post-Nargis Joint Assessment (PONJA)*, July 2008b, p. 38.

43 OCHA, 2008a; Larkin, 2010, pp. 45–51.

44 Larkin, 2010, p. 10.

45 Larkin, 2010, pp. 63–65.

46 U.S. Government Accountability Office, 2011, p. 59

47 "'To Be Busy Helps Them Forget': Burma's Storm Survivors Cobble Together a Meager Future," 2008.

48 Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012; Larkin, 2010, pp. 91–92.

delays and inefficiency of the Burmese authorities in providing assistance to the population. Relief on the Burmese side largely came from civil society groups, which organized spontaneously to bring food, water, and other relief supplies to the delta—where they sometimes found distribution of these goods impeded by Burmese military forces.[49] Some local officials, too, seem to have tried to assist the survivors against higher orders.[50]

A key impediment to cooperation between DoD and the Burmese government was the latter's overwhelming fear of invasion by a foreign power—be it the United States or one of its Asian neighbors. In the aftermath of the disaster, the regime started distributing leaflets advising the population on what to do if foreign forces invaded.[51] Burmese state media reported that the United States was contemplating invading the country out of interest in its oil deposits.[52] Naval assets such as the USS *Essex* were seen with particular suspicion by the junta, which fears invasion by sea.[53]

A last challenge was the fact that USAID and DoD could not provide aid to sanctioned entities, namely the Burmese government, while, in some regions, government employees were the key point persons for humanitarian assistance.[54] Relying on civil society worked to some extent, because local organizations were generally highly motivated and had an excellent knowledge of how to organize communities. However, they also proved much more qualified at helping with food and shelter than at providing more technical skills, such as setting up mobile clinics, providing clean water, or running nutrition programs.[55]

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49 "Frustrated Burmese Organize Aid Forays," *The Washington Post*, June 21, 2008.

50 "'To Be Busy Helps Them Forget': Burma's Storm Survivors Cobble Together a Meager Future," 2008.

51 Larkin, 2010, pp. 57–58.

52 "Unable to Help Myanmar Relief Effort, U.S. Navy Vessels Sailing Away," 2008.

53 Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012.

54 U.S. Government Accountability Office, 2011, pp. 22 and 64.

55 Phone conversation with international NGO representative (B), January 18, 2012.

DoD Coordination with International and Regional Actors

U.S. Partners and Other Countries

U.S. flights departed from U-Tapao, about 90 miles southeast of Bangkok. U-Tapao was chosen because of its proximity to Burma and the ease of access provided by the good relationship existing between the United States and the Thai government. This, however, contributed to the junta's perception that the United States was a surrogate for Thai relief in Burma—a potential problem, given the historical animosity that exists between Burma and Thailand.[56]

There is mixed evidence on how successful China was at helping HA/DR providers gain more access to Burma. Chinese authorities certainly pressured the Burmese into accepting foreign assistance,[57] and, on May 9, Deputy White House Press Secretary Gordon Johndroe told journalists: "We certainly appreciate the efforts that some countries, such as China and others, have made to talk to the junta about the need to get help in."[58] It seems, however, that Chinese aid was not much more successful than American aid at entering Burma, as the Burmese government's xenophobic behavior generally did not discriminate, with all outsiders being treated the same. Chinese authorities largely shared other foreigners' sense of dismay at being unable to provide much-needed assistance.[59] China's planes were allowed into Burma one day earlier than U.S. planes, but this was also the case for other Asian countries, such as Thailand and India, as well as the UN.[60]

Search and rescue operations were carried out solely by Burmese civil and military authorities. Though it initially hesitated, the Bur-

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[56] Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012. Burma and Thailand (then known as Siam) experienced repeated wars from the 16th to the 18th century; Thailand invaded Burma during World War II. More recently, the two countries experienced border clashes in 2012.

[57] Focused discussion with U.S. government officials (E), Honolulu, HI, January 11, 2012.

[58] "Press briefing by Gordon Johndroe," Crawford Middle School, Crawford, Tex., *The American Presidency Project*, University of California at Santa Barbara, May 9, 2008.

[59] Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012.

[60] Larkin, 2010, p. 47.

mese government ultimately allowed a small number of international teams into the country to provide medical aid. Medical teams allowed into Burma were almost exclusively from neighboring countries and numbered approximately 235 persons in total.[61] Given that 2.4 million people were affected by the cyclone, this equates to more than 10,000 people per international medical worker. The total numbers of medical workers in-country at any one point were never much greater than 180, and they only began arriving in Burma over two weeks after the cyclone struck. In addition to providing the two largest contingents, service members from the two international militaries involved, China and India, also made up approximately 40 percent of the overall medical workers in country. The Indian military team was focused on the villages of Bogalay and Phyaphon, and the Chinese military team was sent to the village of Kungyangon.[62] According to the leader of the Chinese military medical unit, the team provided medical services to over 3,000 patients and trained 30 Burmese medical personnel in epidemic prevention.[63]

Compared to aid provision and distribution, aid delivery was one of the few avenues that the Burmese government opened to the international community, including international militaries. Most instances of aid delivery were from airlift, though in at least one instance aid was brought on naval warships by India to Rangoon. Figure 2.2. shows the amount of aid delivered directly by the United States and other foreign militaries,[64] a figure that is about 37 percent the volume of the total U.S. effort.

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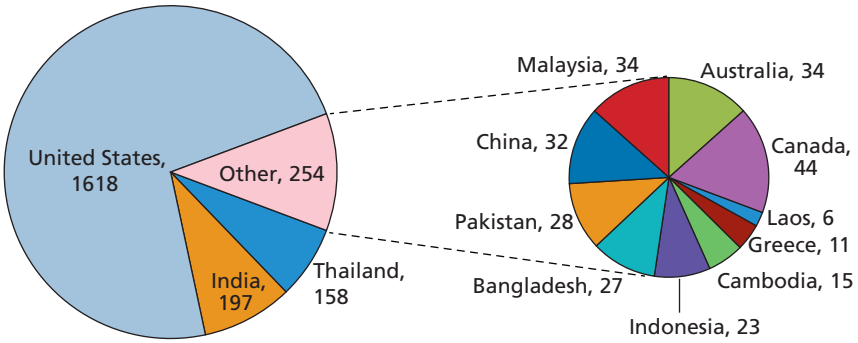
[61] These numbers may undercount the total international effort, as it is difficult to establish the full scale of the international community in providing medical aid to Burma. International medical personnel that may have contributed efforts but could not be verified include civilian teams from the Philippines, France, and Taiwan.

[62] "Bangladeshi medics arrive in Burma to care for cyclone victims," *BBC Monitoring Asia Pacific – Political*, May 5, 2008.

[63] Xiang Shiping, "Experience of the China Medical Team with Emergency Medical Relief in Burma After Cyclone Nargis," presented at the 39th Congress on Military Medicine, November 2011.

[64] "India to Send 8 Tonnes of Relief Material to Myanmar," *Thaindan News,* May 6, 2008; "India Launches 'Operation Sahayata' in Nargis-hit Myanmar," *OneIndia News,* May 7,

Figure 2.2
Aid Delivered by Foreign Militaries to Burma, by Country and Amount (in short tons)



NOTE: The total tonnage of some military aid relief flights is estimated when data is unavailable. Beyond delivery of aid that can be measured or estimated, Bangladesh, China, Laos, and India are known to have transported their respective civilian or military medical teams on military transport aircraft. In some instances, the aid amount (in tons) from Thailand and India was estimated.

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Once the delivery of aid was finally allowed, the infrastructure at Rangoon International Airport was not poised to receive aid shipments, lacking material-handling equipment such as forklifts. Accord-

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2008; "Bangladesh Aid Arrives in Burma," *BBC News,* May 9, 2008; "Naval Ships Discharge Supplies in Yangon," *The Hindu,* May 9, 2008; "India to Send More Relief to Myanmar on May 10," *The Economic Times,* May 10, 2008; "Relief Goods Sent to Myanmar," *Daily Times*, May 12, 2008; "Canadian Forces to Transport Emergency Relief Supplies for Burma," *National Defence and the Canadian Forces,* May 13, 2008; "International Relief Supplies Continue to Arrive," *The New Light of Myanmar,* May 13, 2008; "More International Aids Arrive," *The New Light of Myanmar,* May 14, 2008; "World Fears for Cyclone Victims; In Addition to Poor Aid Distribution, Heavy Rain Has Also Hurt Myanmar," *Nanaim Daily News,* May 14, 2008; "Relief Aid from Abroad Arrives at Yangon International Airport," *The New Light of Myanmar,* May 15, 2008; "International Relief Supplies Flow in by Air," *The New Light of Myanmar,* May 16, 2008; "More Relief Items from Abroad Arrive at Yangon International Airport," *The New Light of Myanmar,* May 16, 2008; "Myanmar (Burma) Humanitarian Relief Efforts for Victims of Cyclone Nargis – May 16, 2008," *Thai Press Reports,* May 19, 2008; "More International Relief Aid Arrive," *The New Light of Myanmar,* May 28, 2008; U.S. Agency for International Development, *Office of Foreign Disaster Assistance Annual Report*, 2008.

ing to a U.S. Congressional testimony, "no modern facilities [in Burma] to unload relief goods from cargo planes exist."[65] U.S. Defense Department pictures of what appear to be Burmese soldiers hand-carrying boxes down the ramps of U.S. C-130s only underscore the nature of the problem for aid delivery.[66]

It is also important to note that there were no instances of foreign militaries providing aid distribution within the country. A French and a British naval ship waited 12 nautical miles offshore with the USS *Essex* battle group.[67] These ships would have been able to use a substantial number of helicopters for distribution, in addition to delivering the relief supplies they had onboard.[68] The two ships waited for approximately eight days but were never given permission to enter Burmese territorial waters or airspace to commence relief operations.[69] The French ship, which had a significant amount of relief supplies aboard, sailed to neighboring Thailand and off loaded the supplies for the UN to deliver.

As a result, the Burmese military junta had a nearly complete monopoly on relief aid distribution inside the country until the WFP finally received a green light to bring in helicopters to distribute food almost 20 days after the disaster began.[70]

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[65] Sein Win, "Burma: Aftermath of Cyclone Nargis," *CQ Congressional Testimony*, May 20, 2008.

[66] U.S. Department of Defense, "Supplies for Burma," May 19, 2008b.

[67] The USS *Essex* battle group was composed of the USS *Essex* landing helicopter dock ship, the USS *Juneau* landing platform dock ship, the USS *Harpers Ferry* landing ship dock, and the USS *Mustin* destroyer. Accompanying the battle group was the French Navy's *Le Mistral* landing platform helicopter ship and the U.K. Royal Navy's *Westminster* frigate.

[68] The French *Le Mistral* can sail with a compliment of up to 16 medium or large helicopters, and the HMS *Westminster* could have provided a single helicopter as well.

[69] Kenneth Denby, "Burma Accepts Foreign Medics," *The Australian*, May 20, 2008; "World Outraged Over Myanmar's Detention of Suu Kyi," *Associated Press Online*, May 28, 2008.

[70] The WFP was finally able to start helicopter distribution in the affected areas on or around May 22, 2008. "US Ships Idle at Sea as Myanmar Rebukes Aid," Agence France-Presse – English, May 22, 2008; "Myanmar Appears to Nix US Navy Help, Saying 'Strings Attached,' *Associated Press Worldstream*, May 22, 2008.

International and Regional Organizations

Cooperation with UN agencies and NGOs proved particularly important to needs assessment. Information provided by the Burmese authorities was both incomplete and unreliable, prompting foreign assistance providers to make their own assessment. PACOM relied heavily on open-source intelligence, compiling media reports and commercial satellite imagery to provide a quick assessment of the extent of damage in the Irrawaddy Delta and prioritize its relief efforts. This information was shared with NGOs and other key HA/DR players involved in the Burma response.[71] The most comprehensive effort at needs assessment finally started on June 9, with the launch of the 250-strong Post-Nargis Joint Assessment (PONJA) team, which included representatives from ASEAN member states, the Burmese government, the UN, NGOs, the Myanmar Red Cross, experts from the Asian Development Bank (ADB) and the World Bank, and volunteers.[72] This comprehensive assessment focused on relief and recovery needs, as well as the longer-term impact of Nargis on communities and their economies.[73]

In terms of access, UN agencies and NGOs experienced the same obstacles as the United States. While U.S. C-130s were waiting in U-Tapao for authorization to fly to Rangoon, the WFP had three planes on standby in Bangladesh, Thailand, and Dubai, waiting for the same authorization.[74] Four days after the disaster, the UN OCHA disaster assessment team was still waiting on its visas in Bangkok. Other organizations, including the United Nations Children's Fund (UNICEF) and the International Federation of the Red Cross, also experienced major visa delays.[75] Consequently, all organizations relied, to a large extent, on the staff and national partners they already had

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71 "USARPAC OSINT Support to Cyclone Nargis Relief Efforts in Burma 2008," undated.

72 ASEAN, "Post Nargis Joint Assessment Teams Begin Assessments in Ayeyawaddy (Irrawaddy) Delta," June 11, 2008b.

73 OCHA, 2008b.

74 Larkin, 2010, p. 8.

75 William French, "UN Says Aid Agencies Made to Wait for Myanmar Visas," Agence France-Presse, May 6, 2008.

in Burma, some of which held in-country stockpiles of relief goods.[76] They also relied on their Burmese personnel, who, unlike foreigners, were allowed to travel inside the country.[77] These personnel, however, were in limited numbers and soon found themselves overworked; they also had difficulties covering areas of assistance that did not necessarily fit their expertise.[78] UN agencies and NGOs were more successful than the United States at getting Burmese authorities to accept their use of helicopters for supply delivery—but permission for this was not obtained until June 2.[79]

Indirectly, the UN and NGOs played a role in helping the United States and other countries gain access to Burma by convincing the Burmese government that the amount of destruction was so massive that it could not handle everything. This may have contributed to the Burmese leadership letting foreign nations fly into Burma to deliver supplies.[80]

The UN and NGO response was organized using the cluster system,[81] which had been in place since 2005 and organized respond-

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[76] UN Department of Public Information, "Press Conference on Myanmar Humanitarian Situation," May 6, 2008.

[77] Larkin, 2010, p. 9.

[78] UN Department of Public Information, 2008; U.S. Government Accountability Office, 2011, p. 36.

[79] OCHA, 2008b.

[80] Focused discussion with U.S. government officials (B), Honolulu, HI, January 14, 2012.

[81] The cluster system is designed to improve coordination among all organizations (UN and non-UN) providing disaster assistance in a particular area. Each cluster has a lead organization that provides a clear point of contact for the authorities of the affected country, as well as the UN Humanitarian Coordinator. The clusters are as follows: Nutrition (UNICEF), Health (World Health Organization), Sanitation/Water and Hygiene (UNICEF), Emergency Shelter (UN High Commissioner for Refugees/International Federation of Red Cross and Red Crescent Societies), Camp Coordination/Management (UN High Commissioner for Refugees/International Organization of Migration), Protection (UN High Commissioner for Refugees), Food Security (Food and Agriculture Organization and WFP), Early Recovery (UN Development Programme), Logistics (WFP), Education (UNICEF/Save the Children), and Emergency Telecommunications (WFP). See UN Office for the Coordination of Humanitarian Affairs, "Cluster Coordination," undated.

ers into functional groups with one organization as the lead.[82] The JTF did not attend cluster meetings but was in close contact with USAID/OFDA, which was a participant. The JTF also followed UN cluster regulations, including when it was asked to provide 150,000 tarps.[83]

The purchase of tarps actually ended up being a source of tension between the JTF and the UN because the JTF did not initially know the exact specifications—resulting in successive, small purchases of tarps that were rejected by the UN. The JTF eventually found that no Thai-produced tarps met the standards. Obtaining tarps produced elsewhere considerably increased the cost to DoD—as well as the amount of time it took to deliver the tarps to Burma. The JTF eventually found tarps that complied with UN standards, but this required ferrying Chinese-made tarps to Korea and then flying them to Bangkok and finally Rangoon.[84]

When Cyclone Nargis hit, ASEAN countries had been attempting for more than three years to set up a coordinated HA/DR capacity at the regional level. The tsunami that devastated Southeast Asia on December 26, 2004 had revealed a complete lack of regional disaster response capacity, plans for a coordinated response, or ability to share information in times of crisis. Consequently, in 2005, ASEAN countries adopted an Agreement on Disaster Management and Emergency Response, which aimed "to provide effective mechanisms to achieve substantial reduction of disaster losses in lives and in the social, economic and environmental assets of the Parties, and to jointly respond to disaster emergencies through concerted national efforts and intensified regional and international co-operation."[85] This agreement, however, had not yet entered into force when Nargis took place.[86]

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82 On the difficulties the cluster system experienced in Burma, see Larkin, 2010, p. 74.

83 Phone conversation with U.S. government official (N), June 4, 2012.

84 "JTF-Caring Response: Operational Orientation & Review," undated.

85 ASEAN, "ASEAN Agreement on Disaster Management and Emergency Response," July 26, 2005, Article 2.

86 ASEAN, "ASEAN Members Urged to Support International Emergency Relief for Cyclone Victims in Myanmar," May 5, 2008a.

Some other regional mechanisms were, nevertheless, available. Nargis represented the first time ASEAN deployed an Emergency Rapid Assistance Team (ERAT) to a country in need.[87] The team, composed of government officials and HA/DR experts from Brunei, Malaysia, the Philippines, and Singapore, as well as representatives of the ASEAN Secretariat, deployed on May 9 to assess the situation in the delta.[88] These teams played a critical role in assessing the scope of the damage and the needs of the affected communities.[89]

ASEAN also contributed to breaking the deadlock with the Burmese government by forming, on May 25, 2008, a Tripartite Core Group (TCG) in which ASEAN, the Burmese government, and the UN each had three representatives. The mission of the TCG was to build confidence, promote dialogue, and coordinate action between Burma and all actors involved in HA/DR.[90] The TCG started working on May 31, and its weekly or more frequent meetings succeeded in increasing the number of visas granted to the international community.[91] ASEAN also took a leading role in setting up PONJA, which published its needs assessment in June 2008. This progress was halted on June 10, when new regulations for UN and international NGOs started delaying visas again. It took another meeting of the TCG to revert to the visa rules previously enforced.[92] The TCG's work was not limited to the immediate aftermath of the cyclone: It also carried out periodic reviews of the humanitarian relief effort, the first of which

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[87] Focused discussion with international organization representative (A), Bangkok, Thailand, January 24, 2012. ERATs act as a rapid response capability for natural disasters; they fall under the ambit of ASEAN and are composed of representatives from each member state.

[88] ASEAN, "Post-Nargis Needs Assessment and Monitoring: ASEAN's Pioneering Response," Jakarta: ASEAN Secretariat, August 2010, pp. 8, 14, and 21.

[89] Focused discussion with regional government officials (A), Bangkok, Thailand, January 31, 2012.

[90] Tripartite Core Group, "Myanmar: 1st press release of Tripartite Core Group," June 24, 2008a; OCHA, "Myanmar Cyclone Nargis, OCHA Situation Report No. 29," June 9, 2008c.

[91] Tripartite Core Group, 2008a.

[92] Moe, 2008.

took place in October 2008, and the group's mandate did not end until July 2010.[93]

Conclusions

U.S. Security Cooperation Considerations

The HA/DR operation following Cyclone Nargis provides a rather extreme example of DoD HA/DR engagement because it required the United States to gain access to one of the most closed and xenophobic regimes in the world. The limited access and sanctions that prohibited the United States from providing aid to the junta made the mere principle of intervention highly challenging. The United States also had no military-to-military relationship with Burma, aside from the presence of its Defense Attaché. Burma has since experienced a change of government in 2011 and increased political and civil rights, which culminated in the visit of U.S. Secretary of State Hillary Clinton in December 2011 and the election of regime opponent Aung San Suu Kyi to the Parliament in April 2012. Diplomatic relations with Burma are evolving, and sanctions are being rethought.[94] This process could, in the future, make some form of military engagement with the Burmese possible—maybe starting with limited participation in some events and later expanding to personnel exchanges. Such engagement may change the Burmese leadership's perception of the United States and reduce the mistrust they showed during the Nargis response. However, it is important to note that, at the time of Nargis, some senior members of the Burmese leadership had been recipients of international military education and training (IMET) before 1988, as the United States had an important IMET program with Burma until that date.[95] Still, this

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[93] Tripartite Core Group, "TCG Launches First Periodic Review of Humanitarian Relief and Early Recovery Efforts in Cyclone Nargis Affected Areas Yanton, Myanmar," October 19, 2008c; U.S. Government Accountability Office, 2011, p. 8.

[94] See, for instance, Kurt M. Campbell, "Statement Before the House Committee on Foreign Affairs Subcommittee on Asia and the Pacific," April 25, 2012.

[95] Martin, 2012.

prior contact did not result in these individuals having the willingness, or the ability, to support U.S. assistance when it was offered.[96]

Overall Considerations for DoD

HA/DR is sometimes seen as an "easier" way to engage "difficult" nations in that it is more palatable than cooperation in more sensitive areas, such as counterterrorism.[97] Convincing Burma to consent to the use of U.S. military assets for HA/DR showed the limits of this principle. In spite of intense confidence-building efforts, the United States was never allowed to provide more than an air bridge. Still, the U.S. presence proved useful because it filled the gap until other providers could get organized (it took the WFP several weeks to put in place air capabilities).[98]

Did the United States gain any long-term benefits from this intervention? The confidence built among the population itself may have been limited, as Burmese authorities made sure people could not identify what they received as U.S. assistance.[99] Confidence built with Burmese officials may have also been limited by the fact that the system is highly stovepiped, but the recent change of leader, if it also leads to a change in the decisionmaking process, may allow positive impressions of the United States made during the Nargis response to have an effect on U.S.-Burmese relations. The Nargis case, therefore, suggests that, even in the most politically difficult contexts, HA/DR can be a useful channel of U.S. public diplomacy.

The Nargis case also highlighted interagency difficulties. Political pressure to engage Burma resulted in the U.S. military "pushing" supplies, to some extent, while HA/DR principles call for "pulling" supplies instead—only bringing in what is needed by affected populations for fear of providing inadequate supplies or clogging an already

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96 Focused discussion with U.S. government official (F), Honolulu, HI, January 11, 2012.

97 Focused discussion with U.S. government official (G), Honolulu, HI, January 11, 2012.

98 Focused discussion with U.S. government official (B), Honolulu, HI, January 14, 2012.

99 Focused discussion with U.S. government official (E), Honolulu, HI, January 11, 2012.

stressed delivery and distribution system.[100] Although most actors involved understood that the diplomatic opportunity could not be wasted, these different approaches created tensions. The JTF acknowledged the risks associated with too much "push" but also noted that some degree of it was required early on because it did not receive any anticipated requirements from USAID and NGOs, and it accordingly made its own decisions as to what should be sent.[101] This highlights the need for improved interagency communications on requirements and specific items that should or should not be delivered in instances where political stakes for intervention are particularly high.

Some tensions also grew out of a lack of communication of standards between the UN and the JTF. The fact that the JTF in Burma did not have the UN specifications for tarps, leading to repeated back and forth between the JTF and the UN Shelter Cluster, points to a lack of knowledge of each others' modes of operation. This could be easily fixed through clearer communication of checklists or the circulation of standardized forms with the precise requirements for each type of supply, as well as approved commercial providers.

Last, Cyclone Nargis provided an opportunity for ASEAN to play the regional HA/DR role it had been intending to play ever since the 2004 tsunami. Nargis was the first time ASEAN engaged programmatically through the TCG, and it showed that the organization had the ability to spur innovative and effective ways of responding to disasters.[102] Overall, ASEAN proved to be a very successful diplomatic conduit for bringing all actors together and building confidence with a recipient country highly suspicious of foreign intervention.

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[100] Focused discussion with U.S. government officials (C), Bangkok, Thailand, January 24, 2012; focused discussion with international organization representative (C), Bangkok, Thailand, January 24, 2012.

[101] Phone conversation with U.S. government official (N), June 4, 2012.

[102] Focused discussion with international organization representative (A), Bangkok, Thailand, January 24, 2012. Interestingly, Cyclone Nargis also revealed how little progress ASEAN had made since the 2004 tsunami with regard to HA/DR: by May 2008, the 2005 ASEAN Agreement on Disaster Management and Emergency Response had not yet entered into force, and the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Center) in Jakarta was still in the making.

How likely is ASEAN to continue on this path? As a result of Nargis, ASEAN's efforts to set up its own HA/DR capacity accelerated.[103] After receiving support from the United States, Australia, and Japan, the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA) Center is now more operational.[104] Its ambition is to act as the command center for any disaster in the region, sending situation reports to other member states to provide them with accurate, timely needs assessments.[105] Other initiatives are progressing. The ASEAN Agreement on Disaster Management and Emergency Response (AADMER), which gives the rules and engagement procedures that ASEAN countries should abide by if a disaster strikes, finally entered into force in December 2009. It was reinforced by the adoption of Standard Operating Procedure for Regional Standby Arrangements and Coordination of Joint Disaster Relief and Emergency Response (SASOPs), which give national disaster management agencies a toolbook for disaster response. The ASEAN Regional Forum has also undertaken several HA/DR exercises.

Before the United States can hope to see ASEAN take a decisive role in HA/DR operations, however, it is important to note that some key obstacles remain to the full and efficient functioning of these mechanisms. As of 2012, the AHA Center had a staff of only three people, and it was poorly equipped.[106] Another key issue is confidence-building. Most ASEAN countries are reluctant to share lists of the resources they could commit to HA/DR in case of a disaster, but such national mappings could significantly help the AHA Center

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[103] Focused discussion with international NGO representative (A), Bangkok, Thailand, January 26, 2012.

[104] Focused discussion with regional government official (B), Bangkok, Thailand, January 27, 2012.

[105] Focused discussion with U.S. government official (F), Honolulu, HI, January 11, 2012; Focused discussion with international NGO representative (A), Bangkok, January 26, 2012.

[106] Focused discussion with international organization representative (D), Bangkok, Thailand, January 26, 2012.

operate more effectively.[107] Another obstacle to an effective regional response is the fact that numerous ASEAN members tend to rely on bilateral assistance and are, in some cases, wary of breaking these ties in favor of a more regional approach.[108] Finally, the need for an HA/DR regional structure is also changing: Since 2004, ASEAN countries have built considerable institutional capacity with regard to HA/DR and are reluctant to call for outside help in cases of small or medium-sized disasters because of a sense of pride and political accountability.[109] These different factors suggest that a structure such as the AHA Center would mostly be of use in the case of a large or mega-disaster. Existing political tensions and national preferences, therefore, suggest that ASEAN's HA/DR ambitions, while making steady progress, are still a long way from being a reality. With limited capacity and fragmented member states, ASEAN can certainly play an HA/DR role in specific contexts, such as Cyclone Nargis, but is unlikely to become a key humanitarian actor—and, therefore, a key DoD partner—in the near future.

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[107] Focused discussion with regional organization representative (A), Bangkok, Thailand, January 24, 2012; focused discussion with regional government officials (A), Bangkok, Thailand, January 31, 2012.

[108] Focused discussion with international organization representative (B), Bangkok, Thailand, January 24, 2012; focused discussion with international organization representative (C), Bangkok, Thailand, January 24, 2012.

[109] Focused discussion with international organization representative (B), Bangkok, Thailand, January 24, 2012; focused discussion with regional government official (B), Bangkok, Thailand, January 27, 2012; focused discussion with regional government official (C), Bangkok, Thailand, January 25, 2012.

CHAPTER THREE

Padang Earthquake, West Sumatra (Indonesia)

The earthquake that struck the western coast of Sumatra Island on September 30, 2009, represents a type of disaster with which Indonesia has become all too familiar. The Indonesian archipelago is located on the so-called Ring of Fire, an area particularly prone to seismic activity due to the collision of the Indian-Australian, Pacific, and the Philippines tectonic plates.[1] As a result, Indonesia has experienced 38 earthquakes of magnitude 6.3 or above since 2005.[2] The 2009 West Sumatra earthquake, in this regard, highlights some lessons for DoD on responding to a "routine" disaster likely to repeat itself in the future.

The response to the 2009 earthquake also illustrates the trend for countries in the Asia-Pacific region to rely increasingly on their own disaster response mechanisms instead of seeking assistance from the international community. Indonesia restructured its HA/DR capabilities in 2008, with the creation of a National Agency for Disaster Management (*Badan Nasional Penanggulangan Bencana* [BNPB]). When the earthquake hit Sumatra, Indonesia effectively managed the overall disaster response.

DoD successfully provided logistical assistance to relief workers by transporting personnel and supplies, including to areas that had been cut off by landslides. It was also the first time DoD sent a Humanitar-

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1 Badan Nasional Penanggulangan Bencana (BNPB), Bappenas, and the Provincial and District/City Governments of West Sumatra and Jambi and international partners, "West Sumatra and Jambi Natural Disasters: Damage, Loss and Preliminary Needs Assessment," October 2009, p. 13

2 U.S. Geological Survey, "Historic World Earthquakes: Indonesia," undated.

ian Assistance Rapid Response Team (HARRT), an Air Force field hospital that can be deployed within 24 hours to disaster-affected areas to provide medical care to the population. DoD personnel in Padang also worked with Australian responders, illustrating how the United States and its close allies can fruitfully cooperate on HA/DR.

The Padang case study is particularly interesting in terms of command and control arrangements in the absence of a JTF. It also illustrates the type of relationships that DoD can establish during a crisis with a country that has acquired sufficient disaster response assets to lead decisively its own relief effort. Finally, the large number of disaster relief organizations present around Padang provides useful lessons in terms of coordination between DoD and other state and non-state actors.

Background

Two earthquakes of 7.6 and 6.2 magnitude on the Richter scale struck off the coast of West Sumatra, Indonesia, 22 minutes apart on September 30, 2009. The resulting damage affected an estimated 1.2 million people and devastated the cities of Padang, with almost a million inhabitants, and Pariaman, with a population of 80,000 (see Figure 3.1). A third earthquake of 6.8 magnitude hit an area 225 kilometers southeast of Padang the next day.[3] An assessment a month later estimated that more than 1,100 people had died as a result of the earthquake, and its overall financial cost came close to $2.3 billion in damages and losses.[4] More than 180,000 houses, 1,000 schools, 10 hospitals, and 272 health facilities were damaged.[5]

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3 United Nations, "West Sumatra Earthquake: Humanitarian Response Plan in Coordination with the Government of Indonesia," 2009.

4 BNPB, Bappenas, and the Provincial and District/City Governments of West Sumatra and Jambi and international partners, 2009, p. xii.

5 OCHA, "Indonesia – Earthquake, Situation Report No. 20," November 3, 2009c.

Figure 3.1
Map of Padang Earthquake Impact

RAND *RR146-3.1*

Both Indonesia and the international community were already responding to other disasters when the Padang earthquake struck.[6] Only a few weeks earlier, a smaller earthquake had killed more than a hundred people on the nearby island of Java, and some of Indonesia's disaster response assets were still employed there in late September.[7]

Other recent disasters had triggered international assistance in the region. In early August, Typhoon Morakot had killed close to 500 people in Taiwan; on September 26–29, Typhoon Ketsana devastated the Philippines and caused major floods in Cambodia, Laos, and Vietnam; on September 29, Samoa, American Samoa, and Tonga expe-

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6 Although technically three earthquakes took place and the damage extended beyond the city of Padang, this disaster will be referred to as the "Padang earthquake" for the rest of this chapter.

7 Aubrey Belford, "More than 1,000 Feared Dead in Major Indonesian Quake: Officials," Agence France-Presse, October 1, 2009; UN, 2009.

rienced a submarine earthquake followed by a tsunami that caused widespread damage and led to the deployment of U.S. Operation PACIFIC WAVE. This series of disasters placed high demands on the HA/DR capacity of ASEAN countries and beyond, forcing the United States to evaluate how best to distribute its assets among these concurrent theaters.[8]

The landslides created by the Padang earthquake made it difficult to distribute aid in West Sumatra. Several villages entirely disappeared under these landslides, which also cut roads and means of communication.[9] One month after the earthquake, international humanitarian agencies noted that some areas—the hardest to reach—had still not received assistance and admitted having no good assessment of aid distribution and remaining needs.[10]

U.S. DoD Involvement and Interagency Coordination

Scale and Organization of DoD Effort

The U.S. Ambassador in Indonesia issued a disaster declaration on October 1 and USAID/OFDA deployed a DART the following day.[11] Meanwhile, Defense Secretary Robert Gates authorized $7 million for DoD's contribution to this HA/DR mission.[12] The DoD response to the earthquakes was coordinated by the Commander, Amphibious Force Seventh Fleet, RADM Richard Landolt.[13] Amphibious Force

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8 Government of the Philippines, "Commentary: ASEAN Needs to Step Up on Preparedness, Coordination for Future Disasters," October 7, 2009.

9 "Indonesia Ramps Up Aid Effort a Week After Quake," Agence France-Presse, October 7, 2009; Katie Nguyen, "Wave of Disasters Tests Aid Agencies' Preparedness," AlertNet, October 2, 2009.

10 OCHA, "Indonesia – Earthquake, Situation Report No. 19," October 30, 2009b.

11 USAID, "Indonesia – Earthquake, Fact Sheet #3," October 5, 2009b; USAID, "Indonesia – Earthquake, Fact Sheet #11," October 27, 2009f.

12 Merle David Kellerhals, Jr., "United States Delivers Disaster Assistance to East Asia," U.S. Government, October 7, 2009.

13 U.S. 7th Fleet Public Affairs, "Amphibious Force 7th Fleet Sends Survey Team to Indonesia," October 6, 2009.

Seventh Fleet/Task Force 76 led the U.S. Navy Response.[14] The Thirteenth Air Force sent the 36th Contingency Response Group (CRG), which set up a HARRT. A JTF was not established for this operation. Table 3.1 presents a chronology of the U.S. military HA/DR operations in response to the Padang earthquake.

When the Padang earthquake took place, DoD was already in the process of redirecting some of its assets from Taiwan (where they supported the response to Typhoon Morakot) to the Philippines, where floods had begun. The USS *Denver* was separated from the other ships—USS *Harpers Ferry* and USS *Tortuga*—and rerouted toward

Table 3.1
Chronology of U.S. Military HA/DR Operations in Response to the Padang Earthquake

Date (2009)	Significant Events
September 30	Two earthquakes (7.6 and 6.2) hit West Sumatra
October 1	A third earthquake (6.8) hits inland
October 4	Coordinator of U.S. military response, RADM Landolt, arrives in Indonesia with HAST team
October 5	HARRT leaves Padang on two C-17 Globemaster IIIs The government of Indonesia (GoI) halts search and rescue operations in Padang and transitions to relief phase
October 7	HARRT is fully operational
October 9	DoD starts flying in and delivering supplies and personnel
October 9–10	DoD conducts aerial assessments of affected areas
October 14	HARRT completes its mission
October 16	End of U.S. military engagement in the Padang area

SOURCES: Veronica Pierce, "PACAF Airmen Deploy to Indonesia to Help Earthquake Victims," 13th Air Force, October 5, 2009a; USAID, 2009b; USAID, "Indonesia – Earthquake," Fact Sheet # 7, October 9, 2009c.

[14] Ty Swartz, "Navy Wraps Up Indonesia Relief Mission," Amphibious Force 7th Fleet release, October 16, 2009.

Indonesia.[15] It was joined by the USS *McCampbell*, which was doing a port visit in Hong Kong, the USS *Richard E. Byrd*, and some elements of the 31st Marine Expeditionary Unit (MEU). The 353rd Special Operations Group (SOG) was already in Indonesia for a training exercise with the Indonesian military and was immediately available to provide communication and logistical support to RADM Landolt and his staff.[16]

The 353rd SOG set up a command and control center in Ta Bing Airfield in Padang to coordinate the U.S. military effort.[17] A DoD HAST team undertook an assessment of the accessibility of the affected areas and identified potential landing areas for the delivery of supplies.[18] C-130s transported supplies and personnel from Jakarta to Padang, while helicopters reached the most isolated areas. As of October 13, U.S. military helicopters had transported an estimated 66 metric tons of relief supplies.[19]

The West Sumatra earthquake was the first operational employment of a HARRT.[20] The decision to deploy a HARRT in West Sumatra was motivated by the extensive damage experienced by four hospitals in Padang.[21] Led by the 36th CRG commander at Andersen Air Force Base (AFB), Guam, Col. Dan Setterfren, it included personnel from the 36th Wing at Andersen AFB; 13th Air Force at Hickam AFB,

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15 "Typhoon Morakot, the Aftermath: U.S. Helicopters to Join Rescue Effort," *Taipei Times*, June 18, 2009; U.S. 7th Fleet Public Affairs, 2009.

16 Aaron Cram, "Kadena Airmen Aid Indonesian Recovery," American Forces Press Service, October 9, 2012; U.S. Department of Defense, "Department of Defense Bloggers Roundtable with RADM Richard Landolt," U.S. web page, October 22, 2009c.

17 Swartz, 2009.

18 DoD, 2009c.

19 U.S. Agency for International Development, 2009c; U.S. Agency for International Development, "Indonesia Earthquake," Fact Sheet #8, October 13, 2009d.

20 DoD, 2009c.

21 David Olson, HARRT medical commander from Andersen AFB, Guam, cited in Pierce, 2009a; Cathal O'Connor, "Foreign Humanitarian Assistance and Disaster-Relief Operations: Lessons Learned and Best Practices," *Naval War College Review*, Vol. 65, No. 1, Winter 2012, p. 156.

Hawaii; 3rd Wing at Elmendorf AFB, Alaska; and the 374th Medical Group at Yokota AFB, Japan.[22] The HARRT, established on October 5, was fully operational two days later and scheduled to treat 200–250 patients per day.[23]

This first deployment of the HARRT provided an opportunity to identify its strengths and weaknesses for future missions. One issue was the hospital's relatively late arrival. The HARRT was on site and operational nearly six days after the earthquake hit. By then, most people injured in the earthquake had already received medical attention elsewhere. As a result, the HARRT ended up providing mostly primary care, while its specialty is the treatment of traumatic injuries. The HARRT still proved very useful to the population, though, as health facilities in Padang had been damaged and could not handle all primary care. This experience suggested, nevertheless, that the pace of deployment should be quickened.[24] Further research is required to ascertain whether HARRT use has improved for subsequent disasters.

The HARRT completed its mission on October 14 and left Sumatra on October 16.[25] October 16 also marked the end of the deployment of USN assets, following the withdrawals of the USS *McCampbell* and the USS *Denver*.[26] During the 12 days that DoD's intervention lasted, it conducted 150 sorties to deliver 640,000 pounds of supplies, and the HARRT provided medical care to 1,945 people.[27] USAID/OFDA's DART demobilized on October 25, with USAID/OFDA leaving only two officers behind until November 11 to handle the subsequent stages of the relief effort.[28]

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22 Pierce, 2009a.

23 Swartz, 2009.

24 Focused discussion with U.S. government official (A), Washington, D.C., June 5, 2012.

25 USAID, "Indonesia – Earthquake, Fact Sheet #9," October 15, 2009e.

26 Swartz, 2009.

27 O'Connor, 2012, p. 157.

28 USAID, 2009f; USAID, "Indonesia – Earthquake, Fact Sheet #12," November 16, 2009g.

The U.S. military left Padang when NGO requests started to decrease, showing a lesser demand for its logistical capabilities. The departure of the HARRT was more difficult for local hospitals, which do not seem to have been warned in advance of the departure of the U.S. medical personnel and facilities.[29] A JTF would have been useful to facilitate the coordination of U.S. assistance. As described by the then–chief of staff of CTF-76, "the command and control of multiple service components was done informally. It worked because of the people involved, but a JTF would have provided clear-cut command-and-control relationships."[30]

Coordination with Other U.S. Actors

Interagency coordination seems to have functioned well during the Padang response.[31] A forward-command element coordinated with the U.S. embassy in Jakarta, while the HAST was in touch with the U.S. consul and USAID in Padang. The Commander, Amphibious Squadron 11 assisted USAID in conducting surveys of roads and potential landing areas with helicopters from the USS *McCampbell* and the USS *Richard E. Byrd*.[32] USAID validated NGO requests for transportation using DoD assets through the Mission Tasking Matrix (MITAM) system. The USAID/DART assisted DoD's HARRT in providing medical supplies to the organizations that could make the best use of them.[33] Interagency dialogue was facilitated by the fact that USAID and DoD personnel were located in nearby areas and the Padang operation remained relatively small, making it easy to know the individuals in charge on both sides.[34]

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29 Focused discussion with U.S. government official (A), Washington, D.C., June 5, 2012.

30 O'Connor, 2012, p. 157.

31 Phone conversation with U.S. government official (O), June 7, 2012.

32 O'Connor, 2012, p. 156.

33 USAID, 2009e.

34 Phone conversation with U.S. government official (O), June 7, 2012.

DoD Coordination with Recipient Country

The Indonesian government's response to the disaster was quick and efficient. It declared a one-month emergency phase and set up an Emergency Coordination Post to facilitate access for HA/DR workers.[35] It immediately mobilized $10 million dollars, with another possible $600 million later on for emergency relief, and the ADB approved a loan of $500 million to Indonesia for this purpose.[36] Indonesia had recently restructured its entire emergency management framework at the national and provincial levels. In 2008, it established the BNPB to manage disaster preparedness, relief, and recovery activities.[37] The BNPB also coordinates military and nonmilitary efforts.[38]

The BNPB is an increasingly efficient organization, and Indonesia provides it with steady resources.[39] However, capacities are still uneven between the national and provincial levels; the small Padang airport, for instance, experienced difficulties accommodating flights from the United States, Australia, and other international donors.[40] The Indonesian government welcomed international assistance—albeit "under close national coordination."[41] DoD worked in coordination with the GoI. The Indonesian military, dispatched from Jakarta, West Sumatra, and North Sumatra, participated in search and recovery and deployed two C-130 aircraft and six warships with relief supplies and medical personnel to affected areas.[42] The Indonesian National Armed

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35 BNPB, Bappenas, and the Provincial and District/City Governments of West Sumatra and Jambi and international partners, 2009, p. 8.

36 UN, 2009.

37 World Bank, "Helping Indonesia Prepare for Disasters," October 2, 2009.

38 Phone conversation with U.S. government official (P), June 5, 2012.

39 Phone conversation with U.S. government official (O), June 7, 2012; Phone conversation with international organization representative (F), June 6, 2012.

40 Phone conversation with U.S. government official (O), June 7, 2012.

41 BNPB, Bappenas, and the Provincial and District/City Governments of West Sumatra and Jambi and international partners, 2009, p. 8.

42 BNPB, Bappenas, and the Provincial and District/City Governments of West Sumatra and Jambi and International Partners, 2009, p. 8; Peter Beaumont, "Sumatra Counts Earth-

Forces (*Tentara Nasional Indonesia* [TNI]) required that all air travel be reported to them and that TNI aircraft be given priority to transport relief commodities—foreign aircraft could be used only if needs exceeded TNI aircraft's capacity. BNPB was the coordination point between IOs willing to fly in relief items and TNI.[43] The fact that the Indonesian HA/DR capacity is still an emerging one, however, resulted in some mishaps. RADM Landolt noted that, on the third day the United States heavy-lifted relief commodities into the affected areas, "we were not so successful because we were working with the Indonesian military on some outlying cargo-placement areas that turned out not to be at the global positioning system (GPS) points they had provided us, so we lost most of that day."[44]

DoD Coordination with International and Regional Actors

U.S. Partners and Other Countries

The Indonesian earthquake required a response focused primarily on search and rescue efforts, medical treatment, and water treatment. The delivery of aid also played a role, though to a lesser extent. While at least 14 international search and rescue teams operated in Sumatra in the aftermath of the earthquake, they were, with the exception of one, all civilian units. Only Qatar's Internal Security Force's search and rescue team represented actual military participation in search and rescue activities.[45]

In addition to that of the United States, eight international medical teams from seven countries participated in treating earthquake sur-

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quake Toll As Rescue Efforts Intensify," *The Guardian*, October 1, 2009; USAID, "Indonesia – Earthquake," Fact Sheet #1, October 1, 2009a.

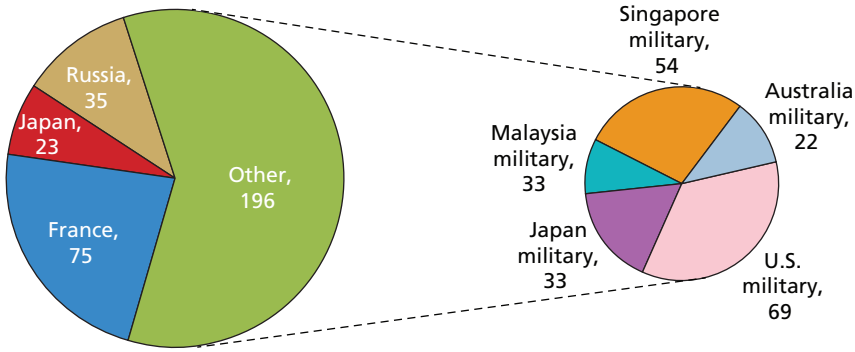
43 OCHA, "Indonesia – Earthquake, Situation Report No. 14," October 13, 2009a.

44 DoD, 2009.

45 "Worksheet: Qatari Search and Rescue Team's Experience During the Relief Operations in the Sumatra Island's Earthquake," *Qatari Internal Security Force (Lekhwiya)*, November 2011. While search and rescue can be undertaken by a variety of civilian and military organizations, most organized search and rescue teams that operate globally are entirely civilian in nature; China's team and Qatar's team are noted exceptions.

vivors. Of these seven teams, four were composed of foreign military personnel (Australia, Japan, Malaysia, and Singapore),[46] as shown in Figure 3.2. Except for the Australian team, which arrived seven days after the initial earthquake, the military teams were at the scene of the disaster quickly, arriving either on October 2 (Japan) or October 3. Though its military medical team arrived relatively late, Australia

Figure 3.2
Indonesia: Numbers of Medical Aid Workers, by Country (not including IO/NGO personnel)



RAND *RR146-3.2*

[46] M. Jegathesan, "Disease Fears as Rains Lash Indonesia Quake Zone," Agence France-Presse, October 4, 2009; "Japan Sends Search, Medical Teams to Quake-Hit Sumatra," Agence France-Presse, October 1, 2009; "Foreign Aid Pours into Quake-Hit Indonesia," Agence France-Presse, October 4, 2009; "Russian Rescuers Leave Indonesia for Moscow," RIA Novosti, October 9, 2009; Japan International Cooperation Agency, "Japan Rescuers Comb Wreckage of Hotels with Sniffer Dogs Searching for Survivors of Indonesia's Latest Devastating Earthquake," October 5, 2009; "Indonesia: Malaysia Sends Aid to Sumatra Quake Victims," *Jakarta Post,* October 3, 2009; "M'sian Humanitarian Aid Team from West Sumatra Arrive Home Safely," *Malaysia General News,* October 13, 2009; "S'pore team in Indonesia to Help Quake Victims," *AsiaOne,* October 3, 2009; Government of Australia, "Indonesia: HMAS Kanimbla on route to Padang," Ministry of Defence, October 10, 2009a; Government of France, "Intervention humanitaire française d'urgence en Indonésie," Ministry of Foreign Affairs, October 4, 2009; "Indonesia: France Sends Aid Team, Supplies to Padang," Agence France-Presse, October 3, 2009; Veronica Pierce, "Air Force HARRT Arrives in Indonesia," U.S. Air Force, October 7, 2009b.

stayed much longer than the other teams, both civilian and military, leaving October 30.[47]

In addition to the foreign civilian and military teams providing medical treatment and search and rescue, Australia sent 145 soldiers to set up and run two water purification plants. These plants provided approximately 400,000 gallons of drinking water to residents of Padang after the town's water treatment facility was damaged in the earthquake.[48]

Other than the U.S. military, the Royal Australian Air Force (RAAF) carried out the lion's share of foreign military aid delivery. Most of this aid was delivered by three RAAF C-130s that were used to ferry international aid delivered to Jakarta to Padang's Minangkabau International Airport. These aircraft operated for nearly a month, often flying two sorties a day, and delivered approximately 600 tons of aid.[49] RAAF C-130s and C-17s also brought other equipment and supplies into Indonesia from Australia on at least three occasions.[50] Beyond RAAF participation, the Singapore Air Force's C-130 aircraft, delivering the country's civilian search and rescue team, also brought relief aid supplies.[51]

The size of Operation Padang Assist and the extent of the Australian involvement can be explained by the level of military-to-military engagement existing between Australia and Indonesia; Australia's largest aid program in the region is in Indonesia, and the two countries have a strong diplomatic relationship.[52]

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47 Government of Australia, "Padang Mission Ends," Department of Defence, undated.

48 Government of Australia, "Padang Water Plants Wind Down," Department of Defence, undated(b).

49 Government of Australia, "Australians Complete Indonesian Earthquake Mission," Department of Defence, October 30, 2009b.

50 "Indonesia Earthquake: Rescue Teams Refocus on Survivors," *Mercy Corps,* October 4, 2009; "Pictorial: Helping Hand for Indonesia and Samoa," *Defence Magazine*, Issue 8, 2009.

51 "S'pore team in Indonesia to Help Quake Victims," 2009.

52 Focused discussion with regional government official (C), Bangkok, Thailand, January 25, 2012.

The United States worked with the Australians on several occasions. The U.S. DART flew into Padang on an Australian C-130 and worked with the AusAid emergency representatives to carry out joint site visits and assessments.[53] RADM Landolt expressed thanks to the Australians for getting clean water into Padang. Communication with the Australians was facilitated by the fact that RADM Landolt had met some of the individuals in charge of Australia's response effort during exercise Saber only two months earlier.[54] Some degree of coordination took place through PACOM and engagement liaison officers in Canberra and Washington, but most of it took place directly in the field because both countries have a long history of working together in contexts other than HA/DR.[55]

International and Regional Organizations

The earthquake triggered a massive influx of NGOs into Padang to assist with the rescue and relief efforts. As of October 13, 2009, UN OCHA counted more than 191 organizations working to provide assistance in the Padang area.[56] A large number of these NGOs were already present in Indonesia, often in Aceh, where they had been working since the 2004 tsunami on various recovery projects. Their number in Padang decreased quickly, however, once those that did not succeed in attracting outside funds or finding an appropriate use for their skill set left the area.[57]

The fact that many organizations were already working in Indonesia facilitated HA/DR, since some of them had pre-positioned stocks of relief supplies that could be accessed and distributed quickly

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53 Focused discussion with U.S. government official (A), Washington, D.C., June 5, 2012; Phone conversation with U.S. government official (O), June 7, 2012.

54 DoD, 2009.

55 Focused discussion with regional government official (C), Bangkok, Thailand, January 25, 2012.

56 OCHA, 2009a.

57 Phone conversation with U.S. government official (O), June 7, 2012.

after the earthquake.[58] RADM Landolt carried out daily briefings with NGO partners and the U.S. embassy. NGO requests to the U.S. military for airlift started decreasing as early as October 12, leading RADM Landolt to request an assessment from USAID and NGOs of their remaining airlift needs—the first step in the progressive phasing-out of DoD airlifting missions.[59]

UN agencies and NGOs organized themselves using a cluster system. Some DoD personnel, including the HARRT Commander, attended the meetings of the health cluster and the logistics cluster.[60] The U.S. military used the logistics cluster meeting, in particular, to pass on information on how to fill in requests for transportation.[61] Coordination between DoD and the UN system (mainly WFP and the two clusters) was generally perceived as good.[62]

At the regional level, the Indonesian earthquakes did not prompt any collective ASEAN response, but individual countries did send assistance. Singapore and Malaysia sent military personnel to take part in rescue operations.[63]

Conclusions

U.S. Security Cooperation Considerations

The Padang disaster highlights the importance of personal relationships between those individuals in charge of the HA/DR effort. Collaboration between the United States and Australia was made easier

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58 USAID, 2009a; UNDP, "UNDP Boosts Recovery in Earthquake-Hit Padang," November 4, 2009.

59 DoD, 2009.

60 Phone conversation with U.S. government official (O), June 7, 2012.

61 Focused discussion with U.S. government official (A), Washington, D.C., June 5, 2012. These guidelines were also posted around tents in the Padang Governor's House yard, where all NGOs were assembled.

62 Phone conversation with international organization representative (F), June 6, 2012; Focused discussion with U.S. government official (A), Washington D.C., June 5, 2012.

63 Government of the Philippines, 2009.

by the fact that RADM Landolt knew some of the key players in the Australian response team. In the absence of formalized cooperation mechanisms, U.S.-Australia coordination also benefitted from their experience working together in contexts other than HA/DR.[64] Bilateral relationships in HA/DR can therefore be facilitated by joint exercises that do not focus on HA/DR.

Overall Considerations for DoD

This disaster also underscores the change in attitude of countries that have developed their own emergency response system and expect to take the lead in humanitarian response. They tend to be more selective with regard to the capabilities being offered by the international community and are better described as customers, rather than recipients, of HA/DR. Countries that have heavily invested in their own resources want to be seen by their populations as being in charge. In the case of the Padang disaster, WFP delivered assets to Indonesian organizations that interacted with the affected populations—it did not do the distribution itself.[65] Unless the economic trajectory of these countries experiences a dramatic change, this trend is likely to continue in the future. This has already changed the type of activities that USAID conducts with a country like Indonesia. It now focuses more on capacity-building and disaster risk reduction,[66] as well as early recovery—focusing on getting people back to work, restoring their livelihoods, getting them back to normalcy—than on addressing the immediate consequences of small and medium-sized disasters, which the BNPB can generally handle.[67] There will remain, however, a need for U.S. military assistance in the case of large-scale or mega-disasters that exceed these countries' response capacities.

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[64] Focused discussion with regional government official (C), Bangkok, Thailand, January 25, 2012.

[65] Focused discussion with international organization representative (E), Bangkok, Thailand, January 23, 2012.

[66] The World Bank noted, two days after the earthquakes, that the BNPB had not succeeded in limiting the extent of damages created by natural disasters (World Bank, 2009).

[67] Phone conversation with U.S. government official (O), June 7, 2012.

CHAPTER FOUR

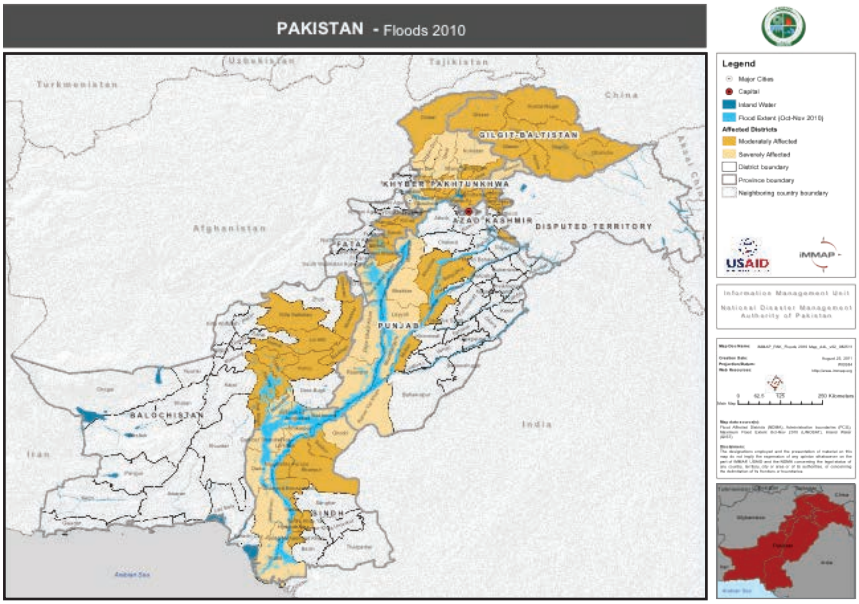
2010 Monsoon Floods (Pakistan)

Beginning in July 2010, abnormally intense monsoon rains in Pakistan resulted in massive flooding as rivers overflowed, creating the worst natural disaster in Pakistan's history. About one-fifth of Pakistan's territory was flooded (as shown in Figure 4.1), and one in eight Pakistanis was directly affected. The flooding constituted a slow-moving and complex disaster that unfolded over many weeks. The vast scale of the disaster presented huge challenges to the Government of Pakistan (GoP), including the Pakistani military in its first-responder role.

The overall international response to the disaster was large, and the United States was the greatest single contributor to the response. The U.S. military component of that contribution was relatively small in scale but filled an important niche requirement for airlift support, especially rotary airlift. Pakistani authorities were ambivalent recipients of this support; on one hand, they recognized the need for the capabilities the U.S. military could bring to bear, but on the other hand, at least some Pakistani officials (particularly in the military) were suspicious of the United States' motivations and reluctant to accept help that they perceived as encroaching on Pakistani sovereignty.

In conducting research for this case study, we investigated the effectiveness of how the U.S. military HA/DR contribution was organized, the command and control arrangements that were put in place, communication and coordination among U.S. agencies and between the U.S. military and Pakistani authorities, and the U.S. military's coordination with the broader humanitarian response community. We

Figure 4.1
Map of Pakistan Monsoon Flooding, 2010



SOURCE: Pakistan National Disaster Management Agency website.
RAND *RR146-4.1*

also sought to evaluate whether the goals of the U.S. military effort were met and what the impact was on U.S.-Pakistani relations.

This case illustrates ways in which the U.S. military can quickly mobilize and use its unique capabilities to make significant contributions to HA/DR and to demonstrate its responsiveness to the needs of an ally. It also illustrates the challenges of engaging with an internally divided and at least partly reluctant recipient government, as well as those of conducting HA/DR operations in an insecure environment. In addition, the case reveals constraints on achieving the strategic communications objectives of HA/DR operations, even when the humanitarian objectives are successfully met.

Background

Over the course of the 2010 monsoon season, abnormally heavy rainfall, flash floods, and riverine flooding combined to create a moving body of water equivalent to the size of the United Kingdom's land mass.[1] Within one and a half months after the flooding began, 78 out of the 141 districts in Pakistan were affected.[2] Though casualties were limited relative to the magnitude of the disaster—nearly 2,000 people lost their lives and 3,000 were injured—more than 20 million people were affected in other ways. The flooding had a huge impact on agriculture; rural livelihoods; and infrastructure, including education and health facilities, military installations, and communications systems, as over 130,000 square kilometers were inundated. Nearly two million homes were damaged, and many roads and bridges were washed out, thus cutting off many communities and necessitating airlift for the delivery of relief supplies. In addition to the challenges posed by the scale of the disaster, the political environment affected relief efforts: wealthy landlords in Pakistan's semi-feudal countryside as well as tribal leaders reportedly interfered with aid allocation decisions.[3]

The huge geographic scale of the disaster and large number of affected people made relief and recovery an exceptionally complex undertaking for the humanitarian aid community.[4] Moreover, the scale of the disaster and the locations of some of the affected areas were unexpected.[5] While many humanitarian NGOs were already operating in Pakistan, international NGOs were not well established in some

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1 United Nations, "Pakistan, Floods Relief and Early Recovery Response Plan, Revision," November 2010, p. 10.

2 Figures in this paragraph are from Government of Pakistan National Disaster Management Authority, "Annual Report 2010," Islamabad: Prime Minister's Secretariat, April 2011a.

3 See, for example, Carlotta Gall, "Floods in Pakistan Carry the Seeds of Upheaval," *New York Times*, September 5, 2010. See also DARA, "The Humanitarian Response Index 2011, Focus on Pakistan Lessons from the Floods," 2011, p. 10. Also, focused discussion with U.S. government official (J), Washington D.C., January 27, 2012.

4 United Nations, 2010, pp. 1–2.

5 Phone conversation with international NGO representative (B), January 18, 2012.

areas that were seriously affected by the floods, and national NGOs had little experience dealing with major emergencies.[6]

Pakistan's limited civilian governance capabilities exacerbated the challenges this disaster presented. Pakistan's disaster management framework was in flux at the time of the flooding, with a new structure, under the National Disaster Management Authority (NDMA), still under construction and the old relief system still working in parallel in some areas. Overall, the civilian disaster management system was severely underfunded and lacked capabilities. Weak district governments and the absence of elected local government machinery also limited the ability of Pakistani authorities to respond effectively to the disaster.[7]

The cost for relief was estimated to be nearly $1 billion, and the same amount was estimated for early recovery.[8] Overall damage was estimated at 5.8 percent of Pakistan's 2009–2010 gross domestic product (i.e., nearly $10 billion). Under UN auspices, an initial appeal for immediate relief needs was launched on August 11, 2010, seeking $459 million, and a revised emergency relief and early recovery appeal was made on November 5, 2010, seeking nearly $2 billion in aid.[9] This was the largest humanitarian appeal in both the UN's and Pakistan's history.[10] By December 2011, donors had funded 70 percent of identified humanitarian needs.[11]

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6 Government of Pakistan National Disaster Management Authority, "Pakistan 2010 Flood Relief – Learning from Experience, Observations and Opportunities," April 2011b, p. 3.

7 Oxfam, "Ready or Not: Pakistan's Resilience to Disasters One Year on From the Floods," Oxfam Briefing Paper 150, July 26, 2011, pp. 18–20.

8 Government of Pakistan National Disaster Management Authority, 2011a, p. 14, citing World Bank and Asian Development Bank Damage and Need Assessment.

9 Government of Pakistan National Disaster Management Authority, 2011a, p. 16.

10 United Kingdom House of Commons, International Development Committee, "The Humanitarian Response to the Pakistan Floods," Vol. 1, London: The Stationery Office Limited, May 10, 2011, p. 8.

11 DARA, 2011, p. 3. See also OCHA, "Pakistan Humanitarian Bulletin," Issue 16, February 17–March 3, 2011a.

U.S. government (USAID and State Department) humanitarian assistance for the floods reached nearly $600 million for FY 2010 and FY 2011, largely from International Disaster Assistance and Food for Peace funds.[12] According to USAID, other civilian and military in-kind assistance was valued at more than $95 million, including air support to and within Pakistan, Halal meals, and prefabricated steel bridges.[13] According to another source, the DoD response cost $107.4 million.[14] The United States was by far the single largest donor for relief efforts related to the flooding.[15]

The rescue and relief phase began in July 2010, initially for a three-month period, and was later was extended to the end of January 2011. Relief efforts continued after that date in several of the worst-affected districts, while the recovery phase commenced.

U.S. DoD Involvement and Interagency Coordination

Scale of DoD Effort

DoD's HA/DR response to the floods had two strategic objectives: the first was to relieve the suffering of affected Pakistanis and the second was to strengthen U.S.-Pakistan relations. Senior military leaders of the operation considered the guidance clear and broad, and the delegation of authority to the commander in the field fully sufficient.[16] DoD's principal contribution to the relief effort was airlift support—a critical

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[12] USAID, "Pakistan – Floods, Fact Sheet #9," January 21, 2011a. See also USAID Office of Inspector General, "Audit of USAID/Pakistan's Flood Relief Efforts as Administered by Local Nongovernmental Organizations," Audit Report No. G-391-11-003-P, January 24, 2011, p. 1.

[13] USAID, 2011a.

[14] Phone conversation with U.S. government official (S), November 18, 2011.

[15] K. Alan Kronstadt, Pervaze A. Sheikh, and Bruce Vaughn, "Flooding in Pakistan: Overview and Issues for Congress," Washington, D.C.: Congressional Research Service, November 18, 2010, p. 5; and United Nations, 2010, p. 124.

[16] Focused discussion with U.S. government officials (K), Washington D.C., February 14, 2012.

need in this disaster due to infrastructure damage, inundated roads, and, eventually, snowfall in some affected areas.

One key feature of the response was the speed with which it was initiated, followed by continuing quick responses to GoP requests. DoD's ability to utilize forces and equipment already deployed nearby was an advantage in this regard; 12 hours after the GoP asked the U.S. Ambassador to Pakistan for airlift support, U.S. Army helicopters were en route from Afghanistan, and these were replaced by the 15th MEU from off the coast of Aden within 72 hours. The commander of the HA/DR operation, VADM Mike LeFever, emphasized the importance of responding quickly to Pakistani requests in order to demonstrate U.S. commitment to Pakistan as an ally. In addition to the rapid deployment of aviation assets, DoD responded quickly to the first GoP request it received related to the disaster—as many Halal meals as could be provided. The Office of the Defense Representative in Pakistan (ODRP) scoured ARCENT-Kuwait and worked with the International Security Assistance Force (ISAF) in Afghanistan to locate meals, arrange airlift and diplomatic clearance, and ensure the delivery of nearly 450,000 Halal meals ready to eat (MREs) within three days.[17]

A second key feature was DoD's contribution of a niche capability: rotary lift. The United States provided not only the vast majority of foreign airlift support but also capabilities that were unavailable from UN Humanitarian Air Service (UNHAS), the Pakistani military, or other donor governments. In particular, DoD was able to deploy heavy-lift helicopters and to capitalize on the U.S. capability to operate in austere environments.[18]

Table 4.1 provides a chronology of the operation.

At the peak of DoD's HA/DR effort, the United States had deployed 26 helicopters, C-130 and C-17 cargo aircraft, and several hundred servicemembers. At the end of operations, 18 U.S. military

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[17] Focused discussions with U.S. government officials (K) and (L), Washington D.C., February 14 and 2, 2012.

[18] Focused discussion with U.S. government official (K), Washington D.C., February 14, 2012.

Table 4.1
Chronology of U.S. Military HA/DR Operation in Response to 2010 Pakistan Floods

Date	Significant Events
Late July	Monsoon flooding begins
July 30	U.S. Ambassador to Pakistan declares disaster
July 30	NDMA requests Halal meals; ODRP initiates response to request
July 31	First Halal MREs arrive in country via a U.S. C-130
August 2	Pakistan military requests U.S. aviation support; delivery of 436,944 Halal MREs completed
August 3	ODRP establishes operations at Ghazi Air Base; USAID/OFDA personnel arrive
August 8	USAID DART stood up
Throughout August	Multiple U.S. DoD elements deploy, importantly including rotary wing assets
September 1–5	26th MEU joins effort
October 3	Final fixed-wing mission, in accordance with GoP termination of U.S. fixed-wing operations
November 6	U.S. rotary wing operations terminated per GoP decision
October 26–November 17	Delivery of eight prefabricated bridges and transfer to GoP for installation by Pakistani military
December 2	End of DoD HA/DR mission
January 31, 2011	GoP-declared end of disaster relief phase

SOURCE: Compiled from multiple sources.

helicopters and about 350 U.S. servicemembers were conducting airlift missions.[19] U.S. Air Force cargo aircraft transported relief supplies to distribution sites around Pakistan, and U.S. helicopters delivered supplies to locations cut off by the flooding. By the end of the mission, DoD had transported over 11,000 metric tons of relief supplies, about one-third by fixed wing and two-thirds by rotary wing. Using specialized capabilities (i.e., U.S. aircraft for lift), the United States evacuated more than 26,000 people stranded by flooding (as of the end of October).[20] By comparison, Pakistani forces evacuated 1.4 million people.[21] In addition, DoD provided eight prefabricated bridges, which were among the 103 bridges donated by foreign governments and transferred from NDMA to the Pakistan Army for the replacement of damaged bridges.[22]

Pakistani personnel were responsible for packaging relief supplies into the pallet loads that DoD aircraft delivered and for deciding what supplies would be sent to which locations. Initially, the pallet loads were not standardized but instead were intended for specific destinations. This wasted time because aircraft going to particular destinations would have to wait—burning up crew days—for the customized loads to be ready. Gradually, DoD successfully pressed the Pakistanis to decide further in advance to which destinations they wanted U.S. aircraft to fly and to standardize pallets. ODRP brought in personnel to help the Pakistani side with air planning, as well as airfield managers, pallet handler personnel, forklifts, and K Loaders.[23]

To put the scale of DoD airlift support in the context of the broader international effort to deliver relief supplies, WFP delivered by air more than 12,200 metric tons of food and other emergency sup-

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[19] Jim Garamone, "Ceremony Marks End of Pakistan Flood Relief Operations," American Forces Press Service, December 2, 2010.

[20] U.S. Department of State, Office of the Spokesman, "Update: U.S. Response to Pakistan's Flood Disaster," October 29, 2010.

[21] United Nations, 2010, p. 12.

[22] Government of Pakistan National Disaster Management Authority, 2011a, p. 19.

[23] Focused discussion with U.S. government official (L), Washington, D.C., February 2, 2012.

plies with helicopters provided by the UNHAS, Japan, Pakistan, and the U.S. military.[24] In addition, separate from the U.S. DoD effort, the North Atlantic Treaty Organization (NATO) conducted a 90-day airlift operation (ending November 22), during which it transported 1,020 tons of relief goods in 24 airlift missions to the Islamabad, Lahore, and Karachi airports. NATO also conducted sealift delivery of NATO-donated bridging equipment through end of 2010. The NATO effort was managed by its Euro-Atlantic Disaster Response Coordination Center.[25] According to U.S. personnel with whom we spoke, there was no direct coordination of airlift support between ODRP and NATO, though there was some communication between the ODRP commander and the Supreme Allied Commander Europe regarding operating in Pakistan.

The United States also reportedly offered the GoP support from a range of reconnaissance aircraft, including the Global Hawk.[26] Some reports suggest that intelligence, surveillance, and reconnaissance (ISR) aircraft were indeed used by the U.S. military to provide real-time video to U.S. and Pakistani commanders, but we were not able to determine which specific aircraft these might have been at the unclassified level. Reasons for this lack of clarity and publicity could include political sensitivities in Pakistan and elsewhere regarding the use of such assets for U.S. counterterrorism activities. Separate from DoD, the National Aeronautics and Space Administration published imagery from the Landsat 5 and Terra satellites showing flood effects in Pakistan.[27]

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[24] World Food Program, "Fighting Hunger Worldwide: The World Food Programme's Year in Review, 2010," undated, p. 11.

[25] NATO News, "NATO Concludes Airlift Operations in Support of the Flood Victims in Pakistan," November 25, 2010.

[26] "U.S. Officials: Pakistan Keeps Up Anti-Islamist Fight Despite Floods," *The Wall Street Journal*, September 8, 2010.

[27] See, for example, National Aeronautics and Space Administration Earth Observatory, "Flooding in Pakistan: Image of the Day," August 3, 2010; National Aeronautics and Space Administration Earth Observatory, "Lingering Floods in Pakistan: Image of the Day," April 12, 2011.

Organization of DoD Effort

The organization of the DoD response centered on the ODRP, whose commander, VADM Mike LeFever, was designated to command the HA/DR operation. ODRP was structured for a security assistance mission but also had the capability to provide command and control for a relief effort. As an alternative, consideration was given to deploying an expeditionary command and control staff from Bahrain, and there was some debate and disagreement within DoD as to the relative merits of the two options. The ODRP approach was chosen, in part, because obtaining visas and country clearance for personnel from outside Pakistan would have delayed the response. CENTCOM concerns about using ODRP included that it might be distracted from its security cooperation tasks. Once the debate was settled, ODRP had clear operational control in theater.

Using and augmenting ODRP instead of setting up a wholly new ad hoc command and control arrangement proved to have multiple benefits: ODRP personnel's pre-existing relationships with their Pakistani counterparts eased coordination; communications structures were already in place that linked ODRP with CENTCOM, the Pakistani military, and ISAF in Afghanistan; and VADM LeFever had valuable HA/DR experience, having been involved in the 2005–2006 DoD response to a major earthquake in Pakistan. Moreover, ODRP's presence in Pakistan enabled a very fast start to the operation. Before the flood, ODRP had about 200 personnel in Pakistan; for the HA/DR operation, this figure surged to about 1,000.

Two task forces were set up under ODRP: TF-North, led by BG Michael Nagata (who was also VADM LeFever's deputy in ODRP), and TF-South, led by RADM Sinclair Harris from the Fifth Fleet.[28] TF-North was composed of the Army 16th Combat Aviation Brigade, with 325 personnel, and TF-South comprised the 15th and 26th MEUs, with 250 personnel. Enhancements to ODRP for the HA/DR operation also included U.S. Joint Forces Command (USJFCOM)

[28] At the time, RADM Harris was Commander of the Expeditionary Strike Group 5.

augmentees[29] (medical, legal, logistics, public affairs, and intelligence), several contingency contracting support personnel, an engineer from the U.S. Army Corps of Engineers, a six-person joint communications support element, and a six-person combat camera team.[30] An operations and planning team from the Joint Enabling Capabilities Command arrived during the third week in August; in the view of one individual we spoke with, earlier CENTCOM authorization of that team's deployment would have been useful.[31]

Coordination with Other U.S. Actors

DoD, State Department, and USAID personnel with whom we spoke who were directly involved in the U.S. response to the floods all regarded the interagency coordination process as effective, with no significant problems. At a senior level, VADM LeFever coordinated directly with the U.S. Ambassador to Pakistan, Anne Patterson, and the USAID DART team leader, Bill Berger. Below that level, ODRP personnel coordinated closely with the DART team. The country team in this instance was cohesive, and the key players had positive personal relationships with each other. It was particularly helpful that VADM LeFever—because of his ODRP role—was well known to the embassy, as was Berger, who had considerable past experience in Pakistan. Both LeFever and Berger had played leading roles in the U.S. response to the 2005 earthquake in Pakistan, so they had valuable experience in a disaster relief context working together, with the embassy, and with their Pakistani interlocutors.

The ODRP operations center in the U.S. embassy was the physical locus of interagency coordination. A USAID liaison officer (LNO) was present in the operations center during the HA/DR operation.

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[29] These came from the Joint Enabling Capabilities Command now under USTRANSCOM and formerly under USJFCOM. Focused discussion with U.S. government official (M), February 16, 2012.

[30] "USACE Support to JTF ODRP, 2010 Pakistan Floods," briefing, U.S. Army Corps of Engineers, Joint Engineer Operations Course, September 19–23, 2011; focused discussions with several DoD personnel.

[31] Focused discussion with U.S. government official (M), Washington, D.C., February 16, 2012.

Communications with Washington (including the National Security Council Staff and the State Department) occurred daily by video teleconference in which the U.S. ambassador, ODRP commander, and USAID representative participated, and ODRP contributed to the embassy's daily written message to Washington.[32] The use by different agencies of different electronic communications platforms, which has proved problematic in other HA/DR operations (see Chapter Five on Operation Tomodachi), was not a significant issue in this case.[33] DoD personnel involved in the operation used SIPRNet for communications with CENTCOM and among themselves and NIPRNet for communications with U.S. embassy personnel, USAID, and WFP.[34] ODRP established an unclassified portal for sharing information related to the flood disaster among U.S. agencies, though it is not clear how extensively it was used.[35] One individual involved in the DoD operation felt that interagency sharing of information was impeded, however, by CENTCOM's over-classification (to the secret level) of information pushed out to it.[36]

DoD Coordination with Recipient Country

There were multiple points of contact (POCs) for communications regarding the disaster response between U.S. government officials and the GoP. For DoD, the principal formal coordination link was between ODRP and NDMA. Concurrently, however, ODRP coordinated directly with the Pakistani military and perceived the Pakistani Army to be the most influential authority in terms of GoP decisionmaking

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[32] Phone conversation with U.S. government official (R), July 27, 2012.

[33] Focused discussion with U.S. government official (L), Washington, D.C., July 25, 2012, and phone conversation with U.S. government official (R), July 27, 2012.

[34] Focused discussion with U.S. government official (L), Washington, D.C., July 25, 2012.

[35] The portal was housed on a harmonieweb.org site funded by USJFCOM, and was stood up on APAN as well.

[36] Focused discussion with U.S. government official (M), Washington, D.C., February 16, 2012.

regarding the response. Interaction between U.S. and Pakistani personnel occurred at a variety of levels. In addition to senior-level communications regarding Pakistan's needs, there was daily planning-level coordination, and, at an operational level, Pakistani military personnel flew aboard all U.S. aircraft providing airlift support in order to provide on-the-ground security and distribute transported relief supplies upon landing.

The Pakistani military has responsibility for disaster relief internally and is an experienced and largely capable first responder, but the huge scale of the needs in this disaster exceeded its capabilities.[37] The NDMA was a new agency at the time of the floods,[38] established to improve Pakistan's disaster preparedness and response system, but was not yet a well-developed organization. Furthermore, links between national and provincial disaster management entities were generally weak.[39]

Civil-military tensions within the GoP and institutional weaknesses, including a lack of effective systems for internal communications and for dissemination of information, undermined the GoP's coordination effectiveness and complicated DoD efforts. For example, GoP decisions communicated to the United States often moved slowly down the GoP chain, so that U.S. personnel often found their Pakistani counterparts uninformed.

NDMA was formally the lead GoP actor, and ODRP's positive relationship with the head of NDMA, retired Lt. Gen. Ahmed Nadeem, proved valuable for facilitating communications between ODRP and

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[37] The Pakistan Armed Forces are frequently called upon by the civilian government to participate in disaster relief, a role authorized by Pakistan's constitution. "Guidelines for Civil-Military Coordination in Pakistan Endorsed by the [UN] Humanitarian Country Team," March 5, 2010, p. 3.

[38] Development of the NDMA and the disaster management institutional architecture beneath it (with provincial- and district-level agencies) began in the wake of the massive October 2005 earthquake. NDMA was established in 2007. A law formally establishing the disaster management system was not adopted until 2010, prior to the floods. Development of the system was still at an early stage at the time of the floods. See Government of Pakistan National Disaster Management Agency, 2011a, pp. 3–5.

[39] DARA, 2011, p. 7.

NDMA. But NDMA's coordination capabilities were limited. NDMA itself identified the need to improve Pakistan's limited disaster management capacity as a key lesson learned from the flood disaster response.[40]

In addition to constraints on Nadeem's authority due to internal GoP dynamics, NDMA and, to an even greater degree, the Provincial Disaster Management Authorities (PDMAs) under NDMA's umbrella were underresourced.[41] At the time of the floods, NDMA had only 21 officers to manage disasters and a budget of under $1 million per year. Significant authority had been devolved to the provinces, but the PDMAs had little capability to exercise their authority.[42] To augment its capabilities to deal with the flood, NDMA asked government ministries to second personnel to it, but only the Pakistani military complied. Coordination between NDMA and other elements of the government was thus limited.[43] In addition, NDMA planning was detached from OCHA cluster efforts, which caused disconnect between the international and local responses.[44]

The manner in which the GoP articulated its requests created challenges for DoD. Initially, the GoP simply produced a large list of requests and gave it to all donors. The GoP's tendency was to articulate its requests in terms of the assets they wanted, not in terms of disaster relief needs, which could then drive analysis of how to meet those needs. ODRP personnel pressed the Pakistanis to articulate prioritized needs and to commit them to paper. Although the GoP requests became increasingly specific over the course of the operation, this remained a challenge throughout, with the GoP continuing, at times, to request assets without a clear articulation of its requirements or plan for using the assets. The U.S. side perceived that Pakistani prioritization was at

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[40] Government of Pakistan National Disaster Management Authority, 2011b, pp. 2, 6.

[41] Government of Pakistan National Disaster Management Authority, 2011b, p. 2.

[42] Phone conversation with U.S. government official (R), July 27, 2012.

[43] Government of Pakistan National Disaster Management Authority, 2011b, p. 2; and Oxfam, 2011.

[44] DARA, 2011, p. 6.

times not based on objective needs but rather on political pressure from wealthy landowners and well-connected families.[45]

A key coordination mechanism was the Joint Aviation Coordination Cell, chaired by NDMA. This cell comprised representatives of the Pakistan Air Force, Pakistan Army Aviation, ODRP, USAID, UNHAS, and WFP. The Japanese government joined for the final two weeks of its aviation contribution, and the Chinese government participated in the cell for two weeks. The cell's role was to coordinate, on a daily basis, the transportation of relief supplies using fixed-wing and rotary assets and to coordinate the determination of priority areas to serve and the types of aircraft needed to move supplies.[46] ODRP and USAID pressed Nadeem to set up this mechanism to forge a better link with identified needs, civilian humanitarian responders, and available air assets. It took two to three weeks for the GoP to put the cell in place, however, and this delay limited the effectiveness of coordination during the early period of the relief effort. NDMA itself identified as a lesson learned from this disaster the need to immediately establish a Joint Aviation Coordination Cell in response to future major disasters.[47]

Methods of communication with NDMA and the Pakistan Army General Headquarters had to be worked out during the course of the operation. Initially, the Pakistani side wanted to communicate using fax. DoD personnel pressed them to use centrex email, for which only a few terminals were available at the Pakistan Army General Headquarters. When sending communications by centrex email, the U.S. side had to send text messages advising Pakistani personnel to retrieve the email messages; junior personnel would then print the emails for more senior personnel. Many communications occurred simply by using text messages followed by telephone calls as needed, especially regard-

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[45] Focused discussion with U.S. government official (J), Washington, D.C., January 27, 2012.

[46] Government of Pakistan National Disaster Management Authority, 2011a, p. 21; focused discussions with U.S. government officials (L) and (M), Washington, D.C., February 2 and 16, 2012.

[47] Government of Pakistan National Disaster Management Authority, 2011b, p. 6.

ing issues with short suspenses, such as requests for diplomatic clearances. Face-to-face communications were important as well, which led ODRP to send LNOs to NDMA on a daily basis. One ODRP LNO spent half of each day at NDMA during the operation and the other half of the day with the DART.[48] Pakistani military personnel were physically colocated with both TF-North and TF-South, which facilitated face-to-face communications.[49]

The Pakistani military's ambivalence toward U.S. military HA/DR assistance posed obstacles throughout the operation. While preexisting military-to-military relationships at multiple levels were crucial to the operation's achievements, the Pakistani military's discomfort with the size of the U.S. footprint was evident. It was apparent to the U.S. side that Nadeem had arranged for U.S. military support over the objections of others in the GoP.[50] Particularly during August, Pakistani military personnel underplayed the severity of needs and resisted acknowledging their need for assistance. During September, however, the need for foreign help in responding to the disaster became more widely recognized on the Pakistani side.[51]

Pakistani ambivalence was apparent, for instance, in the GoP's resistance to providing visa waivers for U.S. helicopter crews, access to airfields for surveys needed before U.S. aircraft could land, and customs waivers. Significant effort was required on the U.S. side to obtain these authorizations, and arranging access was consistently difficult throughout the operation. GoP ambivalence extended beyond foreign militaries to civilian international humanitarian actors as well. For both sets of actors, the GoP restricted access to sensitive areas,

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48 Focused discussion with U.S. government official (M), Washington, D.C., February 16, 2012.

49 Focused discussion with U.S. government official (L), Washington, D.C., February 2, 2012.

50 Phone conversation with U.S. government official (R), July 27, 2012.

51 Focused discussion with U.S. government official (M), Washington, D.C., February 16, 2012.

including the Federally Administered Tribal Areas and much of Kyber-Pakhtunkhwa in northern Pakistan.[52]

Several U.S. officials with whom we spoke expressed the view that, from the U.S. military perspective, the Pakistan Army decided to terminate U.S. DoD support prematurely for political reasons while there was still a humanitarian need for such support. These officials understood NDMA and the UN to have considered DoD airlift support necessary for two to four additional weeks beyond the termination date set by Pakistan Army General Headquarters. However, other U.S. civilian agency officials with whom we spoke believed that DoD support was no longer required at the time the Pakistan Army command ended the mission. Regardless, it was clear that the GoP was intent on eliminating the external presence related to the disaster response as quickly as possible.

The bilateral and multi-stakeholder coordination processes and structures that either involved or had implications for the DoD HA/DR operation were only one element of a broader set of coordination processes and structures involving the GoP related to the flood response, most of which are not examined in this case study. On the international side, for instance, UN OCHA operated a standard cluster coordination system for relief efforts, with 12 groups of humanitarian actors organized thematically to deal with food security, shelter, agriculture, the management of camps for displaced persons, and other needs. Other structures were set up by the GoP, such as a Strategic Leaders Forum,[53] or were established for phases subsequent to relief, such as the Early Recovery Working Group, cochaired by NDMA and the UN Development Program.[54] The overall coordination architecture was complex and burdened with a variety of tensions, especially between the GoP and UN, as well as some parallel and overlapping decisionmaking bodies.[55]

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52 United Kingdom House of Commons, 2011, p. 10.

53 Government of Pakistan National Disaster Management Authority, 2011b, p. 2.

54 OCHA, 2011a.

55 Government of Pakistan National Disaster Management Authority, 2011b, pp. 3-4.

DoD Coordination with International and Regional Actors

U.S. Partners and Other Countries

The Pakistan floods of 2010 were a massive operation that saw significant foreign military participation across the aid spectrum of provision, delivery, and distribution. Large contingents of military medical personnel set up and ran field hospitals to provide treatment and epidemic prevention for thousands of victims; thousands of tons of aid were delivered by various foreign militaries and NATO, through airlift. Finally, besides the U.S. military, four other foreign militaries (Afghanistan, Japan, China, the United Arab Emirates) also had helicopter units operating within the country for many weeks.

Search and rescue was not a major facet of the international military response. Only military personnel from the Saudi Arabian Interior Ministry were sent specifically for this task. This contingent was sizable, however, at 130 members.[56] Other search and rescue tasks were carried out by Pakistani military and civil authorities and may have been, though it is not clear, conducted by the foreign militaries contributing to the distribution of aid through the deployment of helicopter units.

The overwhelming focus of the international military provision of aid was medical treatment for the affected population by treating wounds, illness, and engaging in epidemic prevention. A number of the foreign medical teams set up field hospitals in various locations throughout the area where flooding occurred. As the flooding continued over a long period of time, many of the teams eventually had to be relieved by follow-on contingents of medical personnel. This was certainly the case for the contingents from the Indonesian military and the Chinese military and may have been the case for the Saudi Arabian and Australian military contingents as well, but data are lacking.[57]

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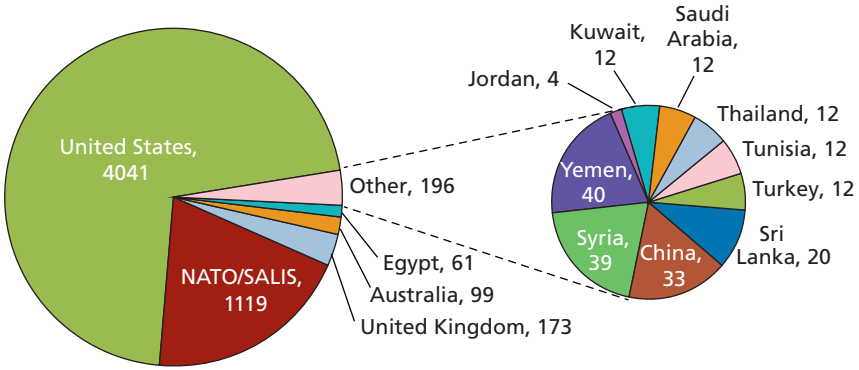
[56] Integrated Regional Information Networks, "MIDDLE EAST: Gulf Aid to Pakistan–Update," August 26, 2010; "1st Batch of Saudi Rescue Team Arrives in Karachi," Saudi Press Agency, August 23, 2010.

[57] "First Chinese Aid Team Leaves Pakistan with High Praise," Xinhua, September 15, 2010; "Second Chinese Contingent Arrives in Pakistan's Thatta for Disaster Relief," Xinhua, September 15, 2010; "Indonesia Sends More Humanitarian Assistance to Pakistan," *Antara*

Figure 4.2
Pakistan 2010: Aid Delivered by Foreign Militaries, by Country and Amount (in short tons)



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As in the Nargis case (see Chapter Two), delivery of aid was a major facet of international military involvement in Pakistan. As shown in Figure 4.2, at least 11 international militaries airlifted aid to Pakistan aboard military transports.[58,59] In addition, a multinational

(Indonesia), September 2, 2010; "Indonesian, Saudi Governments to Provide Relief for Flood Affectees," *The Baluchistan Times*, August 3, 2010; "Indonesia Sends Rescue, Medical Experts to Flood-Hit Pakistan," Associated Press of Pakistan, September 1, 2010.

[58] It is unclear if aid delivered by Azerbaijan (August 28, 2010) was delivered by military means because, in addition to the Azerbaijan Air Force, the IL-76 mentioned in reports could belong to the civil airlines Silk Air or Azerbaijan Airlines. "Azerbaijan Donates $1m for Victims," *The Frontier Post,* August 28, 2010.

[59] John Faulker and Stephen Smith, "Australian Medical Help Arrives in Pakistan," joint media release, Government of Australia, Ministry for Foreign Affairs, August 25, 2010; "Program Summary: CCTV-7 'Military Report' Mandarin 1130 GMT 04 Aug 10," *BBC Worldwide Monitoring Asia–Political*, August 10, 2010; "Egypt to Send Flood-Relief Goods to Pakistan," *BBC Worldwide Monitoring*, August 26, 2010; "2nd Kuwaiti Plane Flies to Flood-Stricken Pakistan," Qatar News Agency, August 19, 2010; NATO, "One More NATO Humanitarian Relief Flight Lands in Islamabad," September 2, 2010a; NATO, "Humanitarian Relief Flights to Pakistan Go On," September 16, 2010b; NATO, "More NATO Humanitarian Relief Flights to Pakistan's Flood Victims," September 30, 2010c; "The World Must Do More," *Rupee News,* August 16, 2010; Integrated Regional Information Networks, 2010; "Syrian Humanitarian Aid Plane Arrives in Islamabad," Syrian Arab News Agency

military organization, the NATO Strategic Airlift Interim Solution, (SALIS) provided substantial additional military airlift.[60]

DoD was the predominant provider of foreign government airlift support for the delivery of humanitarian supplies, but four other militaries deployed helicopters to distribute aid: Japan, China, UAE, and Afghanistan. Table 4.2 shows NDMA's accounting of airlift support assistance, which augmented 40 Pakistani helicopters used for air

Table 4.2
Foreign Military and International Organization Airlift Support to Pakistan During Rescue and Relief Operations Related to the 2010 Floods

Foreign Military/IO	Rotary-Wing Aircraft: Total Number and Type(s) Deployed	Fixed-Winged Aircraft: Total Sorties and Type(s)
United States	24: CH-46, CH-47, UH-60	350+: C-17, C-130
Afghanistan	4: MI-17	0
Australia	0	2: C-17
China	4: MI-17	3: IL-76
Egypt	0	5: C-130
Japan	6: CH-47, UH-1	0
Jordan	0	1: C-130
Kuwait	0	1: C-130
NATO SALIS	0	12 (NATO): B-707 TCA, C-135; 11 (chartered): A-300, AN-124, B-747, IL-76
Saudi Arabia	0	1: C-130

(SANA), August 17, 2010; "Hyderabad, Dera Allahyar Under Heavy Flood," *Right Vision News,* August 23, 2010; "Royal Air Force Supports Flood Effort," *Asian Image,* August 16, 2010; "More RAF Flights Bring Shelter for 3,500 Families," *Daily Times,* August 29, 2010; U.S. Department of State, Office of the Spokesman, 2010.

[60] NATO SALIS is one of two NATO airlift initiatives, the other being the Strategic Airlift Capability, and is a consortium of 14 NATO countries (Belgium, Canada, the Czech Republic, Denmark, France, Germany, Greece, Hungary, Luxembourg, Norway, Poland, Slovakia, Slovenia, and the United Kingdom), and two partner countries (Sweden and Finland). North Atlantic Treaty Organization, "Strategic Airlift Interim Solution (SALIS)," undated.

Table 4.2—Continued

Foreign Military/IO	Rotary-Wing Aircraft: Total Number and Type(s) Deployed	Fixed-Winged Aircraft: Total Sorties and Type(s)
Sri Lanka	0	1: C-130
Thailand	0	1: C-130
Tunisia	0	1: C-130
Turkey	0	1: C-130
UAE	3: CH-47	0
United Kingdom	0: –	6: C-130, C-17
WFP/UNHAS	8: MI-17	WFP used NATO and possibly other aircraft for aid delivery
Yemen	0: –	1: IL-76

SOURCES: Government of Pakistan National Disaster Management Agency, 2011a; Scott T. Sturkol, "Mobility Airmen Reach 20-Million Pound Milestone," U.S. Air Force, October 29, 2010; NATO, "EADRCC Situation Report No. 21: Floods in Pakistan," October 21, 2010d; "Japan Sends Six Helicopters to Assist Pakistan Flood Relief Operation," *BBC Monitoring South Asia–Political*, August 26, 2010; "Program Summary: CCTV-7 'Military Report' Mandarin 1130 GMT 04 Aug 10," 2010; Faulkner and Smith, 2010; Rob Leese, "Afghan Airmen Return to a Hero's Welcome," *Air Force Print News Today*, September 4, 2010; Integrated Regional Information Networks, 2010; "2nd Kuwaiti Plane Flies to Flood-Stricken Pakistan," 2010; "Hyderabad, Dera Allahyar Under Heavy Flood," 2010; "The World Must Do More," 2010; "Relief Flights Aircraft for Pakistan's Flood Affectees," *History of PIA*, August 26, 2010; "Royal Air Force Supports Flood Effort," 2010; "More RAF Flights Bring Shelter for 3,500 Families," 2010.

operations during the rescue and relief phase of the response. (According to U.S. government information, DoD deployed 26 helicopters at the peak of operations, rather than the 24 indicated in Table 4.2.)

The Japanese military already had a history of such deployments, having even deployed in this very role to Pakistan once before in 2005.[61] For China, Afghanistan, and quite possibly the UAE, this operational deployment abroad was a first for their respective militaries. Whereas

[61] Government of Japan, "Two Decades of International Cooperation: A Look Back on 20 Years of SDF Activities Abroad," *Japan Defense Focus*, No. 24, Ministry of Defense, December 2011, p. 5.

Japan and the UAE both had to travel some distance to bring their assets to Pakistan, both China and Afghanistan share a land border with the country, which eased the difficulties associated with at least the travel aspect of this mission.

International and Regional Organizations

Separate from the U.S. military airlift response, the UN Logistics Cluster (under the overall UN OCHA coordination umbrella) facilitated air operations that delivered more than 12,200 metric tons of relief cargo supplied by UN agencies, government organizations, and international and national NGOs. About a third of these supplies were delivered by UNHAS air assets, which, at the peak of the operation, included nine helicopters. UNHAS operations began later than U.S. air operations, in September 2010. The Logistics Cluster participated in the Joint Aviation Coordination Cell chaired by NDMA.[62] Coordination between U.S. military air operations and Logistics Cluster operations thus occurred indirectly in this forum.

Though DoD did not participate formally in the UN OCHA cluster system, ODRP personnel met occasionally with UN personnel during the operation and attended some cluster meetings, and some communication with the UN occurred through the ODRP LNOs working on a daily basis with NDMA. For the most part, however, communication with multilateral organizations was handled through USAID's DART team.[63] ODRP held occasional bilateral meetings with other donor governments, including those of Australia, Japan, and the UK, principally to discuss engagement with the Pakistani military.

Concerns on the part of some multilateral organizations and international NGOs about the use of military assets to transport humanitarian supplies were evident in this case. For example, after the GoP requested the use of NATO assets to deliver humanitarian goods without consulting the UN, the UN rejected the NATO offer on the basis

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[62] Logistics Cluster Pakistan Air Operations, "Monsoon Flood Emergency Response, August 2010–February 2011"; OCHA, 2011a.

[63] Focused discussion with U.S. government official (L), Washington, D.C., February 2, 2012; phone conversation with U.S. government official (Q), July 23, 2012.

that it was inconsistent with humanitarian principles because civilian alternatives were available and military assets should be used only as a last resort.[64]

Some international NGOs maintained their distance from the U.S. military even while coordinating closely with the Pakistani military due to its important role in disaster response. A representative of one major U.S.-based NGO told us that his organization's approach to working with the U.S. military is context-specific: where the U.S. military is perceived by the population to be a neutral or positive player, his organization would work with the military on transportation and logistics, but in Pakistan, doing so would compromise the organization's impartiality and independence and pose security risks to its staff. In this view, the U.S. military can be a crucial partner in a large-scale disaster only where politically benign.[65]

There was some debate and disagreement among humanitarian actors on the necessity of using any military assets—Pakistani or foreign—to transport humanitarian supplies.[66] The International Committee of the Red Cross and Médecins Sans Frontières, for example, refused to use military assets to deliver assistance or use any labeling associating themselves with donor states or the UN.[67]

WFP was less hesitant to work with the U.S. military than others in the humanitarian community. WFP takes a pragmatic approach in this respect. It relies heavily on U.S. food donations and tends to have a higher proportion of American personnel than other UN organizations.[68]

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64 United Kingdom House of Commons, 2011, p. 13.

65 Phone conversation with international NGO representative (B), January 18, 2012.

66 Nicki Bennett, "Civil-Military Principles in the Pakistan Flood Response," *Humanitarian Exchange Magazine*, Issue 49, February 2011; International Crisis Group, "Pakistan: The Worsening IDP Crisis," Asia Briefing No. 111, September 16, 2010, pp. 14–15.

67 Marion Péchayre, "Humanitarian Action in Pakistan 2005–2010: Challenges, Principles, and Politics," Feinstein International Center Briefing Paper, January 2011, p. 12.

68 Phone conversation with U.S. government official (Q), July 23, 2012.

Conclusions

U.S. Security Cooperation Considerations

This HA/DR operation revealed—not for the first time—a number of weaknesses on the Pakistani side of types that, in principle, could be addressed through security cooperation activities. For example, there were weaknesses in civil-military communications and coordination among Pakistani actors, as well as in Pakistani processes for analyzing and prioritizing disaster relief needs, that could be improved through training and technical assistance. Also, development among partners on a contingency basis and the exercise of coordination mechanisms, such as the Joint Aviation Coordination Cell, would be helpful for avoiding lost time in establishing such structures during an emergency. Training in how to develop and apply lessons learned from disaster relief operations could be another helpful activity, because it was apparent in the flood response that lessons identified from the response to a major earthquake five years earlier had not led to sufficient changes in disaster management practice.

However, individuals from both DoD and civilian U.S. agencies we spoke with uniformly shared the view that undertaking such activities would not have been realistic in Pakistan prior to the floods and was certainly not feasible later, due to the politically fraught U.S.-Pakistan relationship. The bilateral diplomatic and security cooperation agenda is too burdened with other issues to leave room for cooperation activities related to HA/DR. The ODRP LNO to NDMA continued in that role after the end of the HA/DR operation to try to identify partnership-building means and opportunities related to disaster management, but his efforts were stymied by broader problems in the U.S.-Pakistan relationship.

Overall Considerations for DoD

DoD's flood relief operation accomplished its humanitarian objective, even though the GoP limited the U.S. footprint. DoD airlift filled a critical gap in the GoP's and international community's capacity to bring in the goods and services needed to relieve the population's suffering. Several factors contributed prominently to this success. One

factor was the use of command personnel already deployed in Pakistan who were able to launch the operation quickly and who had preexisting relationships with Pakistani authorities, the U.S. country team, and some humanitarian actors. DoD's ability to respond quickly, to deploy unique assets, and to operate in austere environments were crucial factors as well. And the establishment of liaison relationships between ODRP and both the USAID DART team and NDMA significantly facilitated coordination.

The political environment constrained the achievement of the operation's strategic communications objective, however. Unrelated issues and negative events in the U.S.-Pakistan relationship overwhelmed the goodwill generated by the DoD contribution, and benefits for the U.S.-Pakistan relationship were seen as fleeting. GoP ambivalence about receiving U.S. disaster assistance was one source of constraint; the GoP actively suppressed local media reporting on the U.S. contribution.

Nevertheless, the DoD contribution to the disaster response can be seen as putting a "tourniquet" (in the words of one individual with whom we spoke who was involved in the operation) on deterioration in the bilateral relationship. The United States *not* contributing to the response when it had the capability to do so would likely have had negative consequences for the U.S.-Pakistan relationship. In other words, the negative strategic consequences of not undertaking an HA/DR operation would likely have been of a greater magnitude than the positive strategic effects of doing so.

To the extent DoD did try to use the HA/DR operation to improve Pakistani perceptions of the United States, it was not entirely clear who the intended audience was—the population at large or the GoP. Given GoP sensitivities about accepting relief assistance from the United States, the distinction between these target audiences would suggest very different approaches to strategic communications. One lesson from the operation suggested by a U.S. civilian agency representative we spoke with is that it is important to decide early on whether the strategic communications goal is to make the United States look good or the recipient government look good in the eyes of the population.

This case suggests several other lessons as well. First, because DoD is only an occasional participant in HA/DR, many personnel involved in such operations are engaged in HA/DR for the first time. It is important to anticipate, therefore, that many will not know the funding processes; the roles of USAID, the embassy, IOs, and NGOs; or humanitarian assistance principles. This common challenge was mitigated in the Pakistan case by designating as commander of the operation an individual who already was familiar with the Pakistani context and who had been closely involved in a prior HA/DR operation in Pakistan.

Second, to coordinate effectively with other actors and plan on the basis of realistic expectations, it is important for DoD personnel to understand the perspectives of these other actors, as well as to be familiar with the humanitarian principles followed by NGOs and IOs.[69] Adhering to these principles consistently is regarded as crucial to the ability of humanitarian actors to continue fulfilling their missions over the long term.

Third, appreciating the sensitivities of the recipient government is important to effective coordination. In the Pakistan case, the recipient government was very proud and prickly about receiving help, and dependence on external actors for relief assistance was regarded as an embarrassment. This attitude caused delay on the Pakistani side in recognizing the full extent of their need for help. While it is unlikely that U.S. actors can modify such sensitivities, they do need to remain attuned to them.

Fourth, this case illustrates that personal relationships are key to synchronizing the efforts of different institutional actors and working out operational challenges as they arise. The key senior players in this case had preexisting and positive relationships, and multiple individu-

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[69] These principles are humanity, neutrality, impartiality, and operational independence, and they have been outlined by United Nations General Assembly, Resolution 46/182, Strengthening of the Coordination of Humanitarian Emergency Assistance of the United Nations, December 19, 1991, and United Nations General Assembly, Resolution 58/114 Strengthening of the Coordination of Emergency Humanitarian Assistance of the United Nations, February 5, 2004. See OCHA, "OCHA on Message: Humanitarian Principles," April 2010.

als we spoke with cited this as a key factor in facilitating communication and coordination. Below the senior level on the U.S. side, frequent personnel turnover during the operation made sustaining relationships with Pakistani counterparts difficult, however. OFDA personnel rotated frequently, as did some DoD personnel, without overlapping with their predecessors. ODRP was thus required to frequently introduce new people to their Pakistani counterparts, which impeded effective coordination.

Finally, the country clearance process was a particular challenge in this case. This could have been eased if DoD personnel had greater knowledge in advance of the country clearance documentation requirements, or if the DART team had anticipated the fact that U.S. military personnel deploying in HA/DR operations often do not have passports. In the end, this was not a major issue but was certainly worth thinking about ahead of time. This highlights again the importance of communication among the different USG components of HA/DR operations.

CHAPTER FIVE

The Great East Japan Earthquake/Operation Tomodachi (Japan)

In the early afternoon on March 11, 2011, a magnitude 9.0 earthquake occurred 130 kilometers off the shore of Sendai, on the eastern coast of Honshu Island, Japan. Within less than an hour, tsunami waves measuring up to 40 meters high crashed almost six miles inland, inundating 561 square kilometers. With a population of 14.8 million people, the prefectures along the northeastern coast were the worst affected, with 129,500 houses destroyed and 265,324 severely damaged by the earthquake, tsunami, or ensuing fires.[1] Figure 5.1 shows the areas affected by the earthquake and tsunami. The disaster was compounded by events at the Fukushima Daiichi nuclear power complex, making this event unprecedented as an HA/DR and consequence management crisis.[2]

The United States was heavily involved in the disaster response in Japan, particularly during the nuclear portion. From DoD, all four military services played a role, as did the Defense Threat Reduction Agency (DTRA). Other U.S. government agencies, particularly the

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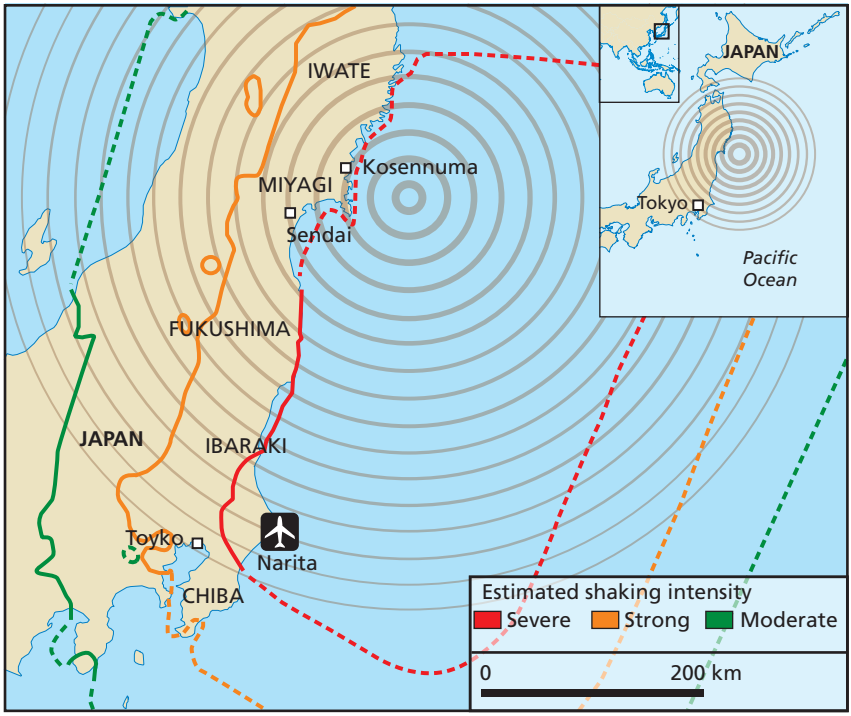
1 Japanese Red Cross Society, "Japan: Earthquake and Tsunami, 11 March 2011–26 April 2012," 12 Month Report, EQ-2011-000028-JPN, April 27, 2012.

2 We consulted the following reports and briefings, which are not available to the public: Report (U), Commander Fleet Activities Okinawa, "USN Okinawa Tomodachi Summary," April 6, 2011; Briefing (U), Col Robert Toth, 353 SOG/CC, to ADM Eric Olson, PACOM/CC, "Joint Force Special Operations Component (JFSOC): By, With and Through Approach to HADR," April 23, 2011; Briefing (U), Dr. Robert Sligh, 5 AF/HO, "USFJ Operation Tomodachi Timeline 11-25 March," June 1, 2011; Report (U), Commander Fleet Activities Okinawa, "USN Okinawa Tomodachi Summary," April 6, 2011; Briefing (U), PACAF/HO, "PACAF Operation Tomodachi Timeline 11-17 March," August 9, 2011.

Figure 5.1
Map of Areas Affected by the Great East Japan Earthquake and Tsunami



SOURCE: U.S. Geographical Survey (USGS), found in "Japan Earthquake: Tsunami Hits North-East," *BBC News*, March 11, 2011.

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State Department and the Department of Energy (DoE), also had significant roles in the response. Overall, the United States deployed—at the operation's peak—close to 24,000 personnel, 189 aircraft, and 24 Navy vessels in support of the disaster response.[3] This intervention was perceived very positively by the Japanese population. The United States' favorability rating in Japan jumped from an already high 66 percent the year prior to 85 percent just weeks after the earthquake.

[3] Andrew Feickert and Emma Chanlett-Avery, *Japan 2011 Earthquake: U.S. Department of Defense (DoD) Response*, Washington, D.C.: Congressional Research Service, June 2, 2011, p. 1.

This was the highest rating among the 23 nations the Pew Center surveyed in 2011.[4]

The disaster response to the Great East Japan Earthquake illustrates the wide array of capabilities the United States can bring to bear on an incredibly complex disaster involving earthquakes and mass flooding, as well as consequence management (for the nuclear response portion). Moreover, this case study illustrates the special role the United States assumes in a disaster that also directly affects its forward-based forces. Finally, Japan is a key ally with considerable capabilities, which makes this case study different from the others discussed in this report. As a consequence, the United States had to take a "back seat" supporting role and wait for requests for assistance to be made.

This chapter provides an overview of key lessons from DoD's response to the Japan disaster based on two sources: after-action reports and briefings from the USG, DoD in particular, and focused discussions with key U.S. and Japanese military and political leaders. While we highlight some best practices and areas in which the operation worked particularly well, our focus is primarily on those areas in which we saw opportunities for improvement.

Background

Following the tsunami, an estimated 1.4 million households in fourteen prefectures had no access to water across Japan, and 1.25 million households were without electricity.[5] The number of displaced citizens reached over 500,000 by March 17, as aftershocks continued to rock

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[4] The Japanese Cabinet Office also found in a September–October 2011 survey that "friendly feelings" toward the United States were the highest since the poll began in 1978, at 82 percent. Richard Wike, "Does Humanitarian Aid Improve America's Image?" Pew Global Attitudes Project, March 6, 2012. U.S. forces, however, were careful to ensure that the Japanese Armed Forces received maximum public credit, as the U.S. military was in a supporting role.

[5] OCHA, "Japan Earthquake & Tsunami, Situation Report No. 3," March 14, 2011b.

Japan's main island of Honshu.[6] Severe cold weather and snow during the ensuing week further hampered relief efforts.[7] During the initial few days of the disaster, the destruction of communications infrastructure, including 2,000 transmission stations for mobile phones, inhibited accurate estimates of the extent of the damage.[8] In addition, over 2,000 roads, 56 bridges, and 26 railways were damaged by the earthquake and the tsunami, paralyzing transportation to the worst affected areas.[9]

As the result of bombardment by the tsunami waves, the reactor cooling systems at several units of the Fukushima Daiichi nuclear power complex failed, resulting in several explosions over the next few days. Because of the threat of radiological contamination and radiation emissions, the Government of Japan (GoJ) ordered the evacuation of the 177,503 people living within a 20-kilometer radius of the nuclear complex.[10] By March 15, the evacuation zone had been increased to 30 kilometers, and on March 18, Japan's Nuclear Industrial Safety Agency raised the alert level to five, based on a seven-point international scale for atomic accidents.[11]

Six months after the disaster, the GoJ concluded that the earthquake and resulting tsunami killed almost 16,000 people, injured over 5,000, and resulted in 4,647 people unaccounted for and 131,000

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6 Cheryl Pellerin, "Helping Japan Now Pacific Command's Top Priority," *American Forces Press Service*, March 17, 2011.

7 OCHA, "Freezing Temperatures and Fuel Shortages Complicate Emergency Relief Operations," March 16, 2011c.

8 Japanese Red Cross Society, 2012.

9 U.S. Geological Survey, "Magnitude 9.0 – Near the East Coast of Honshu, Japan: Earthquake Summary," undated.

10 OCHA, 2011.

11 Charles Miller, et al., "Recommendations for Enhancing Reactor Safety in the 21st Century," United States Nuclear Regulatory Commission, July 12, 2011, pp. 10–14; OCHA, "Damaged Fukushima Nuclear Plant Cause for Concern," March 20, 2011d.

people still displaced.[12] It is estimated that the cost of reconstruction could reach close to $300 billion over the next ten years.[13]

The disaster triggered a worldwide movement of solidarity with Japan and a rush of international aid. Three days after the tsunami, 91 countries and nine IOs had already offered their assistance. Within the first three weeks, the Japanese Red Cross had received more than $1 billion in donations.[14] More than 68 search and rescue teams from 45 countries were willing to intervene, but the GoJ, at least initially, requested only the presence of those teams from Australia, New Zealand, South Korea, and the United States.[15] This can be explained by the fact that Japan has important HA/DR capabilities of its own; during the first week of the response, it deployed more than 100,000 personnel, more than 500 fixed-wing and rotary aircraft, and 60 ships to the affected areas.[16] The GoJ may have also been wary of the potential consequences that too many responders could have on already strained communications systems and infrastructures.[17] Consequently, a UN Disaster Assessment and Coordination team assisted the GoJ, at its request, in coordinating international assistance "in order to limit

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[12] U.S. Air Force, "Team Kadena & Operation Tomodachi (Friend): 11 March–13 April 2011," 18th Wing History Office, undated.

[13] Lucy Rodgers, "Japan Quake: Loss and Recovery in Numbers," *BBC News*, March 11, 2012.

[14] Liz Ford and Claire Provost, "Japan Earthquake: Aid Flows In From Across the World," *The Guardian*, March 14, 2011. This number had increased to 138 countries or regions and 39 international organizations as of late April 2011 (GoJ cited in Center for Excellence in Disaster Management & Humanitarian Assistance, "Japan Earthquake and Tsunami Update," April 20, 2011, p. 2); Julie Makinen and Kenji Hall, "Red Cross Hasn't Reached Japan Quake Victims," *Los Angeles Times*, April 3, 2011.

[15] Stephanie Nebehay, "Japan Requests Foreign Rescue Teams, UN Says," Reuters, March 11, 2011.

[16] Feickert and Chanlett-Avery, 2011, p. 1.

[17] Many of these lessons were learned during the 1995 Kobe earthquake, when too many responders hindered access to populations in need. See James Jay Carafano, *The Great Eastern Japan Earthquake: Assessing Disaster Response and Lessons for the United States*, The Heritage Foundation, May 25, 2011, p. 3.

unsolicited contributions."[18] The number of foreign search and rescue teams was later increased, and overall the GoJ both welcomed and facilitated outside assistance, except in the recovery of Japanese casualties, which exclusively involved Japanese forces. The disaster response was complicated by severe weather; strong winds and snowfall made airlift operations particularly difficult, and U.S. helicopter operations had to be suspended for a few days.[19]

Over the course of the response, the GoJ, the Japan Self-Defense Forces (JSDF) and the Japan Ground Self-Defense Forces (JGSDF) in particular, performed generally well. Several U.S. and Japanese military officials remarked that the JSDF's professional and swift response greatly increased the stature of the military in the eyes of the Japanese population. As of late April 2011, the United States had provided $95 million in humanitarian funding—$88 million from DoD and $7 million from USAID/OFDA—in response to the disaster.[20]

U.S. DoD Involvement and Interagency Coordination

Scale and Organization of DoD Effort

The GoJ initially requested HA/DR support from the U.S. government the evening of March 11. Operation Tomodachi (a Japanese word meaning "friends"), as the U.S. response was known, continued until May 1, 2011. The day following the earthquake, Secretary of Defense Robert Gates approved $35 million in funding for disaster relief operations. The main assistance requested by the GoJ entailed search and rescue teams; the use of the U.S. military's lift capacity to transport supplies and personnel; and DoD, Nuclear Regulatory Commission

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[18] U.S. Agency for International Development, "Japan – Earthquake and Tsunami, Fact Sheet #5," March 15, 2011b.

[19] U.S. 7th Fleet Public Affairs, "7th Fleet Relief Support Update (March 26)," March 26, 2011.

[20] U.S. Agency for International Development, "Japan – Earthquake and Tsunami, Fact Sheet #17," April 22, 2011c.

(NRC), and DoE nuclear expertise to help with the Fukushima nuclear crisis.[21]

All U.S. services were involved in Operation Tomodachi. As of March 16, 2011, the U.S. Seventh Fleet was operating 19 ships, 140 aircraft, and more than 18,000 personnel in support of the disaster response.[22] As of April 1, Pacific Air Forces (PACAF) had conducted 444 sorties, carrying close to 6 million pounds of cargo for Operation Tomodachi. The Air Force was also heavily involved in Operation Pacific Passage, which repatriated to the United States those U.S. citizens and their dependents desiring to leave Japan. The 33rd Rescue Squadron from Kadena Air Base also took part in search and rescue operations along with Japanese forces.[23] The Marine Corps (through the III Marine Expeditionary Force) was involved in delivering supplies and clearing access to affected areas. After the accident at the Fukushima Daiichi nuclear facility, it also provided radiological surveillance and decontamination. U.S. Army Japan took part in the assessment effort in the Sendai region, and the U.S. Army Corps of Engineers Japan District helped with debris cleaning.[24] All services participated in the relief and recovery effort at the request of, and in close cooperation with, the JSDF. Table 5.1 provides a chronology of the most significant events and milestones of Operation Tomodachi.

In a March 11, 2011 task order, PACOM designated the Commander, U.S. Forces Japan (USFJ) as the supported operational commander, and each of the services designated its own supporting commander for the HA/DR mission. As the scope of the complex crisis became apparent over the week following the earthquake and tsunami, shifts in command relationships occurred. A Joint Support Force (JSF) deployed to Japan and essentially took over the mission. All U.S. mili-

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[21] U.S. Pacific Command Public Affairs, "Japan Self-Defense Force directs PACOM in 'Operation Tomodachi,'" March 13, 2011; U.S. Nuclear Regulatory Commission, "NRC Actions in Response to the Japan Nuclear Accident," August 14, 2012.

[22] U.S. 7th Fleet Public Affairs, 2011.

[23] U.S. Air Force, "Operation Tomodachi: Fact Sheet," Secretary of the Air Force, Office of Public Affairs, April 1, 2011.

[24] Feickert and Chanlett-Avery, 2011, pp. 6–7.

Table 5.1
Chronology of U.S. Military HA/DR Operations in Response to the Japan Earthquake and Nuclear Disaster

Date	Significant Events
March 11	• 9.0 magnitude earthquake strikes off eastern coast of Honshu and tsunami waves reach shores shortly afterward
	• Formal request by GoJ for U.S. assistance
	• Commander, U.S. 7th Fleet, VADM Scott Van Buskirk, directs CTF-76 to organize a Maritime Response cell to coordinate U.S. Naval efforts
	• RADM Richard Landolt is designated Humanitarian and Disaster relief executive agent
March 12	• Explosion at Fukushima Daiichi Unit 1 results in severe damage to secondary containment
	• GoJ recommends the evacuation of residents within 20 km of Fukushima
	• P-3 Orion and C-130 sorties begin
March 13	• Joint Japan-U.S. operation using U.S. helicopters to transport 30,000 emergency food rations from the USS *Ronald Reagan*
March 14	• Explosion at Fukushima Daiichi Unit 3 and Unit 4 results in damage to secondary containment and the reactor building
	• U.S. aircraft with DoE systems onboard begin collecting radiation data
March 15	• Explosion at Fukushima Unit 2 results in primary containment damage
	• GoJ adjusts evacuation zone around Fukushima from 20 km to 30 km

SOURCES: Based on U.S. Department of Defense, "U.S. Military Provides Help in Wake of 9.0 Earthquake in Japan, Tsunami in Pacific," undated, and Ryan Zielonka, "Chronology of Operation Tomodachi," The National Bureau of Asian Research, undated.

tary personnel were coordinating their portion of the response with the JSF and USFJ personnel, but the chain of command proved confusing and it was unclear who was really in charge.

One particularly innovative idea on the U.S. side was to enlist the support of the Google Corporation to assist with mapping and

GPS information. By using Google GPS software, officials were able to determine which Japanese highways were passable and which were not. Cars having GPS capabilities would respond to the Google signal, showing that the roads were passable. This information proved critical to response and recovery efforts.

In addition to using private-sector resources, the U.S. military also utilized its airborne ISR assets to establish greater situational awareness and share this information with its Japanese counterparts. Within 48 hours of the March 11, 2011 earthquake and tsunami, the U.S. Air Force launched an RQ-4 Global Hawk, a high-altitude unmanned aircraft from Andersen AFB in Guam, to assist with the disaster relief effort by imaging survivors, living areas, and infrastructure (including roads) to assess damage and help officials and the Japanese government evaluate priorities in near-real time.[25] It is also reported that the U.S. military used the Global Hawk to monitor the situation at the Fukushima Daiichi Nuclear Plant in support of GoJ's efforts, such as monitoring levels of heat within the reactors.[26]

The Air Force also employed another regionally based ISR asset to assist in the disaster relief effort. The South Korea–based U-2, a high-altitude manned aircraft, captured high resolution, broad-area imagery of disaster-affected areas using an optical bar camera, the film from which was to be analyzed after landing at Beale AFB in California.[27] The U.S. Navy's P-3 Orion maritime surveillance aircraft, another manned platform, was also used to perform aerial search missions over the debris off the northern coast of Japan. The flight crews searched for

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[25] Flown by crews based at Beale AFB in California after the launch and recovery team in Guam took the aircraft to 50,000 feet. It was on-station for about 300 hours (200 additional hours were required for transit to and from Japan) during 21 days of continuous flight, employing three aircraft. See "Air Force Officials Use Global Hawk to Support Japan Relief Efforts," *Air Force Print News Today*, March 16, 2011; Seth Robson, "Global Hawk Invaluable After Japan Disasters," *Stars and Stripes*, September 12, 2011b; Tony Capaccio, "Northrop Drone Flies Over Japan Reactor to Record Data," Bloomberg, March 17, 2011.

[26] Capaccio, 2011; Evan Ackerman, "Japan Earthquake: Global Hawk UAV May Be Able to Peek Inside Damaged Reactors," *IEEE Spectrum*, March 17, 2011.

[27] "U-2 Reconnaissance Aircraft Deployed to Aid Japan Relief Efforts," *Air Force Print News Today*, March 14, 2011.

survivors by sight and via surface-search radar and also provided information about hazards that could affect the ability of surface ships to perform relief missions.[28] Overall, the use of airborne ISR was greatly helped by already existing U.S. airfields and assets nearby in Guam, Okinawa, and South Korea. In addition, compared to cases of airborne ISR use in other humanitarian responses, the Japanese government proved less politically sensitive to granting access to its national airspace for the operations.

An important point is that Operation Tomodachi was demilitarized from the start. As one Japanese General put it, there were "no weapons, only smiles." The U.S. Army, for example, conducted three small humanitarian efforts: "shower power" (to provide shower facilities at base camps); "band camp" (a musical concert), and "soul train" (to clean up debris from railway lines) at its own initiative.

Operation Tomodachi, however, revealed some key issues, particularly in terms of command and control. USFJ has tactical command and control over forces in Japan, but because it did not have operational command over those forces, USFJ did not have the authority to deploy forces and other assets to the affected area for a prolonged period of time, thus allowing the United States to respond very quickly to requests for assistance. There were basically three options for PACOM during this crisis. The first was to give USFJ operational control over all forces in Japan rather than just tactical control. The second was to augment USFJ with additional forces to fill needed gaps, with those forces falling under the operational command of USFJ. The third was for PACOM to deploy a JTF (renamed as a JSF). The challenge with the first option is that USFJ is not designed to execute HA/DR operations. USFJ really needed an operational '3' office in the headquarters to manage the HA/DR on a daily basis, as it was basically designed as a political-military headquarters staff. The second option, according to those we conducted focused discussions with, could have worked if the operational '3' function had been provided. According to USFJ leadership, the headquarters staff already had the established relation-

[28] Steve White, Commander, Navy Installations Command Headquarters, "Operation Tomodachi: Search and Rescue," undated.

ships with their Japanese counterparts to get the job done. However, the decision was made to implement the third option.

When the JSF arrived, a decision was made to retain USFJ's political-military role, but staff reported to JSF leadership rather than to USFJ leadership. The command and control situation changed daily. For example, according to one U.S. official, every headquarters element thought it had tasking authorities over the 374 airlift wing at Yokota Air Base. In short, operational command and control relationships were not clear to the units.

In addition, Operation Tomodachi revealed some complicated questions regarding a lack of existing procedures for landing foreign aircraft on a U.S. base in a foreign country during a crisis. For example, who should provide clearance to a country that desires to utilize a runway located on a U.S. air base in a foreign country to provide assistance to the affected host nation? This issue was raised several times during Operation Tomodachi and was complicated further when requests originated from countries not allied with the United States.

Operation Tomodachi also highlighted some coordination issues within DoD. The U.S. military services all had different metrics or benchmarks for their exit strategies. For example, some services deemed the operation complete when the GoJ ceased requesting assistance. Other services considered the end of U.S. financial assistance as the ending point. Across DoD, the end state of Operation Tomodachi was not coordinated and communicated, leaving the Japanese unsure about how long the additional U.S. military forces would remain to assist with the relief efforts.

Finally, this operation underlined a resourcing issue, namely how to use OHDACA funds, the largest funding source for DoD to support HA/DR operations. There was some confusion in the field about the rules that govern the use of these funds, such as the extent to which the mission is tied to the money, if consequence management scenarios are included, and when funding actually runs out. According to officials we spoke with, OHDACA does not have explicit authorities for consequence management situations abroad, suggesting that the use of OHDACA funds may need to be clarified for future operations.

Coordination with Other U.S. Actors

The U.S. embassy in Tokyo formed a new organization called the "Bilateral Assistance Coordination Cell" (BACC), which met daily and included all USG agencies. Embassy personnel modeled the BACC on the USAID MITAM coordination system. We were told that the U.S. embassy in Tokyo housed a large number of visitors, many from DoD, during Operation Tomodachi. Experts arrived in Tokyo, formed small subject-matter expert cells on a variety of issues, and tried to help where they could. These cells, however, did not have clearly defined leadership or oversight, a role that could have been filled by a policy representative or two from OSD/P and/or the Joint Staff.

U.S. assistance, expertise, and equipment were more in demand during the foreign consequence management phase than the prior HA/DR phase. The USG provided experts primarily from DoD and DoE. However, in this phase, there was no single U.S. POC to receive requests, validate and resource them, and task agencies, which created confusion over who was in charge.

The response to the nuclear disaster also revealed a lack of standards on the U.S. side that generated significant confusion. In an attempt to pool expertise from across the USG, a U.S. interagency team, averaging around 20 individuals from DoE and DoD, was created to conduct data collection and analysis; however, in practice they did not offer collective recommendations to senior civilian and military decisionmakers. The main issue was that standards and approaches (e.g., models) differed across those agencies and even within DoD itself. As a result, there was little consensus at any given time during the nuclear crisis as to what the data meant and what the response should be. Officials repeatedly noted the U.S. Navy's conservative "zero tolerance" policy for radiation leaks, which differs from the DoE NRC standards. DoE follows the Environmental Protection Agency's procedures outlined in their protected action guides, which link incident phases (limited to

severe) to protective actions, ranging from sheltering in place to relocation and decontamination.[29] The "sea of silence" concerning conditions early on at Fukushima contributed to the NRC-recommended 50-mile evacuation radius, which far exceeds the required evacuation radius for incidents at U.S. nuclear power plants.[30] There were also differences over standards for what to do with contaminated equipment and how to deal with radioactive waste stored on U.S. military bases overseas (i.e., who owns it, who can move it, and how long it can remain).

Another important shortcoming became apparent during the volunteer evacuation phase, which followed the nuclear explosions. We were told that there was no single tool to track U.S. military dependents in a dynamic environment. It was reported that the Department of Homeland Security's Noncombatant Evacuation Operation (NEO) Tracking System did not work particularly well—the software was apparently out-of-date. The tracking of U.S. dependents became a polarizing issue and was a significant distraction to military personnel in Japan, as they were trying to do their job in a challenging environment while also being concerned about the welfare of their families.

DoD Coordination with Recipient Country

Fairly early on, it was clear that existing concepts of operations (CONOPs) were not tailored to a highly developed, capable ally country (like Japan) where the United States has an established military presence. While the majority of U.S. support to HA/DR operations takes place in developing countries, Operation Tomodachi has shown that there are exceptions and that these exceptions are not featured prominently in military planning processes.

The Bilateral Coordination Council (BCC) system, which included only U.S. and Japanese military officials (as opposed to the

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[29] See United States Environmental Protection Agency, "Protective Action Guides," October 17, 2012.

[30] Steven Mufson, "NRC Fukushima Transcripts Show Urgency, Confusion Early On," *The Washington Post*, February 21, 2012.

BACC structure described above), worked well overall, with three locations at Yokota Air Base, Sendai Air Base, and Ichigaya (the Japanese Ministry of Defense headquarters), but some councils were better integrated than others, and none included civilian agencies (thus the need for a BACC). One important element of the communications process concerns the LNOs at each of the BCCs and embedded within the JSDF. The U.S. Army has four LNOs to the JGSDF; there is one Marine Corps LNO as well. There are also Japanese LNOs at the PACOM components in Hawaii. At PACAF, for example, the role of the Japanese LNO was elevated significantly. He participated in many briefings, worked in the operations center, and served as an advisor to senior PACAF leadership. The BCC structure was essentially the workaround to information-sharing, and the LNOs were tasked with reporting information to higher authorities and answering their questions.

At the political level, the interface between the USG and the GoJ was challenging. For example, there was no centralized process for coordinating the U.S. response to various assistance requests from the GoJ. Eventually, a cabinet-level position in the Prime Minister's office was established for this function on the GoJ side, but requests to the USG flowed on a number of levels and in various directions, including at the military service–to–military service level, and to the headquarters elements in Hawaii (PACOM and component commands).

Overall, the U.S. request for forces process and the tyranny of distance in the Asia-Pacific region meant that DoD officials felt the need to push GoJ officials for decisions early so that requests could be fulfilled. Moreover, during the nuclear response phase, some capabilities were "pushed" to the GoJ that were not officially requested, including, for example, the Marine Corps' Chemical-Biological Incident Response Force (CBIRF), K-MAX unmanned aerial vehicles, drones, and (26 types of) Bechtel pumps. For example, the Marine Corps CBIRF team deployed 100 people for 30 days. While the CBIRF team conducted some demonstrations, they were ultimately not needed for the operation. However, as the environment was unpredictable and dynamic, it is conceivable that they *might* have been needed. In other cases, the United States exceeded the request. For example, one million bottles of

water were provided to Japan in response to the government's request for "water."

On occasion, vagueness of the requests contributed to this disproportionate response. According to U.S. officials we spoke with, the GoJ tended to make unspecific requests for assistance (e.g., fuel, water) with limited notice, often leaving out important details, such as purpose, quantity, and location. Those requests came from the prefectures to the three BCCs, which one U.S. official described as "one adjutant general trying to service many governors and mayors at the same time—an impossible task." Priorities in terms of supplies at the prefecture level changed frequently because rotating volunteers prioritized these needs differently—basically there were no metrics to make the determination of "needs" objective. Requests for assistance, in many cases, went directly to existing contacts in the JSDF and then to the relevant component command (e.g., JASDF to PACAF via 5AF and 13AF).

In addition, it was not always clear to GoJ officials which capabilities were free of charge to them (i.e., covered by OHDACA assistance) and which they would be required to purchase (i.e., higher-end technologies, such as detection and monitoring equipment offered by industry vendors). The role of U.S. industry is important to consider in terms of HA/DR and consequence management operations. These kinds of operations provide an opportunity for U.S. industry and an avenue to field their technologies, but they can also introduce confusion and raise the expectations of the affected country.

As with any coalition operation, including HA/DR, communications and the sharing of information and intelligence tended to be an issue; the question is how these issues affected day-to-day operations, and what work-arounds were successful. For Operation Tomodachi, at least from the U.S. perspective, the clearly communicated goal from military leadership was to do all planning over an unclassified system called APAN. While the decision to try to conduct this HA/DR operation over the unclassified system is laudable, there were at least four problems with this approach.

First, the GoJ was not willing or even able to upload information considered For Official Use Only (FOUO) and/or proprietary to APAN, particularly in terms of the nuclear response. The organization man-

aging this operation was Tokyo Electric Power Company (TEPCO), a private sector company with significant authority in Japan, rather like a government agency. This considerably complicated the sharing of real-time data between the United States and Japan. Second, APAN had not been incorporated into security cooperation exercises with the JSDF and, as a result, the GoJ was unfamiliar with it and even a little skeptical of its utility. Third, APAN is primarily a military system; civilian government organizations and NGOs did not have access. The GoJ preferred to use the CENTRIX-J system, which it shares only with the United States; however, there are limited terminals to access this system in the Ministry of Defense, and the Ministry of Foreign Affairs did not have access. Finally, foreign disclosure and over-classification (i.e., using "no foreign nationals [NOFORN]" unnecessarily) was also reported as an issue. Several officials reported an inadequate number of foreign disclosure experts at the various command locations throughout Japan. Officials we spoke with speculated that the information-sharing situation would be even worse in a combat situation.

Overall, while most indicators showed that the American and Japanese military officials agreed on most major issues, there were a number of issues on which their perspectives differed. While none of these issues drastically affected the outcome of the operation, they are worth noting in terms of overall lessons for future operations with the JSDF. Table 5.2 provides a simplified synopsis of the differing perspectives on key operational issues.

First, in terms of the main goals, we found that the United States and Japan emphasized two different aspects of the overall value of Operation Tomodachi. U.S. officials stressed the importance of assisting an ally in a time of crisis. Japanese officials pointed out the deterrence benefit of "showing the force" with regard to the U.S. military presence in Japan. Second, U.S. military decisionmaking is generally pushed down to the lowest appropriate level, whereas in Japan, decisionmaking is more centralized at higher echelons of the government. This approach tended to slow down the decision process. Third, command and control posed similar issues to decisionmaking. The United States preferred an elaborate system of sending LNOs to many locations to interact directly with the other U.S. and Japanese forces in an

Table 5.2
Comparison of U.S. and Japanese Military Perspectives on Key Operational Issues

Issues	U.S. Perspective	Japan Perspective
Main goals for U.S. involvement	Strengthen U.S.-Japan relationship and remain in a strictly supporting role	Highlight the deterrence factor of U.S. forces stationed in Japan
Decisionmaking process	Pushed down to as low a level as appropriate	Centralized, top-down process, even on minor decisions
Command and control	Deploy many LNOs and report information to a large audience	Centralize; send LNOs only where absolutely needed
Communications and information-sharing	Unclassified, non-FOUO is appropriate for HA/DR	Critical information is too sensitive for unclassified, non-FOUO systems
Planning perspectives	U.S. military thinks in terms of purpose, end states, and tasks	JSDF thinks in terms of capabilities
Request for support process	Offer as many capabilities as possible as a "menu of options"	Prefer more information about specific capabilities relative to each option in a prioritized way

effort to share information and gain insights in real-time. Japanese officials generally approached decisionmaking in Operation Tomodachi from a more centralized command and control perspective, with decisions generally made by senior officials within the Ministry of Defense.

Fourth, in terms of communications and information sharing, U.S. officials preferred to use the unclassified APAN system, but this system did not work well for Japan, primarily because of the amount of information (particularly in terms of the nuclear response) they considered FOUO, if not classified. Fifth and sixth, in terms of planning perspectives, the United States generally focused on providing timely, relevant support, but given the time-distance factor, U.S. forces needed decisions to be made quickly to meet requests. Japanese officials rightly needed time to deliberate, and they required more information about the specific capabilities in question, including who, in the end, would be responsible for paying for these items (i.e., the United States

or Japan), to make the best decisions. We were told by both U.S. and Japanese officials we spoke with that the two sides talked past each other on this issue, which was a source of frustration at times.

The issues raised above are largely tied to processes that are linked to certain cultural views and values. While difficult to change, the differences in approaches should be, at a minimum, highlighted and well understood by both sides. Operation Tomodachi was clearly a learning experience for both Japan and the United States, for their militaries, in particular, and for their civilian agencies as well. HA/DR operations on a large scale like that of Operation Tomodachi are useful for testing certain processes, such as information-sharing, communications, and command and control, in a "real world" operational context, allowing for the identification of lessons learned and best practices, such as those outlined above.

DoD Coordination with International and Regional Actors

U.S. Partners and Other Countries

Seventeen countries rushed search and rescue teams to Japan in the days following the earthquake and tsunami to dig through the rubble and seek out trapped persons. At their peak, five days after the disaster, international search and rescue teams swelled to 796 individuals on the ground. However, of these teams, only the 15-member contingent of the Chinese International Search and Rescue team constituted a foreign military response. The rest were comprised of civilians. China's team arrived on March 14 and worked for six days in the seaside town of Ofunato.[31]

While medical teams came from six countries, Israel's was the only team composed of military personnel.[32] China offered medical aid

[31] Government of Japan, "A Map of Sites Where Rescue Teams from Foreign Countries, Regions, and International Organizations are Operating," Ministry of Foreign Affairs, undated.

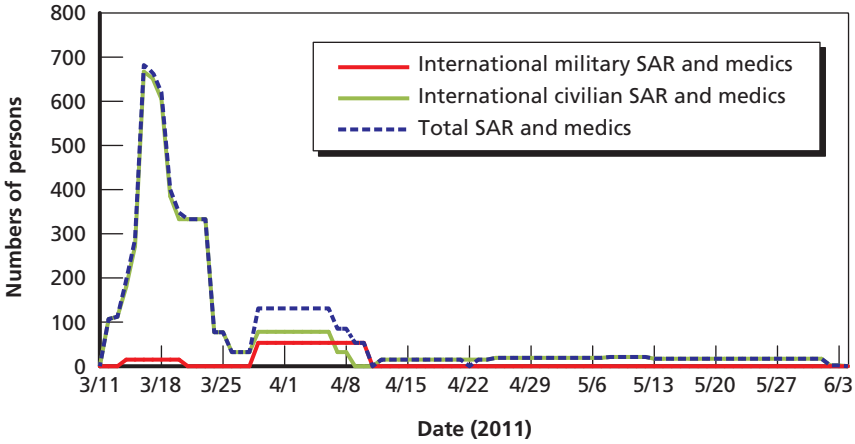
[32] Countries sending civilian medical teams include: India, Indonesia, Jordan, Thailand, and Sri Lanka.

that would have come from its military (specifically the People's Liberation Army Navy), but this offer was ultimately declined by Tokyo.[33] Figure 5.2 shows the numbers of foreign search and rescue and medical response personnel over time.

International and Regional Organizations

At the peak of the crisis, over 200 NGOs operated within the affected areas of Japan, providing supplies, shelter, and medical care. Though the GoJ coordinated the contributions from intergovernmental organizations (IGOs), such as the International Red Cross, U.S. NGO efforts were coordinated primarily through USAID and the State Department. After the State Department and USAID paired GoJ's requests for support with NGO offers of assistance, the validated requests were then sent to the military typically through a USAID representative.

Figure 5.2
Foreign Search and Rescue and Medical Personnel Involved in Response to the Japan Earthquake and Tsunami Disaster



NOTE: This figure does not include numbers of NGO/IGO personnel.[304]
RAND *RR146-5.3*

[33] Beijing offered to send its military medical ship "Anwei" (Peace Ark) with 300 hospital beds. Peter W. Mackenzie, *Red Crosses, Blue Water: Hospital Ships and China's Expanding Naval Presence*, Center for Naval Analyses, 2011, pp. 12, 20.

According to USFJ spokesman SGM Steven Valley, "in most cases, the military isn't speaking directly with an NGO." In many cases, the coordination entailed the U.S. military providing delivery support for the NGO humanitarian supplies and personnel.[34]

Conclusions

U.S. Security Cooperation Considerations

Operation Tomodachi identified capabilities gaps for the JSDF, such as information sharing (with the United States), search and rescue in a contaminated environment, opening up airfields, establishing a joint amphibious capability (for HA/DR and other operations), developing deployment capabilities, and fielding new Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) and nuclear monitoring capabilities. Security cooperation, including security assistance, could be targeted to help address some of these capability gaps. Rich lessons from Tomodachi should directly inform future exercises, training events, military-to-military activities, and conferences, for example.

Moreover, Japanese ground, maritime, and air self-defense forces do not yet operate effectively on a joint level, and both Japanese and U.S. officials remarked on the need to address this deficiency, perhaps by increasing the number of joint exercises to improve interoperability and help break down cultural barriers. In fairness, this was the first time a JTF was operationalized in Japan. We were told that lessons had been captured and are being incorporated into Japanese joint training and exercises. Still, combined exercises (perhaps less scripted and incorporating lessons from Operation Tomodachi) with the JSDF would be useful, as would expanding exercise participation to include civilian agencies, primarily to practice HA/DR and FCM in a complex environment. As Operation Tomodachi demonstrated, it is important to incorporate information-sharing systems, such as APAN, into exist-

[34] Seth Robson, "Military, NGOs Teaming Up to Deliver Aid to Earthquake Victims," *Stars and Stripes*, April 6, 2011a.

ing exercises.[35] Service component–level exercises, such as the USAF PACIFIC ANGEL, can also benefit from incorporating lessons learned into the scenarios. Also, within existing security cooperation frameworks, it would be useful to review and possibly revise U.S.-Japan Defense Cooperation Guidelines to include HA/DR operations.

Beyond U.S.-Japan security cooperation, it is conceivable that lessons from Operation Tomodachi and from Japan's own response efforts could be useful for discussions in and around the region with interested countries. The United States could facilitate these discussions.

Overall Considerations for DoD

At a high level, there are some noteworthy takeaways from the experience in Japan. First, on the positive side, the utility and credibility of the U.S.-Japan alliance was strongly enhanced. The name of the operation, Tomodachi, which means "friend" in Japanese, was very well received on the Japanese side, and Tomodachi increased the popularity of the United States in Japan. Second, Operation Tomodachi showed Japan why interagency coordination is important. One U.S. general described the coordination process as "a phenomenal unity of effort without standard operating procedures."

However, there are also a few high-level challenges worth noting. The most acute challenges were associated with command and control, but communications, information-sharing, resourcing, and operations were also problematic. In terms of command and control, one of the most significant issues on the U.S. side was that USFJ did not have operational command and control over all U.S. forces stationed in Japan. In addition, the United States and Japan did not have a common operating picture; both sides worked from different systems and processes. A new command and control structure was put into place to streamline and facilitate communication between the United States and Japan, to include videoconferences, liaisons, and coordination structures, but the main issue was that no one was really "in charge" of the U.S. gov-

[35] The RAND team was told that the KEEN EDGE exercise in January 2012 employed lessons from Tomodachi, such as joint committee frameworks, and included more civilian interagency officials than in prior events.

ernment assets and, as a result, the response process was multi-layered and multifaceted.

It is important for DoD to be aware of the challenges associated with HA/DR and FCM missions like Operation Tomodachi, but it is also important to understand that such missions are anomalous as far as USG-provided HA/DR support is concerned. Japan is a highly capable ally. Also, the United States has significant forces stationed in Japan, and these forces were also directly affected by the events of March 2011. The challenges, while numerous, were not insurmountable. U.S. and Japanese forces were able to work together to get the job done. In one senior U.S. official's view, Operation Tomodachi consisted of smart people making good decisions with limited or no guidance, being creative, and trying to do the right thing.

That said, there are some challenges within DoD's purview that, if addressed, could streamline processes and facilitate operations in the future. First, to assist the U.S. embassy more effectively, OSD/P or the Joint Staff might send an upper mid-level representative to serve as a direct LNO with the authority to make decisions and contribute to policy discussions and debates, particularly when there is such a large U.S. military and civilian presence in the affected nation. According to officials we spoke with, having a policy-level representative or two at the embassy might help to streamline decisionmaking and perhaps clarify and coordinate policies across DoD, particularly where time-zone differences create a major lag in decisionmaking. To be sure, this liaison role would not be required or appropriate in every HA/DR crisis, but perhaps should be considered for large-scale events like Operation Tomodachi, in which DoD plays a significant role and controls the majority of resources to enable an effective and efficient response, and in which time-lag creates delays in policy decisions. For example, there were policy questions regarding the legal uses of certain funding streams such as OHDACA, specific issues relating to actions the United States should or should not take that could impact the bilateral defense relationship with Japan, and questions regarding DoD's overall position on the evacuation of military dependents that required timely policy inputs. Second, in terms of resources, it is important to clarify the authorities of OHDACA in consequence management scenarios.

Does it apply? Under what circumstances? What are the limitations, if any? Perhaps the OHDACA handbook should be amended to provide answers to these questions.

Third, the Operation Tomodachi case study highlights the fact that DoD support to HA/DR and FCM events is not limited to developing countries. It is certainly plausible that in the future a capable ally or partner country, perhaps one where U.S. forces are stationed, will request immediate USG assistance for these kinds of disasters. Such a request, as we have seen in Operation Tomodachi and other HA/DR operations, will undoubtedly require significant DoD assets. Therefore, it is important to plan for that potentiality.

Fourth, it is important to set USG standards for operating in a CBRN environment to avoid confusion on the part of the host nation. The lack of common standards created significant problems during Operation Tomodachi.

Fifth, the integration of civilians into the decisionmaking process is critical. This would include civilian governmental agencies and other relief-providing organizations such as NGOs. Finally, Tomodachi response efforts would have benefitted from additional personnel with foreign disclosure experience to ensure that requests for information release are handled in an appropriate and timely manner.

CHAPTER SIX

Findings and Recommendations

Humanitarian relief is a "core U.S. military mission that the Department of Defense shall be prepared to conduct with proficiency equivalent to combat operations."[1] The analysis set forth in this report has shown that, although there are many success stories to report, DoD can improve its proficiency in HA/DR by implementing key lessons from its numerous past interventions in the Asia-Pacific region. This chapter highlights lessons identified[2] across our four case studies. Also, since the cases cover a wide range of contingencies in terms of the size of the disaster, the openness of the affected nation, and the extent of the U.S. response, this chapter highlights certain lessons drawn from only some of the cases when these lessons were deemed to have potential implications for future U.S. HA/DR interventions. The Japan case, in particular, is the only FCM and CBRN case in this study and, accordingly, provides lessons that could be of use in similar future circumstances.

In relation to the identified lessons, we make recommendations that fall into two distinct categories:

- recommendations that require changing current practices but that could be implemented relatively easily at a relatively minor cost

[1] U.S. Department of Defense, DoD Instruction 3000.05, *Stability Operations*, September 16, 2009b.

[2] In the remainder of this chapter, the words *lessons* and *findings* will be used interchangeably, since the purpose of this study (the "findings" our research led us to) was to identify "lessons" from DoD's involvement in HA/DR.

- recommendations that require changing current practices but necessitate a higher level of effort and would incur more significant costs.

To decide whether a recommendation belonged in the first or second category, we established for each an order of magnitude using the following criteria:

- the number of institutional actors involved in implementation
- the level of additional funding required (if any)
- the expected implementation timeline.

Any recommendation with a short implementation timeline (defined as a matter of weeks) was deemed "easy." Recommendations were deemed "difficult" if they required substantial additional funding and/or the involvement of any agency (U.S. or non-U.S.) beyond DoD.

It is important to note that many of the findings relate to the Japan case study. This is not because we think that case was more important but, rather, because the incredibly complex operation in Japan produced the preponderance of lessons.

Improving DoD's Efficiency as an HA/DR Provider

Findings

Case studies offer contrasting views of the quality of DoD's internal coordination in HA/DR missions. In complex disasters, such as the Japan case, the lack of a single military POC made it difficult for civilian U.S. agencies and IOs to identify the most effective channels of communication with the U.S. military.[3] In addition, U.S. services ended up determining their own exit strategies due to the lack of overarching policy guidance for when to declare a humanitarian intervention over. Although, in our study, such issues only arose in the Tomodachi case, they may prove to be more prominent in the future if affected countries

[3] Focused discussion with U.S. government officials (C), Bangkok, Thailand, January 24, 2012.

become increasingly capable of handling small or medium-sized disasters and the United States ends up "specializing"—as it has already started to do—in responding to large or mega-disasters.

All our case studies show the importance of personal connections among individuals involved in the disaster response. Such connections considerably facilitate coordination. In Indonesia, for instance, the official leading the U.S. response knew his Australian counterparts, with whom he had participated to a recent exercise. These case studies also highlight the benefits of deploying individuals who have previous HA/DR experience on HA/DR missions. These individuals are already familiar with the relevant actors, institutions, processes, and funding sources. As a result, they prove themselves to be fully operational faster in situations where time is of the essence. Pakistan is a case where the United States benefitted from both personal connections and HA/DR experience at the top level, as the U.S. Commander had worked with Pakistani officials during the response to the 2005 earthquake.

Recommendations

DoD's efficiency as an HA/DR provider can be improved through several relatively easy, low-cost fixes:

- Whenever possible, select personnel with previous HA/DR experience to lead disaster response.
- Encourage the participation of senior military in USAID's Joint Humanitarian Operations Course.
- Explore making HA/DR a qualification or special skill identifier for individuals with such relevant experience, or ensure that DoD keeps track of individuals with direct HA/DR experience.

Enhancing Interagency Coordination

Findings

The case studies suggest that the quality of interagency coordination has generally improved, but that it depends on the specific circumstances

of each disaster. Factors that facilitate or hamper interagency coordination include prior experience in disaster response and a knowledge of interagency coordination mechanisms by the individuals in charge;[4] prior connections between individuals in leadership positions; and the degree of media exposure of a given disaster, which can add considerable pressure to act quickly and visibly, sometimes to the detriment of coordination.[5] The deployment of Military Liaison Units between USAID and PACOM has proven particularly helpful in improving coordination.

Based on the Japan case, there is room for improvement in the FCM portion of the overall U.S. response structure. The case revealed that the USG has a lack of common, agreed upon, and practiced standards and procedures with regard to operating in a CBRN environment. Moreover, the BCC structure adopted during Operation Tomodachi was purely military-to-military and did not provide the whole-of-government approach that the situation required. Another source of difficulties for the U.S. military was the absence of clear guidelines on the use of OHDACA funds in an FCM contingency.

Recommendations

Interagency coordination can be improved through several relatively easy, low-cost fixes:

- Consider placing one or more representatives from OSD/P or the Joint Staff on the embassy team during an HA/DR operation involving a significant U.S. response and multiple USG agencies.
- Clarify authorities and simplify the use for OHDACA funds, especially in FCM/CBRN cases.

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4 The logistics community, too, has emphasized the importance of social networks in creating relationships as well as clarifying "roles, responsibilities, authorities, and core capabilities" (Joint Staff J-7 and Joint Staff J-4, "Joint Concept for Logistics Experiment (JCLE)," senior leader seminar briefing, November 7, 2011, p. 17).

5 Focused discussion with U.S. government officials (C), Bangkok, Thailand, January 24, 2012. The crucial role played by personal relations in interagency coordination was further underlined in U.S. Government Accountability Office, 2011, p. 15.

- Develop templates for funding requests so that they do not need to be generated internally. Such templates could be web-based and would allow more consistency across time and units.
- Integrate civilians in the planning and coordination structure (e.g., consider a civil-military operational center rather than a BCC structure in FCM cases).

Other changes, although equally important, may require more time and effort:

- Develop exercises that help improve interagency coordination, such as the Special Operations Capability Exercise (SOCEX).[6]
- Set standards for operating and living in a CBRN environment. This may include harmonizing FCM standards across services and agencies, setting U.S. or DoD standards for contaminated equipment, issuing guidance on living in a zone with low doses of radioactivity where the United States has forward-deployed forces, and issuing guidance on handling radioactive waste on U.S. bases.

Improving Coordination with Affected Countries

Findings

Several of our case studies suggest that a lack of standard operating procedures between the United States and affected countries created delays in HA/DR responses. In Indonesia, flight clearances took time to obtain. In Operation Tomodachi, some complicated questions arose that revealed a lack of established procedures, such as landing foreign aircraft on a U.S. base in a foreign country during a crisis. Operation Tomodachi also showed that existing CONOPs do not have the

[6] Large-scale exercises such as COBRA GOLD or BALIKATAN do not fulfill this role as currently figured, as they are focused on the military and not on working out basic technical coordination issues with other agencies (focused discussion with U.S. government officials [C], Bangkok, Thailand, January 24, 2012).

required specificity when it comes to responding to a highly developed, capable ally or to intervening in a country where the U.S. has an established military presence—both conditions exemplified by Japan. Operation Tomodachi revealed some weaknesses in information-sharing with Japan, particularly with the Japanese private sector.

Creating or improving standard operating procedures with potential HA/DR recipients requires a solid institutional and cultural knowledge of these countries. Such knowledge also facilitates just about every aspect of HA/DR interventions and prevents both tensions with the affected country's government and potential blunders in interactions with the population. In the case of Pakistan, ODRP benefitted from its preexisting knowledge of local institutions and key Pakistani officials. This case highlights the importance of being well acquainted with the bureaucratic system and politics of the affected country. An awareness of cultural differences may also help communication. During Operation Tomodachi, for instance, the U.S. military pointed out the fact that, while they thought in terms of purpose, end states, and tasks, the JSDF focused more on capabilities. Cultural knowledge is also essential to ensuring that appropriate supplies are sent to the affected country, as the Burma case underlined.

Recommendations

Coordination with the affected country can be improved through several relatively easy, low-cost fixes:

- Articulate a new strategy and doctrine (or at least establish the "business rules") for HA/DR with a first-tier, capable ally, as compared with less-capable partners.
- Improve foreign disclosure expertise during HA/DR deployments; ensure that NOFORN classification is kept to a minimum so as to maintain the highest possible degree of communication with the affected country.
- Reach an early agreement with the affected country on the information-sharing platform to be used. Avoid situations such as that of the Japan case, in which PACOM/USJF used APAN while Japanese authorities used CENTRIX-J.

Other changes, although equally important, may require more time and effort:

- Build knowledge of the institutions, bureaucracy, infrastructure, and individuals in charge in potential affected countries.[7]
- Develop institutional relations and contingency planning with national disaster agencies early on. If possible, set up coordination cell structures with these agencies.

Working More Effectively with the UN and NGOs

Findings

Communication between the military and IOs/NGOs has improved considerably in the past 20 years. The military community has partly overcome its reluctance to share intelligence with UN agencies and NGOs. The sharing of imagery, in particular, has increased considerably. However, further means of sharing operational details could be developed, particularly through exercises. The personal connections forged through exercises that include IOs and NGOs have been described as "invaluable" and "priceless."[8] Our focused discussions, however, suggest that the key to establishing better coordination between the U.S. military and IOs/NGOs is not more exercises, but better targeted exercises.[9] Such exercises would focus more on the operational level, to include co-planning, standard operating procedures exchange, and high degree of technical detail. While respecting the military's requirement for some degree of secrecy, these exercises

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[7] DoD already possesses this knowledge where it has a presence and should capitalize on it, for instance, by using the local office as response coordinator (as in the Pakistan case) rather than creating a new structure (as in the Japan case). Additional information relevant to HA/DR cooperation can be provided by USAID, IOs, and international and local NGOs.

[8] Focused discussion with international organization representative (A), Bangkok, Thailand, January 24, 2012.

[9] Focused discussion with international organization representative (C), Bangkok, Thailand, January 24, 2012.

would contribute to improving interoperability between military and civilian agencies.

Finding a commonly agreeable communication platform is another issue. The unclassified APAN communication portal—commonly described as a military version of ReliefWeb—was described as not comparing very well to other available information tools. As a result, it has improved internal communication but not necessarily communication with the outside.[10]

Recommendations

Coordination with IOs and local NGOs can be improved through several relatively easy, low-cost fixes:

- Develop exercises that focus on joint planning between the U.S. military and IOs/NGOs.
- Develop shorter events (2–3 days) to optimize participation from understaffed civilian agencies and NGOs.
- Explore how other countries facilitate collaboration between their military and NGOs (e.g., UK, Australia).[11] Increase sharing between DoD and civilian agencies of knowledge of supply standards and make available lists of the commercial providers of supplies that meet these standards.

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[10] Focused discussion with international organization representative (C), Bangkok, Thailand, January 24, 2012; focused discussion with U.S. government officials (E), Honolulu, Hawaii, January 11, 2012.

[11] Some British NGOs, for instance, have a sustained engagement with the UK military. They give regular talks on UK bases, and their personnel are invited to attend UK military academies (focused discussion with international NGO representative (A), Bangkok, Thailand, January 26, 2012).

Aligning Security Cooperation Activities and Regional HA/DR Capabilities

Findings

Security cooperation is a primary vehicle used to prepare affected countries to respond better to their own disasters, as well as those of their neighbors. It is also a prime mission area in which to improve interoperability and facilitate future HA/DR cooperation. During Operation Tomodachi, the Japanese LNOs that U.S. services were hosting at the time proved extremely valuable at front- and back-channeling information.

Based on our four case studies, a few countries in the region appear particularly promising in terms of their HA/DR capabilities. U.S. treaty allies Australia and Japan have demonstrated both the willingness and capability to respond to disasters, and they can be expected to continue making significant contributions. Indonesia, Malaysia, Thailand, and Bangladesh have fewer capabilities but have shown a willingness to send assistance to their neighbors. China is becoming a major source of HA/DR and is likely to expand on this role in the future. South Korea and India, however, are not providing HA/DR at a level commensurate to their capabilities.[12] It is also worth noting that the participation of militaries outside of the PACOM AOR is infrequent and unreliable. Consequently, HA/DR capacity-building efforts within the PACOM AOR will likely prove most beneficial to Asia-Pacific area disaster response.

ASEAN's institutional progress with regard to HA/DR has yet to translate into operational capability. The AHA Center remains small, and the organization is fragmented and has no clear priorities or agenda. Overall, there is a disconnect between the rhetoric and the reality of ASEAN's HA/DR role. Countries will continue to rely for some time on bilateral rather than regional ties. Regional rivalries and tensions are also likely to make some countries prefer assistance from countries other than their own neighbors.

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[12] At least in our four case studies.

Recommendations

Using security cooperation activities in the Asia-Pacific region to further build HA/DR capabilities can be done through several changes that may require time and effort:

- Tailor whole-of-government exercises to practice HA/DR and FCM in a complex environment.
- Build partner capacity with Indonesia, Malaysia, Thailand, and Bangladesh, because their militaries have shown a willingness to engage in HA/DR.
- Encourage greater contributions from South Korea and India, because both have the capacity to do more to support HA/DR responses.

Building Goodwill Through HA/DR

Findings

All four case studies clearly show that, although HA/DR is commonly presented as a relatively benign form of foreign military intervention, affected countries do not perceive it as such and are acutely aware of its potential political repercussions, both internally and externally. Even Japan, a close U.S. ally, controlled tightly what assistance was being provided and was careful to remain at all times fully in charge of the disaster response. This care was even more pronounced in the cases of Indonesia, which takes pride in being non-aligned; Pakistan, which had been experiencing political tensions with the United States; and Burma, which harbors a deep-rooted fear of foreigners. In these contexts, it is difficult to assess what degree of goodwill U.S. interventions really created through HA/DR. While the United States' 2005 post-earthquake assistance seemed to have a positive effect on U.S.-Pakistani relations,[13] the diplomatic rift between the two countries was

[13] Several surveys show that, one month after the earthquake, "favorable opinion of the United States" among the Pakistani population had increased from 23 to 46 percent. This figure rose to 55 percent three months after the earthquake (Kenneth J. Braithwaite, "U.S.

too deep in 2010 to provide the United States with a decisive improvement. Trying to establish some sort of relationship with Burma seemed a long shot in 2008, but the relationships that were built during the response to Cyclone Nargis may provide some tangible benefits now that the Burmese political leadership has changed.

In light of this perspective, foreign assistance should always be seen as being in support of the affected country's greater effort. This is particularly true in those Asia-Pacific countries that have made considerable progress in building their own disaster response capacity, such as Indonesia and Thailand. Such countries are likely to grow more reluctant to receiving large amounts of foreign aid—military aid in particular—even from their allies.[14] In some instances, receiving assistance may be an embarrassment or prove a political liability.[15] Affected countries increasingly request support to their own national disaster administrations or targeted, rather than comprehensive, assistance (e.g., search and recuse or assessment).[16]

Recommendations

Using security cooperation activities in the region to further HA/DR capabilities can be done through several changes that may require time and effort:

Humanitarian Assistance/Disaster Relief: Keys to Success in Pakistan," *Joint Forces Quarterly*, No. 44, 1st quarter 2007, p. 22).

[14] Focused discussion with international organization representative (D), Bangkok, Thailand, January 26, 2012.

[15] Focused discussion with U.S. government officials (E), Honolulu, HI, January 11, 2012. Disasters can also be an opportunity for the local military to improve its image with the population. In the 2011 Thai floods, the Thai military appeared as the most efficient relief provider while the government showed division and confusion. This contributed to rehabilitating the military in the eyes of the population after its 2010 crackdown on political protests (focused discussion with international organization representative (D), Bangkok, Thailand, January 26, 2012).

[16] Focused discussion with international organization representative (E), Bangkok, Thailand, January 23, 2012.

- For each contingency, plan what degree of visibility the U.S. response should have in comparison with the affected country's institutions.
- Emphasize a unified USG message, as conflicting messages can undermine the confidence-building benefits of HA/DR interventions.
- Identify clearly who in the affected country should be the focus of the strategic communication effort (e.g., the country's government, its population, the U.S. population, or some other audience). Strategies will vary across cases, but the failure to choose an audience may result in losing the ability to convince any audience at all.[17]

In addition to these proposed changes, our four case studies highlighted a number of good current practices. The individuals we spoke with identified these practices as particularly useful for improving the efficiency and coordination of HA/DR providers. Such practices include:

- Relationship-building through professional-military education (PME) and LNOs and senior-level engagement activities, such as the Pacific Air Chiefs Conference and the Executive Observer Program in Red Flag. Such events make it easier for officers to call each other later on when needed.[18]
- Flag officer participation in USAID's Joint Humanitarian Operations Course to gain more detailed knowledge of humanitarian principles and USAID's mode of operation.
- HA/DR capacity–building and disaster risk prevention.
- The use of airborne ISR (a U.S. niche capability) in HA/DR contexts and imagery-sharing with other assistance providers.

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[17] Some strategies may also be impracticable depending on the affected country. DoD was unlikely, for instance, to overcome the Pakistani government's intent on controlling public message to reach out directly to the population.

[18] Focused discussion with U.S. government officials (H), Honolulu, HI, January 12, 2011.

- Negotiations toward a model contingency arrangement within the ASEAN Regional Forum to cover military personnel participating in HA/DR. This is but one example of the type of standard operating procedures that could be developed to provide easily activated mechanisms to facilitate U.S. response.

Such practices should accordingly be continued and expanded whenever possible.

Conclusion

Operationally, there are variations in terms of the overall approach, methods, command, control, and communications arrangements employed in each HA/DR intervention. Overall, we do not believe there should be a blueprint or template created that would prescribe the same approach for every HA/DR intervention; that would be unrealistic and politically untenable. The nature of the intervention and the political relationship with the affected nation should determine how DoD organizes itself. We found that, generally, the arrangements in place worked well and that when they did not, effective work-arounds were created. The lessons we identified from our case study analysis are intended to improve DoD's overall effectiveness and efficiency in future HA/DR interventions rather than suggest a new, widely different approach.

In terms of our analytic methods, we found that, in order to truly understand the specific lessons, it is useful to conduct "deep dive," inductive case study analysis. Common themes may be identified, but many findings are case-specific. This study approach was useful in helping us to fully grasp the unique context, politics, nature of the response effort, challenges, and overall lessons of each individual case, as well as to identify ways in which DoD could have been more effective and efficient.

Finally, we found that the process of turning lessons identified into actual lessons learned (i.e., issues are assessed, validated, and changes are implemented) is extremely challenging. In practice, follow-

ing major operations such as Operation Tomodachi, DoD has set up committees to collect, assess, and prioritize lessons, but because many other duty responsibilities take higher priority, there are typically only a few areas that are actually addressed. The result is that lessons remain "identified" but not "learned."

Looking ahead, we believe that some of our recommendations could be addressed through additional research. Such research could include, first, examining how DoD could better integrate IOs and NGOs into its planning. As noted earlier, this challenge might be addressed through a series of targeted operational planning exercises that rely on real lessons from past operations. But there could also be valuable lessons to take away from exploring how other key U.S. allies, such as the UK and Australia, work out collaboration between their military and NGOs.

Second, it would be useful to identify existing and potential "niche" capabilities in Asia and identify countries with the capacity and willingness to provide HA/DR support to other countries. Third, an assessment of the effectiveness of existing security cooperation activities that focus on HA/DR would be useful for identifying which types of activities are likely to be the most valuable in real-world HA/DR operations. Fourth, DoD should consider how intervening in HA/DR missions benefits the U.S. government. How should DoD be using its strategic communications capabilities during these crises? What are the overall strategic aims of each intervention, aside from the obvious aim of saving lives? Additional research could help to inform DoD decisionmaking in terms of future HA/DR investments.

APPENDIX

Tracking PACOM AOR Militaries' Capabilities for HA/DR

Introduction

Looking at our four case studies, a picture begins to emerge of which foreign militaries are active in international disaster relief and which are not.

When thinking about the future of HA/DR in the PACOM AOR, one way to track the ever-changing capabilities for international disaster relief operations among the region's militaries is to look at how the numbers of specific systems change over time. If key systems regularly associated with HA/DR are growing, it can be argued that the capabilities for these systems are expanding as well. This appendix specifically looks at the numbers of two systems that provide good metrics for tracking the evolution of this capability over time:

- military transport fleets, composed of medium and heavy fixed-wing aircraft
- sea-based helicopters.

However, some caution is warranted by this approach. Capability is just one of two conditions necessary for a country to commit military force for international HA/DR operations. The other is will.[1]

[1] Understanding such willingness for international HA/DR operations or, more specifically, the conditions under which military force would be used—factors that limit or impede

While such analysis is beyond the scope of this paper, the case studies showed that a number of militaries in the region are active in HA/DR. As a result, this section focuses on the militaries of the following countries: Australia, Bangladesh, China, India, Indonesia, Japan, Malaysia, South Korea, and Thailand.

Military Airlift

Military airlift often plays a vital role in HA/DR operations to both deliver aid and personnel to disaster-stricken countries. Airlift is one of the easiest means through which a country can provide material. Also, the level of commitment required for aid delivery alone is low, as a country delivering aid does not have to sustain units abroad for any period of time. However, medium and large military transports are expensive to acquire and even more expensive to maintain, and their utility is not obvious to every military, especially those that do not operate in large geographic areas or regularly deploy overseas. Australia, with its many global commitments and large land mass, possesses a number of medium and large transports, such as the C-130 and C-17, while Cambodia, a country with no global commitments and a small territory, does not.

This section assesses which militaries in the Asia-Pacific region are most able to participate in the delivery of aid based on the amount of airlift they possess by looking at fleet capacity and how it changes over time. The million ton miles per day (MTM/D) measure provides a useful means to compare transport fleets across various militaries that are composed of multiple aircraft of different capabilities.[2] Figure A.1 shows how the theoretical fleet capacity of the militaries selected have changed since 2000. Based on this data, Japan's fleet capacity from

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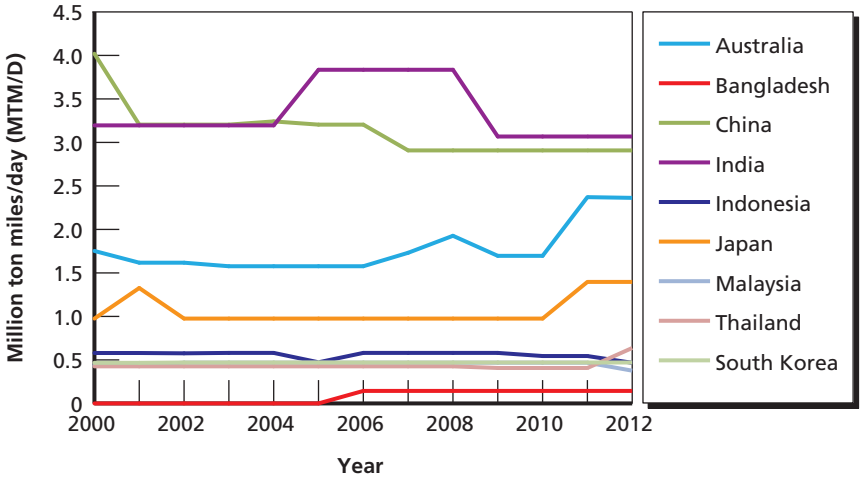
a country's will—and the evolution of both of these factors over time would provide a more complete picture as to when and how a foreign partner will likely participate in future HA/DR operations.

[2] An explanation of the mathematical formula can be found in U.S. Air Force, *Air Force Pamphlet 10-1403: Air Mobility Planning Factors*, Washington D.C.: Secretary of the Air Force, 2003, p. 4.

Figure A.1
Theoretical Maximum Fleet Capacity (MTM/D) of Various Asia-Pacific Militaries Over Time



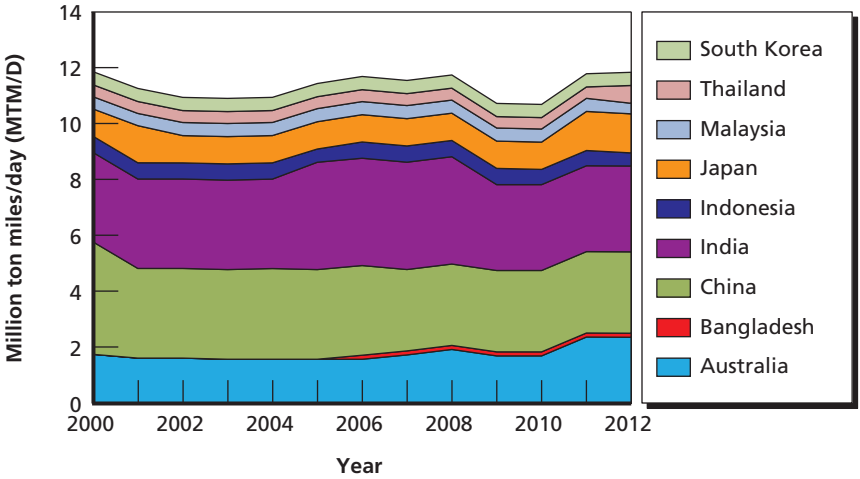
NOTE: Factors are estimated when data is unavailable to make MTM/D calculations.
RAND *RR146-A.1*

2002 to 2010 was approximately 1 MTM/D. This means that Japan's transport fleet could, in one day, deliver a theoretical maximum of 1,000 tons over 1,000 nautical miles or 100 tons over 10,000 miles, as both equal 1 MTM/D when multiplied.

India and China possess the most airlift capacity of the nine militaries surveyed, though both now possess less than they did over a decade ago, China most dramatically, India almost imperceptibly. Australia and Japan have made impressive gains. In Australia, these gains are attributed to the addition of C-17 and KC-30 aircraft, while Japan has increased its numbers of C-130 aircraft. Thailand and Bangladesh have also increased their fleets' capacity in recent years, though these gains have been somewhat more modest.

Figure A.2 shows the same data presented in Figure A.1 as a sand table. From this view, we can see that aggregate airlift capacity among the nine militaries surveyed has remained quite stable—between 11 and almost 12 MTM/D for the last 13 years.

Figure A.2
Theoretical Maximum Fleet Capacity (MTM/D) of Various Asia-Pacific Militaries over Time



NOTE: Factors are estimated when data is unavailable to make MTM/D calculations.
RAND *RR146-A.2*

In the near future, Japan, India, and possibly China are poised to add new acquisitions to their military transport fleets. Japan is seeking to replace its C-1 Kawasaki and C-130 transports with a new and significantly more capable C-2 Kawasaki transport that is currently under development.[3] India has signed deals to start acquiring ten U.S.-made C-17 heavy transports; the first is due to arrive in 2013.[4] In addition to these purchases, India is also already acquiring U.S.-built C-130J medium-lift transports.[5] Seeking to increase its numbers of heavy-lift aircraft, China announced in 2009 an indigenous program to build a new heavy-lift transport rumored to be named "Y-20."[6]

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3 "Kawasaki C-2," *Jane's All the World's Aircraft*, August 22, 2011.

4 "India's First Boeing C-17 Celebrated in Long Beach," *KABC-TV Los Angeles*, July 31, 2012.

5 "India Signs $4.1 Billion C-17 Deal," *Jane's Defence Weekly*, June 17, 2011.

6 "XAC-'Y-20'," *Jane's All the World's Aircraft*, August 20, 2012.

Sea-Based Helicopters

The ability to send helicopters to engage in missions abroad requires an advanced level of HA/DR capacity, as such a capability is both operationally challenging and exceptionally valuable to affected populations that are otherwise cut off from aid and services. While helicopters can cross terrestrial borders, as was the case with China's involvement in Pakistan in 2010, the ability of a military to send helicopters stationed aboard nearby offshore ships is highly valuable for HA/DR. This largely self-contained means of assisting a disaster-stricken country provides an exceptional level of support while both minimizing the onshore footprint and mitigating local populations' sensitivity to the presence of foreign military forces.

For this second metric, we focus on the number of helicopters that can be operated from aircraft carriers and various amphibious ships. While almost every modern frigate or destroyer is equipped with a helicopter pad and sometimes even an indoor hanger for helicopter operations, these ships are intentionally excluded from our calculations because they are not ideal platforms for HA/DR due to low sortie generation. Put another way, it is inefficient to send a destroyer, whose only contribution to an HA/DR operation is a single helicopter. Certainly helicopters aboard naval surface warships can and do participate in HA/DR, but often in a trivial manner compared to those aboard aircraft carriers or Landing Helicopter Dock (LHD) ships.

As neither Bangladesh nor Malaysia possess aircraft carriers or amphibious ships with helicopter decks, only seven of the nine militaries are examined here. Of those seven, three (India, Thailand, and Japan) possess aircraft carriers.[7] The rest only possess amphibious ships with helicopter decks.[8] The aircraft carriers of India and Thailand have been active for the entire period displayed in Figure A.3, while Japan has only recently acquired its helicopter carrier. Only Australia has decreased in sea-based helicopter capacity due to the recent retirement

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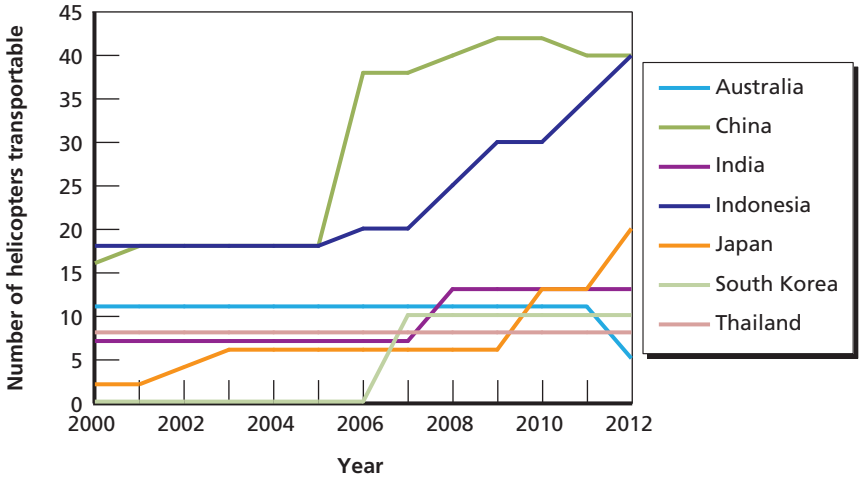
[7] China's first aircraft carrier, the Russian-built *Varyag*, is still undergoing sea trials and is not operational.

[8] Thailand's only ship considered is its lone aircraft carrier, the HTMS *Chakri Naruebet*.

Figure A.3
Number of Sea-Based Helicopters Transportable by Aircraft Carrier and Amphibious Ships, by Military Over Time



SOURCE: International Institute for Strategic Studies, various years.
RAND *RR146-A.3*

of its two *Kanimbla*-class ships. However, this decrease is likely temporary, as three more large amphibious ships are planned to join the fleet in the coming years.[9] Over the period surveyed, China, Indonesia, and Japan have made dramatic leaps in their numbers of theoretically deployable sea-based helicopters, based on ambitious acquisition programs that are radically transforming the makeup and overall amphibious capabilities of their respective navies.

Figure A.4 shows the dramatic change in capacity for sea-based helicopters across our surveyed militaries. In less than eight years (2005–present), this capacity has more than doubled. These numbers will only become more dramatic in the coming years as more large, ocean-going amphibious ships become operational in the region's fleets.

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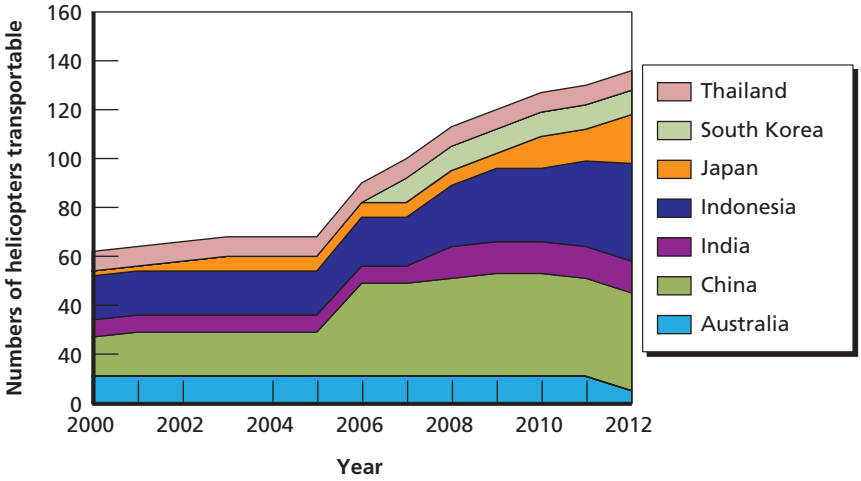
9 This includes another *Choules*-class LSD and two *Canberra*-class LHD ships. "Amphibious Ambitions: Expanding Australia's Naval Expectations," *Jane's Navy International*, December 22, 2011.

Figure A.4
Number of Sea-Based Helicopters Transportable by Aircraft Carrier and Amphibious Ships, by Military over Time



SOURCE: International Institute for Strategic Studies, various years.
RAND *RR146-A.4*

Conclusion

This study has observed a trend of growing participation on the part of Asia-Pacific militaries in various aspects of HA/DR operations, signaling an increased willingness for such activity. The question remains, has such willingness been accompanied by investment in capacity for HA/DR? Based on our two metrics, the evidence is mixed. The airlift metric shows that although certain militaries have made substantial gains, these were largely offset by decreases in the capabilities of other countries. However, new aircraft acquisitions on the horizon certainly point to the improved capabilities (longer distances and heavier loads) of those transport fleets. Whether these new additions will prove to be a net increase in fleet capacity (MTM/D) is currently unclear, as older, less-capable aircraft will likely be replaced.

The second metric shows that the numbers of sea-based helicopters have grown dramatically and will continue to grow for the foreseeable future. New ships and entirely new ship classes are remaking

the composition of many Asia-Pacific navies' inventories and their mix of capabilities. This will not only have profound effects on the abilities of these militaries to conduct HA/DR but also on their abilities to carry out other missions less focused on promoting peaceful international interactions. This includes sea-based long-range airstrike for those countries pursuing or already possessing aircraft carrier programs (China, India, Thailand, Japan). For those acquiring large amphibious ships (Indonesia, China, Japan, South Korea, India, and Australia), the marine expeditionary capabilities attained can be used for a variety of operations, both benign and bellicose.

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The Department of Defense has long been able to play a major role in international humanitarian assistance and disaster response (HA/DR) due to its unique capabilities, manpower, and forward-deployed resources. The Asia-Pacific region is of particular importance to the United States because it bears the brunt of more than half of the world's natural disasters and is home to numerous key U.S. allies. In an effort to improve the effectiveness of HA/DR operations in the future, this report analyzes recent operations in Burma, Indonesia, Pakistan, and Japan, and identifies lessons that have emerged in the areas of (1) interagency coordination, (2) communication with the affected country, (3) coordination with other state and non-state actors, (4) prospects for U.S. security cooperation and building partner capacity for HA/DR, and (5) prospects for the increased involvement of regional organizations in HA/DR. This report also identifies complementary capabilities and comparative advantages that exist around the region, presents options for leveraging these capabilities to deal with future disasters, and assesses various crisis management mechanisms involving allies and partners that can be applied to other contingencies.

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