After serious flooding in Haiti's north, its government, with support of United Nations Mission in Haiti and other UN agencies, responded with evacuations, temporary shelters, and distribution of food and supplies, November 11, 2014 (UN/Logan Abassi)

Climate Change and Urbanization
Challenges to Global Security and Stability

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Two global trends that present monumental new challenges for civil-military coordination in humanitarian crises are urbanization—the growth of cities across the world—and climate change. The following article explains how these two trends and their interactive effects will increasingly complicate and test civil-military coordination in human-itarian crises. Each trend individually intensifies the risk for crises and makes responses remarkably more compli-cated. The manner in which these two trends interact to drive and escalate further crises is also becoming clearer. The humanitarian community has begun to address these challenges in its operations by debating their impact on coordination and thinking through

potential actions that can facilitate more resilient approaches to crisis preparedness. Militaries, increasingly engaged in supporting humanitarian missions in both natural disaster and conflict settings, face a rapidly changing environment. Civil-military coordination in these crises must be re-examined, and militaries must adapt to this shifting landscape in order to operate effectively with humanitarian actors.

Climate Change and Cities

Climate change greatly exacerbates and complicates known threats affecting urban areas. The role that climate change plays in driving and compounding natural disasters, displacement, pandemics, and even conflict in cities forces militaries to rethink how they conduct humanitarian assistance and disaster response operations. The Intergovernmental Panel on Climate Change (IPCC) predicts an average sea level rise of 0.4 meters by 2100 in the best and least-likely scenario, but projections with unchecked emissions predict a rise of up to two meters.[1] Global temperature is forecast to increase by 2 to 3 degrees Celsius by the end of the century keeping current emissions commitments.[2] This rise in temperature alters precipitation and ocean atmospheric patterns, increasing the severity and frequency of storms.[3] By 2030, two-thirds of the global population is expected to live within 100 miles of a coastline, with over 1 billion people expected to live in low-lying coastal zones, those within 10 meters of sea level.[4] A majority of megacities, those with populations above 10 million, contain this vulnerable geographic zone and climate change places these urban centers at risk.[5]

Additionally, sea level rise and warming have multiple destructive consequences as they contribute to food insecurity, drive population displacement, and in some cases, conflict. Many experts predict that hundreds of millions of people will migrate in the next few decades due to environmental change that will cause drought and increase the salinity of freshwater sources, leading to food shortages and loss of agricultural livelihoods.[6]

For many, this will be unpredictable, sudden, and maladaptive displacement within and across borders. This displacement will be increasingly into urban areas where the majority of refugees now live.[7]

Both urbanization and climate change also collude to increase the global risk of pandemics. The 2014 Ebola outbreak in West Africa and the recent Zika virus epidemic demonstrate how infectious pathogens can have devastating consequences in a globalized and urban world, with increasing density and inadequate public health and healthcare systems. Previously self-limiting outbreaks can now enter the cauldron of urban slums that receive both migrants and displaced populations within a dense urban landscape, aggressively facilitating the spread of disease. Without the capacity to detect, respond, and quarantine effectively and safely, growing cities fueled the Ebola epidemic in West Africa, threatening a pandemic. Climate change contributes as well by dramatically altering environments. Greater humidity enhances the range and altitude of mosquitos, while warming waters allow conditions for cholera to spread beyond its typical locales, respectively.[8]

Climate Change and Conflict

Climate refugees are, in and of themselves, imperatives for humanitarian action, but they can also demographically and economically stress local host populations and lead to conflict. While no causal link has been proved, the pathway is becoming more evident.[9] Former Secretary-General of the United Nations (UN) Ban Ki-moon cited the Darfur conflict as a potential example of climate change–induced conflict, as drought drove displacement and ultimately led to conflict.[10]

While climate change has historically been a polarizing topic in U.S. politics, the Intelligence Community, in 2008, prepared the *National Intelligence Assessment on the National Security Implications of Global Climate Change to 2030*. This assessment notes that

we judge global climate change will have wide-ranging implications for U.S.

national security interests over the next 20 years. . . . The United States depends on a smooth-functioning international system ensuring the flow of trade and market access to critical raw materials such as oil and gas, and security for its allies and partners. Climate change and climate change policies could affect all of these—domestic stability in a number of key states, the opening of new sea lanes and access to raw materials, and the global economy more broadly—with significant geopolitical consequences.[11]

There have been numerous updates since this initial assessment, culminating in the September 2016 release by the U.S. Intelligence Community and National Intelligence Council of a memorandum, *Implications for U.S. National Security of Anticipated Climate Change*.

This memorandum highlighted that climate change "will almost certainly have significant effects, both direct and indirect, across social, economic, political, and security realms during the next 20 years. These effects will be all the more pronounced as people continue to concentrate in climate-vulnerable locations, such as coastal areas, water-stressed regions, and ever-growing cities."[12] The nexus of climate change and urbanization present wide-ranging threats to not only U.S. national security, but also global security and stability and the health and welfare of potentially billions of vulnerable people.

Cities and Conflict

Humanitarian response in cities is incredibly challenging, particularly in those afflicted by conflict. As power is typically defined by territorial control, cities represent the most valuable domain in conflict and serve as one of the principal metrics by which to measure control. Cities serve as the seats of power and the battlefields of modern conflict.[13] Coordinating with a humanitarian response in conflict will entail actively engaging these new urban landscapes. The layout and density of these rapidly growing urban spaces present concrete operational challenges. Large swaths of informal settlements,

Fire Controlman from USS *Lake Erie* works with Sri Lankan marines to repair levees in Matara, Sri Lanka, during humanitarian assistance operations in wake of severe flooding and landslides, June 12, 2017 (U.S. Navy/Joshua Fulton)

or slums, which represent over 50 percent of many urban environments, are a hallmark of growing cities.[14] These are often unmapped areas, marked by narrow ingress and egress routes and little to no lighting. Most have proved difficult or nearly impossible to police and many have been ceded in all intents and purposes to criminal elements.[15] In fact, in many of these cities, state authorities do not have a monopoly on power or violence, with multiple actors who are not bound by international humanitarian law effectively in control of many parts of the city. Displayed most prominently in Latin American cities, criminal violence has led to homicide rates that exceed violent death rates in some declared wars.[16] Militaries that engage in humanitarian operations,

either to support logistics or provide security, face a multitude of challenges that they may not have dealt with in the past and, therefore, have not been trained to effectively respond to.

The Complexity of Urban Response

Due to rapid urbanization, over 50 percent of the global population now lives in urban areas. This is accelerating at a pace that will see the urban population grow to 66 percent of the global total by 2050, while the rural population declines.[17] Humanitarian response will increasingly take place in these rapidly growing cities as they concentrate the risks and hazards to natural and man-made disasters. Unregulated growth, deficiencies in basic services, inadequate

disaster preparedness, and poor mitigation efforts place populations at greater risk for crises that will necessitate an international humanitarian response.[18]

The very nature of humanitarian response is being rethought because of urbanization's increasing complexity.[19] Urban crises now entail a much broader variety of actors aside from international aid agencies, state authorities, and national militaries. There is a larger role being played by municipal authorities that increasingly lead and coordinate aid responses. Local community-based organizations and nongovernmental organizations provide goods and services before, during, and after a crisis, and may be a major source of on-the-ground efforts during an urban response. Similarly, the private sector provides the majority

of goods and services in urban areas, and they are an important part of the initial response and recovery.[20] This is increasingly recognized by humanitarian organizations that now engage in market analyses and cash transfers, as well as support markets, rather than simply delivering hard goods. There are also myriad stakeholders that must be taken into account, especially local communities affected by the crisis, among other informal and formal powerbrokers. As described above, various powerbrokers may control territory and even provide what traditionally have been public services, such as a mafia organization providing electricity. Humanitarian engagement in these environments requires a deep contextual understanding of local communities. Militaries coordinating with civilian actors will face similar complexities, even when they refrain from the "retail" or service delivery side of the response. The very need to coordinate with numerous actors and authorities will necessitate a re-examination and modification, at the least, of standard operating procedures and traditional frameworks for engagement.

The humanitarian community itself is reassessing its approach to coordination in urban crises, with much of the above informing the new Urban Crises Charter released by the Global Alliance for Urban Crises at the May 2016 World Humanitarian Summit.[21] This charter emphasizes the need to promote a localized and holistic approach to humanitarian response, with a detailed contextual analysis and local participation and ownership of the process. These ideas have permeated various emerging methods such as area-based programming as well as a settlement approach to urban response. While the humanitarian architecture continues to evolve to better deal with urban challenges, militaries coordinating in these crises must similarly adapt, whether coordinating to support logistics, conducting engineering and infrastructure support, or providing protection for a humanitarian mandate.

Military Operations
Urbanization poses massive security, logistics, health, and healthcare challenges to any current or future humanitarian response that will take place in or around a megacity. Most international militaries do not specialize or routinely train for urban operations. Even the U.S. Army, arguably the world's most capable modern ground force, is not designed to operate in complex urban settings. U.S. Army Chief of Staff, General Mark A. Milley, has publicly stated that the Service "has been designed, manned, trained and equipped for the last 241 years to operate primarily in rural areas." He further elaborated that the Army needs to prepare "for operations in urban areas, highly dense urban areas, and that's a different construct. We're not organized like that right now."[22] Tragic recent and ongoing humanitarian crises in relatively small cities, including Aleppo, Syria (~2.5 million people in 2012), and Mosul, Iraq (~664,000 people in 2015), have highlighted the unique dangers that exist to vulnerable people, medical responders, and humanitarian organizations in urban environments. Not only have these groups found themselves under nearly constant attack by militaries and non-state actors, but they also cannot easily gain access to food, water, medicine, and other basic lifesaving needs.

Observing the death toll of hundreds of thousands of innocent civilians in Aleppo, Syria, from 2001 to 2016—and then considering the fact that Aleppo is not even in the top 150 cities in the world by population—should serve as a warning beacon for humanity to more effectively think through future conflicts and humanitarian emergencies in large cities.[23] In these urban environments, comprehensive civil-military coordination becomes an even greater imperative to ensure that access to vulnerable people is gained and maintained until the conflict is resolved or an enduring ceasefire is implemented.

Opportunities
Given the challenges for military engagement regarding the acute phase of an urban humanitarian response listed above, there may be an increasing role and opportunity to improve civil-military coordination in the pre-disaster phase. Performing these activities in predictably high-risk cities, where politically feasible and in line with national interests, opens an area of military engagement in humanitarian efforts as part of a potentially larger grand strategy. Cities that have existing military bases and ongoing activity present a logical starting point with clear direct benefits for those military installations, the communities they are collocated with, and overall efforts by all actors in the humanitarian ecosystem to improve responses.

More frequent, realistic, and robust simulations and exercises with specific involvement of municipal authorities, local nongovernmental organizations, and stakeholders from selected cities, along with the UN and major humanitarian agencies, may help improve humanitarian response and coordination in future crises. When appropriate, including international militaries in these simulations and exercises may allow key relationships to form prior to disasters and provide all actors with a deeper understanding of challenges and opportunities for improving coordination. Also, frameworks and processes for coordination can be explored and tested in the non-acute disaster phase.

Various militaries are engaged in efforts to improve coordination (for example, U.S. Pacific Command's Rim of the Pacific [RIMPAC] exercise), and sometimes the efforts include key civilian actors from the humanitarian response community. From RIMPAC and other similar exercises and simulations, there is an excellent opportunity to take best practices from civilian-civilian and military-military coordination tools and methods and learn from them to improve civil-military coordination.

Taking global scenarios and long-term predictions of climate change down to likely scenarios, over shorter time frames and for specific regions and cities, may help identify hotspots—indicators for early warning—and develop tools that decisionmakers can use in urban planning, forward deployment of resources, disaster preparedness, and humanitarian response planning. These are shared interests among civilian and military actors

U.S. Servicemembers assigned to Combined Joint Task Force–Horn of Africa periodically visit children in Caritas Djibouti mission in downtown Djibouti to donate food items, toys, clothing and supplies, April 26, 2017 (U.S. Air Force/Eboni Prince)

and may very well serve as a rallying point due to the perceived neutrality of diverse actors coming together in a "safe" academic setting.

Similarly, shared tools and efforts to understand and map the key actors and factors that influence and dictate the security environment, particularly for vulnerable populations, present a common area for work. This may also encourage a wider discussion on how militaries may better comply with international humanitarian law or provide protection and access within humanitarian corridors in conflict environments.

Finally, increased interaction between academics from civilian and military universities—specifically those engaged in humanitarian research and education fields—allows a unique opportunity to conduct research and writing that tackles some of the most pressing issues facing vulnerable people and communities both in urban environments and due to climate change. Academics from military universities often have tremendous influence on the development and evolution of military doctrine within their nation's military. The same can be said for academics from civilian universities who frequently work closely with, and often deploy in support of, humanitarian organizations, and therefore can help drive process and framework improvements for humanitarian responses. Expanding opportunities for civil-military academics to exchange ideas in symposia, classrooms, and simulations may only further accelerate improvements to civil-military coordination efforts.

Conclusions

The profound challenges that urbanization and climate change present for humanitarian response and thus civil-military coordination in disasters and conflict settings require focused discussion and reevaluation. A new model or architecture for civil-military coordination may be required as global challenges become increasingly complex. Better communication remains a priority and becomes imperative in the face of these new complex challenges. Humanitarians tend to use open communication platforms and new technologies such as Web-based assessment tools, crowd-sourcing, and open street mapping; these innovative approaches are pushing the envelope further. Military communication systems, by design, are closed, often classified in nature, and value information control. A new communications platform for shared resources may better enable aid agencies and militaries to coordinate with each other, let alone with local actors that are increasingly taking a more prominent role in humanitarian response.

Humanitarian actors may also have to align closer to certain international military efforts, in some cases of conflict, to ensure access to populations in need. At the very least, humanitarian and military communities will benefit from exploring new models of coordination together. Options to improve the effectiveness and efficiency of civil-military engagement include joint training, workshops, simulations, and research collaborations where we can explore broad approaches to better innovate together. While certain goals to improve civil-military coordination can be described conceptually, designing a new operational framework is far off until humanitarian actors and militaries commit the time and resources to working together in safe spaces such as conferences and classrooms. The next decade will force all actors to collectively pursue inventive solutions to coordination challenges in these complex crises, and new modes of operation and patterns of engagement may develop on the ground before any pre-defined protocols are formalized. Honest and collaborative discussions and explorations of new civil-military coordination frameworks and processes are urgently needed to keep pace with a rapidly changing and increasingly dangerous world. **JFQ**

Notes

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