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Capabilities and Competencies in Humanitarian Operations

18 June 2012

by

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Abstract

This research explores the core capabilities of the U.S. military as well as of non-military organizations through the lens of the disaster response life cycle. Disasters and war share several attributes, such as the presence of displaced, injured, and vulnerable persons and the need for functioning infrastructure and life support through the distribution of emergency supplies and services. Both the U.S. military and non-military organizations bring assets, skills, and capabilities to a humanitarian crisis; however, the competencies and capacities of each are far from homogeneous. Identification of the specific competencies and capabilities that are core to the types of organizations bringing logistics and support to a crisis can enable better planning by both military and non-military organizations such that greater effectiveness and efficiency in the humanitarian response are achieved.

Keywords: competencies and capabilities, U.S. military, non-governmental organizations, humanitarian assistance, disaster relief, HADR

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Table of Contents

I. Introduction 1

II. Capabilities and Competencies 5

A. Information and Knowledge Management 8

B. Needs Assessment 9

C. Supply 11

D. Deployment and Distribution 12

E. Health Services Support 12

F. Collaboration and Governance 13

III. Summary and Conclusion 17

List of References 19

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I. Introduction

In recent years there have been approximately 400 disasters affecting 150–200 million people, resulting in damages of US$20 billion (Vos, Rodriguez, Below, & Guha-Sapir, 2010). As the number of reported disasters increases over time, it is worth identifying those capabilities that are both necessary and unique with respect to humanitarian and disaster response operations. In the past, the responses by non-military organizations (NMOs)[1] and non-governmental organizations (NGOs) to disasters have been described as ineffective and inadequate (Thomas & Kopczac, 2005), particularly in the immediate response phase that involves coordinating supply and uncertain demand. Some of the problems experienced may lie in the fact that in the immediate hours following a disaster, the availability of resources and supplies may not be known (Tomasini & Van Wassenhove, 2009).

Recently, the United States Department of Defense (U.S. DoD) identified humanitarian assistance and disaster response (HADR) as a key mission in promoting security around the world (DoD, 2012; DoN, 2007). As a result, the U.S. military—Army, Navy, Air Force, and Marine Corps—has begun to shape its training and force structures to improve its effectiveness in conducting what were once considered only collateral, extraordinary, or special missions. As a part of improving the effectiveness of operations, the military—like NMOs and NGOs—is making changes to its operating procedures to improve intra- and inter-organizational cooperation.

Response to a sudden-onset humanitarian crisis often involves a request for the military to deliver critical materiel and services to enable, augment, or expand the scope of assistance rendered by NMOs and NGOs (Apte & Heath, 2011). On January 12, 2010, a 7.0-magnitude earthquake struck Haiti. The U.S. Coast Guard

[1] In this article, NMO includes non-governmental and governmental organizations, unless specifically stated otherwise.

(USCG) cutter *Forward* was diverted from its patrolling duties in the Caribbean to Port-au-Prince, and USCG helicopters were also deployed. The *Forward* arrived within 17 hours of the disaster and provided some of the first images and reports of the devastation in Haiti (Figure 1). Ships, cutters, and aircraft assisted in evacuating thousands of injured Haitians and Americans, delivering medical and emergency supplies, and beginning the process of restoring the port's infrastructure. These efforts demonstrate how an organization's assets, competencies, capabilities, authorities, and partnerships bring forth a unique ability in humanitarian operations.

Figure 1. Images of the Destruction of the Port at Port-au-Prince, Haiti, Captured by the U.S. Coast Guard Cutter *Forward* in the Aftermath of the January 12, 2010, Earthquake
(Simmins, 2010)

Although the U.S. military has a history of responding to humanitarian crises, there are significant areas in which the effectiveness and efficiency of its responses, as well as its coordination with NMOs and NGOs, could improve (GAO, 2010). Within humanitarian operations literature it has been stated that preparing for a humanitarian crisis primarily involves managing the logistics of potential response

operations (Apte, 2009; Thomas & Mizushima, 2005; Van Wassenhove, 2006). In all disasters, an effective and efficient humanitarian response is found to depend on, among other factors, the capabilities and competencies of organizations involved in procuring, transporting, and receiving supplies at the affected area (Thomas, 2003).

Disasters and war share several attributes: the presence of displaced, injured, and vulnerable persons and the need for functioning infrastructure and life support, including potable water, functioning wastewater facilities, and access to medical care. Both the U.S. military and NMOs bring assets, skills, and capabilities to a humanitarian crisis; however, the capabilities and capacities of each are far from homogeneous. The unique and sometimes overlapping core capabilities and competencies of the U.S. military and NMOs are not well understood in the context of HADR.

Several studies have been conducted and reported in the literature related to humanitarian logistics (Alexander, 2003; Apte, 2009; Gibbons, 2007; Marx, 2009; Tomasini & Van Wassenhove, 2009; Waugh & Streib, 2006), military logistics (Kress, 2002; Lynn, 1994; Prebelič, 2006; Smith, 2007; Van Creveld, 2004), and the similarities and differences between the two (Jahre, Jensen, & Listou, 2009; Kovács & Tatham, 2009; Pettit & Beresford, 2005). Specifically relevant to our research in this report, Tomasini and Van Wassenhove's (2009) research discussed capabilities and competencies such as information and knowledge management, supply chain management, and collaboration and coordination in the context of humanitarian organizations and private firms. What have not been identified in the literature are those competencies and capabilities that are core to the military and where those competencies are critical or most needed during the operational life cycle of a humanitarian crisis. Our work builds upon the seminal work by Prahalad and Hamel (1990) on the core competency of the corporation. In this research we outline the core capabilities of military forces, in particular the U.S. military, and NMOs with respect to disaster response.

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II. Capabilities and Competencies

The ability of organizations to function efficiently and effectively during disaster response operations depends in some part on their ability to identify, cultivate, and exploit their core capabilities. Prahalad and Hamel (1990) introduced three tests to identify competencies that are "core" to a commercial firm: the capability must not be easy for competitors to imitate, it must be able to be leveraged across a wide variety of products or markets, and it must contribute to the needs of the final customer or end user (Table 1).

Table 1. Prahalad and Hamel's Business Core Competencies
(Prahalad & Hamel, 1990)

Business Core Competencies (Prahalad & Hamel, 1990)
Difficult for competitors to imitate
May be leveraged across a variety of products or markets
Contributes to the needs of the final customer or end-user

Building on the idea of a core competency, we created three analogous criteria to identify those capabilities that may be considered core to organizations providing humanitarian assistance in response to disasters. First, the capability should be unique or not met or matched by other organizations responding to the disaster or providing assistance. The uniqueness of a capability reduces the chance that it will be redundant should other organizations wish to contribute to a particular relief effort and make that capability core to their response effort. If the capability provides a public good (Samuelson, 1954), then this, too, would likely make it core from an HADR perspective because the private sector is a poor or non-provider of such goods (Samuelson, 1954). Second, a core competency should provide potential relief to a wide variety of disasters, which we classify based on the speed of the disaster's onset as well as by the geographic dispersion of the affected area

(Apte, 2009). Finally, a core competency should make a substantial contribution toward the end relief received by the affected population (Table 2).

Table 2. Humanitarian and Disaster Response Core Competencies

Humanitarian Assistance and Disaster Response Core Competencies
It is unique or not matched by other organizations
May be leveraged across a wide variety of disaster types
Contributes toward the relief of the affected population

We use the definitions of the criteria described above of HADR core competency to identify the relative number and types of competencies typically found in military and non-military organizations that are active participants in HADR.

The military invests in highly specialized equipment to ascertain conditions in a potential battle space, to support forcible entry, and to conduct strategic lift of materiel. However, the investments in equipment, skills, and knowledge that comprise these competencies also have relevance and application in HADR operations.

For example, over the past decade the U.S. Navy (USN) has provided a significant amount of effective humanitarian assistance in disasters due to its many critical and unique competencies. Amphibious assault and transport deck ships are a primary capability for the USN in humanitarian operations because of their usefulness in search and rescue efforts, aircraft and landing support, and freshwater production, and for their berthing capacity and medical support facilities (Apte, Yoho, Greenfield, & Ingram, 2012; Greenfield & Ingram, 2011). The USN is in the process of augmenting Maritime Prepositioning Squadrons for supporting amphibious warfare forces. The USN also has been modifying and modernizing its littoral combat ships to provide flexible and modular ships for confronting “irregular” challenges (*Statement*, 2011).

Because war and disaster response have common characteristics, it is only natural that the military and some humanitarian organizations share capabilities. However, we submit that there are some capabilities that are core to each and that may be identified by looking at their internal documents (such as mission or posture statements) or at their past performance in operations. Natural disasters give rise to a wide range of needs that may be characterized by both scale and scope. Tomasini and Van Wassenhove (2009), Kovács and Spens (2007), and Apte (2009) described those activities that are essential to delivering aid to address the needs of those affected, and we summarize them in Figure 2.

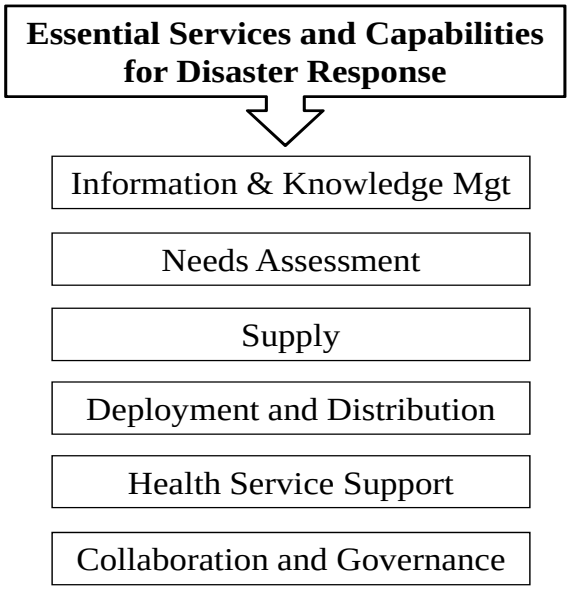

Figure 2. Essential Services and Capabilities for Disaster Response

The collection, organization, and synthesis of information, as well as its transformation into knowledge are necessary for preparing the initial needs assessment for a disaster response and for managing the humanitarian efforts of that response on a continuous basis. The needs assessment is critical for determining the scale and scope of disaster aid that must be delivered to the affected area as well as for estimating the local capacity to receive, organize, distribute, and manage the aid. We refer to supply generally as those activities involved with the procurement, staging, warehousing, and managing of inventory to

support the disaster response. Deployment and distribution refers to the movement and distribution of the supplies from their point of origin to their point of consumption. Health service support is treated separately from other relief activities because it is likely to be the service with the greatest scarcity and demand during the initial stages of a disaster response. Finally, collaboration and governance are necessary to ensure that the entire relief effort is efficient, effective, and continuous. We now discuss the core capabilities of the U.S. military and NMOs with respect to the essential services and capabilities needed to effectively respond to a natural disaster.

A. Information and Knowledge Management

Information and knowledge management are necessary first to develop an understanding of the effects of a natural disaster and then to develop an understanding of how to respond effectively to that disaster. Information management enables an organization to determine the "who, what, when, where, how, and how much" of a disaster. For example, when did the disaster occur? Who is affected? What infrastructure and services are no longer functioning? Where is the greatest need for disaster aid? How should the disaster response be coordinated with local authorities? And, how much relief aid is necessary? These questions are not, of course, exhaustive, but they illustrate the types of information that need to be collected as well as demonstrate the necessity of synthesizing the answers to these questions in order to develop plans that can achieve an effective disaster response.

Information collection by the military is referred to as *intelligence gathering*, and the military has specific methods and equipment as well as trained staff to develop an operational picture of the "battle space." Both the military and NGOs are largely reliant on news sources, government releases of information, and contacts who might happen to be on the ground in the affected region for information in the aftermath of a natural disaster. However, the military also has access to satellite and aerial reconnaissance assets that are capable of developing a very clear picture of the state of the infrastructure and population on the ground. In addition to remote

sensing and aerial reconnaissance assets, special operations forces that are specially trained to be inserted into adverse environments for the purpose of establishing landing zones and collecting intelligence can be deployed to provide an accurate description of conditions in specific areas.

For example, global integrated intelligence, surveillance and reconnaissance, as well as cyberspace superiority are core functions of the U.S. Air Force (USAF). The USAF develops, integrates, and operates its cyberspace capabilities for supporting missions by continuing work that increases situational awareness while securely improving information sharing and data-transport capabilities (Department of the Air Force, 2012). The U.S. Army has major programs that form the backbone of the tactical network and provide real-time operating pictures in great detail. The software-defined family of radios carries data and sound for the benefit of the soldiers. Such competencies in information management are critical for humanitarian operations.

The Services' abilities to gather this type of information is critical for assessing needs, but it must still be converted to knowledge and integrated into an organization. It is especially important in both the military and NMOs. In the military, the rotation of tours makes it necessary to transfer gathered information in order to retain this capability. The same can be said about other organizations in which staff turnover rates are high and limited resources necessitate the management of knowledge. Knowledge management in terms of lessons learned is also a core capability for both the military and NMOs.

B. Needs Assessment

Needs assessment is the second essential capability that must be cultivated by all the organizations involved in humanitarian operations. However, the first critical step in this process is to define what the need is since the way in which the military and NGOs describe needs assessment is very different. The military is more likely to describe needs assessment as requirements generation whereby there is a

mandate to generate a high-fidelity operational picture of what is happening in the area of responsibility. For the military, the needs assessment involves the fusion of all source intelligence that can be collected by humans, electronic sensors, and imagery assets to generate situational awareness; the end product is a statement of the capabilities that are needed to accomplish a specific mission—a mission that will be carefully defined in terms of its duration, scope, and chain of authority. To the extent that the military is able to share information over unclassified systems with NMOs and NGOs, the information collected from the military's unique assets can be very valuable for generating higher quality assessments of the needs on the ground.

In the case of NMOs, and especially NGOs, a needs assessment in the event of a disaster tends to be carried out in order to gain awareness of the size of the affected population so that calculations can be made to determine the type and volume of aid that must be sent to the area and so that a project plan can be developed to deliver the aid. For example, the World Food Program (WFP) calculates quantities of food to be delivered to various locations based on needs-assessment surveys that take into account the size and scope of the affected population (De Angelis, Mecoli, Nikoi, & Storchi, 2007). The International Federation of the Red Cross (IFRC) believes that donor national societies should be involved in the needs-assessment phase. Without knowing what is needed, humanitarian organizations find themselves in the tough situation of managing donated supplies that may not be necessary or suitable for the given disaster (Apte, 2009; Samii, Van Wassenhove, Kumar, & Becerra-Fernandez, 2003).

The needs assessment plays a critical role in the decoupling point of all supply chains where the supply chain ceases to be based on a forecast and becomes based on a specific customer order (Van Hoek, 1997). In other words, similar to agile supply chains in the private sector (Christopher & Towill, 2000), in humanitarian response supply chains the decoupling should happen where the "pull" of the affected population's specific need meets the upstream "push" forecasted by relief organizations. The more the demand information travels upstream, the better it

is to locate the strategic inventory downstream. However, this suggests that the needs assessment (demand forecasted remotely) should be one of the upstream activities in a humanitarian response supply chain (Oloruntoba & Gray, 2006), whether based within the military or NMO community. Such placement can enhance the agility of the supply chain by being responsive to the changing needs of the affected population and being able to respond quickly to these changes if the supply chain has an effective information infrastructure.

C. Supply

The third essential capability shown in Figure 2 is supply. The supply capability includes procurement, staging, warehousing, and inventory management. For both the military and NMOs, this entails reviewing any pre-staged or pre-positioned materials and determining their suitability for the particular disaster as well as determining how the supplies will be moved from their point of origin to the final point of consumption. The military has a core capability in the management of large stores of supplies in the case of a contingency as well as in the necessary material handling equipment and professionals to move material quickly.

For example, the U.S. Army provides key support to civil authorities in case of a disaster. Its Reserve and National Guard components are a great strength for relief efforts during floods, wildfires, and tornados. The National Guard provides a distinctive capability for responses to domestic disasters because of its ability to procure and distribute emergency supplies and services to the affected areas (Apte & Heath, 2011).

In addition to managing warehoused supplies in preparation for a disaster, NGOs must also manage donated supplies. Due to uncertainties of demand and supply, donated supplies are as much a blessing as a curse. Any lack of information about specific characteristics of the affected area makes it harder to secure the appropriate types of supplies (Apte, 2009).

D. Deployment and Distribution

The military possesses unique transportation assets that provide essential deployment and distribution capabilities during responses to natural disasters. Both strategic airlift and sealift capabilities that can roll-on and roll-off equipment, materiel, and personnel are available in quantities and within lead-times that very few other organizations are capable of delivering. Large transport aircraft capable of landing on short, unimproved airfields, for example, are very important for some types of disaster responses. Ships with shallow drafts or landing craft that can move directly from sea to shore without the need for a dock are useful when the ports are damaged or too congested to receive the volume of aid that is flowing in from external sources (Apte et al., 2012). And if the airports are incapable of receiving the necessary aid to support the relief effort, the military has the capability to bring large numbers of helicopters offshore that can operate independently of support from land in order to deliver supplies to specific locations in need.

For example, helicopter vertical lift is the most highly demanded service during disaster response and costs the U.S. DoD the most. During the 2010 floods in Pakistan, flight operations represented nearly 80% of the total incremental costs of the relief effort (Ures, 2011). However, a military outfit like the U.S. DoD has the most capability and sufficient competency to respond within the needed timelines since it possesses the only ready fleet of such assets. The NGOs that respond to a disaster are typically dependent on contracted or regularly scheduled commercial flights to move staff and supplies to affected areas.

E. Health Services Support

Both the military and NMOs work toward the same objective when it comes to providing health services: relieving pain and suffering as well as preventing fatalities. However, the military possesses hospital ships as well as field hospitals and surgical units that are capable of deploying rapidly while managing the logistics of supply and the transfer of patients to higher levels of care in a cohesive manner. Historical

knowledge and mindset helps the military in managing health support services. Among these services USN hospital ships have significant upfront costs for deployment. For a hospital ship to be deployed, it must serve a symbolic purpose or have critical flexibility in medical supplies and services that outweighs its uneconomical characteristics. Although an extremely useful capability, a hospital ship can prove to be extremely expensive and, therefore, should not be a competency to be taken for granted in case of a disaster.

NGOs, on the other hand, may have to source some medical capabilities from many other organizations or from a network of volunteers and then form those individuals into teams to provide care because of the diversity of disasters. In addition to providing general medical supplies, specific requirements also have to be managed (such as the proper vaccine during a pandemic).

F. Collaboration and Governance

Collaboration can be defined as a process in which two or more organizations work together to achieve a common goal. Governance, on the other hand, can be achieved through command and control, or pre-established logistics networks and supply chains. Collaboration is a critical foundation of humanitarian logistics to mitigate any kind of disaster (Waugh & Streib, 2006). Response supply chains in a humanitarian crisis can be thought of as extreme supply chains that must function at high levels of uncertainty and in constantly changing operational environments (Hughes, 2009). Therefore, it is necessary for the participants to be skilled and adaptable so that they can cope with the situation. Perhaps because of the extreme conditions of a disaster situation, military and humanitarian logistics are examples of fully flexible supply chains that are even more agile than agile supply chains in the private sector (Gattorna, 2009). Both the occurrence of a disaster and the disruption it brings to normal living lead to the need for the creation of a complex supply chain from scratch. Such a supply chain must be fully flexible for immediate responses. These responses have to be structured and executed quickly. This is decision-

making on the run, hopefully with no regrets (Gattorna, 2006). This type of decision-making cannot be achieved without collaboration.

The collaboration scene changed significantly in the NGO community after Hurricane Katrina. One of the most important improvements was the establishment of the UN cluster approach, which facilitated collaboration among organizations. This approach strengthened the humanitarian community's collaboration structure, and through that, the level of collaboration. Eleven clusters, reflecting the global humanitarian structure and led by NGOs and UN agencies, were created. The change to this cluster approach addresses the gaps in humanitarian response and ensures greater predictability, accountability, and partnership. The creation of the clusters was the result of the humanitarian response review conducted by the UN in 2005, which was prompted by the ad hoc and unpredictable nature of responses by numerous international agencies in the past. The cluster approach essentially gives the international humanitarian community much-needed structure and accountability. It enables these organizations to conduct their business professionally and be better partners with host governments, authorities, and communities. Examining the past experience of the humanitarian supply chain reveals the critical need for collaboration and coordination (Tomasini & Van Wassenhove, 2009) not only within NGOs but also within the military and private sector (Pettit & Beresford, 2005; Samii & Van Wassenhove, 2003; Van Wassenhove, 2006). A significant example of the necessary collaboration between the military and NMOs is ensuring the adequate transportation and distribution of critical supplies and services and providing the security needed to maintain these activities.

Challenges remain in this NMO–military collaboration in terms of principles versus pragmatism. A GAO (2010) report cited U.S. SOUTHCOM as having mature interagency processes and coordinating mechanisms in the collaboration area. SOUTHCOM's response to the recent Haiti disaster suggests that there still exist challenges in coordination among government agencies, international partners,

NGOs, and private organizations. These challenges have to be met to improve HADR efforts.

Figure 3 depicts the core capabilities of both the U.S. military and NGOs, and matches them to the essential services and capabilities required to effectively respond to a natural disaster. This is a mapping of core organizational capabilities to essential response capabilities.

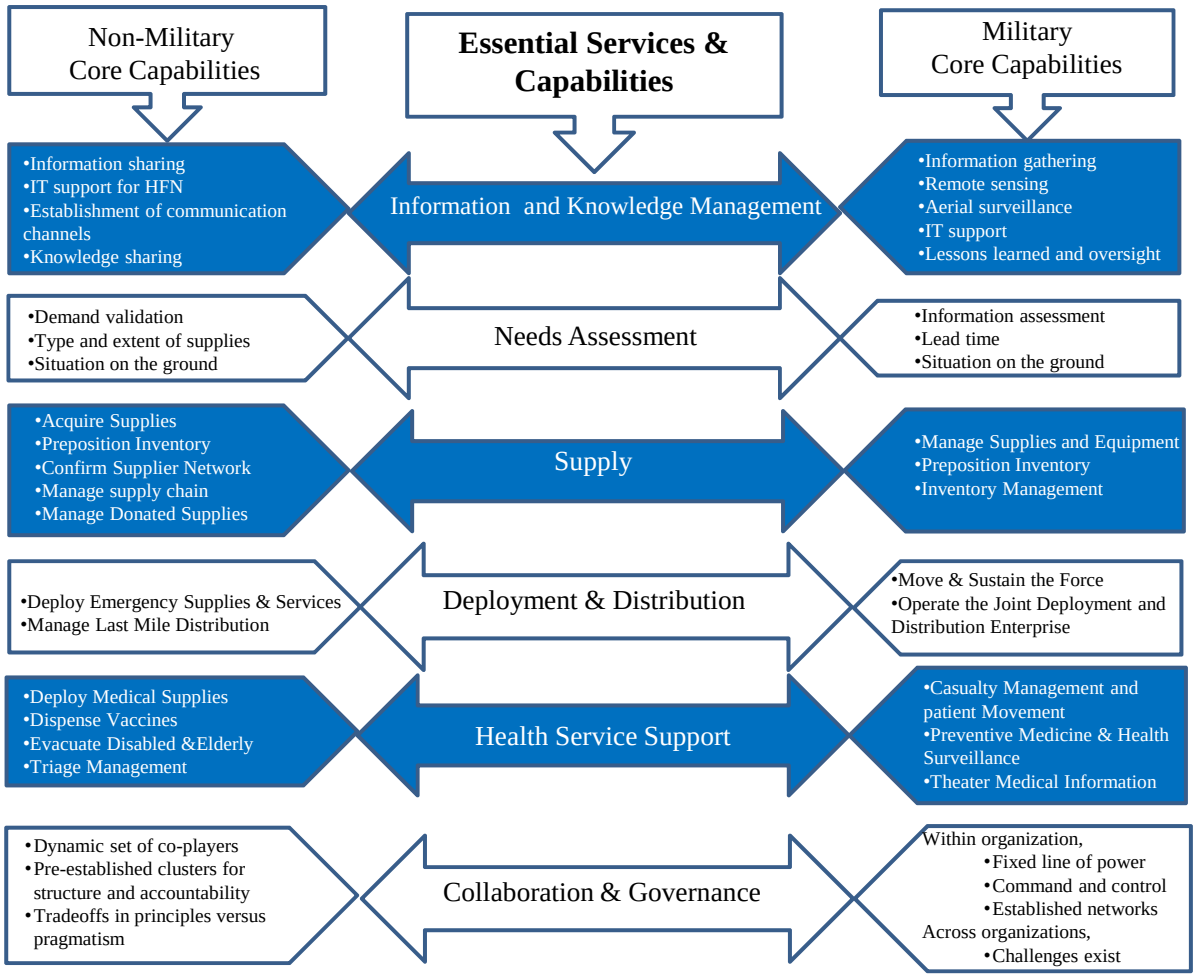

Figure 3. Humanitarian and Military Core Competencies
Note. This figure was adapted from Joint Publication 4-0 (DoD, 2008).

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III. Summary and Conclusion

In this research we identified those competencies and capabilities that are core to the military (specifically the U.S. military) and non-military organizations. Further, we hope this work will lead and contribute to a growing body of empirical and case study research that explores the role of the military and NMOs in HADR in order to facilitate greater understanding within the field of operations management. We believe this research cuts across disciplines to include academic scholars, policy-makers, and decision-makers in universities, public administration, public health, and international aid. Though our research is focused on the U.S. military and its interaction with NMOs, including domestic and international NMOs, we believe that our ideas concerning core capabilities and competencies can be applied to other military organizations. Future research investigating the capabilities of the militaries of other countries might lead to the development of regional capability maps that could assist humanitarian operations performed by militaries or NMOs in their disaster planning processes.

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