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LIAISON

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Staying Ahead

Utilizing Information and Strategies to Equip and Prepare for Disaster Response

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LIAISON is a publication of the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) and serves to inform its diverse audience of current and emerging issues related to civil-military relations across the broad spectrum of disaster relief in order to enhance understanding among civilian and military practitioners and policy makers. Content is prepared in accordance with the *Associated Press Style Guide*. Contributions are welcomed and highly encouraged. The editor reserves the right to make editorial changes to any material submitted as deemed necessary.

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The Director's Letter

Joseph Martin, SES

Utilizing information and strategies to equip and prepare for disaster response is of great importance to all responders. As stated in the UNOCHA CMCoord Field Handbook, "key coordination elements in natural disasters and complex emergencies are Information Sharing, task division and planning." As we approach our 25th anniversary, we are looking back at the progression of civil-military coordination and the challenges that still remain. We aim to cut through the confusion and give you clear, sensible and reliable information from writers and experts that you can trust.

This issue's title Staying Ahead highlights the theme of preparation and the necessity of robust methods of Information Sharing and its critical role in successful response coordination. Additionally, we focus on the importance of unity of effort, the disaster preparation phase, and the current state of disaster response efforts of one of the countries in the region, China. These topics each play an integral part as we collectively work together towards refining efforts on collaboration and cooperation in civil-military disaster preparation and response.

There is a story this month that I particularly like because it combines a great read with intriguing graphics. Graduate student Taylor Tielke from the University of California, San Diego's School of Global Policy and Strategy explores the processes of humanitarian assistance and disaster response (HADR) in China as well as investigates the leadership, structures, and policies that shape and drive Chinese HADR framework. This piece utilizes open source materials to synthesize public information so that organizations and agencies within HADR can better understand China's growing significance in HADR.

Articles from Russell Crumrine, Jr., Assistant Professor at the U.S. Army Command and General Staff College, Department of Joint, Interagency, and Multinational Operations Improvements and CDR Andrea H. Cameron, permanent military professor at the U.S. Naval War College illustrate how civil-military coordination, response planning and execution has improved throughout the years. Informed by collective lessons learned and best practices by the international humanitarian community, military responders and regional organizations, this effort has led to better unity of effort in preparation and during the relief phase.

Lastly, a lack of effective Information Sharing during disaster response has long been noted and recorded as detrimental to mission in after action reviews and humanitarian literature by both civilian and military responders. CFE-DM's Alan Aoki highlights select real-world examples of civil-military Information Sharing and its effect on disaster relief operations while Columbia University's School of International and Public Affairs graduate student, Shaohong Lu discusses the findings of a study on Information Sharing platforms and their function as an effective and efficient collaboration tool during a response. Topping off the triad on Information Sharing is an article that deliberates on the value of timely and accurate information as a key to saving lives in a disaster and the U.S. military's unique position to provide rapid, accurate, and relevant imagery, analysis, and information products.

As we approach our anniversary of connecting people and ideas with the latest HADR practices, we hope you enjoy this issue and put those ideas into action to solve the problems of our complex world.

Aloha,

CONTRIBUTORS

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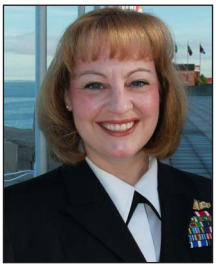

CDR Andrea H. Cameron is a permanent military professor at the U.S. Naval War College. She teaches Foreign Policy Analysis, is the Director of the Climate & Human Security Studies Group, and conducts research in humanitarian civil-military coordination. She is a member of the Consultative Group on Humanitarian Civil-Military Coordination and Chinese.

Russell Crumrine, Jr. is an Assistant Professor at the U.S. Army Command and General Staff College, in the Department of Joint, Interagency, and Multinational Operations. His instructional focus is on strategic and operational level topics with specialization in U.S. joint operations and planning, the Middle East region, and interagency. He worked with representatives from the U.S. Agency for International Development to develop two USAID oriented electives. He retired from the U.S. Army after 23 years of service as an artillery officer and a Foreign Area Officer (FAO) with expertise in the Middle East. As a FAO he had numerous Middle East related assignments, including at the American Embassy in Jordan, and with the United Nations Truce Supervision Organization in Syria. He was designated a Joint Qualified Officer. He has B.A. and M.A. degrees in Political Science.

Shaohong Lu is a graduate student at Columbia University's School of International and Public Affairs (SIPA) pursuing a Master of Public Administration (MPA) with concentration in management and humanitarian policy. He is also an active duty U.S. Army Field Artillery Officer and will attend Command and General Staff College after completing his current studies. Prior to Columbia SIPA, Shaohong served as both the commander of the United Nations Command Honor Guard in Seoul along with commanding an artillery battery in the United States Army's Second Infantry Division. His previous military assignments have taken him to East Asia, South Asia, and the Middle East. Shaohong is keenly interested in furthering his knowledge of the military's role in Humanitarian Assistance and Disaster Relief (HADR) operations and learning best practices in coordinating local, national, and international entities during disaster response.

Taylor Tielke is finishing his Master's of International Affairs at UC San Diego School of Global Policy and Strategy focusing on international politics with concentrations in China and quantitative methods. At GPS Taylor is a Robertson Foundation for Government fellow, as well as a Harold Rosenthal fellow. Before his graduate studies, he volunteered with the Peace Corps in China working as a college English teacher and capacity builder. He is interested in foreign policy, Chinese politics, research, and international exchange.

LIAISON provides an open forum for stimulating discussion, exchange of ideas and lessons learned – both academic and pragmatic– and invites active participation from its readers. If you would like to address issues relevant to the disaster management and humanitarian assistance community, or share a comment or thought on articles from past issues, please submit them to editor@cfe-dmha.org. Please specify which article, author and issue to which you are referring. LIAISON reserves the right to edit letters to the editor for clarity, language and accuracy.

LIAISON welcomes article submissions

LIAISON is a journal of civil-military disaster management and humanitarian relief collaborations and aims to engage and inform readers on the most current research, collaborations and lessons learned available. If you are interested in submitting an article for consideration, please email your story idea to editor@cfe-dmha.org.

•**Format.** All submissions should be emailed to the editor as an unformatted Microsoft Word file. Footnotes are the preferred method of citation, if applicable, and please attach any images within the document as separate files as well.

•**Provide original research or reporting.** LIAISON prefers original submissions, but if your article or paper is being considered for publication elsewhere, please note that with the submission. Previously published articles or papers will be considered if they are relevant to the issue topic.

•**Clarity and scope.** Please avoid technical acronyms and language. The majority of LIAISON readers are from Asia-Pacific nations and articles should be addressed to an international audience. Articles should also be applicable to partners in organizations or nations beyond that of the author. The aim is for successful cases to aid other partners of the disaster management and humanitarian community.

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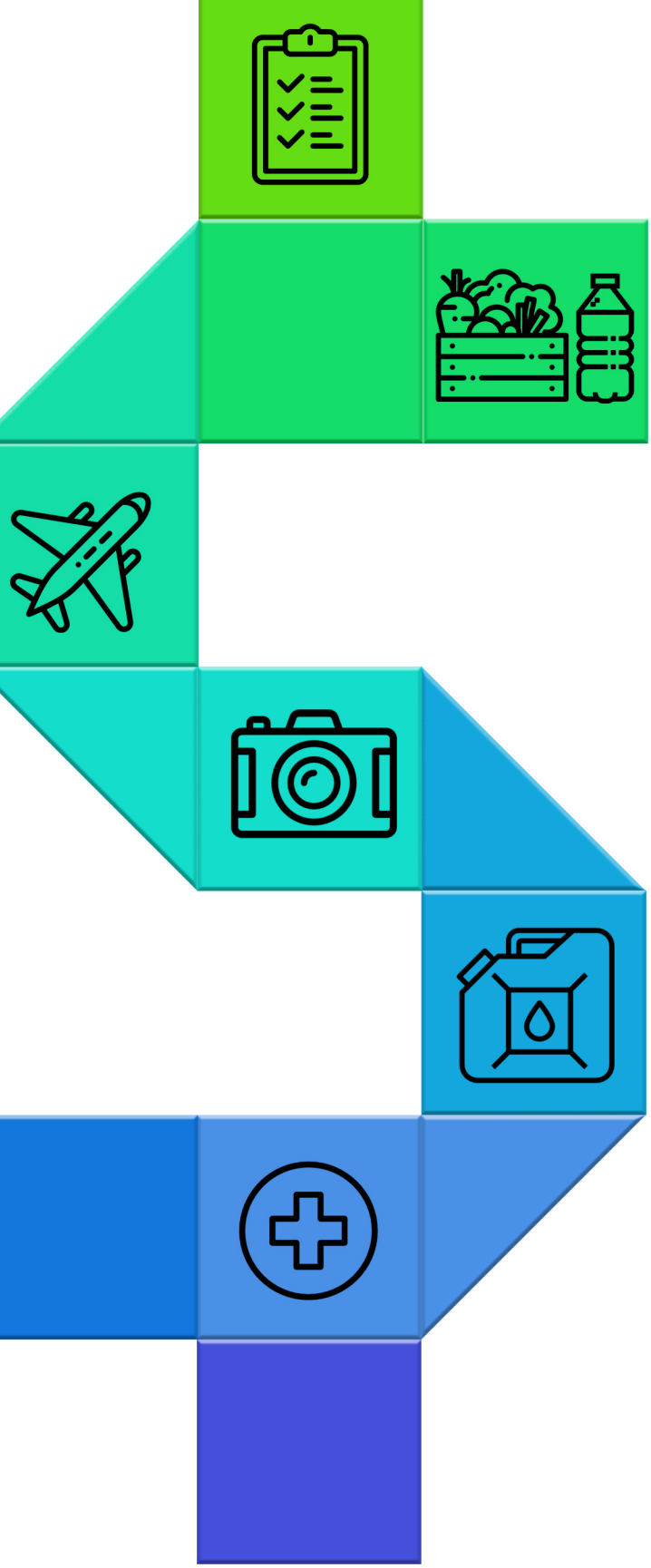
•**Supporting imagery.** Original imagery supporting any and all articles is welcome. Please ensure the images are high-resolution and can be credited to the photographer without license infringement. Images should be attached to the submission separately, not embedded within the Microsoft Word document.

•**Biography and photo.** When submitting an article, please include a short biography and high-resolution photo of yourself for the contributors' section.



Information as a Commodity

Evolving the "Need to Know" into the "Need to Share" during HADR

By Liaison Staff

Timely and accurate information is a key to saving lives in a disaster and the U.S. military is in a unique position to provide rapid, accurate, and relevant imagery, analysis, and information products.

In the same way that the U.S. military is uniquely capable of providing rapid access to vertical lift, airfield operations, engineering, communications and even medical, the same holds for information in a disaster. Information should be viewed by the U.S. military as a commodity and, following the humanitarian response principles, be provided free of charge to those in need and those who could benefit from it (other assistance providers, such as United Nations (UN), International Federation of the Red Cross (IFRC), Non-Governmental Organizations (NGOs), and even other Assisting States).

Proposition

It is both practical and beneficial to quickly and easily share information to decision makers and first respond-

ers in a disaster. However, there needs to be a fundamental change to the thinking about how information should be shared. The days of Requests for Information (RFI)s and collection plans are perhaps behind us in the world of disaster response and life or death consequences. Proposed is a methodology which allows the U.S. military to, (1) plan for information requirements well in advance, (2) share information requirements broadly and quickly, while (3) remaining receptive to outside sources pushing information, perhaps before the need is actually identified formally.

The challenge should be viewed through the lens of an information requirements generator (the Affected State) and an information provider (Assisting States). In a disaster, the Affected State will exhibit certain characteristics as the victim of a given event. Particularly in a sudden onset disaster (earthquake, tsunami, etc), the Affected State will suffer from a deep lack of information about the situation. The lack of information will be noticed quickly by first responders and leadership after the buildings stop shaking. Fairly quickly, word of the disaster will get out and offers of support will start, and assistance will begin moving. The offers of assistance may be for a capacity that the Assisting State simply happens to have available, but more often those assisting organizations (up to the Assisting State level) will need to know what is needed so they can best match their capabilities to actual requirements.

Conversely, the Assisting States often have information requirements as well from the Affected State in order to effectively, and perhaps safely, coordinate relief efforts. For example, the nuclear data from the Fukishima reactor after the 2011 earthquake and tsunami was critical to assisting organizations, but only available from Japan. It is therefore practical to think of Information Sharing as a two-way process.

There are a host of disaster event lessons learned which highlight the challenges in Information Sharing in a disaster. There are also a range of programs developed prior to disasters in which practitioners and experts attempt to improve the Information Sharing environment before tragedy strikes. These lessons, and the programs intended to solve them, usually point towards an ideal solution, or perhaps highlight the specific technical issue that a given software solution seeks to resolve. In other words, there are multiple software programs available which the well-intended developer sees as either a -- or THE -- solution to the Information Sharing challenge.

If only Information Sharing were that easy to understand, then a simple technical solution would do. The problem is deeper than that, and the solutions are far more diverse. To get to the range of solutions necessary in both planning and execution, one must first provide an agreed to definition of what Information Sharing is, and then the entire collective of researchers, practitioners, and lessons learned experts can work toward a common solution. Indications are such a definition will never exist.

Lacking a shared definition of Information Sharing does not obviate the need to (1) plan for information requirements well in advance, (2) share information requirements broadly and quickly, and (3) remain receptive to outside sources pushing information into the system. To unpack the lack of a shared definition of Information Sharing and the requirement to plan, share, and to receive information, the focus should be on the purpose, content, and medium by which the information is to be shared.

The purpose of Information Sharing is to answer a question -- perhaps one that has not even been asked yet, but history teaches us will be relevant in a given scenario. Additionally, Information Sharing has a secondary purpose in trust and relationship building developed through the act of sharing.

Content can take many forms, and often is linked to answering a specific need. For example, content could include coordinate data for NGO operating areas in a combat zone to avoid errant targeting, or it could be an image or analysis from a collapsed dam. The point being is that the information shared, the tangible content, can take many forms and be provided by many sources. The medium by which information is transmitted can range from face-to-face meetings, to the most complex digital common operational pictures (COPs).

For military forces to be effective at Information Sharing, there is an important distinction that the intent of the information includes both internal and external users. Determining who your sharing partners are can be self-limited to only other military forces, but the expansion of that content sharing to others who may benefit ought not to be overlooked. Despite the potential 2nd and 3rd order benefit to non-traditional partners, freely sharing information as broadly as possible can be a complete paradigm shift for forces who are more accustomed to stove-piped systems and processes.

Bottom Line - Information needs to be treated as another commodity in a disaster and there is a missed opportunity to provide imagery, analysis and intelligence if military capabilities cannot be exported properly and shared quickly.

Bottom Line

Information needs to be treated as another commodity in a disaster and there is a missed opportunity to provide imagery, analysis and intelligence if military capabilities cannot be exported properly and shared quickly.

In military support during a disaster, the military forces bring to bear speed, capacity, and unique capabilities not readily available to the first responders. This is one of their inherent advantages. For U.S. forces in a foreign disaster response, that typically means capabilities such as vertical lift, engineering, airfield opening and management, command and control, logistics (supplies, water, transportation, fuel, etc), and periodically medical support. The missing opportunity is in providing imagery, analysis, and intelligence products outside the military community.

Unless there are military forces already on the ground, the intelligence community can generate and provide usable information products faster than any other military capability. Even when forces are coincidentally on the ground already, the first request of those forces is more often for situational assessments than for actually assisting victims. Information as a commodity, taken in the context of **"purpose, content, and medium"** can now take on a whole new way for information providers to consider their contribution to the overall disaster response.

Purpose

If the purpose of sharing information is to answer questions, or more typically "RFIs" then the intelligence community can pre-plan for data needs and quickly release those products to those that normally would make such a request. The change in intent in the "information as a commodity" paradigm is that although the primary audience may very well originate as the supported military force, the information gathered can benefit governments, aid agencies, and first responders well before the first U.S. military forces can even step aboard their departing aircraft. The purpose ought to be to share information as broadly and as quickly as possible to anyone who can benefit from its use.

The purpose is also more than just the RFI it answers. Purpose also includes the relationships such Information Sharing supports, and can place the U.S. military intelligence community at the forefront of making accurate, timely, and useful data available to the largest possible audience. The U.S. government, and just about every aid agency, provides assistance in a disaster completely free of charge. The provisioning of information therefore, need not be tied to costs, but ought to be thought of in terms of the overall U.S. contribution to an event. The significant difference is the speed with which information products can be generated and distributed. Intel can provide "before and after pictures" faster than USAID can write their first grant check or the U.S. military can launch its first C-130. Practically speaking, the intel community can actually provide data faster than the U.S. government decision-making process can declare a disaster, decide for military support, process the paperwork through the Pentagon, and notify the supported commander to execute.

Content

The chosen term "content" includes a range of information, with examples including location data, imagery, finished intel analysis/products, inventory levels of commodities, specific needs, and more. The key is, the needed content satisfies an information deficiency for one party, and is provided by another party who has -- or can get -- the information needed. That over-simplification completely misses the point that at times those in need don't know what they need, nor do they necessarily know who is in a position to help answer their questions. This challenge is exacerbated in a disaster response by the chaos of the situation or the particular difficulties of operating in a combat zone.

But information requirements (the content) can be pre-planned or at least gleaned from history and lessons learned. Disasters have certain characteristics, so it is possible to pre-plan what your information content requirements will be. For example, "before" imagery or country reports are by-definition generated pre-disaster. Each picture can be particularly useful content for comparative purposes, and agencies external to the affected area may maintain very useful products in an "on the shelf" status. Sharing that information, that content, may not even be to a specific request for information, because the affected area may not even have the immediate wherewithal to think to ask for it. Similarly, there are products such as the Sphere standard which can be used to determine basic needs after an event. A calculation of affected population multiplied by basic needs can provide critical content for meeting life-saving requirements.

Medium

Given intent and content, transmission of the information is enabled by the medium used for sharing. This can range from face-to-face meeting to complex networked solutions; but each has the same foundation in there is a specific medium by which the information is literally passed from one individual, organization or agency to another. Medium matters because the generation of technical solutions to a problem that is best solved with a phone call, creates systems-of-systems that potentially degrade the ability to share data, or perhaps more accurately the ability to access usable data.

Research by the Federated Mission Networking and Mission Partner Environment, Civilian-Military (FMCM) categorized Information Sharing in a useful context as Direct and Indirect sharing. Direct sharing is the face-to-face meeting, the direct email reply, the file transfer directly to the agency in need. Indirect sharing can be thought of as the placement of information in an area where anyone interested (and aware) can access it. It can also be thought of as the larger group meeting, where information that is sharable widely is shared as such.

The treatment of information as a commodity enables the use of both methods to get useful data to as many users as possible…even if the user doesn't realize yet that they are missing important information early in a disaster. The medium is just the vehicle by which that information is directly or indirectly shared. Between the need for content and the medium by which it is transmitted lies the concept of the "Push and Pull" supply of that data. users and providers have to consider if they "push" the data to a predetermined location where the user wants it, or do the providers allow users to "pull" the data from a provider's site after ensuring the users know it is there. There are solid arguments for either, or perhaps a combination of push and pull, depending on the type of information (and emergency type) required.

Challenges and Recommendations

Policy Change Needed: Even if the military can figure out a way to quickly provide imagery and analysis to an Affected State in a medium and location that they can use, there are still process challenges. U.S. policy is very specific on supporting Foreign Humanitarian Assistance (FHA); (1) Declared disaster by Ambassador, (2) Country request for assistance or willingness to accept, and (3) in U.S. national interests. It takes days to get a U.S. military force in place, it only takes minutes to provide background (before) imagery, and potentially only hours to provide post-event imagery.

Fiscal Considerations: Imagery is not free.

Security Considerations: Imagery and analysis can be used for nefarious purposes, and sharing information is exceptionally challenging in a conflict environment.

Releasability: Intel and other providers should generate HADR related products with the intent for them to be purely Unclassified; in other words "write for releasability" which also eliminates the time-consuming and cumbersome FDO process.

Military Preparation: There are a range of activities which military units should engage in regarding Information Sharing preparedness and response in HADR events.

Pre-disaster planning:

- Intelligence Preparation of the Environment (IPOE) for the most likely situations
- Information Sharing agreements
- Disaster planning at the ConOps level
- Review of AARs from previous disasters
- Familiarization and account establishment in Information Sharing communities and systems
- Exercise planning and execution for HADR
- Rapid access to post-event imagery and other products, such as assessments

Trans-Disaster Processes:

- Rapid access to post-event imagery and other products, such as assessments
- Incorporation of military capabilities during the international RFA/RFI process
- Monitoring of social media and on-line volunteer and response communities

Post-Event

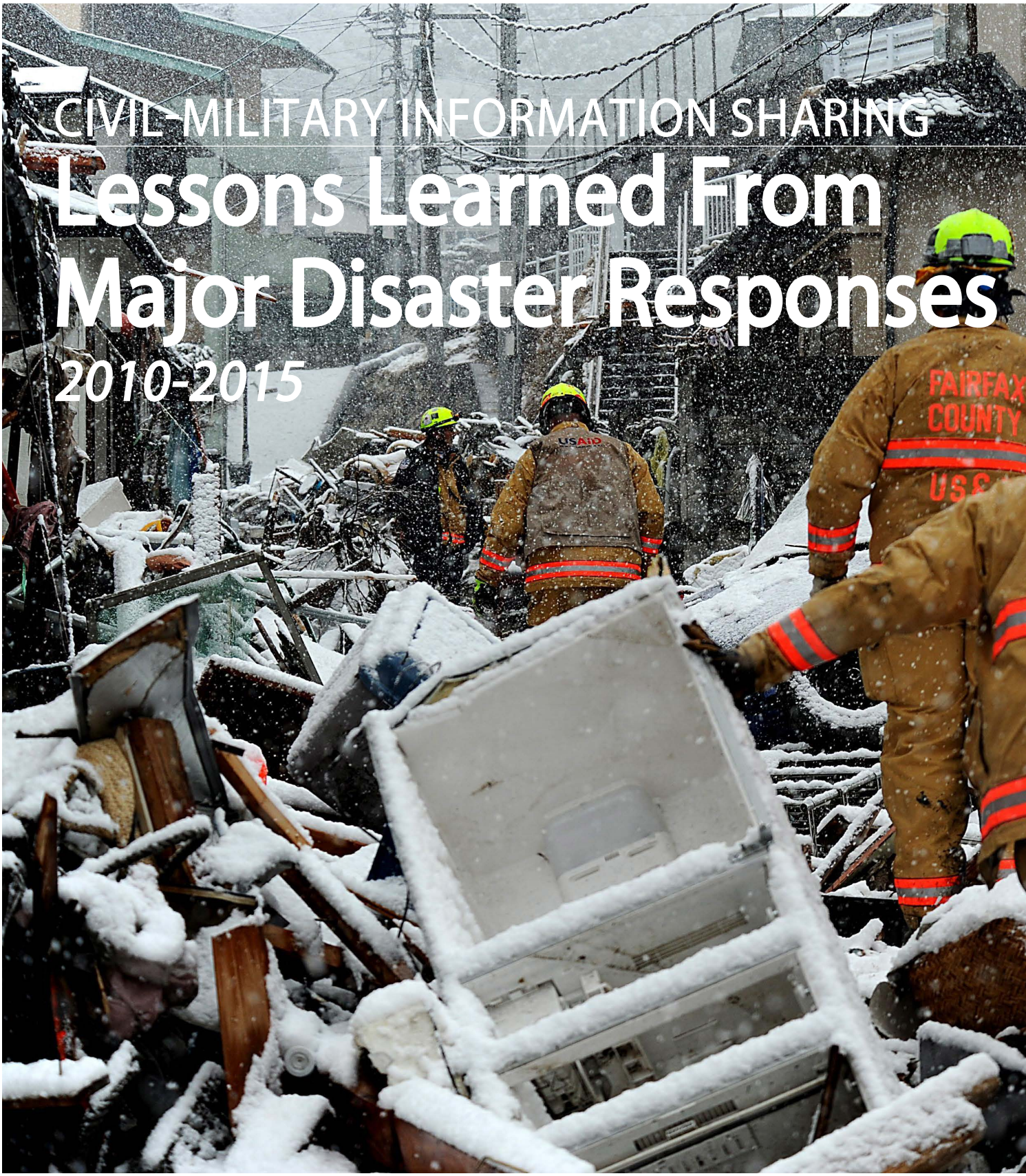
- Lessons Learned and Best Practices
- Technology improvements, such as data mining, big data, Social Media, and Artificial Intelligence (AI)
- Monitor the HADR philanthropic arm of Information Sharing industries
- Engage in the development of HADR-relevant standards (IT systems, metadata, security)

Recommendation: As the most disaster prone Area of Responsibility, leaders in the Indo-Pacific embark on a process to treat information as a commodity in disasters, and offer that commodity (i.e., public releasable imagery and analysis) to the affected state and disaster response community in a similar process as to other commodities and capabilities. As noted, the speed at which information can be generated and provided may very well be faster than the request and approval process for U.S. military support can accommodate. Unfortunately, most information and imagery at the start of a major disaster is also very time limited. If the required/desired information is not provided in hours, vice days, then those responsible for making decisions and taking actions will not delay their process or decision making while waiting. That could have significant impacts as more clarity on the conditions in the space can have a direct impact on where additional assessment teams are sent (perhaps unnecessarily) or where commodities and capabilities are moved to (perhaps incorrectly).

CIVIL-MILITARY INFORMATION SHARING

Lessons Learned From Major Disaster Responses

2010-2015



By Alan Aoki, Research Analyst, Applied Research and Information Sharing (ARIS) Branch of the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM)

A lack of effective Information Sharing during disaster response has long been noted and recorded in after action reviews and reflected in assorted reports by both civilian and military responders. The response to major disasters in recent years, such as the 2010 Haiti earthquake, underscored this problem amongst the response community and highlighted the need for better information exchange during relief efforts. At the same time, the Haiti response and subsequent major disaster responses also revealed what went well with civil-military Information Sharing. The effective sharing of information is directly tied to response coordination, or the lack thereof, and therefore of great importance to all responders. While some progress has been made on the sharing of information among responders, there exists a continuing need for improvement.

The exchange of information between civilian and military responders is crucial following a disaster. In the United Nations Humanitarian Civil-Military Coordination (UN-CMCoord) Field Handbook, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), describes Information Sharing as a key

Photo to the left:
Members of the Fairfax County, Va., Task Force 1 Urban Search and Rescue search structures and debris on March 16, 2011 in Kamaishi, Japan. A 9.0 earthquake hit Japan on March 11, 2011 that caused a tsunami that destroyed anything in its path.

1st Combat Camera Squadron | Photo by Master Sgt. Jeremy Lock | Date Taken:03.16.2011 | Location:KAMAISHI, 23, JP

https://www.flickr.com/photos/dvids/5546514065/in/album-72157626118615291/

basis for coordination: "The key coordination elements in natural disasters and complex emergencies are Information Sharing, task division and planning."[1] Effective civil-military coordination cannot be achieved without the sharing of information. A lack of timely information exchange can result in relief efforts not being directed to where they are most needed, duplication of efforts, and mismanagement of precious relief commodities, among other things. This in turn could lead to additional loss of lives and the prolonging of suffering of the affected populace. It is therefore essential for responders to have access to, and distribute and exchange information during disaster relief operations in an efficient manner.

Regional guidelines also emphasize the importance of Information Sharing. The Multi-National Force Standard Operating Procedure (MNF SOP) says: "Information Sharing between all parties is critical to maximizing unity of effort…" [2] Other military doctrine echoes this sentiment. According to Joint Publication JP 3-29 Foreign Humanitarian Assistance: "The sharing of information is particularly critical because no single responding entity—whether it is an NGO, IGO, assisting country government or host government—can be the source of all of the required data and information." [3]

This article seeks to highlight some real-world examples of civil-military Information Sharing and its effect on disaster relief operations. Major disasters covered in this article include: the 2010 Haiti earthquake, the 2011 Japan Earthquake and Tsunami, Typhoon Haiyan in the Philippines in 2013, Typhoon Hagupit in the Philippines in 2014, the 2014-2015 Ebola response in West Africa, Tropical Cyclone Pam in Vanuatu in March 2015 and lastly, the earthquake in Nepal which struck in April 2015.

This article is not meant to provide a comprehensive assessment, but rather provide some select and specific recent examples and "quotable quotes" of the consequences of effective or ineffective Information Sharing on relief operations. It is hoped this introductory literature review will help spark further discussions and serve as a starting point for a more comprehensive look at the importance of civil-military Information Sharing during disaster response efforts.

The following is a compilation of select lessons learned on Information Sharing from various reports and after action reports (AARs) following responses to the major disasters from 2010-2015 mentioned above. It is organized chronologically and by disaster. The last part highlights select general civil-military Information Sharing lessons learned followed by a section on Information Sharing best practices that are aimed at informing the military responder.

1 United Nations Humanitarian Civil-Military Coordination (UN-CMCoord) Field Handbook, https://www.unocha.org/publication/un-cmcoord-field-handbook
2 "Multinational Force Standing Operating Procedures (MNF SOP), Version 3.11 November 2017, HADR Extract 2.4.6, https://wss.apan.org/432/Reference Documents/MNFSOP%20Ver%203.11_10%20Nov%20%2017.pdf
3 JP 3-29, Foreign Humanitarian Assistance, pg. 1v-v, www.jag.navy.mil/disturb/instructions/JP3-29FHA.pdf

2010 Haiti earthquake

Lesson: Situational Awareness and Assessments

"Timely initial assessments are critical to effective response. These Assessments are used to determine command and control requirements, damage estimates (including the status of critical infrastructure), the size and type of required military units, and deployment priorities. In natural disasters, these assessments can be difficult to achieve, and the military can provide significant capability for performing these assessments. However, often the assets used for these assessments (usually air assets) are also in high demand for delivering aid and performing search and rescue missions. The allocation of resources between assessment missions and immediate relief to areas of known need is a tradeoff that leaders must be prepared to make. Combining traditional ISR assets with non-traditional tools on commercial internet sites helped US SOUTHCOM overcome this challenge during the Haiti earthquake response." [4]

Lesson: Humanitarian field workers had no common or reliable operating platform on which to share information

"Field staff found the method of exchanging files via web portals to be flawed. They often could not afford to download large files, particularly those which involved datasets, imagery, and new applications...Portals also tended to provide file dumps instead of a common picture or dashboard, requiring staff to piece together a situational picture by painstakingly reading through lists of documents and blog posts; few had time or adequate network bandwidth for this activity. Many had no means to exchange data with other web sites or services." [5]

Lesson: Information overload resulted in diminished inter-cluster coordination and staff effectiveness

"In the initial days after the earthquake, the Office of the Coordination for Humanitarian Affairs (OCHA) and UN Disaster Assessment Coordination (UNDAC) team deployed an information management staff to coordinate information flow between clusters, along with a team from the NGO MapAction to supply mapping services. These information managers focused on getting the basics completed: …building 3W reports (who is doing what where), making maps, and coordinating the information flows of the relief effort. They had no time for additional duties. It was all the staff could do to manage the team's inbox …build contacts lists, and handle the information flows generated by USAR operations. OCHA and UNDAC were so overstretched that Map-Action staff increasingly assumed a formalized task of augmenting

4"[Unclassified] Information Paper, Considerations and Implications of International Humanitarian Assistance and Disaster Relief (HADR) Operations"
5 "Disaster Relief 2.0: The Future of Information Sharing in Humanitarian Emergencies," pg. 23, (2011, March 28), https://reliefweb.int/report/world/disaster-relief-20-future-information-sharing-humanitarian-emergencies

information management staff. Even together, they could not keep up." [6]

Lesson: Lack of dedicated information management personnel (Intra-cluster coordination)

"Each functional area—emergency shelter, food, WATSAN, etc.—was also supposed to have an information management staff assigned to process flows of data into analyses that could support decision making. Most clusters did have small numbers (1–3) of information managers who usually wore multiple hats: public information officers, data jockeys, technicians, and Geographic Information System (GIS) analysts. However, anecdotal evidence points towards a problem of 'double-hatting', or multi-tasking by key staff in some clusters: many personnel assigned to handle information management at the cluster or sub-cluster level were also expected to perform their 'day jobs' for their organizations." [7]

Lesson: Several issues delayed/prevented effective Information Sharing: translation, ad hoc data management practices, and fusion of data from multiple sources

- Translation: "Multiple sources cited a lack of translation support as a perennial problem in international operations. Cluster meetings were held in language that shut out many participants and which delayed the communication of decisions to those who needed to know... As a result, critical data may have been available to decision makers, but there was neither time nor funding to allow those who speak other languages, including the host government, to find or read it." [8]

- Ad hoc data management practices: "Given the tempo of staff rotations, a common complaint is that incoming staff felt lost in a stream of data and experienced a steep learning curve. It was a common practice for staff to use spreadsheets to try to come to terms with data—often reinventing the tools that departing staff had used, substituting their own familiar data structure and thereby making the data from one staff rotation incompatible with the next. This was a result of both lack of commonly accepted tools and standards, and the common chaos caused by staff duty-cycles in a crisis…" [9]

- Fusion of data: "In aggregate, the information management practices of the cluster system not only experienced problems with information management at both the intra- and inter-clusters levels but also were ill-prepared to accept information flows from new sources…" (the affected population and emerging Volunteer & Technical Communities, or V&TCs) [10]

Lesson: Information Sharing processes need to be improved

"The coordination of data and its translation into decision making—information management—is different from building the communication pathways via which those data are able to flow. The processes that facilitate the flows of data and information over ICT infrastructure have not received the same attention in humanitarian operations as information technology." [11]

Lesson: A formal interface for sharing information with the humanitarian coordination system was needed by new groups from the Volunteer and Technical Communities (V&TCs)

- International humanitarian organizations were not capable of incorporating information from V&TCs (i.e. OpenStreetMap, Sahana, and CrisisMappers). Few V&TCs made direct connections with the field staff at UN agencies and the NGOs that were working under the cluster system. "The reason was simple: although the V&TCs had personal relationships with people on the ground, these individuals were too busy to both perform their jobs and lobby for the use of V&TC tools (which would have required changes to standard procedures) during an emergency operation..." [12]

- Several barriers emerged: "1. Lack of Channel. Field staff had no formal channel to link these new flows of information into existing workflows… 2. Verification of Data. Field staff had neither time nor methods for verifying data from V&TCs…. Crowdsourced reports were not (and are not) a replacement for formal assessments; they are a complement, signaling where more data might be collected…" [13]

- "…No one predicted that volunteer-run platforms—many running on free-and-open-source software—would not only augment the traditional information systems but also provide data that became essential to the earthquake response." [14]

Lesson: Humanitarian information systems must "retool" to take advantage of new "technologies" such as crowdsourcing

"…for all the power of the new information flows and

6 Ibid, pgs. 23-24
7 Ibid, pg. 24
8 Ibid, pgs. 24-25
9 Ibid., pg. 25
10 Ibid, pg. 25
11 Ibid, pg. 31
12 Ibid, pg. 33
13 Ibid, pg. 33
14 Ibid, pg. 34

the opportunities presented by the V&TCs to apply web services and collective intelligence to humanitarian emergencies, the international humanitarian system was not yet tooled to process this information… The international humanitarian system is still firmly rooted in a paradigm of documents and databases passed through hierarchies. It is not yet ready to exchange knowledge via services, architectures, and communities in a flattened, distributed mesh of partnering organizations. Nor is the system designed to receive individual pleas for assistance from large numbers of an affected population and to act on those requests on an individual level….What remains to be seen is how the international community will retool to take advantage of the power of crowds." [15]

Lesson: Information flow and systems were fragmented

"Interviewees expressed strong worries about the fragmentation of crisis information management systems. In the field and headquarters, it was impossible to synthesize data from diverse workflows for each cluster and subcluster into a composite picture that facilitated decision making…As more information flows through humanitarian operations, the success of the cluster system relies on its ability to synthesize the insights of each stakeholder into a composite view of a dynamic situation. …Fragmentation is a design challenge of deep importance." [16]

Lesson: A central Information Sharing/data management system was needed for the response

"The U.S. Government did attempt to coordinate data and Information Sharing across the interagency; however, due to the massive quantity of the data collected…the creation of a common operating picture for the overall response coordination was practically impossible to achieve. The main impediment to establishing an effective Common Operating Picture (COP) was not the amount of data available, but rather the quality of the data. Since multiple U.S. agencies worked in parallel to conduct needs assessments and report responses, a number of different data sets of varying data quality were created. As a result, there was great difficulty in sharing and standardizing information. An effective central data management system was clearly lacking in the response." [17]

"An effective common shared information portal is needed to establish situational awareness among all responding organizations and governments. Information managers and specialists should be assigned to manage these websites. Their responsibilities should include verifying the validity and reliability of the data before uploading onto the site and formatting the webpage so that is it easy to navigate and access information." [18]

15 Ibid, pgs. 34-35
16 Ibid, pg. 48
17 "Independent Review of the U.S. Government Response to the Haiti Earthquake, Final Report, March 28, 2011," pgs. 12-13, https://pdf.usaid.gov/pdf_docs/pdacr222.pdf
18 Ibid, pg. 80

Lesson: U.S. Government (USG) interagency Information Sharing must be improved

"…There was also a lack of Information Sharing among the various federal agencies, which led to confusion when USAID/OFDA reported on the response to Washington. This issue was compounded by the fact that the USAID/OFDA Disaster Assistance Response Team (DART) simply could not manage the large number of federal agencies that all arrived at once. Though some agencies did attempt to coordinate with OFDA, there were problems caused by a lack of timely response." [19]

Lesson: Unclassified websites for Information Sharing had some utility for the response but usefulness was limited Websites such as OneResponse and APAN were used by the UN and DoD respectively.

"Although these sites allowed access to a wide variety of information, they were criticized as 'dumping grounds' for data. The sites were not actively managed, nor were the data aggregated or analyzed in any way, so the sites essentially became just a large collection of files. This limited usefulness and kept the data fragmented. Some of the files were open source and could be edited by anyone, so multiple, non-validated versions of a single file could exist." [20]

Lesson: Utilizing an unclassified system for operational Information Sharing allows the DoD to more easily and efficiently coordinate and communicate with external partners

"In addition to creating the All Partners Access Network (APAN) portal, the U.S. military operated on an unclassified system. The military had never conducted all operations on an unclassified network. This new open approach allowed the U.S. military to share information with all partners on the ground, including NGOs, the GOH, and the UN, thus enabling greater communication and coordination efforts." [21]

Lesson: A USG internal Information Sharing platform was successfully used for inter-agency coordination

"The management and sharing of information internal to the U.S. Government is vital to developing a coherent operating picture and coordinating efforts. The website developed by Depoartment of State DoS, known as Intellipedia, garnered 50,000 hits within the interagency community and hosted internal situation reports from DoS, USAID, The Department of Health and Human Services (HHS), DoD, Coast Guard and others. It was accessible to all U.S. Government personnel. Although this website was not utilized to its full potential, it is a good example of internal communication and suc-

19 Ibid, pg. 65
20 Ibid, pg. 79
21 Ibid, pg. 79

cessfully kept U.S. Government personnel within the Interagency apprised of the situation and news on the response." [22]

Lesson: Lack of coordination on data collection and management limited the creation of an effective Common Operating Picture (COP)

"Data collection and data management were not coordinated across the interagency, thus limiting the creation of a common operating picture for the overall response coordination. Multiple U.S. agencies worked in parallel to conduct needs assessments and report results to their respective headquarters. This led to different data sets, varying data quality, and difficulties in sharing and standardizing the information. This limited coordination efforts and reinforced "stovepipes" within the chain of command. Additionally, since there was no single reliable data source, U.S. Government agencies "pushed" resources into Haiti in order to meet the unidentified needs in the field." [23]

Lesson: A new information management system should be created, devoted only to data management and sharing

"Standardized reports, schedules, and methods should be required across agencies. A new information management system should be created, devoted only to data management and sharing. This will make reporting easier, more accurate, and more consistent across the interagency and will promote coordination efforts. Extending such a solution to include international partners and governments would also benefit the overall response and limit duplicative results." [24]

Lesson: Introduce Information Sharing systems before a disaster strikes

"Introduce and provide training in new Information Communication Technology (ICT) tools and information systems in advance of emergencies, so that these technologies can be utilized fully and effectively when a disaster occurs. Tools and technologies that are inter-operable, non-proprietary, no/low-cost, self-contained, easy to access and easy to use are the most effective." [25]

Lesson: Information should be shared (and translated) with the Affected State government and population

"Make critical data and information sharable with the host government, civil society and affected populations (in local languages) in order to strengthen host country capacities, leverage local expertise, gain their input, involve them in coordination and empower them." [26]

22 Ibid, pgs. 79-80
23 Ibid, pg. 80
24 Ibid, pg. 80
25 "The Haiti earthquake: breaking new ground in the humanitarian information landscape," King, D., U.S. Dept. of State, Humanitarian Information Unit, The Haiti Earthquake Response, Humanitarian Practice Network, No. 48, October 2010, pg. 25, https://odihpn.org/magazine/the-haiti-earthquake-breaking-new-ground-in-the-humanitarian-information-landscape/
26 Ibid, pg. 25

2011 Japan Earthquake and Tsunami

Lesson: Access to shared information among partners is crucial in responding to a complex disaster; utilizing unclassified information will expedite response and enhance coordination

"For U.S. Forces, there were two major requirements around which Information Sharing was needed: the provision of support to the Government of Japan, and the safety of U.S. military personnel and dependents living in Japan. In the first days it was difficult to judge the full scope of the disaster and decision makers had limited access to information. Amid the particular uncertainty of radiological contamination, the challenge as time moved on was collecting and presenting the right information in a way that was useful to all parties, considering that each had different goals and priorities. Among the measures that worked effectively was the establishment of direct lines of Information Sharing between U.S. Forces and Japan Self-Defense Forces (JSDF)…Also, nearly all Operation Tomodachi materials were unclassified and the deliberate decision to give the Japanese open access to U.S. military unclassified systems facilitated Information Sharing and enhanced transparency…" [27]

Lesson: Improve Information Sharing between the region's Ministries (Departments) of Defense during a disaster response (Military-Military Information Sharing)

It was noted following response efforts that Japan's Ministry of Defense (MoD) needed to consider how it could better share necessary information with the U.S. Department of Defense (DoD). Interviews of U.S. Army officers at the Pentagon revealed a lack of necessary military information which could not be acquired from ordinary newscasts but was better suited to come directly from the MoD. It was therefore recommended by JSDF staff that the MoD should explore how to keep DoD staff directly informed of Japan's military situation during contingencies. [28]

Lesson: Send military liaisons to local affected areas to gather and share information on the affected populations' specific needs to provide situational awareness

During the response, JSDF established the Joint Task Force (JTF) headquarters in Sendai and sent liaisons to Prefectural Disaster Response Headquarters and other ad-hoc response headquarters established throughout the area. JSDF soldiers visited local shelters and communities to inquire about missing persons and pressing needs. The sending of JSDF liaisons to have in-person meetings with the affected population proved to be effective in ensuring that relief aid was being sent to where it was needed most.[29]

27 "Liaison Vol. V, Civil-Military Lessons Learned IN the Response to the 2011 Great East Japan Earthquake," pgs. 59-60, https://www.cfe-dmha.org/Publications/Liaison/Liaison-Archives
28 Ibid, pg. 28
29 Ibid, pgs. 41-42

Lesson: Interagency Information Sharing means and procedures were not clearly defined or sufficient

It was noted by JSDF staff that there were no clear Interagency Information Sharing procedures in place. Complicating this fact was that the destruction of the communication network in the disaster additionally hindered operations. It was suggested that to avoid this, the framework, procedures and means of communication and Information Sharing should be prepared and agreed to in advance. One suggestion was to utilize retired military personnel in local governments' disaster prevention offices to serve as liaisons. Additionally, the quick integration of communication among agencies is key. The military, local officials, and NGOs possess communication capabilities, thus in an emergency, ad hoc networks involving all responders should be quickly created. [30]

Lesson: An unclassified COP should be established for use and Information Sharing by all stakeholders

U.S. Forces and JSDF communicated well and exchanged liaison officers, but this was not enough to build an adequate picture of the operational environment. "Critical information such as the activities, status and whereabouts of UN agencies, NGOs and the private sector was not readily available to U.S. Forces Japan (USFJ). To build an effective COP that meets the needs of all parties, there must be a common understanding of the information needed by the host nation responding agencies, foreign militaries and governments, local communities and the humanitarian community and private sector. The COP should be made available to a wide audience on unclassified networks." [31]

Lesson: Agree on a common Information Sharing platform to be used ahead of time

RAND Corporation recommends that coordination with the affected country can be improved with "relatively easy, low-cost fixes":

"Reach an early agreement with affected countries on the information-sharing platform to be used. Avoid situations such as that of the Japan case, in which U.S. Pacific Command (USPACOM) /USFJ used APAN while Japanese authorities used CENTRIX-J." [32]

"…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 nuclear response) they considered FOUO, if not classified." [33]

The RAND study found that while the U.S. Perspective was: "Unclassified, non-FOUO is appropriate for HA/DR," the Japanese perspective was that: "Critical information is too sensitive for unclassified, non-FOUO systems." [34]

Lesson: Utilize Information Sharing systems in HADR exercises

"As Operation Tomodachi demonstrated, it is important to incorporate information-sharing systems, such as APAN, into existing exercises." [35]

Lesson: Make sure personnel/mechanisms are in place to allow for information to be released in a timely manner

"…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." [36]

and

"Improve foreign disclosure expertise during HA/DR deployments; ensure that Not Releasable to Foreign Nationals (NOFORN) classification is kept to a minimum so as to maintain the highest possible degree of communication with the affected country." [37]

2013 Typhoon Haiyan (Philippines)

Lesson: Information Sharing should be conducted through unclassified networks

"Coordination and correspondence during an FHA response should be unclassified as much as possible to maximize Information Sharing. If one cannot communicate, one cannot coordinate. Operating in the secret internet protocol router network (SIPRNET) resulted in wasted time and effort, delaying shared situational awareness with partners." [38]

Lesson: Establishment of the International Coordination Team (ICT) in support of Operation Damayan helped synchronize effective international support through all phases of USPACOM operations, including Information Sharing

"The ICT serve(d) as an enabling mechanism for the effective and speedy provision of military capabilities and resources to support international efforts in the USPACOM AOR…the ICT meets regularly…and ongoing during a crisis situation…for the purpose of joint planning, sharing information, and creating a synchronized awareness of the theater among USPACOM international military liaisons (LNOs)." ICT core members collect and monitor five main aspects of international military-related contributions during crisis, including information

30 Ibid, pg. 42
31 Ibid, pg. 57
32 "Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region," pg. 114, https://www.rand.org/content/dam/rand/pubs/research_reports/.../RAND_RR146.pdf
33 Ibid, pg. 101
34 Ibid., pg. 101
35 Ibid, pgs. 104-105
36 Ibid, pg. 107
37 Ibid pg. 114
38 "An Inside Look into U.S.PACOM Response to Super Typhoon Haiyan," (2015), pg. 10, https://www.cfe-dmha.org/Publications/Reports

Photo above:
Aftermath of Typhoon Haiyan in Tacloban, Leyte Philippines
https://upload.wikimedia.org/wikipedia/commons/thumb/7/77/Tacloban_Typhoon_Haiyan_2013-11-14.jpg/800px-Tacloban_Typhoon_Haiyan_2013-11-14.jpg

Photo to the right:
Philippine citizens gather around a MH-60S Seahawk from the "Golden Falcons" of Helicopter Sea Combat Squadron (HSC) 12 as it delivers relief supplies in support of Operation Damayan. The George Washington Strike Group supports the 3rd Marine Expeditionary Brigade to assist the Philippine government in response to the aftermath of Super Typhoon Haiyan/Yolanda in the Republic of the Philippines. (U.S. Navy photo by Mass Communication Specialist 3rd Class Peter Burghart/ RELEASED)

Date Taken:11.17.2013

https://www.flickr.com/photos/dvids/10928400543

requirements to better enable deployments and support. "In addition, the ICT also provides a platform for sharing lessons learned and best practices across all partner nations to promote alignment with USPACOM allies and partner militaries particularly before a crisis makes landfall. The ICT also assists in the creation, review, and revision of military response plans, CONOPs, dissemination of relevant operational information…" [39]

Lesson: The creation of a virtual unclassified Information Sharing group on a system such as the All Partners Access Network (APAN) helped facilitate timely Information Sharing

"U.S. Pacific Command launched the Typhoon Haiyan Response Group on APAN to provide organizations and militaries of multiple countries a centralized location to share information, increase situational awareness, and decrease response time. A request for information (RFI) or assistance (RFA) would normally require numerous emails and phone calls, but with a single post to an APAN forum, a request could reach the same list of people with one posting. Supplying answers to questions on the forums allowed other users with similar questions to see the information later, greatly reducing duplicated efforts. Additionally, having a common community allowed users to host, announce, and keep numerous situation reports available in a single location which created maximized situational awareness and decreased duplication of efforts." [40]

Lesson: Work with local community communication networks

"The importance of fitting in with existing local communication networks and Information Sharing mechanisms was highlighted and should be carefully explored with all members of the affected community to ensure information and communication is effective: 'There is a need to build on existing mandated channels of communication rather than setting up parallel structures. Barangay leaders are mandated to communicate with and on behalf of their communities' (Program Manager, INGO)." [41]

2014 Typhoon Hagupit (Philippines)

Lesson: Lessons learned from Typhoon Haiyan and put into best practices during the response to Typhoon Hagupit resulted in better operational Information Sharing, particularly with regard to timely and effective warnings to the populace

- "The two main lessons learned from Super Typhoon Haiyan consisted of local leaders giving accurate, timely, relevant, and understandable warnings to the public, and secondly, enabling the people to put this knowledge into action. In applying lessons learned from Super Typhoon Haiyan, the President of the Philippines instructed the Department of Science and Technology (DOST), overall lead agency responsible for disaster prevention and mitigation, to deliver information that would inform vulnerable communities how to take appropriate action." [42]
- Following Haiyan, the Pre-Disaster Risk Assessment—Actions, Protocols, and Programs (PDRA-APP), a tool geared towards pre-emptive evacuations that is "Hazard specific, Area focused and Time bound" was created. With information from different sources, the National Disaster Risk Reduction and Management Council (NDRRMC) issued very specific warnings to the population regarding potential storm impacts. "The PDRA-APP served as a baseline for cluster response operations and communications. For the first time, the Philippine government achieved a nationwide consensus on the operating environment." [43]
- "The PDRA-APP inclusive approach to risk monitoring and analysis, needs assessment, and risk communication provided a shared informational platform to achieve consensus on the operating environment" for the first time in the Philippines. "Through the institutionalization of the PDRA-APP, the Office of Civil Defense systematically integrated civil-military collaboration into the overall disaster risk reduction strategy…The PDRA-APP represented one of the Philippines' best practices in emergency response preparedness using a collaborative multi-sectoral approach." [44]

2014-2015 Ebola Response in West Africa

Lesson: Reliance on classified information systems hindered the response

"…the U.S. military's overreliance on classified computer networks to promulgate substantial, unclassified information complicated Information Sharing. DoD also grappled with how to effectively network with its non-DoD partners operating on the open (non-military) internet."[45]

Lesson: Information Sharing and management proved difficult because of a lack of a common, standardized Information Sharing tool

"Information management and effective collaboration were difficult in OUA as online collaboration tools were

39 Ibid, pgs. 9-10
40 "Philippines Typhoon Haiyan Response, APAN, https://www.apan.org/(S(eiacovq5mqjfp4cwgx4wxlcm))/pages/case-study-haiyan)
41 "The CDAC Network: Typhoon Haiyan Learning Review: A Review of Communicating with Communities Initiatives and Coordination in the Response to Typhoon Haiyan in the Philippines, "November 2014, pg. 39
42 "Advances in Civil-Military Coordination in Catastrophes: How the Philippines Turned Lessons Learned from Super Typhoon Haiyan (Yolanda) Into Best Practices for Disaster Preparedness and Response," (2015), pg. 10, https://www.cfe-dmha.org/Publications/Reports
43 Ibid, pgs. 10-11
44 Ibid, pg. 12
45 "Operation United Assistance: The DoD Response to Ebola in West Africa," (Jan 6 2016), pg. 7, http://www.jcs.mil/Portals/36/Documents/Doctrine/ebola/OUA_report_jan2016.pdf

not standardized across participating agencies. The lead for JFC-UA communications preferred to use APAN as the primary inter-organizational collaboration tool, but others internal and external to DoD differed on APAN's usefulness…Although information was shared through other means, MG Williams noted, it is important to 'develop a common communication network within the USG that will facilitate unclassified data sharing between interagency and external entities (e.g., UN, NGOs)." [46]

Lesson: The development of a rudimentary COP helped facilitate Information Sharing

"An established synchronization matrix also facilitated the development of a map-based COP, another common tool that provides a visual depiction of units and activities on a geographic display. The COP… facilitated Information Sharing across organizations. JFC-UA soldiers put aside their normal reliance on digitized products and created something that worked better for the specific operational environment. Later on, JFC-UA produced a digitized and interactive COP that was available on APAN." [47]

Lesson: Do not forget the importance of human interaction for effective Information Sharing

"…CCMDs should identify, plan, and exercise communication methods that are not reliant on advanced technology and network operations, such as increased human interaction (e.g. face-to-face, telephonic meetings), to communicate and share information in a complex FHA environment with non-DoD partners…" [48]

Lesson: Information Sharing should be an essential activity in a disaster response

"Treat information and Information Sharing as an essential activity in an emergency response, as pivotal as providing food, water, or shelter in emergency response, recovery and in longer-term resilience planning. This requires ensuring affected communities have regular access to vital and up-to-date information about the crisis and response, conveyed in culturally relevant and appropriate formats, from the beginning of an emergency." [49]

Lesson: The so-called "fog of Information" can hinder effective Information Sharing

The fog of information characterized the early stages of the response to the Ebola outbreak:

"…Several interviewees referred to as a "fog of information," describing the lack of timely, accurate, and accessible data, which clouded situational awareness, impeded effective decision-making, and stymied the response…" [50]

Lesson: Data should be standardized; utilize existing or developing humanitarian data standards for good information exchange practices

"The Humanitarian Data Exchange HDX, an open-source platform designed to serve as a central repository for both public and restricted humanitarian data sets, was under development when the Ebola outbreak struck. Although the tool was new, it became a repository for many of the data sets collected during the response…Although many organizations collected extensive amounts of data as part of the Ebola outbreak response, many of these datasets were not shared or easily accessible. According to Sarah Telford, manager of the Humanitarian Data Exchange (HDX), the goal of the platform was to "try to change the culture of guardedness around Information Sharing ... and to solve the problem of making [response] data more immediately accessible." [51]

and

"The lack of standards makes it so that you can't create a common operational data picture based on multiple sources and types of data. You can only look at it data set by data set." [52]

Lesson: Utilize established Information Sharing practices

"…On the humanitarian side, many interviewees highlighted the absence of OCHA and the humanitarian cluster coordination system as contributing to confusion surrounding coordination and Information Sharing, and forcing a reinvention of the wheel when established practices already existed." [53]

2015 Tropical Cyclone Pam (Vanuatu)

Lesson: Develop an information management system at the national level to improve Information Sharing

"Development of a web-based information management system to allow improved disaster management communications at National, Provincial and Area Secretary Levels for all ministries and agencies involved in preparedness, response and recovery to share information" [54]

Lesson: Ensure information is shared in a way so that all populations can understand

"Ensure information is shared in simple ways so that everyone, including People Living with Disabilities (PLWD), can access and understand." [55]

Lesson: Utilize an Information Management system at the national level

"Establish, coordinate and maintain an Information

46 Ibid, pg. 37
47 Ibid, pgs. 38-39
48 Ibid, pg. 40
49 "Fighting Ebola with Information: Learning from the use of Data, Information, and Digital Technologies in the West Africa Ebola Outbreak Response," USAID, pg. 118.
50 Ibid., pg. 25
51 Ibid., pg. 89
52 Ibid., pg. 89
53 Ibid., pg. 25
54 "Tropical Cyclone Pam Lessons Learned Workshop Report – June 2015," pg. 3, https://reliefweb.int/report/vanuatu/tropical-cyclone-pam-lessons-learned-workshop-report-june-2015
55 Ibid, pg. 7

Management (IM) System for disaster response in NDMO: This should include the core/essential datasets for disaster emergency response needs and be built from data available from various sources (National Statistics Office (NSO), Health, Communications, Police, Area Secretaries)." [56]

Lesson: Utilize situation reports to share information for the response

"Situation reports or Sitreps and the value they add to efficient and timely response, should be carefully considered. Clusters should identify trained people and ensure disaster-readiness to contribute information towards Sitreps. Current procedures for the maintenance of Sitreps and contact lists must be reviewed to ensure they are kept up-to-date and consistently utilized." [57]

Lesson: Improved Information Management at the national level will assist in response

"Knowledge of where assistance was needed was not always clear or available. NDMO needs to improve its information management and data collection and flows to provide a statistical base for international response." [58]

Lesson: Utilize and share existing national level baseline information

"Pre-compiled statistics, data and maps from the National Statistics and Lands Departments, Education and Health Ministries also made information accessible." [59]

Lesson: Work on ensuring information is integrated

"The key recommendation from the Information Management and Assessment session was integration; recognizing that both information management and the various sectoral assessment forms need to be more effectively harmonized and applied." [60]

Lesson: Consider establishing Memorandums of Understanding on Information Sharing

"Agreed Priority recommendation 1: Establish Memorandums of Understanding across agencies, including the private sector, with clear mandates to share required information while assuring protection of intellectual property rights." [61]

2015 Nepal earthquake

Lesson: Prepare information and share beforehand

"Joint Intelligence Preparation of the Operational Environment is critical for military decision makers and responding units during a disaster response. While there are unique aspects to a humanitarian assistance and disaster response operation, the military decision-making and intelligence cycles do not change…Building more continuity of knowledge regarding previous Nepal earthquake disaster response planning…would have facilitated the initial U.S. Pacific Command crisis planning and increased situational awareness." [62]

Lesson: Despite the advantages of technology in disaster response, there is no viable substitute for human intelligence or "boots on the ground" Information Sharing

The Nepalese Army (NA) used a variety of technologies to help support disaster relief efforts, particularly during initial damage assessments. These included the use of satellite imagery, GIS based products, a Centralized Information System, the utilization of a Common Operational Picture, Crowd Sourced data and aerial surveillance systems. However, the NA cautions that the while the use of cutting edge technology in HADR is increasingly effective, there was no substitute for human intelligence (HUMINT) in response efforts. "Only when the NA had boots on the ground into virtually every Village Development Committee in affected areas, did the true picture of the extent of the devastation start to emerge." [63]

Lesson: A single set of specific information requirements should be developed and shared

"Generic critical information requirements (weather, infrastructure, population centers, force pro, hazmat) had been identified ahead of time, yet they were still inadequate, lacking the necessary detail for planners and decision-makers. Additionally, information resources (products, maps, reference texts, etc.) existed, yet USPACOM staff officers were unaware of their existence, therefore it did not help them to inform their planning." [64]

Civil-Military Information Sharing Lessons Learned

Share and Promote Information Sharing with Other Responders, Both Civilian and Military

One of the first lessons to learn from after action reports (AARs) and other reviews is that the promotion of Information Sharing among potential responders is paramount to ensure the start of effective civil-military coordination. A willingness to share information is not only prudent to coordination efforts, but also a way to promote trust among civ-mil responders. Additionally, the promotion and sharing of information is highly conducive to increasing collaboration among all response stakeholders, both civilian and military alike.

56 Ibid, pg. 7
57 Ibid, pg. 8
58 Ibid, pg. 29
59 Ibid, pg. 32
60 Ibid, pg. 32
61 Ibid, pg. 33

62 "U.S. Pacific Command Operation SAHAYOGI HAAT Joint After-Action Review Executive Summary," https://www.cfe-dmha.org/Publications/Reports/Nepal-EQ-JAAR
63 Nepal Army After Action Report, pt. 3, use of Technology for HADR Operations, https://www.nepalarmy.mil.np/engsankatmochan.php
64 "CFE-DM Case Study: Nepal Earthquake March 2016, PowerPoint"

Devastation after the earthquake Kathmandu, Nepal taken April 27, 2015 – Resurge International | Link: https://www.flickr.com/photos/interplast/17324249571/

Lesson: Share information with other responding organizations

"Information Sharing: Information Sharing with Other Government Agency (OGAs) and NGOs the military interact with is critical to ensure unity of purpose and a coordinated approach." [65]

Lesson: Promote Information Sharing

"The two way flow of Information Sharing…is essential to achieving trust, unity of effort and strengthening multi-agency engagement – it should be a feature of normal operational rhythm for as much as security constraints permit." [66]

Lesson: Situational Awareness (SA) helps development of a COP which is essential to coordinated and effective response

"SA is essentially a condition where… [Participants] achieve a common understanding of both the operational context and the prevailing situation and imperatives. This information contributes to the development and maintenance of a Common Operational Picture which is essential to achieving a coordinated, effective, cost efficient, HADR response." [67]

Lesson: The nature of what information should be shared may differ from one emergency to another

"…Information Sharing, to the extent possible, including the minimum exchange necessary to deconflict operations, is of crucial importance in the context of technological or man-made disasters when the preferred coordination strategy between humanitarian and military actors tends towards co-existence. Information Sharing should always be done in a way that does not lead to the blurring of lines or misperceptions about the roles and mandates of different actors. Therefore, the decision on how and what type of information to be shared should be left to the relevant actors and may substantially differ from one crisis to the other." [68]

Civil-Military Information Sharing Should Remain Unclassified as Much as Possible

Probably every single after action report notes the importance of keeping Information Sharing at an unclassified level. This is one of the most obvious yet key findings of each disaster response review. Information Sharing during a response is simply not effective when information is classified or cannot be freely shared. Keeping classifications at the unclassified level enables military responders to quickly and easily share information with the United Nations, NGOs, regional organizations and partner military responders. This in turn assists with a more effective response operation, as it results in less delays, better coordination, and less duplication of efforts. The faster information is received and analyzed by responders, the more efficient and speedy the response will be. This can be achieved by making most information unclassified to the extent possible. This was noted during the 2010 Haiti earthquake response previously mentioned above, where utilizing an unclassified system for operational Informa-

65 "Humanitarian Assistance and Disaster Relief, Aide-Memoire," New Zealand Defence Force, pg. 22, http://www.nzdf.mil.nz/corporate-documents/hadr-aide-memoire.htm
66 Ibid, pg. 44
67 Ibid, pg. 46

68 "Recommended Practices for Effective Humanitarian Civil-Military Coordination of Foreign Military Assets (FMA) in Natural and Man-Made Disasters," pg. 20, Version 1.0, 18 September 2018, UNOCHA

tion Sharing allowed the DoD to more easily and efficiently coordinate and communicate with external partners.

Lesson: Keep Information Sharing "unclassified"

"HADR operations should manage information as 'Unclassified' to the greatest extent possible to enable effective sharing." [69]

Lesson: Utilize unclassified systems to share information

"The ability to use unclassified information environments, especially the public internet and means to communicate with non-military participants, is a factor in successful cooperation and coordination." [70]

Lesson: Keep information unclassified so that it may be shared among responders

"Over-classification of information within military circles is a common problem. Military forces must avoid over classification of data generated within military HQs. Frequently cited approaches were 'writing for release,' and use of the common environment before defaulting to national networks."

and

"Military participants in CIV-MIL environments must deploy with unclassified communications capability and use it. This often requires including commercial off the shelf equipment as part of early response packages." [71]

Lesson: A central point to collect, analyze, coordinate and disseminate information is needed

"Intelligence and Information Management: Intelligence support and a central focal point/organization through which information is collected, analyzed, coordinated and disseminated both internally and externally, is essential to achieving unity of effort, coordination, and efficiency." [72]

Utilize Existing Online Platforms and Data Standards to Share Information

Many humanitarian organizations utilize existing online Information Sharing platforms to assist with coordination and response. Additionally, there is a movement towards standardizing humanitarian data in an ongoing effort to streamline data sharing. It is important for the responder, particularly military responders, to see if an existing online platform for Information Sharing can be used to share information with other organizations. Many organizations have their own Information Sharing system they utilize, however, platforms in use by the UN

and other groups allow for other organizations, including military personnel, to join fairly easily. The common platform or platforms being utilized for the particular response should be accessed and used in the early stages of response efforts. This will allow for the early sharing of information, often when it is needed the most. Additionally, following existing or emerging standards of humanitarian data sharing will greatly assist in the handling, storage and sharing of data.

69 Ibid., pg. 44
70 "Civilian-Military Information Sharing (CMIS) Guidebook for Mission Planning in a Federated Mission Networking (FMN) Environment (Draft)," Enclosure 1: Report on Quick Look Analysis of Communications Issues for Civ-Mil in a Humanitarian Assistance Environment, Multinational Capability Development Campaign (MCDC), pg. 1-9
71 Ibid., pg. 1-10
72 "Humanitarian Assistance and Disaster Relief, Aide-Memoire," New Zealand Defence Force, pg. 22, http://www.nzdf.mil.nz/corporate-documents/hadr-aide-memoire.htm

Photo Above:
131114-N-BX824-209 TACLOBAN, REPUBLIC OF THE PHILIPPINES (Nov. 14, 2013) An MH-60S Seahawk from the "Island Knights" of Helicopter Sea Combat Squadron (HSC) 25 drops supplies onto Tacloban Air Base in support of Operation Damayan. The George Washington Strike Group supports the 3rd Marine Expeditionary Brigade to assist the Philippine government in response to the aftermath of Super Typhoon Haiyan/Yolanda in the Republic of the Philippines. (U.S. Navy photo by Mass Communication Specialist 3rd Class Ricardo R. Guzman/RELEASED)

https://www.flickr.com/photos/us7thfleet/10864374965/in

Lesson: Begin sharing information in the early phases of a relief operation; utilize existing online platforms

"In the early phase of a humanitarian relief operation, and based on context analysis of the operational environment, humanitarian organizations, military, and other governmental actors from Affected and Assisting States are encouraged to share information that can improve coordination, including contact details and roles/responsibilities, when using appropriate online platforms such as Humanitarian ID, the Virtual On-Site Operations Coordination Centre (VOSOCC), and/or other comparable Information Sharing platforms." [73]

Lesson: Use online data standards to streamline data collection, analysis and dissemination

"Humanitarian organizations, military organizations, and other governmental actors from affected and assisting States are encouraged to use the online data standard for Humanitarian Data Exchange (HDX) and associated Humanitarian Exchange Language (HXL) to streamline data collection, analysis and dissemination, including taking appropriate measures to protect Personally Identifiable Information (PII), as considered appropriate based on the specific context." [74]

Lesson: Military responders should familiarize themselves with collaborative tools used by civilians

"…Civilians use a broad range of commercially available collaborative document management tools such as Google Docs and other cloud services. Early determination of which are used allows the military planning staff to make necessary adaptations, gain permissions where possible, and understand restrictions affecting use of these tools for CMIS." [75]

Lesson: Use a common platform to share information

"Identification and use of a common network/information environment for interaction with multinational responder community and the AS is routinely cited as a factor in successful cooperation and coordination necessary to support HADR." [76]

and

"The use existing civilian Information Sharing and collaboration systems and services to communicate with non-military actors wherever possible is a factor in successful cooperation and coordination." [77]

Lesson: Share information to identify social, cultural, ethnic and gender considerations

"At all levels of humanitarian civil-military coordination, and through appropriate and agreed internal mechanisms based on the specific context of the humanitarian emergency, humanitarian organizations, military organizations, and other governmental actors from affected and assisting States should collectively share information to identify social, cultural, ethnic and gender considerations. This information should include differing humanitarian needs (such as the needs of women, men, children, the disabled and the elderly), location of affected people, material and logistical gaps, security, protection and access issues, and instances of actual or threatened sexual exploitation and abuse. The sharing of such information should not place additional risk on the affected people or humanitarian workers, particularly in situations of armed conflict." [78]

Lesson: When appropriate to the emergency, civil-military entities should share information through the Humanitarian Notification System for Deconfliction (HNS4D)

"When contextually appropriate, humanitarian organizations, military organizations, and other governmental actors from affected and assisting States may commit to appropriate data and Information Sharing processes to inform a Humanitarian Notification System for Deconfliction (HNS4D). This is necessary to advise military forces of humanitarian locations and humanitarian personnel in both static and non-static locations for the purpose of protection against attacks and the incidental effects of attacks under international humanitarian law." [79&80]

Information Sharing Best Practices for the Military Responder

Although most civil-military Information Sharing lessons learned and best practices are interchangeable between both civilian and military responders, some lessons learned/best practices are best geared towards the military responder. The following is a collection of best practices designed to assist the military responder to be better prepared to share information with civilians and other military personnel during a response operation.

Best Practice: Despite the challenges, Military Responders should promote and advocate Information Sharing with Civilians

"Generally, on the military side, there is a willingness to share data; the challenge is sharing the data-collection assets. While there are acknowledged sensitivities and ethical issues on data sharing within the intersection of

73 "Recommended Practices for Effective Humanitarian Civil-Military Coordination of Foreign Military Assets (FMA) in Natural and Man-Made Disasters," pg. 20, Version 1.0, 18 September 2018, UNOCHA
74 Ibid, pg. 21
75 "Civilian-Military Information Sharing (CMIS) Guidebook for Mission Planning in a Federated Mission Networking (FMN) Environment (Draft)," Chapter II Best Practices, Multinational Capability Development Campaign (MCDC), pg. 14.
76 Ibid., pg. 1-9
77Ibid, pg. 1-9

78 "Recommended Practices for Effective Humanitarian Civil-Military Coordination of Foreign Military Assets (FMA) in Natural and Man-Made Disasters," pg. 20, Version 1.0, 18 September 2018, UNOCHA
79 According to UNOCHA, HNS4D are voluntary and each organization must decide to participate or not. The decision to participate or not always lies with the individual organization, based on internal analysis, and may differ from one crisis to the other. The manner in which Humanitarian Notification Systems for Deconfliction operate should be constantly updated and revised based on feedback received from humanitarian, military and other governmental actors, and should be tailored to the specific context.
80 Ibid, pg. 21

the military and humanitarian sectors, including the need for humanitarian impartiality, data security and privacy, and the confidentiality of beneficiary data, the sharing of such data could be tremendously valuable." [81]

Best Practice: Work on a common language understood by both Civilian and Military Responders

"Plain speaking. CIV-MIL participants use words differently even if using the same language. Avoid jargon, acronyms, and ambiguous phrasing. Both entities need a common lexicon of terms understood by all information recipients." [82]

Best Practice: Ensure translation is available for responding military forces to understand and communicate in the local language

"Primary language. English may not be the local or even the relief primary language. Determine how to effectively translate between the local language and the responding force language. (Note: it is common, especially in Spanish or French speaking nations, to conduct the relief operation in their primary language. Responding international NGOs will attract non-English speaking staffs. Military responders must be adaptable to working in whatever language is the primary language of the government and the relief agencies)." [83]

Best Practice: Promote face-to-face communications as a way to establish relationships and trust between Civ-Mil Responders

"Trained Liaison Officers. It is important to identify face-to-face communications as a key method to establish trust. Prior to a crises conduct orientation with major agencies (ICRC, IFRC, MSF, Oxfam, Care, Save the Children, etc.), exercising participation to gain insight in humanitarian culture and building interpersonal contacts can bridge the trust gap and reinforce relationships once trust is established. Flexible Liaison arrangements with major aid agencies outside the UN umbrella will enable the military to more effectively conduct Information Sharing and coordinate/de-conflict operations as the situation dictates." [84]

Best Practice: Promote Civ-Mil Information Sharing in training and exercises

"Include Content Management Information System (CMIS) in training and exercises. Opportunities to work with international and local aid agencies and other civilian actors should be integrated into exercise scenarios as a means to build trust, understand CIV-MIL cultural differences, and practice techniques and procedures before a crisis event occurs." [85]

Best Practice: Establish and maintain organizational relationships

"Organizational level relationships. At the field level, interpersonal relationships are critical. No less critical are relationships at the organizational level. At a minimum sharing contact information between aid organizations and military staffs can accelerate Information Sharing. At a higher level, it may enable participation in training and exercise events that support CIV-MIL Information Sharing and understanding of the organization's operations and policies." [86]

Best Practice: Military responders should seek to find ways to share information with responding partners as early as possible

"A military organization's ability to identify and meet mission partner communication, information and collaboration requirements as early as feasible is a key factor in successful cooperation and coordination." [87]

Best Practice: Train with other organizations (both Civilian and Military) ahead of deployments to gain familiarity

"Pre-existing knowledge of people, practices and organizations is a factor in successful cooperation and coordination. Military organizations previous training or experience with other militaries, other governmental organizations, Inter-Governmental Organizations such as the UN, and non-governmental organizations such as the International Red Cross and Red Crescent prior to deployment was a common factor in success." [88]

Best Practice: Face-to-Face interactions are an important component of Information Sharing

"Liaisons and other face to face interactions are keys to success and have utility beyond simple communication of information. Observers routinely mentioned the importance of both providing Liaisons and ensuring these Liaisons had the technical means to communicate." [89]

Best Practice: Attempt to establish an Information Sharing plan with other Civ-Mil Responders ahead of an emergency

"Developing an IM/KM plan in conjunction with civilian and mission partners and other participants, and then executing it, is been frequently identified as a factor in success by military participants in rapid onset events." [90]

81 Civil-Military Relations: A Focus on Health Emergencies and Epidemics, NGO-Military Contact Group Conference (17 July 2018) Conference Report
82 "Civilian-Military Information Sharing (CMIS) Guidebook for Mission Planning in a Federated Mission Networking (FMN) Environment (Draft)," Chapter II Best Practices, Multinational Capability Development Campaign (MCDC), pg. 13.
83 Ibid, pg. 13
84 Ibid., pg. 15
85 Ibid., pg. 15
86 Ibid., pg. 15
87 "Civilian-Military Information Sharing (CMIS) Guidebook for Mission Planning in a Federated Mission Networking (FMN) Environment (Draft)," Enclosure 1: Report on Quick Look Analysis of Communications Issues for Civ-Mil in a Humanitarian Assistance Environment, Multinational Capability Development Campaign (MCDC), pg. 1-9.
88 Ibid., pg. 1-9
89 Ibid, pg. 1-9
90 Ibid., pg. 1-10

INFORMATION SHARING AND MANAGEMENT PLATFORMS IN ASSOCIATION OF SOUTHEAST ASIAN NATIONS DISASTER RESPONSE OPERATIONS:

What Defines Success and How Can We Improve Upon Platform Shortcomings?

By Shaohong Lu, U.S. Army Field Artillery Officer

Collection, sharing, and dissemination of information are critical components of a successful disaster response operation. However, Information Sharing and Management Platforms (ISMP) currently in use by Association of Southeast Asian Nations (ASEAN) member states use different technologies, are not mutually accessible, and are not interoperable - a function necessary for effective and efficient collaboration during a response. Given the severity of recent disasters in the region such as Typhoon Haiyan, a common, interoperable Information Sharing and management platform that is easily accessible to civilian and military responders is vital for a coordinated disaster response.

Given the wide breadth of organizations that respond to any major disaster, the importance of interoperability between ISMPs is crucial to effective coordination between agencies. However, there remains significant challenges with ensuring interoperability with the myriad of national, regional, and international agencies operating in Southeast Asia. This article examines a recent project conducted by graduate students from Columbia University's School of International and Public Affairs. As part of an ongoing collaboration with the DoD Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM), the team of students compared four main ISMPs used in the region and provided recommendations for the development of an effective and efficient ISMP to increase interoperability among disaster response partners. The ISMPs selected for this project consisted of Web Emergency Operations Center (WebEOC), OPERA Command and Control Information System web-portal (OPERA), Virtual On-Site Operations Coordination Center (VOSOCC), and the All Partners Access Network (APAN).

Metrics and Methods

Cost, interoperability, bandwidth capacity, portability, technology requirements, mobile application, and ease of access were the seven metrics used to evaluate each of the ISMPs. These metrics were identified and selected based on desk research and a thorough analysis of after action reviews (AARs) of previous disaster response operations where Information Sharing and interoperability were identified as a challenge.

With the assistance of key CFE-DM personnel, the team conducted surveys and metrics analysis with users

of various ISMPs. Quantitative and qualitative questionnaires and interviews with key stakeholders in Jakarta and Singapore provided further in-depth information regarding interoperability elements of ISMPs. The team met with leaders in both the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) and the Regional Humanitarian Assistance and Disaster Relief Coordination Centre (RHCC) to gain insight on their preferences for ISMP functionalities along with current challenges in interoperability.

Challenges and Key Findings

The challenges identified with Information Sharing in the region correlate with some of the previously noted AARs from disaster response operations. The lack of interoperability between ISMPs was unsurprisingly a major concern for survey respondents. Other findings included the desire to develop and incorporate a true mobile application (as opposed to simply mobile access) for improved user interface and streamlining the information flow to expedite sharing of critical data.

Key Finding #1:

While a preponderance of respondents agree that a single ISMP is optimal, they also acknowledge there are significant challenges hindering the development of such a platform in the current ASEAN area of operations. Interoperability among ISMPs and organizations, for example, was mentioned as desirable. However, all parties agreed that given the nature of their work and the focused nature of their missions within the disaster management space, this is difficult to accomplish. The RHCC focuses on military-to-military coordination while the AHA Centre and UN OCHA focus on primarily coordinating civilian responders for humanitarian relief. At the same time, two of the stakeholders in question, the AHA Centre and the RHCC, have made significant investments in their individual platforms, and thus are unwilling to shelve their systems in favor of another.

Key Finding #2:

Several survey respondents requested that a mobile application be developed for their ISMP. Even though several ISMPs are browser based and can be accessed on a mobile device, their interface is prohibitively complicated. This slows down the information flow as users try to navigate a database that was built and optimized for desktop computers.

Key Finding #3:

The ability to edit information and create user data is not being delegated to the lowest level. End users and responders on the ground often must rely on headquarters staff and ISMP system administrators to change their settings. This creates a lag time that inhibits Information Sharing from responders who may need to adjust settings or create new icons on a map or database.

Conclusion and Recommendations

ASEAN member states have developed essential core competencies regarding international disaster management. Their capabilities and contributions to regional cooperation have improved dramatically in the past few years. To further expand on the benefits of coordination and resource optimization, there is a need to overcome the lack of interoperability between systems and stove piping (the isolated operating nature) of individual responses and contributions.

The findings of survey and interview data analysis reveal a lack of overall interoperability and Information Sharing among the different systems in use. This shortcoming continues even with the acknowledged need from a majority of interviewees. There is no functionality that allows for data transfer between the various ISMPs analyzed in this report. For responders and stakeholders to better coordinate their efforts and resources, steps must be taken to increase efficient exchange and use of information.

Furthermore, users and system administrators in the region have indicated, through qualitative survey data, the need for improvement in user interfaces of the ISMPs and to make them more streamlined and accessible to mobile devices. By overcoming the difficulties of accessing the ISMP on a mobile device, Information Sharing becomes faster and less cumbersome. This increases the accuracy and timeliness of data required to portray an updated common operating platform (COP) for stakeholders responding to a disaster.

Recommendation #1:

Conduct a meeting of relevant ISMP hosting organizations and stakeholders to gain consensus on how to better share information between the different entities.

As the survey data indicates, there is strong acceptance among different organizations that interoperability is a crucial functionality that is lacking in the current communications structure. What is not agreed upon is the way ahead or method of addressing this shortcoming in the different ISMPs. By conducting a meeting with interoperability on the agenda, regional leaders can work towards creating acceptable courses of action in overcoming the myriad of interoperability challenges identified.

Recommendation #2:

Refine standard operating procedures for both the end users and system administrators of current ISMPs.

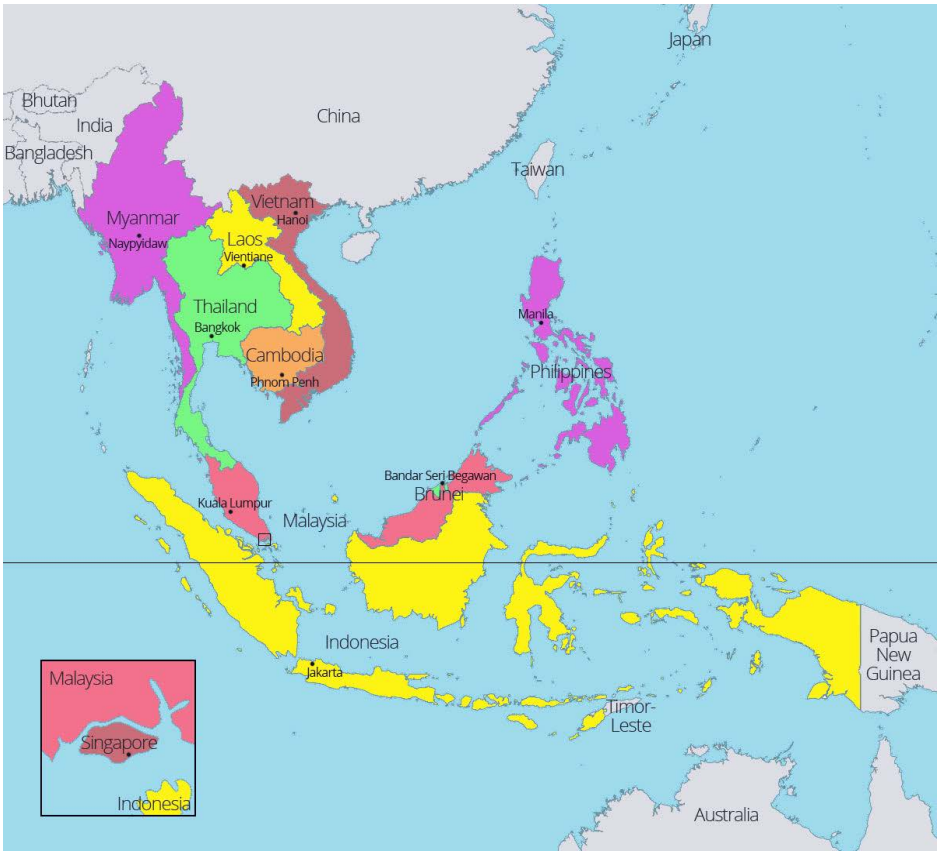


Photo Above:
Map of ASEAN Nations
https://aseanup.com/free-maps-asean-southeast-asia/

Current procedures place a heavy burden on the headquarters and administration staff in creating, maintaining, and editing user accounts. The result of withholding certain edit or change rights at the administrator level is the reduced capacity of end users to input data in a rapid manner while also reducing the resources available at headquarters to process and share data with decision makers.

Furthermore, although the functionalities of each ISMP is vast, end users conveyed a lack of complete understanding of what their ISMP could accomplish. This indicates that there may be faster or more effective methods of sharing data currently available than what is being utilized. By ensuring that standard operating procedures address both procedural and administrative shortcomings in current ISMPs, hosting organizations can streamline their Information Sharing process.

Recommendation #3:

Develop a mobile application for stakeholders to access their ISMP. This allows for emergency response teams of each organization to quickly and efficiently share necessary information and is much more user friendly than current browser-based access on mobile devices. While the challenges of developing a mobile application are significant (including, but not limited to, cost and challenges of developing for multiple operating systems) the rewards of creating a versatile and user-friendly application may outweigh the drawbacks. The ASEAN region is one of the most mobile driven in the world, with significant revenue and application development being forecasted in the next five years. By harnessing this growth and reliance on mobile devices, hosting organizations can facilitate rapid Information Sharing and dissemination that would not have been otherwise possible over traditional methods. The creation of an application can further be used to update COPs and provide real time information to decision makers through crowdsourcing. Utilizing filters and other selective methods to the avoid information overflow at the strategic level, mobile applications can give leaders the data, statistics, and facts needed to make decisions regarding resource allocation and disaster response operations.

The Way Forward

Given the dynamic environment of disasters and their frequency in the ASEAN region (an earthquake ravaged areas of Indonesia on August 05, 2018 as this article was being written), it is crucial to mitigate the difficulties of sharing information between different organizations. With each layer of obstruction removed from effective coordination and Information Sharing, the entities responding to disasters can better manage their resources, allocate critical assets, and assist those who are in need.

Although full interoperability may at first seem daunting, the building blocks are already there. The founding of the RHCC and creation of the AHA Centre greatly improved coordination and partnerships in the region and marked huge steps forward in humanitarian relief and disaster response. With the assistance of these two organizations and the continued stalwart efforts of CFE-DM, the instantaneous sharing of information and full interoperability between systems is not just a pipe dream.

EDUCATING FOR Unity of Effort IN Humanitarian Disaster Operations

By Russell Crumrine, Jr., Assistant Professor at the U.S. Army Command and General Staff College, in the Department of Joint, Interagency and Multinational Operations

The importance of the U.S. military to coordinate and work with other U.S. government (USG) agencies and international and non-governmental organizations (IO and NGO) is accepted in joint doctrine as important to achieving success in military operations. This is especially true when U.S. military personnel and units participate in humanitarian relief operations.

In an interview in the Spring 2016 edition of Liaison Journal, then USMC Brigadier General Paul Kennedy, who commanded Joint Task Force 505 during the humanitarian disaster response in the 2013 response to Typhoon Haiyan in the Philippines and the 2015 response to the devastating earthquake in Nepal, emphasized the importance of the U.S. Agency for International Development (USAID), Office of Foreign Disaster Assistance (OFDA) Joint Humanitarian Operations Course (JHOC) for U.S. military personnel. [1]

British Army Major Peter Hale in his article in the Spring 2017 Liaison Journal offered advice and recommendations to U.S. military field grade officers who may find themselves involved in humanitarian response operations. He emphasizes the importance of…"learning the top tips needed to fulfill an FHA (Foreign Humanitarian Assistance) role…" to be better prepared to succeed.[2] He also recommends becoming familiar with FHA related doctrine such as Joint Publication 3-29 (FHA) and related doctrinal publications from other countries such as the United Kingdom and New Zealand and United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) publications and taking advantage of humanitarian related training courses. [3] For U.S. military officers this includes the JHOC mentioned by Brigadier General Kennedy.

So when U.S. military organizations and personnel participate in humanitarian operations, they work closely with USAID OFDA. Field grade officers who serve as commanders, operations officers, executive officers, and planners at tactical and operational levels are better served by being prepared for these potential humanitarian operations, and specifically Humanitarian Assistance and Disaster Response (HADR) or Foreign Disaster Relief (FDR) in DoD terminology. This article discusses the incorporation and enhancement of the USAID OFDA JHOC into the U.S. Army's Command and General Staff Officer Course (CGSOC) electives program.

In June 2012, then Command and General Staff College (CGSC) Deputy Commandant, Major General Gordon Davis, Jr. directed that efforts be taken to identify courses of other USG agencies that could be imported into the CGSOC curriculum. To those of U.S. involved in this effort, we contacted representatives of a number of USG agencies about potential courses. But, we soon realized that adding an entire course into the existing CGSOC curriculum was not feasible for a variety of constraints.

After careful consideration, USAID OFDA's JHOC was determined to be best suited for inclusion in the CGSOC electives curriculum. Primary reasons for selecting the JHOC were: first, OFDA

1 Liaison Staff, "Interview with U.S. Marine Corps Brig. Gen. Paul J. Kennedy, commanding general of Joint task Force 505 Forward during Operation Sahayogi Haat in Nepal," Liaison Journal VIII (Spring 2016): 28.
2 Major Pete Hale, "An Introduction to Foreign Humanitarian Assistance," Liaison Journal IX (Spring 2017): 46.
3 Ibid., 46-48.

conducts JHOCs to numerous military organizations each year and is funded to do so; second, the JHOC is certified by the Joint Staff J7 for joint education credit; and third, the JHOC is a two day, or 16 hour course around which additional hours could be tailored to create a CGSOC elective.

The JHOC would provide an opportunity for CGSOC students to become familiar with the USG's foreign disaster response structures, policies, authorities, and responsibilities of USAID and DoD. The students would also learn about the role of host countries and international organizations, such as UNOCHA, and non-governmental organizations and how these organizations conduct disaster response operations. Critical for these future commanders and staff officers to understand is how the U.S.G works to achieve unity of effort in foreign disaster and humanitarian relief operations with USAID OFDA as the lead federal agency and how the U.S. military serves in a supporting role.

A typical CGSOC elective course consists of 24 academic hours. So with sixteen hours in hand with the JHOC, the consideration was how to best utilize the remaining eight academic hours to enhance the benefits from the JHOC and maximize the students' education relevant to HADR/FDR. In creating the new elective on humanitarian operations, Mr. Yonahton Bock of USAID OFDA provided advice and assistance in determining what additional topics should be included in the eight additional elective hours. The intent was to broaden the students' learning. We decided that this could be done in two ways beneficial to the students. First, to enable the students, as Major Hale noted in his article, to become more familiar with DoD policies, doctrine, authorities, and funding Overseas Humanitarian, Disaster, and Civic Aid (OHDACA) for FDR and humanitarian operations and assistance. Second, to have the students conduct a case study analysis of a past, but fairly recent, response to a humanitarian disaster.

By having the students review DoD policies, doctrine, authorities prior to the JHOC, they begin the JHOC with a better foundational understanding of DoD's role, This is quite different from other JHOCs that OFDA conducts where participants often begin the JHOC with little or no advance preparation. The CGSOC students and the

OFDA instructors are thus able to have more in-depth discussions on a variety of the topics covered during the JHOC.

Students' research and analysis of a recent, past humanitarian disaster response provides an opportunity to apply what they learned in the JHOC and further broaden their understanding of USG humanitarian disaster responses. Students divide themselves into small group of three-four individuals and select a humanitarian response for their case study from a provided list of USG humanitarian responses. The list is developed and revised each year with assistance from OFDA JHOC instructors. To ensure the broadest learning, student groups may not duplicate their selections and overall selections must include one response from each of OFDA's disaster categories: Rapid Onset, Slow Onset, and Complex Emergency. This ensures students gain a deeper familiarity with USG and international humanitarian disaster responses and not just responses which involved the U.S. military. Provided some basic guidelines, each student small group researches and analyzes their selected humanitarian disaster response and prepares and presents a 30-40 minute presentation.

As the Joint Humanitarian Operations elective is part the CGSOC electives program, interested students enroll in the elective. One other very unique aspect of the JHOCs conducted here during CGSOC is that international military officers attending CGSOC may also enroll in the elective. The international officers participating in the JHOC bring different perspectives to the discussions during the course creating a richer and broader dynamic than traditional U.S. military only JHOCs. International officers from countries such as Bangladesh, Indonesia, Philippines, Malaysia, Cambodia, Cameroon, Rwanda, Nigeria, Tanzania, and Jordan, to name a few, participated in the elective and completed the JHOC.

The original vision for conducting the Joint Humanitarian Operations elective beginning in 2013 was to conduct one iteration per year for a total of 32 students. This meant that USAID OFDA would conduct one JHOC annually for CGSOC students enrolled in the elective. Student interest and enrollment significantly increased. In consideration of demonstrated CGSOC student interest, USAID OFDA agreed to support and conduct two consecutive iterations of the JHOC in one week beginning in the 2015 CGSOC electives term. The two JHOCs annually have accommodated an average enrollment of 55 CGSOC students in the elective the past four years.

During the past six academic years, the incorporation of USAID OFDA's JHOC into the CGSOC electives curriculum has been extremely successful. The outstanding support provided by representatives of USAID OFDA has been, and remains, instrumental to the continuing successful execution of the JHOCs and the overall humanitarian operations elective.

In educating for unity of effort in humanitarian disaster operations, a key question then is - What are the benefits of CGSOC students' education about USAID OFDA and its responsibilities, authorities, programs, and activities for responding to and mitigating the effects of humanitarian crises and disasters? The Joint Staff J7 Deployable Training Division's 2013 Interorganizational Coordination Insights and Best Practices paper offers some key insights which are relevant to appreciating the educational benefits gained by CGSOC students. Relevant key insights include:

- "Personal relationships are key to coordination and unity of effort.
- Focus on common goals and objectives to attain unified action.
- Understand the different roles, authorities, missions, culture, and processes of external stakeholders…
- Effective relationships and coordination with lead federal agencies are key to gaining situational awareness of external stakeholders who can impact the mission." [4]

Upon graduation from CGSOC, these students, as field grade officers, will occupy key positions in assigned units of their military service. They will serve as operations and executive officers, commanders, planners and staff officers at the tactical and operational levels. Having completed this USAID related humanitarian disaster assistance elective and the JHOC, they bring increased knowledge and expertise to their positions. They understand the U.S. government's policies, processes, and authorities for humanitarian disaster response, including USAID's lead role and DoD's supporting role. They appreciate how USAID and the military can and should cooperate and work together, in a foreign country, regionally, and even strategically in responding to humanitarian needs of people affected by natural and man-made disasters.

Interagency and interorganizational coordination and cooperation may be difficult and challenging at times. But with the education they have completed and the knowledge they have gained, these CGSOC students, including the international officers, are well prepared to be able to make their units, organizations, and commanders more effective in planning and executing a critical supporting mission when the U.S. responds to help people in need overseas.

4 United States Department of Defense, Joint Staff J7 Deployable Training Division, Interorganizational Coordination: Insights and Best Practices Focus Paper, 4th ed. (Washington, DC: 2013): 1.

Introducing the "PRACTICES"

Recommended Practices for Humanitarian Civil-Military Coordination for Foreign Military Assets (FMA) in Natural and Man-Made Disasters

By CDR Andrea H. Cameron, Military Professor, U.S. Naval War College

Years of experience, lessons learned, and best practices are operationalized in the new Recommended Practices for Effective Humanitarian Civil-Military Coordination of Foreign Military Assets (FMA) in Natural and Man-Made Disasters. Generated by members of the United Nations Consultative Group on Humanitarian Civil-Military Coordination, the "Practices" are meant to augment the existing humanitarian guidelines. This article will explain how these practices came about, describe the five focus areas of the humanitarian response cycle, and relate why it is important to humanitarian action going forward.

The Need for the Practices

Much has evolved in civil-military coordination over the years. Experiences in both natural disasters and complex emergencies have resulted in lessons that can enhance the existing guidelines. Observing this phenomenon, Ambassador Toni Frisch, Chair of the Consultative Group on Humanitarian Civil-Military Coordination, identified the need to supplement the existing guidelines. With support from the Consultative Group, a drafting committee was formed that collected ideas and prepared the supplemental information. This drafting committee included members from member states, non-governmental organizations, the ICRC/IFRC, UN agencies, and academia. The many drafts were reviewed by a larger, rolling advisory group providing input and revision. As part of the UN Secretariat, UN Office for the Coordination of Humanitarian Affairs (OCHA) chaired the committees to consolidate and reconcile the collective input of the Consultative Group. The Practices were released September 2018.

The Practices do not replace the four existing guidelines. The purpose is to augment these guidelines with information gained from the field. The Oslo Guidelines, MCDA Guidelines, IASC Reference Paper, and IASC Non-Binding Guidelines on the use of Armed Escorts for Humanitarian Convoys still stand as overarching guidance. These Practices act as a ready reference for all parts of the community involved in civil-military coordination: the humanitarian community, military community, and civilian governments. According to Michael Marx, UN Senior Civil-Military Coordination Advisor, "the Practices were never meant to replace the existing guidelines, they are meant to strengthen the Oslo guidelines to reflect how we contextually operate today." While a range of humanitarian activities informed this effort, the guidance in the Practices specifically addresses humanitarian civil-military coordination (CMCoord) in natural hazards and technological or man-made hazards.

Key themes from the existing guidelines permeate the new Practices. With affected people at the center of response, they reiterate the core humanitarian principles of humanity, impartiality, neutrality, and independence. Also, humanitarian assistance shall continue to be offered at no cost to and in support of the affected state. These Practices specifically apply to the use of foreign military assets and do not address the use of domestic forces. Finally, they are intended to be non-binding, aspirational, and context-specific. This new guidance carries forward the existing guidelines with some specific key practices and intended outcomes. Figure 1 shows the Humanitarian Civil-Military Coordination within the Humanitarian Response Cycle.

Five Focus Areas of the Practices

The Practices introduce the humanitarian response cycle with five focus areas. Within the cycle, military support to humanitarian action is described as areas of preparedness, deployment, employment, transition, and monitoring and evaluation. They identify the key practices of integrating FMA to support humanitarian relief operations and describe the intended outcomes when the practices are applied effectively.

The Preparedness area includes guidance, policy and doctrine; capacity and capability development; and coordinated planning and predictability. Efforts in these categories are essential groundwork prior to the need for humanitarian action. Familiarity with guidance, policy and doctrine facilitates the appropriate use of FMA in future situations. Ideally, each State builds off of key CMCoord principles and concepts to develop tailored State emergency response frameworks through a consultative process. The creation of context-specific guidance before an event gives all actors an opportunity to gain familiarity with the guidance, work with partners, express concerns, and achieve consensus prior to an emergency. Capacity and capability development includes participation in planning, simulations, and exercises. This coordination builds networks and Information Sharing among actors who would be working together during an actual event. Finally, coordinated planning and predictabil-

Figure 1. Humanitarian Civil-Military Coordination within the Humanitarian Response Cycle

ity determines vulnerability, delineates appropriate roles, and identifies appropriate relief tasks for FMA. States are encouraged to articulate their principles and procedures for the use of FMA and widely disseminate this information. The preparedness area builds trust before an emergency occurs.

The Deployment area promotes tools to coordinate the efficient deployment of FMA. Deployment comprises consultation and decision making with an additional segment on comparative advantage and complimentary. Through consultation and decision making, affected States can assess anticipated needs and consider how assisting states can communicate offers of assistance with FMA. Whether offers are bilateral or international, understanding the request and receipt process provides a more consistent and predictable deployment if needed. Also, when deploying FMA, timely and specific life-saving assistance can be identified through comparative advantage and complementarity. FMA should supplement local capability, capacity, and resources—addressing identified and validated humanitarian gaps.

The Employment focus area provides the most thorough information in the Practices. This includes the appropriate use and distinction; connectivity and coordination; and Information Sharing and placing needs at the center. Appropriate use and distinction upholds the intent of all actors to act in accordance with humanitarian principles while respecting national sovereignty. Connectivity and coordination support the national response frameworks in practice. Coordination structures, for both military-to-military coordination and humanitarian-to-military coordination, enhance the efficiency of the Request for Assistance (RFA) procedures. Facilitating this dialog amongst actors also constructs a common situational awareness in the field. Finally, Information Sharing and placing needs at the center focuses on information exchange enabling effective decision making. Reliable data helps to prioritize the most immediate needs for the affected people. Collectively, these work to deliver principled humanitarian assistance with the appropriate use of FMA.

The Transition focus area includes exit strategy planning as well as redeployment and handover. The most important part of utilizing FMA during a humanitarian crisis is identifying early how those assets redeploy in a coordinated, responsible, safe and secure way. FMA provides essential unique capabilities in a limited deployment and exit criteria should be determined as soon as possible. Disseminating an exit strategy supports the handoff between services providers without disrupting the provision of aid. During an emergency, transition planning can be difficult, but thinking through this part of the process early helps all actors adapt accordingly.

The final focus addresses Monitoring and Evaluation. During this phase, key stakeholders are encouraged to measure shared results for collective accountability and to improve learning and innovation. Very little data are available regarding the effectiveness and impact of civil-military coordination. By developing baselines, benchmarks, and instruments, more information can be collected and evaluated. This evidence can then be used to enhance learning and encourage innovation. After-action reviews can also identify best practices that can lead to innovation in the field. As the final phase in the humanitarian response cycle, Monitoring and Evaluation thereby informs the products and processes in the Preparedness phase. This overall cycle is developed to improve humanitarian relief operations for today and tomorrow.

The Importance of the new Practices

These Practices are the next major step in documenting the best of how we operate in principled humanitarian action. As a ready reference, they combine the foundation provided in existing guidance with the most valuable lessons through the years. By following the key practices in each of the categories we can improve our responses in the years to come. This is a significant step forward to professionalizing civil-military coordination in humanitarian response.

The Evolving Nature of China's HUMANITARIAN ASSISTANCE

By Taylor Tielke

Purpose

This brief initiated by the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) explores the processes of humanitarian assistance and disaster response (HADR) in China as well as investigates the leadership, structures, and policies that shape and drive Chinese HADR. The first portion focuses on the general structure and policies of Chinese HADR efforts while the second half outlines the significance of the People's Liberation Army (PLA) in the planning and implementation of HADR, and concludes with recommendations for the HADR community moving forward.

For CFE-DM promoting and circulating information about HADR in the Pacific strikes close to its foundational values. China is becoming a large force and player in HADR and the United States must continue to collaborate, prepare, and assist partner countries alongside China. Furthermore, China's growing role presents opportunities to collaborate and foster ties; however much of Chinese HADR remains cloaked in secrecy and recent developments make collaboration politically and logistically difficult. This piece utilizes open source materials to synthesize public information so that CFE-DM and partner countries, as well as other agencies can better understand China's growing significance in HADR.

The Executive Summary

Chinese HADR is secret and tightly regimented by the highest members of Chinese politics. The main driver of HADR decision making, most likely stemming directly from President Xi Jinping, is the State Council which

contains ranking members of the communist party as well as ranking leaders in various agencies. While the groups that respond to HADR and enact HADR measures are proliferating, the primary few are the State Council, Ministry of Finance, Ministry of Foreign Affairs, the Ministry of Civil Affairs, and the Ministry of Commerce which oversees international HADR. HADR policies and procedures are tightly controlled, as are responses to crises as HADR events pose key threats to political stability. Domestically, failed or poor responses to domestic crises could jeopardize political legitimacy and stability. Internationally, most Chinese do not support HADR efforts in favor of local efforts; however, President Xi Jinping understands that HADR efforts are critical to establishing China as a 'responsible' global power. Presently, Chinese HADR efforts are limited and operate under strategically vague terms. Publicly released outlines of policy on assistance speak to increased infrastructure and capacity, but not specific thresholds or criteria. Finalized rules and procedures with Chinese HADR do not exist, and those that do are not public.

Regarding the PLA, China does have a history of HADR and humanitarian missions but the frequency is picking up after Hu Jintao's 2004 speech outlining 'Historic Missions' which included HADR missions as core to China's rise in power and influence. Organizationally, the PLA and its missions flow down from the Central Military Commission, the State Council, Polit-

Nurse Xiao Huan Wang (center) and fellow Joint Logistics Force Soldiers from the People's Liberation Army (PLA) extract a simulated casualty at Camp Rilea Armed Forces Training Center, November 17, 2017, in Warrenton, Ore. Engineers and medics from the Oregon National Guard and PLA worked alongside each other to share disaster response capabilities during the 13th annual U.S.-China Disaster Management Exchange. (Photo Credit: Sgt. 1st Class April Davis)

https://www.army.mil/article/197416/oregon_national_guard_partners_with_chinese_for_disaster_management_exchange

buro as well as the Ministries of Finance and Commerce. As aforementioned, formal rules and policies are not outlined in general, and this trend continues with the PLA. Examining specific responses and efforts it is clear that the 13th Transport Division plays a significant role in delivering resources to both domestic and international events. Overall, the PLA plays the instrumental role of delivering aid as well as performing the logistical tasks associated with HADR efforts. Despite the PLA's large role and size, teams and efforts for international events are predominately small groups; such as the Chinese International Search and Rescue Team or the Peace Ark. For the Chinese, HADR missions are becoming more central to its regional and global interests to establish itself as a 'responsible' regional and global power. More so, HADR missions afford the opportunities to build response and logistical capacity for the PLA, while also fostering relations with host countries. Notwithstanding China's expanding military capacity and HADR efforts, Chinese HADR remains small in comparison to the likes of the U.S. Additionally, HADR efforts are slowed and hamstrung by domestic considerations, often leading to international gaffes and growing suspicions of host countries.

Ultimately, there are a few policy recommendations going forward. First, CFE-DM should try to work with the listed organizations and the PLA to clarify and establish the rules which China operates on. Second, collaboration and cooperation on crises should continue and ideally expand. Working with China on international HADR responses might help bring China into the international mold while also promoting friendship and assuaging fears. Of course, the United States and the West have held this goal as aspirational for decades; recent frays in the U.S.-Sino relationship might make this goal unachievable. Domestic cooperation is also unlikely to happen given CFE-DM's military connections and the Chinese Communist Party (CCP)'s fears of non-governmental organizations (NGO) threatening domestic harmony. While these recommendations could improve cooperation and relations, the inherent difficulties and barriers make it difficult for CFE-DM and other U.S. organizations to effectively build rapport with China. Nevertheless, CFE-DM and the U.S. should earnestly strive to build cooperation with China on HADR.

Chinese Domestic and International HADR

HADR Leadership

Chinese HADR remains an enigma as the majority of details are opaque, or not searchable through open sources. However, Chinese leadership for both domestic and international HADR is similar as the structure of the Chinese government and decision making is vertical with ranking members within the CCP holding positions in most important committees and agencies. Of course, the standing committee and Politburo, as well as the personal direction of President Xi Jinping, will set direction and policy regardless of previous policies. Internally, HADR decisions flow from a rapidly proliferating and byzantine administrative network to plan and implement responses to disasters. Central to HADR planning and response is the State Council which contains leaders and ranking members of the party such as Premier Li Keqiang as well as vice premiers and state councilors from around the country. At the moment 35 members are on the council, and all of the members also chair or are ministers of additional agencies such as the Ministry of Foreign Affairs, Ministry of Civil Affairs, Ministry of Finance, and many others that play roles in HADR. Despite this structure, it is most likely the case that President Xi Jinping directly oversees and manages these processes as he continues to amass authority and in the 19th Plenary session announced a reduction in the size of the state council to roughly 27 members. This holds especially true as the PLA which President Xi Jinping controls and considers his bedrock of political support, remains a key instrument in Chinese HADR response. Agencies that deal with disaster reduction and relief are the National Disaster Reduction Committee, State Flood, State Forest Fire Control, and Disaster Control and Relief Coordination Office (Aldrich 295, Kang 40). Regarding disaster risk management: there is the State Council Emergency Management office which oversees national level events, the National Committee for Disaster Reduction for natural disasters, the National Committee for Worker Safety for labor and industrial problems, the National Committee for Patriotic Health, and lastly the National Committee for Integrated Management for public security (Aldrich 294-295). For coordination, it would be best to try to foster ties above the individual agencies or committees such as at the State Council or at the National Commission for Disaster Reduction, which is the national committee that is staffed by people from the State Council that coordinates and guides disaster responses and relief (Luo 2014, 386).

International HADR predominately flows through the Ministry of Commerce, which is also structured under the State Council. Through Commerce and the State Council, it is often the case that the process funnels down to smaller organizations such as individual banks (China Export-Import Bank), China Africa Development Fund (also within the China Development Bank), and major state-owned enterprises such as China National Petroleum Corporation (Wolf et al., xii). In March 2018 another agency was created, called the State International Development Cooperation Agency (Cornish, 2018;

Mardell, 2018). This agency will be headed by Wang Xiaotao, who previously worked as the deputy director of the National Development and Reform Commission as well as working with other important agencies such as Commerce, Foreign Affairs, and many others (ibid). The State International Development Cooperation Agency will mostly work to do planning while other agencies work with the implementation (such as Commerce, Health, Agriculture). The other vital agent in both domestic and international HADR is the PLA which undoubtedly contributes logistical support as well as resources and technical support to respond to both international and domestic disasters.

Unfortunately, Chinese HADR presents several issues for CFE-DM efforts. First, given the strict hierarchy of Chinese politics and the nature of the people holding positions in the most germane agencies, CFE-DM will have to rely on non-open source information to contact these representatives as even the lowest standing members are in the highest echelons of Chinese politics. Second, the nature of Chinese politics fosters an environment that will change in each scenario as well as after major disasters. One example of this is after the 2008 Sichuan Wenchuan earthquake that killed almost 70,000 people and affected tens of millions of people (Zhen, 2018). Up until the earthquake, NGOs or what the CCP calls civil society organizations (CSO) were not involved in the HADR response network. This is due to the CCP understanding that having more actors who were not part of the government taking part in HADR opens up the CCP to criticism about response efforts or policies (Luo 2014, 386; Kang 60-70). After the 2013 Lushan earthquake, CSOs were much faster and better equipped to deal with relief, and are becoming integral parts of the HADR framework in China (Zhen, 2018). While the inclusion of CSOs is to the benefit of China, the opaque nature of Chinese politics and the history of policy changes after disasters makes it difficult to pinpoint specific organizations or policies as they might change at the whim of a Politburo member. Third, the nature of information flows and the press in China showcases a very regimented and directed perspective of HADR. Media or articles outlining shortcomings of responses are blocked, and those that publish the articles or journalists that ask about these questions frequently lose their positions (if they are not Chinese) and potentially face charges for creating social disorder (Kang, 63). However, recent events between the United States and China also temper and limit the ability of domestic and international CSOs to operate. Most recently, CSOs suffer from increasing regulations and requirements as well as falling victim to external political issues. Presently China is detaining a former Canadian diplomat who was working with an international NGO, the detainment stems from the Canadian detention of the Chief Financial Officer of Huawei earlier this year (Clarke, 2018). As noted before, the structure and the constantly changing headwinds in China both as responses to policies or external pressures create constant changes in HADR framework, structure, and procedures. While CSOs retain valuable information about the landscape and nature of Chinese HADR, the growing legal barriers to interacting with Chinese CSOs will force entities like CFE-DM to work through the CCP and government organized NGOs; or forgo this avenue entirely. At every turn, there are legal and political issues with working with CSOs and accordingly CFE-DM and other organizations should focus their attention elsewhere.

Domestic HADR Policy

While most of Chinese HADR remains secretive, there is little doubt that the CCP will continue to build HADR responses and capability. One study estimates that China's yearly Gross Domestic Product (GDP) costs of disasters are between 3-6% of annual GDP (Kang, 23-24). Domestically, there is a little bit more to work with on how things are done, but not much. Generally speaking, policies and rules are frames of reference for how to approach situations. Many academic complications of conversations with policy makers and responders show that lower level officials believe that they must do what they think is necessary to accomplish the most critical objectives in the given disaster even if they must go against standing procedures (Ibid, 57). Comprehensive and systematic laws and regulations about disaster reduction and relief do not exist, or at least in the public space (Aldrich et al., 298; Hirono 30). While white papers exist, specific rules and regulations are difficult to find; most rules and regulations are general comments or resolutions about expanding respond abilities and infrastructure while maintaining social harmony. The most direct outlines of policy are the levels of response and the local government emergency planning. According to the 2006 'Emergency Response Plan', almost all counties and townships have local emergency plans with slightly more than half of the villages having plans (Luo 2014, 387). In terms of how the government reacts relates to the level of damage of the disaster. Level 1 being the highest, the director of the National Commission of Disaster Reduction (NCDR) goes to the area and takes on leadership (Luo 2014, 383-390). Within one day, the Ministries of Finance, Commerce, and Civil Affairs must move resources and relief to the area. Level 2 is organized by the deputy director of the NCDR who picks the person to go to the disaster area, with a 24-hour window for relief and support groups to be sent (ibid). Level 3 is organized by the secretary general of the NCDR, who is also the deputy minister of civil affairs. Again, relief and groups are sent immediately (ibid). Level 4 is decided by the NCDR after getting a

report from a local office, and relief and supplies are sent immediately. Given the ability for ranking members of the standing committee and Politburo to issue orders or guidance, it is often the case that formal policies are rarely followed and are used as reference points rather than strict procedure. Unfortunately, individual disaster plans and more information are not available to the public.

International HADR Policy

Internationally, Chinese HADR is expanding but continues to be introverted and opaque like domestic HADR. Starting in 2000 the Politburo adopted a 'going out' policy in which China is attempting to build its reputation as a responsible power globally through acts of HADR. Unfortunately, HADR and international aid remain extremely unpopular domestically; which makes consistent and unbiased coverage of Chinese HADR difficult to find (Krebs, 2018). Most domestic articles that reference recent international HADR statements or projects come from organizations like Xinhua and the People's Daily; both are major sources of Chinese news but are also very closely monitored and run by the CCP. Similar to domestic policies, formal guidelines are vague and grant a great deal of flexibility to redefine acts as HADR. The 2014 white paper on foreign aid from the State Council outlines:

> "When providing foreign assistance, China adheres to the principles of not imposing any political conditions, not interfering in the internal affairs of the recipient countries and fully respecting their right to independently choosing their own paths and models of development. The basic principles China upholds in providing foreign assistance are mutual respect, equality, keeping promise, mutual benefits and win-win."

As well as:

> "One of the important objectives of China's foreign assistance is to support other developing countries to reduce poverty and improve the livelihood of their peoples. China prioritizes supporting other developing countries to develop agriculture, enhance education level, improve medical and health services and build public welfare facilities, and provide emergency humanitarian aid when they suffer severe disasters."

Ultimately, international Chinese HADR and domestic Chinese HADR remain quite similar. Set policies and rules are not public, and those that are public are generic enough to point local cadres in the right direction for immediate responses while also leaving ample space for Party leadership to leverage HADR to advance their agenda. Beyond that, however, all of the finer details are determined within very small political circles at the very top, perhaps exclusively by President Xi Jinping himself. Everything is heavily monitored and scrutinized as the CCP recognizes the fact that while giving aid is one way to build international standing, it is also an effective tool to alienate the CCP at home.

HADR Procedures

Rapid relief efforts and supply of emergency resources for domestic crises remains the top political priority. From interviews and available sources, local cadres play larger roles in accomplishing major objectives while also incorporating CSOs to navigate local barriers (such as local mistrust or dialects). Most domestic procedures follow a two-step process in which the government floods the area with responders and relief supplies; after supplies arrive, reconstruction and infrastructure projects to mitigate future events begin. Like most aspects of Chinese HADR, the exact nature of connections between CSOs, local cadres, and larger networks as well as the exact rules and procedures are not public. Again, this is due to the heavy censorship and scrubbing of any response effort as the CPP does not want any doubt in their ability to provide domestic HADR. For CSOs they also tread lightly as speaking to the nature of the process might result in them being cut out or sent to prison, so even with expanding networks of responding organizations, it remains difficult to get concrete information. The literature does point to a recurring theme that local cadres do whatever they think is necessary to mitigate the crisis while waiting for people at the top to give directions or create spearhead groups and committees.

Internationally, there is much more information. As noted before, Chinese HADR assumes a different set of definitions that allow for more flexible perspectives of foreign aid and humanitarian assistance that advance regional hegemony and policy interests (Mearsheimer, 2010; Hirono, iii). There are clear agendas to improve the global standing and prestige of China as a responsible power, as most of the aid that China gives is going towards strategic engagements. Between 2000 and 2012, 47% of foreign assistance went into Africa, and roughly a third of official projects are not categorized as official development assistance (Zhang, 2016). Of the aid going to Africa, roughly 60% of the aid is concessional loans for infrastructure (ibid). Furthermore, between 2000 and 2016, 95% or $45.8 billion USD of aid to East Asia and the Pacific was for infrastructural development (South China Morning Post, 27 June 2018). This is compared to $273 million USD on humanitarian aid, and $90 million on debt relief (ibid). Globally, 42% of aid and grants go towards natural resource development, 40% towards infrastructure, and 18% towards debt forgiveness and humanitarian aid (Wolf et al., xii-xvi). According to official sources, China spends

about $5 billion USD per year on assistance to other countries, but it is difficult to verify that amount (Economist, 2017). While the processes of defining which projects and countries to support with grants are unclear, 93% of recipients of loans would be unable to qualify for loans on the international market (Wolf et al., 13). These loans open up strategic inroads to resources, economic zones for Chinese state-owned enterprises, territory, as well as other fixtures like naval ports (Abi-habib, 2018).

Focusing more on humanitarian aid, the bulk of Chinese HADR is either delivery of supplies (food, water), post-event reconstruction, or financial support (2014 White Paper). From 2000 to 2012, China provided HADR assistance to more than 30 countries with roughly 1.5 billion RMB of total support. 1.2 billion of that estimate went into relief materials such as food, fuel, lights, blankets, tents, medicine, and water. There are other contributions to disasters such as deploying medical teams and other specialized groups, but there is very little open access information about these responses (Krebs, 2018). Despite domestic pressure to cut HADR and foreign aid, Chinese aid continues to expand; however China has only delivered about 10% of promised assistance; usually spending resources on one or two major crises per year (Hirono, 16; Wolf et al., 48). Additionally, the Department of Foreign Aid within Commerce has roughly 70 staff that deals with the programs around the world (Hirono, 2).

While researching Chinese HADR, several graphs and figures provided clarity to the HADR networks and process.

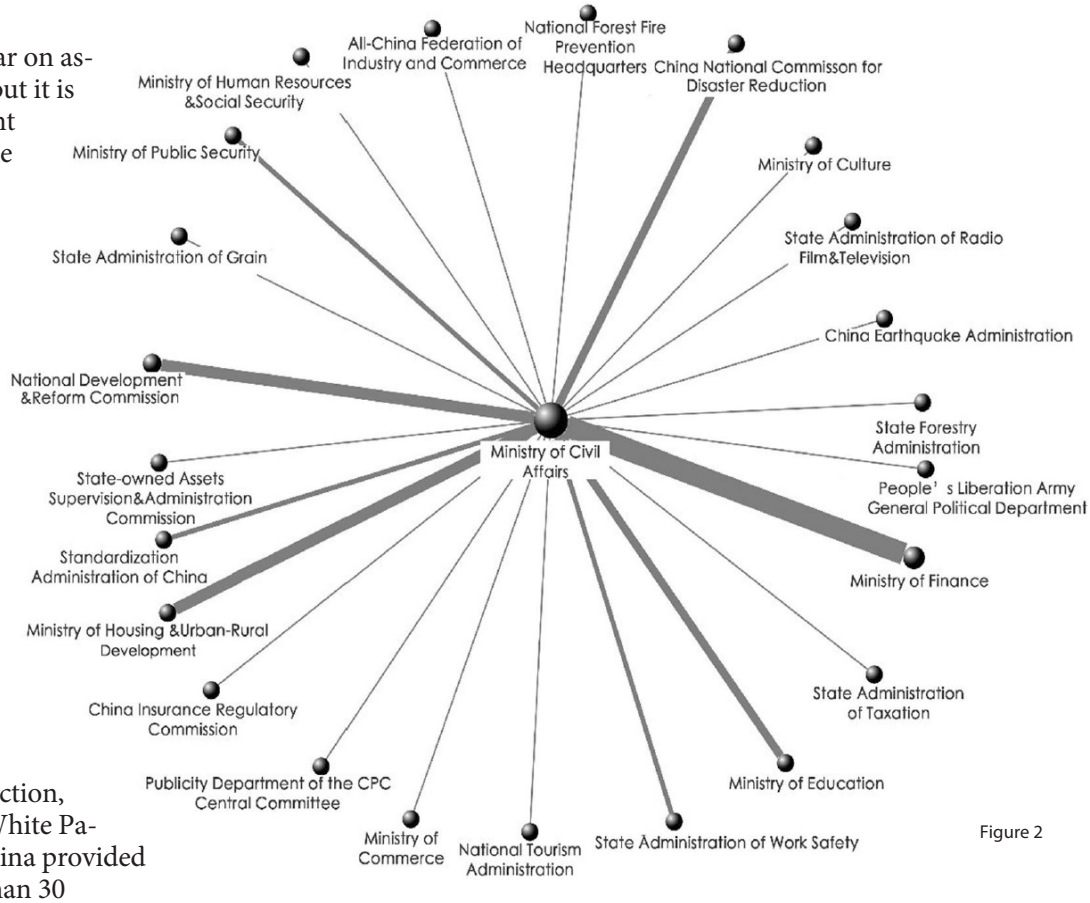


Figure 2

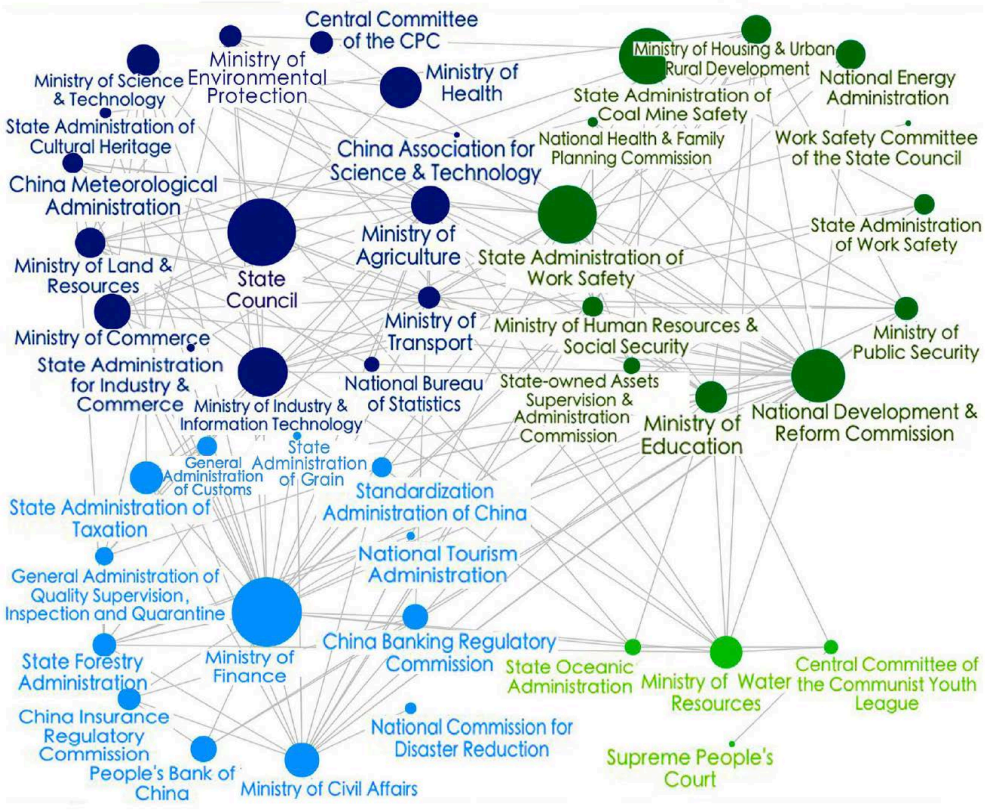


Figure 3

Figures 2 and 3 shows analyses done by Zhang et. al, which used publications and news to chart the relationships and the cooperation between different groups and branches from 2009 to the present (Zhang et. al., 67-70). Figure 2 shows how one ministry cooperates with other departments in the Chinese government. Figure 3 shows the domestic disaster planning using co-word analysis and cluster analysis which illuminates the complexity of Chinese HADR as well as the multiple domestic HADR hubs.

Notice that there are three key hubs around the State Council, the Ministry of Civil Affairs/Finance, and around the National Development and Reform Commission. The sprawling network shows that HADR groups in China are becoming more interconnected, and more cooperative.

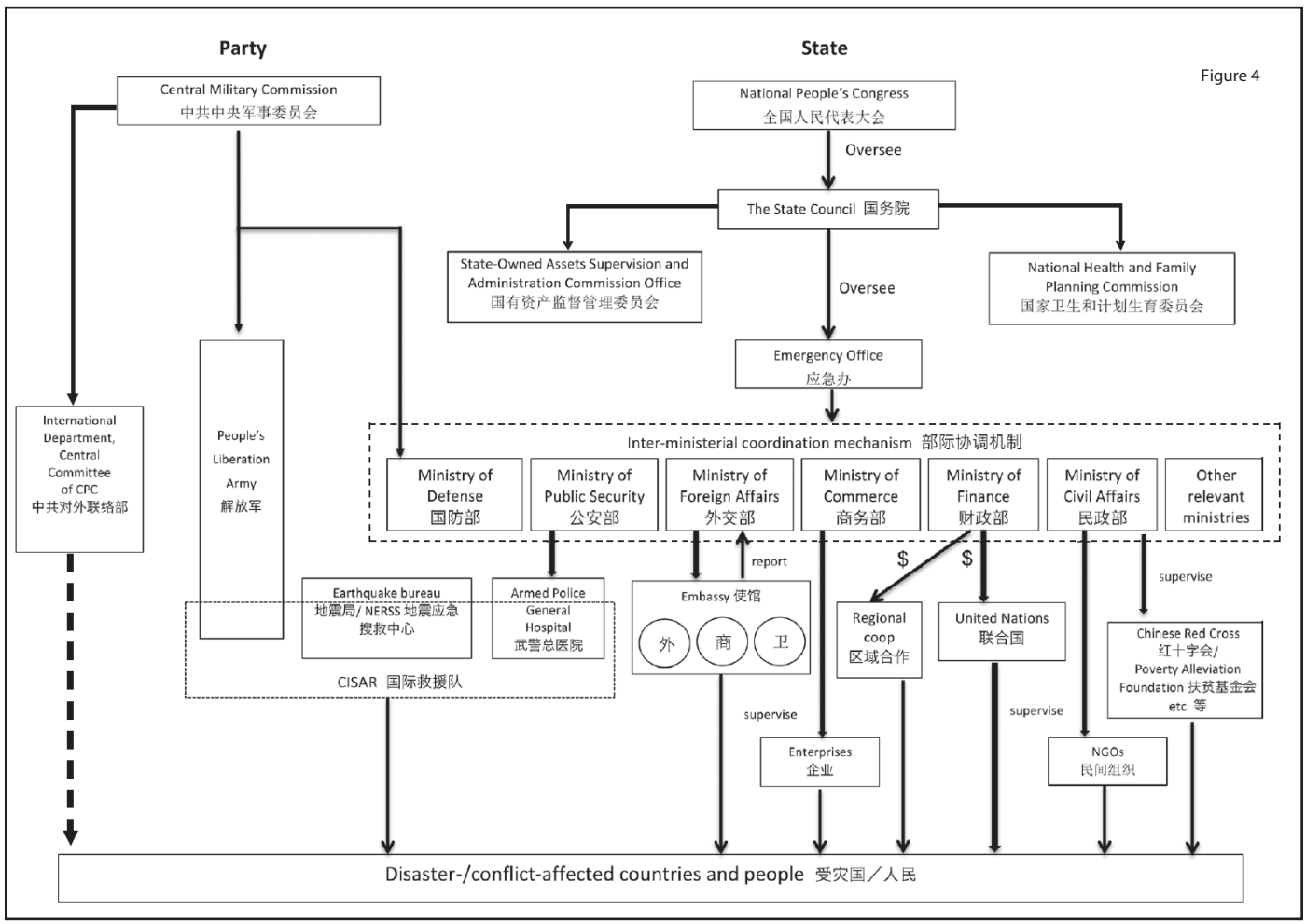
One last figure (Figure 4) comes from a piece by Miwa Hirono which outlines the general structure for how China implements aid. Again, this is a generic roadmap that outlines the process; which Hirono credits most HADR stemming from the state branch.

People's Liberation Army (PLA)

PLA's Changing Purpose

Historically, with international HADR, China and the PLA have been missing from, or were very small players. As China grows economically and politically, the climate and desire to contribute to HADR efforts changed. In 2004, Hu Jintao proposed what he called 'New Historic Missions' which shifted traditional national security priorities to include broader issues overseas such as counterterrorism, peacekeeping, piracy, and HADR as PLA missions (a1). Additionally, Chinese HADR is becoming an avenue to flex soft power, build diplomatic ties, as well as providing opportunities for the PLA to improve operations and capacity (Gunness,5; Yamashita and Iida 5-25). These missions were reinforced in the 2009 defense white paper which outlined the growing importance of overseas efforts (aforementioned such as counterterrorism, peacekeeping, anti-piracy, and HADR) and the logistics required to project force at a global level (Rinehart and Gitter, 27). China, like the international and academic

Figure 4



community, is beginning to recognize HADR as one of the fastest growing avenues to establish influence and access via the exercise of power in regions of interests (ibid, 27-31; Chase et al., 21). These terms: hard, soft, and smart power speak to literature in international relations as well as the thinking of prominent thinkers like Joseph Nye, Kenneth Waltz, John Ikenberry, Robert Keohane, Francis Fukuyama, and Hans Morgenthau. Hard power is military power essentially, while soft power is the ability to influence other actors to think or do as you do. Smart power is the application of both of these, which HADR accomplishes. Deploying HADR makes the assisting country look charitable and friendly as well allowing the assisting country to demonstrate operational competence. Furthermore, the consolidation of political power by President Xi Jinping, who aspires to build standing and clout at the international level as well as ending Pax Americana in the Pacific will certainly drive larger investments into HADR.

It is unlikely that China will abandon its burgeoning HADR efforts. Outside of political aspirations and consolidations, disasters in China are becoming more common due to the effects of global warming (Zhang et al., 1; Renwick, 27). Second, developing HADR efforts also prepare the PLA for domestic crises that could threaten political stability within China (Du et al., 1-3). Given that these forces are very unlikely to change, HADR efforts and goals are going to expand and become more core to China and the PLA.

Definitions, Policies, Procedures

Unlike most countries, China does not have clear and defined definitions and parameters for HADR policies and procedures (Hirono, 25; Aldrich et al., 298). This ambiguity extends within the Communist Party of China, the government, and the PLA as well as PLA documents (Chase et al., 36). Compared with other countries like the United States and European countries, HADR and foreign aid follow strict guidelines. But with China, little is formally published and what writings are in the public domain are vague. Many academics argue that this ambiguity, for the PLA and the CCP, opens doors to unconventional aid to countries or regimes which can advance a foreign policy agenda. Others say that the PLA might not disclose these rules and policies because China is still a relatively new player to this field. Accordingly, what is common for countries like the US with a long history of conducting HADR and assistance is not going to be the case for newcomers like China. Additionally, HADR programs are very small in relation to PLA activities and spending (ibid). One additional explanation for this might be the case that for most HADR scenarios the PLA has private pre-prepared plans or waits for direction from the State Council or Politburo (Gunness, 2; Aldrich, 295; Kang, 40). The other possibility is that published information and statements regarding policies and procedures are vague, internally misleading, or change with the constantly changing political headwinds (Gunness, 2; Rinehart and Gitter, 31).

Despite this strategic dearth of information, there are a few common traits and procedures that the PLA follows. The first and the most important is that the PLA is the central hub for HADR efforts (Hirono, 24). At lower levels, the PLA deploys specialist teams like the China International Rescue Team (CISAR) and other specific teams that this piece will discuss later, but the main procedure for HADR is for the PLA to rapidly mobilize and deliver supplies (Aum, 5). One important political point for the PLA and the CCP is to be seen as the first responders, and usually, the HADR efforts only include resources and basic supplies such as tents, medication, food, and water (2014 White Paper; Garafola and Heath, 23). To this point, the PLA provides the logistical support and framework to rapidly deploy forces, troops, experts, and HADR supplies to crises (ibid, 33; Rinehart and Gitter, 27).

The PLA is centralized around the Central Military Commision Joint Staff Department which is commanded by Li Zuocheng (Saunders and Chen, 46). This hub commands all theaters and forces, which extends to HADR efforts. Logistically, most of the assistance and resources are delivered by the 13th Transport Division with the PLA Air Force (PLAAF), as well as other activities like personnel recovery and participation of international exercises (Garafola and Heath, 9). Smaller groups and teams like CISAR and the Peace Ark provide some granular insights on PLA activities and procedures.

China International Search and Rescue Team (CISAR)

CISAR was founded in April 2001, and recent papers state that the organization incorporates many individuals from ranging organizations within the PLA as well as technical experts from bureaus that specialize on health and seismology for example (Jiong et al., 1). The primary focus of the group was for rapid response to earthquakes and similar disasters (Ibid). Presently, CISAR claims to employ 480 people ranging from administrators, technical experts as well as military, medical, and rescue teams (CISAR Website). Other sources say that there is 222 personnel on CISAR specifically from the PLA and the Earthquake Administration (Hirono, 25). And rounding on two decades of experience, CISAR is growing rapidly more proficient in the number and quality of responses. As of 2015, CISAR assisted in 12 international rescue or disaster missions which resulted in rescuing 63 survivors and medical assistance for more than 40,000 people (Jiong et al., 1). While CISAR is international, many of

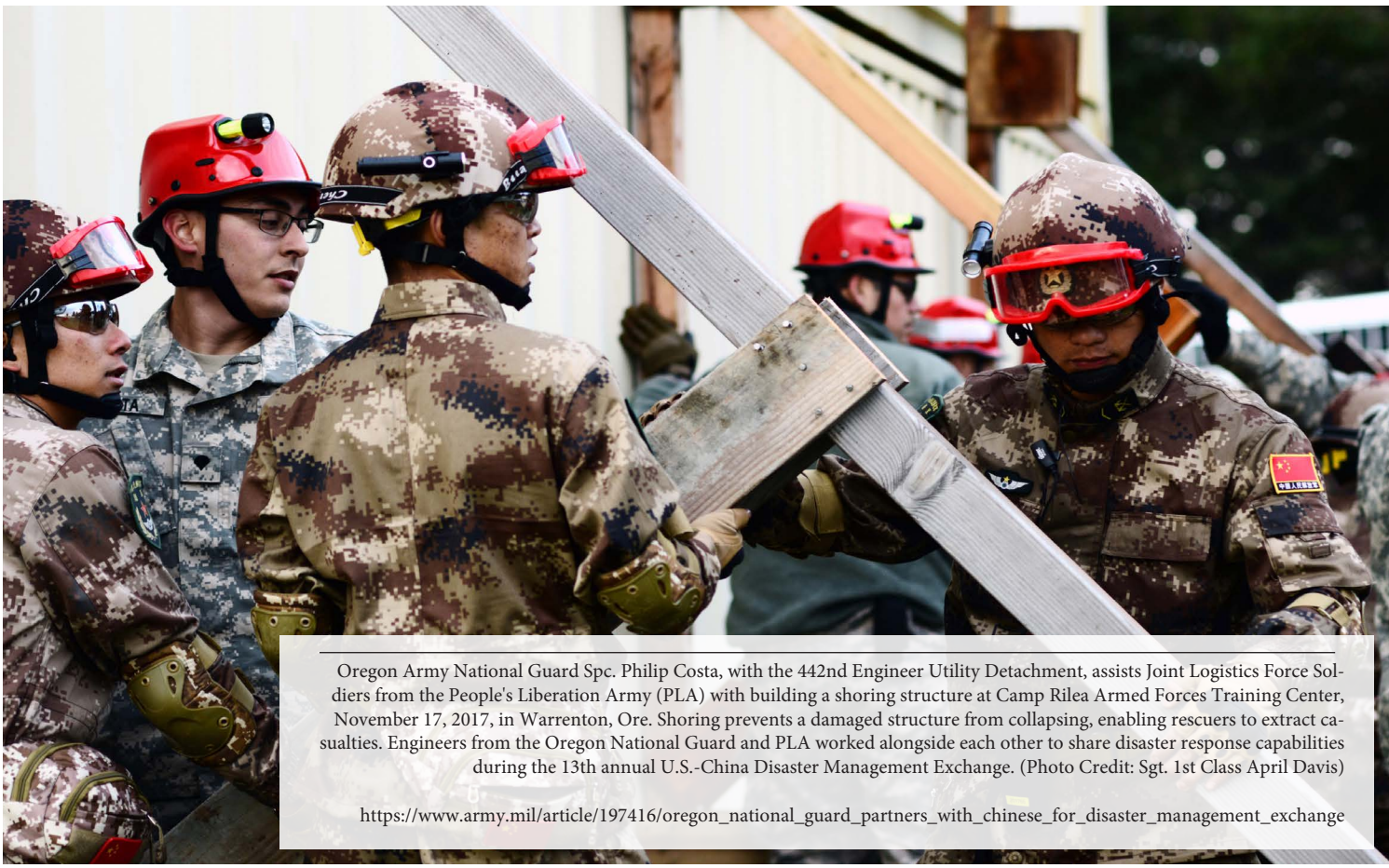
the efforts are directed towards regional neighbors such as Indonesia in 2004, Nepal in 2015, Japan in 2011, New Zealand 2011, Pakistan in 2005, and Thailand in 2018. However, there were countries like Haiti that are much further away, as well as domestic events which CISAR also responded to. The majority of public domain sources that cover CISAR responses are written by Xinhua or the People's Daily and the size of the team depends on the country and the magnitude of the event. The smallest team was 10 members sent to New Zealand in 2011, with 116 sent to Pakistan in 2010 (Xinhua, 27 April 2015).

Organizationally, the State Council, Ministry of Finance, Ministry of Foreign Affairs, and the General Staff Department of the PLA are the primary actors that decide where CISAR is dispatched (Yanzhong, 191). Much like other humanitarian assistance, the Communist Party of China is wary of doing too much international aid as domestically Chinese feel that problems at home should take precedence. Nevertheless, China recognizes that CISAR is one of the ways to demonstrate itself as a responsible power.

Smaller HADR Efforts and Missions

Similar to CISAR, Peace Ark (PA) is a medical Ship that conducts humanitarian assistance abroad in what is called 'Harmonious Mission' (Yamashita and Iida, 4-5). The PA, or the Daishandao, is an Anwei Class hospital ship as well as being the go-to floating hospital to send abroad (Diehl and Major, 276). These missions usually entail the PA docking in disaster areas and providing medical beds as well as medical services and training; up to 2015, there were three Harmonious Missions and four deployments of the PA (ibid, 22; Chase et al., 36). More recently, the PA stopped in Papua New Guinea, Vanuatu, Fiji, and Tonga (Dziedzic 2018). Much like other Chinese HADR efforts, PA missions are usually short and are geared towards building naval abilities and reach (ibid, 41).

Much like the PA, when responding to the 2014 Ebola crisis, China used the PLA to deploy medical units and experts as well as building medical centers, training local medical professionals, and developing diagnostic kits and eventually treatment drugs for Ebola (Huang, 1-3). In particular, 3 teams of experts totaling 115 people were sent to countries with confirmed cases of the illness (ibid, 3). Eventually, PLA experts and supporting teams created Ebola treatment centers as well as training local medical and engineering teams that later assisted other efforts to treat the crisis and the building of treatment centers, like the US



Oregon Army National Guard Spc. Philip Costa, with the 442nd Engineer Utility Detachment, assists Joint Logistics Force Soldiers from the People's Liberation Army (PLA) with building a shoring structure at Camp Rilea Armed Forces Training Center, November 17, 2017, in Warrenton, Ore. Shoring prevents a damaged structure from collapsing, enabling rescuers to extract casualties. Engineers from the Oregon National Guard and PLA worked alongside each other to share disaster response capabilities during the 13th annual U.S.-China Disaster Management Exchange. (Photo Credit: Sgt. 1st Class April Davis)

https://www.army.mil/article/197416/oregon_national_guard_partners_with_chinese_for_disaster_management_exchange

Army's treatment center in Liberia for example (ibid, 3).

One other example of PLA HADR is mine removal. Between 2001 and 2002 China provided equipment and experts around the world to clear mines (Yamashita and Iida, 25). Beyond equipment and experts, China also offers international training courses hosted by the Engineering Institute of Engineering Corps, a college at the PLA University of Science and Technology (ibid). While the process of removing mines does not fall into the HADR category for countries like the U.S., it is important to understand that the Chinese conception of HADR and HADR continuum are different.

PLA HADR Shortcomings and Goals

Despite the programs and efforts, it is important to understand that Chinese HADR projects and programs are still small and infrequent compared to the international community and the United States (Garafola and Heath, 23). More so, China frequently commits political blunders on HADR opportunities. Looking at the recent example of HADR efforts in response to Typhoon Yolanda, many countries like the U.S. marshaled significant aid resources as well as about 13,000 military personnel and 12 ships; whereas China initially offered $100,000 in aid (Capie, 310-320). Once media reports found out that Ikea, the Swedish Furniture Chain offered more in assistance to the Philippines, China quickly increased the assistance (Perlez 2013). To be sure, China is still improving and expanding efforts but the fact that China doesn't understand smart power creates serious shortcomings for China both in the magnitude of response efforts as well as the credibility of China's intentions. Furthermore, the lack of available information and transparency regarding the capabilities of Chinese HADR and PLA efforts as well as the goals and intentions of the HADR efforts only reinforces fears that HADR efforts are strictly hegemonic rather than humanitarian (Rinehart and Gitter, 27-29). By extension, the small size of Chinese HADR relative to other countries and competitors creates a serious and enduring credibility gap. Chinese HADR efforts, like Chinese foreign aid, suffer from continuous suspicion from host countries as well as the international community. Lastly, the PLA and the CCP are attempting to balance potentially opposing political forces. On one side, President Xi Jinping and the CCP continue building international clout and establishing China as a 'responsible power'; at the same time, most Chinese (although young Chinese are more open to aid than older Chinese) are very opposed to being active in HADR and foreign aid until all issues at home are resolved.

From the Chinese perspective, there are several strong incentives that drive HADR. The first being that HADR operations and events allow PLA troops and experts to build capacity to carry out rapid mobilizations as well as smoothing out operational issues (Chong, Smart Power, and Military Force, 239; Lin-Greenberg, 5). More so, with the case of the PA, CISAR, and the 13th Division, these international teams, and logistical chains allow the PLA to test drive activities and project Chinese power and agenda further from the mainland (Gunness, 5; Heath, 6; Lin-Greenberg, 6). In the same vein, HADR efforts allow China to establish and display military wherewithal as well as credibility (Chase et al., 21). Displaying the ability to rapidly dispatch teams and long range planes to disaster zones across the world speak to the logistical planning and abilities of the PLA.

Outside of the logistical benefits, HADR affords an avenue to indirectly compete with regional adversaries and potentially build diplomatic ties with smaller powers (Chong, Smart Power, and Military Force, 235). Despite the fact that domestic economic and political realities might change at any moment, building relations with other countries, especially in the Pacific is critically important to the political agenda of President Xi Jinping. Despite gaffes, HADR efforts are slowly establishing China as a 'responsible power' (Patalano, 33-35). By extension, building the clout of China around the world and in the Pacific would hypothetically grant China the ability to walk back Pax-Americana (cultural, military, and political dominance of the U.S. and its rules-based order) in the Pacific and reshape or change the standing global norms. Beijing understands that soft power is incredibly important, as well as understanding that HADR efforts present the opportunity to catch up to the U.S. both in terms of hard and soft power (Chong, International Security in the Asia-Pacific, 377). While displacing American soft power in the Pacific and building ties with neighbors are the goals of HADR efforts, the reality is that these ambitions are still far from fruition.

Comparing these two overarching goals, it is likely the case that the ability of HADR to establish PLA abilities as well as troubleshooting PLA weaknesses is more valuable to China than potential political goals. This is in part due to China being quite aware that other countries still distrust Chinese aid and efforts; increases in operational capacity, logistical range, and mobilization are tangible benefits for Beijing. Domestically, improved PLA capacity decreases the risk of domestic unrest following disaster or political unrest; and by extension, that means that the regime is more assured. Certainly, political gains and increasing clout are valuable to China's foreign policy but Beijing is quite aware that the HADR project to build that clout takes time, resources, and political will that might not always be there.

Recommendations

Planning ahead, there are three primary recommendations for policymakers and practitioners. First and fore-

most, CFE-DM and agencies should strive to get Beijing, contacts, or even CSOs to outline formal policies and procedures. Of course, these formal rules and regulations might change with the prevailing political headwinds or a recent crisis, as well as the simple fact that getting this information might force changes in policy or regulation, for better or for worse. However, facilitating more transparent rules and policies with Chinese HADR allows for a more stable and diplomatic environment within HADR. Furthermore, more transparent practices might bring China more into the humanitarian fold. Realistically, these definitions, frameworks, and directions would have to come from senior officials who will remain within the locus of power for several years. Organizationally, local cadres might shed some meaningful light on finer details but longer and lasting procedures will come from decision-makers at the top. With the PLA, definitions and procedures might come to light if the U.S. and China work or conduct HADR drills together. Some academics and experts postulate that Chinese HADR will become more transparent over time, but this remains to be seen. In terms of utility and cost, coaxing Beijing to more transparent practices is the best immediate and ongoing course of action. Furthermore, getting Beijing to establish its definitions and codes of conduct would allow the U.S. and regional neighbors in the Pacific to glean the intentions of the Chinese. Such knowledge could reduce tensions in the Pacific while establishing a common set, or a known set of definitions that state could work with.

Second, efforts to work with Chinese HADR domestically and internationally should be increased. Similar to the first recommendation, increasing collaboration between the U.S. and China on HADR training and events removes strategic ambiguity around Chinese efforts while also allowing both parties to participate in capacity building exercises. At the domestic level, CFE-DM and other organizations should work with local American and Chinese embassies as those are the point-people on local disasters. Other contact points would be the National Commission for Disaster Reduction, as it has direct contacts and reporting from several dozen branches. It might also be wise to reach out to much smaller ministries and agencies, even topic specific agencies like the Seismological Bureau; however it is likely that any cooperation between agencies/ministries would require high level approval anyways. With CFE-DM's military connections it might be difficult to build lasting and domestic collaboration as the CCP will fear that the U.S. military is trying to collect sensitive and applicable information. Additionally, the CCP will certainly fear locals and citizens viewing increasing international assistance domestically as a sign of the CCPs inability to resolve domestic crises or instability. Such a perception of weakness or the inability to maintain 'social harmony' or stability is one of the CCPs foremost fears. If such collaboration was possible and permitted, American embassies would have to coordinate with local governments as well as establishing connections and communications with the pertinent ministries. Being that this information is not public and that the nature of a specific crisis would change which actors play a role, or even if new agencies or subgroups are created to cope with the crisis, makes specific policy proposals impossible. One dynamic that can be predicted is that smaller events would likely remain within the purview of the local government, whereas significant events like the 2003 SARS outbreak or the 2008 Sichuan earthquake would become the purview of the State Council and senior CCP members.

Internationally, there will be greater leeway to work with the Chinese. From the Chinese perspective, working with CFE-DM and partners on HADR in the Pacific is a likely course to boost its international reputation as well as creating opportunities to build capacity and showcase its abilities. In practice, conducting drills and working with other countries in activities that allow each person to observe the capacity of the other person reduces risks of miscalculation down the line. Of course, the risk of alienating domestic support will factor in, but given the desire of President Xi Jinping and ranking CCP members to build international clout it is likely that China will work with CFE-DM and others despite risks in doing so. Organizationally, the Ministry of Commerce is the point of contact. Given that most international Chinese aid and HADR flows from commerce under the direction of the State Council, this is the starting point. Again, creating these efforts to work with the Chinese more regularly might create the dynamic for the Chinese to open up and formally define policies and procedures. If nothing else, working frequently with the Chinese HADR teams would allow observation and speculation on procedures and policies.

Realistically, the Chinese will continue to maintain ambiguity over terms and policies as once they set specific guidelines they will close off potential actions down the road. The best course of action for CFE-DM and partners is to try to promote cooperation and collaboration which can build capacity for all elements as well as allowing American HADR teams and CFE-DM to work with and observe Chinese efforts. Again understandably, the Chinese will be cautious about CFE-DM considering its military nature and most American efforts. Nevertheless, progressive steps to build transparency and to collaborate with Chinese HADR might drive greater Chinese efforts and transparency.

Third, given the growing importance of CSOs in HADR efforts, there might be inroads with Chinese and international CSO's that operate in China. Following the trend of the previous recommendations, this will also be tricky and difficult. Considering CSOs are a recent trend

in Domestic HADR, CSOs and NGOs are likely to be worried that cooperation and collaboration with CFE-DM would cause blacklisting or legal issues. Such fears are certainly amplified by the fact that CSOs wield little power and can be removed from the scene as quickly as they entered. On the other hand, CSOs might be more open to discussing policies and procedures expressed to them by local or national figures. If approached cautiously and with the government fully apprised, CSOs and NGOs in China could provide a valuable inroad to foster trust on HADR efforts as well as bringing clarity to the process. Furthermore, local organizations are more likely to provide more honest and transparent information about common HADR practices and policies.

Conclusion

Looking forward, Chinese HADR capabilities are likely to increase. Domestically CSOs will continue to integrate into HADR networks which create opportunities for the international community to build HADR ties. Furthermore, interviews with local cadres highlight the paramount importance of the CCP to maintain credibility in their ability to swiftly respond to local disasters. Internationally, China will continue to expand efforts and capacity within HADR as China attempts to assert itself as a 'responsible power', or at the very lease operationally proficient. The majority of aid and assistance will likely go to countries and areas of strategic interest. In terms of policy and procedure, it remains to be seen whether or not transparency will increase. Recent U.S.-Sino political turbulence casts serious doubts. Throughout the literature, and many sources from this year frequently refer to Chinese HADR as an 'information black hole'. From the perspective of the CCP, ambiguity on policies and procedures remains a strategic option which keeps domestic concerns low while allowing for more options with international HADR. Although, there is a risk that China forgoes the path for soft power and utilizes HADR to build and establish sharp power in strategic areas. Established cooperation with China on HADR is becoming more difficult and unlikely, but the United States should try nevertheless. For the United States, HADR operations remain important operations to showcase values and commitment to the region as well as providing a non-conflict sphere for competition with China.

For CFE-DM, prioritizing key members of high rank or central hubs within the decision-making process such as the State Council, Ministry of Finance or of Foreign Affairs would more likely allow HADR efforts to outlast rapid changes from recent disasters or political headwinds.

Soldiers from the People's Liberation Army (PLA) listen to a briefing in preparation for a search and extraction exchange during the 13th annual U.S.-China Disaster Management Exchange at Camp Rilea Armed Forces Training Center, November 16, 2017, in Warrenton, Ore. U.S. Army Pacific hosts the annual exchange with the PLA to foster mutual trust and understanding while sharing lessons learned to increase disaster response capabilities in the Pacific region. (Photo Credit: Sgt. 1st Class April Davis)

https://www.army.mil/article/197416/oregon_national_guard_partners_with_chinese_for_disaster_management_exchange

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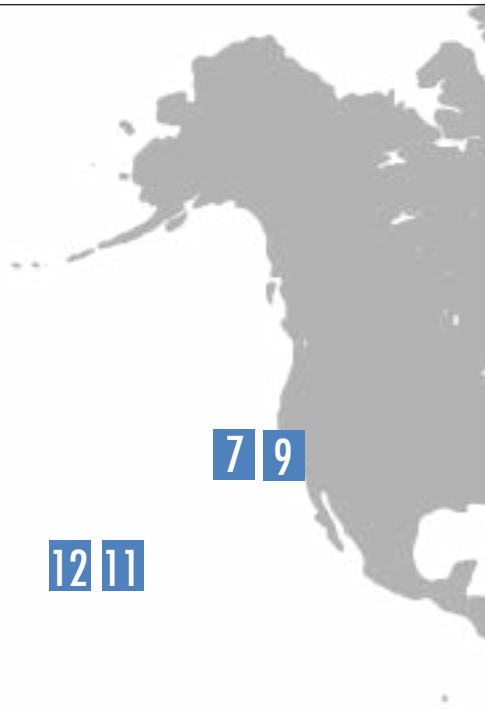

1 **Center for Excellence in Disaster Management & Humanitarian Assistance**
HART III MEF / 3rd MEB
January 14-17
Okinawa, Japan

2 **ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management**
AHA Center Civ-Mil Course
January 19-26
Indonesia

3 **Regional Consultative Group & UN Office for the Coordination of Humanitarian Affairs.**
RCG Annual Meeting
January 24-26
Dhaka, Bangladesh

4 **Center for Excellence in Disaster Management & Humanitarian Assistance**
HART - NATO Joint Force Command
January 28-31
Naples, Italy

5 **U.S. INDO-PACIFIC COMMAND**
Balikatan 2019 FPC
January 29 - February 2
Manila, Philippines

6 **UN Office for the Coordination of Humanitarian Affairs & Swiss Agency for Development and Cooperation.**
Humanitarian Networks and Partnership Week
February 4-7
Geneva, Switzerland

7 **U.S. PACIFIC FLEET**
RIMPAC 2020 CDC
February 4-7
San Diego CA

8 **U.S. INDO-PACIFIC COMMAND**
Cobra Gold 2019
February 11-28
Bangkok, Thailand

9 **U.S. PACIFIC FLEET**
Pacific Partnership FPC 2019
February 19-22
San Diego, CA

10 **Regional Consultative Group & UN Office for the Coordination of Humanitarian Affairs.**
COORES '19 FPC
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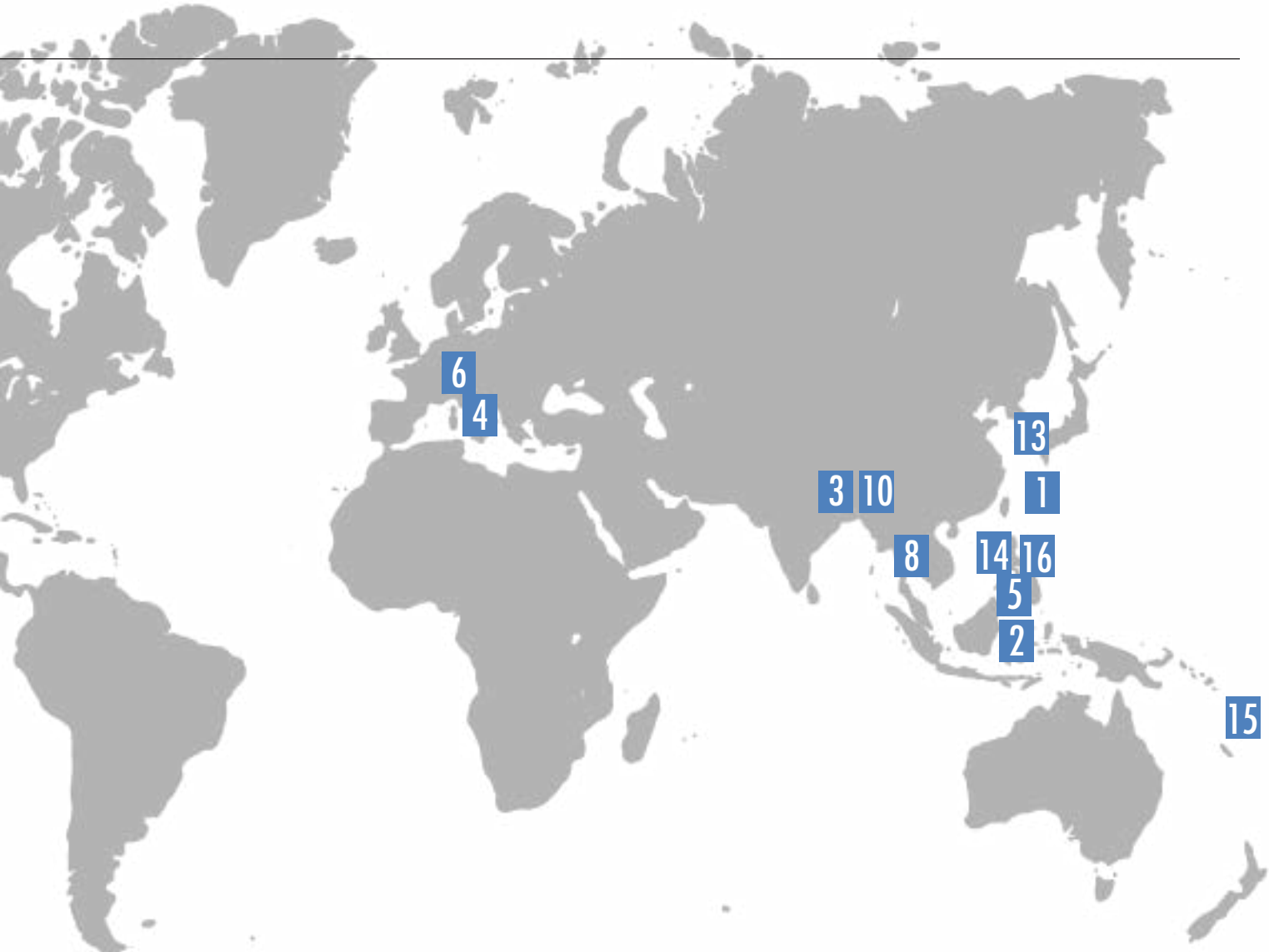

11 TechConnect and U.S. INDO-PACIFIC COMMAND
Pacific Operational Science & Technology (POST) Conference 2019
March 4-8, 2019
Honolulu, Hawaii

12 Center for Excellence in Disaster Management & Humanitarian Assistance
USINDOPACOM HART COURSE
March 5-8
Ford Island Hawaii

13 Center for Excellence in Disaster Management & Humanitarian Assistance
USFK HART Course
March 11-15
Seoul, South Korea

14 U.S. PACIFIC FLEET
Pacific Partnership
UNOCHA CMCoord Course
March 12-15
Manila, Philippines

15 U.S. INDO-PACIFIC COMMAND
Tempest Express (TE34)
March 14-20
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16 U.S. INDO-PACIFIC COMMAND
Balikatan 2019 (BK19)
April 1-14
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