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Future directions in civil-military responses to natural disasters

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The big picture: natural disasters in the future

Over the last ten years natural disasters affected more than 2.4 billion people—the equivalent of one-third of the earth's population—and they have wrought over $910 billion in damages—equivalent to approximately 18 percent of global GDP.[1]

Natural disasters affect not only individuals and communities but also economies, governments and the international system. The 373 natural disasters recorded by the International Disaster Database EM-DAT in 2010 affected some 300 million people from all regions: 300 000 lost their lives and many more suffered injuries, family separation and other trauma. Sudden-onset disasters displaced 42 million people from their homes and caused $108.5 billion in economic losses. Ninety-two per cent of the disasters in 2010 were climate-related.[2] The number of disasters has increased in recent decades—from about 100 to 150 a year in the early 1980s to an annual average of 392 during the 2000 to 2009 decade.[3]

The projections are that the frequency and intensity of sudden-onset climate-related natural disasters—particularly storms, hurricanes, cyclones and flooding—will increase in the future as a result of global warming.[4] With projected population increases, increased urbanisation and economic growth, it is likely that disasters will affect more people and cause greater economic damage. Climate change will also encourage rural-to-urban migration. As droughts, dry conditions and unpredictability in rainfall patterns increase, pressure will grow on rural communities and they will move to cities in search of livelihoods. Climate change is also expected to reduce potential agricultural output by up to 30 per cent in Africa and up to 21 per cent in Asia[5], further adding to both migratory pressure and food insecurity. Natural disasters will continue to affect developed as well as developing countries, with far higher loss of life in developing countries and far greater economic damage in developed countries.

It is expected that rising sea levels will particularly affect the nearly 634 million people—a tenth of the world's population—who live in at-risk coastal areas, just a few metres above existing sea levels.[6] The impact of sea-level rise will be felt in a variety of ways, from increased salinisation of water on Pacific islands to thawing of the permafrost in the Arctic.[7] In a recent article Robin Bronen

points out that winter temperatures have increased by an average of 2.0–3.5° since 1975 in the Arctic, causing the rapid disappearance of ice, increased erosion, increased exposure of communities to autumnal storms, and thawing of the permafrost, which is the 'glue' that keeps the land intact and habitable.[8]

Although 'natural disaster' is a widely used term, it is important to point out that natural hazards do not in themselves constitute disasters: rather, it is the interaction between natural phenomena and human actions that creates disasters. Deforestation, for example, has led heavy rains to cause landslides in Central America and Nepal, while the failure to maintain levees along the southern Mississippi River intensified the effects of Hurricane Katrina.[9]

The Inter-Agency Standing Committee (the global coordination body, with representation of all international humanitarian organisations) has defined a 'disaster' as 'a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources'.[10] In other words, the impact of natural disasters is a function of both the severity of the natural hazard and the capacity of the population to deal with it. One analyst noted, for example, that a citizen of Haiti had an 8 per cent chance of dying in violent shaking during the January 2010 earthquake, while a person living in Chile had only a 0.01 per cent chance of dying, even though the February 2010 Chilean earthquake released 400 times more energy than the Haitian earthquake.[11]

Most attention and media coverage focuses on mega-disasters—such as the Japan earthquake of 2011 or the Pakistan floods of 2010—but the fact is that 90 per cent of disasters cause fewer than 50 casualties[12], and (although there is no research on this) it seems likely that the cumulative effect of small disasters could be considerable on communities. The concentration of attention on mega-disasters is paralleled by funding trends. More than 95.56 per cent of international disaster funding in 2010 went to only two emergencies—the Haitian earthquake and the Pakistani floods—while the remaining 3.54 per cent of humanitarian funds was shared between 54 other disasters. The other 317 recorded disasters received no international funding, or at least were not included in the UN's Financial Tracking System.[13]

While awareness of the need to respond quickly and effectively to communities affected by disasters has grown, there has also been increasing recognition that disaster response involves more than rapid mobilisation of assets to deliver assistance and that protection and human rights considerations must also be incorporated in the response.[14] After the 2004 Indian ocean tsunami, reports of discriminatory access to assistance, violence in temporary shelters and other protection concerns led the Inter-Agency Standing Committee to adopt the Operational Guidelines on the Protection of Persons in Situations of Natural Disasters.[15]

Although it is the responsibility of national governments to protect and assist those living in their countries when disasters strike, governments themselves are often weakened by disaster and lack the capacity to respond adequately. In some cases this leads international players to substitute for governments, which can have the paradoxical effect of actually weakening national capacity.[16] The international humanitarian system is already stretched to respond to present disasters; it will be even more stretched in the future. The humanitarian system that has developed in the past five or six decades is made up of a multitude of actors—UN agencies, government aid departments, the Red Cross Red Crescent movement, international and national non-government organisations, local civil society groups, military forces, and an increasing number of non-traditional participants such as business and militias. In the aftermath of the earthquake in Haiti, for example, hundreds of community groups and NGOs arrived in the country, most of them with the best intentions but with little experience in disaster response.

This proliferation of participants has created enormous coordination problems. Systems that work effectively with 20 or 30 participants are overstretched when hundreds of organisations are involved. There are particular difficulties coordinating the efforts of national governments, international humanitarian organisations and local civil society groups. The fundamental question is whether the current 'business model' of humanitarian assistance is capable of responding to the challenges of a world in which there are more natural disasters, as well as conflicts that create situations of humanitarian need.

The media have always played a role in mobilising international attention and responses to disasters, but increasingly social media provide immediate coverage of major disasters and of the response to them (which will almost always be much slower than people expect). One of the effects of social media coverage of disasters is that it increases political pressure for rapid response: governments that are perceived to respond slowly will suffer politically.

It is in this context of increasing numbers of disasters, growing pressure for responses and a complex world of humanitarian action that we turn to the question of the

participation of military forces in disaster response and their relationship with civilian organisations. Although the focus of the discussion is the military, much of the analysis that follows also applies to police forces; in fact, police forces often have very specific skills that are crucial to providing security for humanitarian operations.

Civil–military relations in natural disaster response: five observations

The military will increasingly be called to respond to sudden-onset natural disasters, both at home and abroad

Although the UN guidelines for humanitarian and military professionals dealing with civil–military matters[17] maintain that military assets should be used only as a last resort in responding to natural disasters, in many countries— particularly in Asia—the military has become the 'first resort' in time of disaster. This role will increase in the future.[18] Some civilian humanitarian organisations oppose any expansion of the military's role in humanitarian settings, yet the reality is that military forces have specific assets that are needed in major disasters, they often have the capacity to respond more quickly and on a larger scale than civilian actors, and there are political reasons, both within the military and in government generally, for deploying military forces at such times. As one senior official of a UN humanitarian agency said:

> You can't hold the military back. The battle to keep the military out of disaster response was lost long ago. And the fact is that in natural disasters you need the military. Rather than trying to keep the military out of disaster response—which is a non-starter—you need to figure out ways to work with the military so that their assets are used effectively and they don't complicate matters for civilian responders.[19]

As noted shortly, there are differences in the military response to disasters and to complex emergencies, especially when the military forces are involved as belligerents in a conflict.

The military has long played a role in responding to major disasters, and military involvement both at home and abroad has grown since the early 1990s. For example, the military played central roles in responding to disasters such as the 1991 cyclone in Bangladesh, Hurricane Mitch in Central America in 1998, Hurricane Katrina in the United States in 2005, the Szechuan earthquake in 2008, and the Japanese earthquake, tsunami and nuclear accident in 2011.

The role of the national military in disaster response varies from country to country. In most countries civil protection or national disaster management organisations are civilian-led but include military and police forces in their governance and planning and rely on these forces when civilian capacity is insufficient to respond. In other countries, such as Pakistan and China, the military takes the leading role in disaster response. In many, perhaps most, countries political authorities must declare a national emergency or, in the case of subnational authorities, submit a formal request to the central government for the use of military forces before they can be deployed. In still other countries, such as the United States, there are legal restrictions on using the military to provide domestic security, although the National Guard and police forces are routinely called in.[20]

For the military, involvement in disaster response can improve its image in a country, offer training opportunities, and be a way to demonstrate new relevance and a diversification of their role at a time when armed forces globally are experiencing budget cuts.[21] As Yates and Bergin point out, providing military forces to respond to disasters in other countries can reinforce alliances and partnerships, advance national security interests, and increase knowledge of military operational capabilities.[22] On the other hand, there is sometimes concern that responding to disasters detracts from the military's mission and is more expensive than civilian engagement, although it should be noted that there are different ways of allocating military expenditures in disaster operations. In some cases of international military assistance the cost of military involvement is covered by the military itself; in other cases it is billed to the civilian government development agency.

One striking example of the way in which a military response to disasters can lead to a rethinking of the military's role in society is the involvement of Japan's Self Defense Forces in the response to the earthquake, tsunami and nuclear accident of 2011. The rapid engagement of the Japanese military has drawn widespread praise and could in the longer term lead to broader public support for defence spending and to increased Japanese military assistance for disasters in other countries. Shortly after the earthquake Japan dispatched 107 000 of its 230 000 troops to disaster relief and for the first time established a joint command of its ground forces, marine assets and air force. The Japanese military coordinated its efforts well with those of roughly 20 000 US service members who were called in to respond. This experience contrasts

with that of the 1995 Kobe earthquake, when the local government and the prime minister were reluctant to summon the Self Defense Forces for help.[23]

Generally there are fewer political tensions in civil–military relations at times of natural disaster compared with in conflict settings

In conflict settings or complex emergencies, serious tensions usually arise with the civilian humanitarian community when the military provides humanitarian assistance. Although the humanitarian principles of neutrality, independence and impartiality are central to the work, and indeed the identity, of humanitarian actors, military actors see humanitarian assistance as a way in which they can advance their military mission and thus are not in any way independent or neutral participants.[24] Moreover, humanitarian agencies argue that the 'blurring of roles' when the military becomes involved in humanitarian work during conflicts has an impact on the way the agencies' operations are perceived by the population and can adversely affect their security.

Civil–military relationships are likely to deteriorate when the military engages in humanitarian efforts in conflicts in which it is a belligerent. Nancy Roberts summarises it: 'While the military sees NGOs and IOs [international organisations] as "force multipliers" (a reality that they resent), NGOs and IOs see the military as trying to "politicize humanitarianism" (a reality that they resent)'.[25]

The military's role in responding to natural disasters is less contentious, although there can be a residual resentment on the part of civilian agencies and a concern that the military might have other motives. For example, after the 2004 Indian Ocean tsunami some humanitarian organisations were nervous about the involvement of the Indonesian military in Aceh, given the military's history in East Timor and in combating the insurgency in Aceh. The humanitarian organisations were, however, generally favourably impressed by the military's efforts to deliver assistance impartially and effectively.[26] There have also been reports of human rights abuses by military forces engaged in disaster response.[27]

By and large, however, military response to natural disasters is a different ball game compared with military involvement in humanitarian work during conflict. In large-scale disasters especially, the military brings assets that civilians simply do not have. In particular, military assets in transportation, communications, logistics and security are often desperately needed in the early days of a disaster. After the 2005 Pakistan earthquake the military's air transportation assets were crucial to responding to remote communities that had been affected. Without the military, casualties would

have been far higher than the 75 000 who were killed by the earthquake. In situations of large-scale flooding, military boats often play vital roles in rescue. Further, the military's use of remote-sensing capabilities is something that is particularly needed in response to earthquakes and is likely to be expanded in the future.

The military also can bring their own life-support systems, a fact that decreases their dependence on limited host nation resources.[28] In cases where there has been strong bilateral cooperation between the militaries of different countries, coordination between military forces in responding to natural disasters is facilitated. Moreover, as Wiley Thompson noted in relation to the response to the 2005 Pakistan earthquake, even among troops meeting each other for the first time military relationships can make coordination easier: 'regardless of national origin, they seem to understand each other'.[29]

Tensions can and do emerge, however, even in the less politicised environment of natural disaster response. The way national military forces are perceived in a country will affect the way the military can operate. So in Turkey's Van Province a stronghold of the PKK (the Kurdistan Workers' Party) where the Turkish military has a long history of operations, the predominantly Kurdish population might not have seen the military as a neutral, impartial distributor of assistance following the 2011 earthquake.[30]

Even in this less politicised environment of disaster response there remain problems with communication and the complementarity of roles. In the case of the US military response to the 2010 Haiti earthquake, there was widespread acknowledgment that the military's role in re-opening the airport and the port was crucial. And yet there was resentment about the way the US military controlled the entry of relief flights[31], and, at least in the early days, civilian humanitarian groups found it difficult to meet with US military forces to coordinate action. In terms of roles, the military is perceived as generally being very good at logistics but much weaker in protection and in the distribution of assistance. Thus, while military forces might do an excellent job of setting up camps (including to accepted international standards), they are not as effective at actually administering the camps and can unknowingly create further problems—for example, when they do not consult the affected communities or lack sufficient local knowledge about cultural matters.

Although no systematic research has been done in this area, it seems that the military's role in the immediate phases of disaster response is generally widely appreciated. But as time goes on the military's comparative advantage

decreases and resentment and tensions increase. This would seem to underline the importance of both clarifying the roles of different players and recognising the importance of a military handover of responsibilities to civilians as soon as practicable.

International actors, military or civilian, simply are not—and perhaps cannot be—fast enough in immediate response

There is often a perception that the military can move more quickly in responding to a natural disaster than civilian humanitarian actors because the military has standing forces. In the case of the 2008 Sichuan earthquake, the Chinese Government reported that it mobilised troops within 14 minutes of the disaster.[32] Search and rescue teams, for example, operate under a protocol of rapid response, both nationally and internationally.[33]

It does, however, take time to mobilise an international response, whether by civilian organisations or military forces, which means that local responders will always be on the front line. Most of the lives saved are the result of local efforts, often by communities themselves rather than government, the military or non-government organisations. Indeed, Malish et al. report that most military emergency relief team deployments do not arrive until one to six weeks after the event. For example, the US naval hospital ship Mercy did not arrive on site in the Indian Ocean until five weeks after the 2004 tsunami; the US Army 212th Mobile Army Surgical Hospital was not operational in Pakistan until day 17 after the 2005 earthquake[34], and of 13 international teams deployed to assist with the 2004 earthquake in Bam, Iran, none arrived as early as day 2 of the disaster. With respect to their experience with a mobile surgical team responding to the 2007 earthquake in Peru, Malish et al. concluded that 'arriving within 48 hours isn't quick enough to make a major contribution to the provision of acute surgical care'.[35]

This leads to an emphasis on the importance of building local capacity in disaster response, including building the capacity of local and national military and police forces. It also leads to recognition of the importance of response—both civilian and military—in the regions where disasters occur and the importance of strengthening regional response mechanisms. Efforts to strengthen regional disaster response mechanisms are under way in most regions.

In the three phases of disaster management —prevention, response and recovery— the military's role is most needed and accepted in the response phase and least in the recovery phase

As noted, the military brings specific assets to disaster response and especially to initial rescue efforts. Recovery and reconstruction, however, are generally seen as the responsibility of civilian authorities. When national governments do not have the capacity to rebuild a country after a major disaster, international organisations—particularly development organisations—are called on to do so.[36]

Both military and civilian humanitarian actors are expected to engage in preparedness activities in order to improve their capacity to respond, but their involvement in disaster risk reduction is much less clear. This is seen as long-term development work, yet the lines between prevention and preparedness are often blurred. Community risk reduction measures involve a range of activities, from training masons in techniques for building houses that are more resistant to earthquakes to building typhoon shelters and educating the population about their use. But there is a grey area where preparing for disaster response and reducing risk overlap—for example, in working with communities to identify evacuation routes, developing organisational structures and setting up early warning systems.[37]

Preparedness: what can be done before a disaster to facilitate disaster response?

In comparison with humanitarian groups, the military probably has more experience in preparedness activities such as contingency planning, development of scenarios and training exercises. Humanitarian groups do engage in such planning, but it is generally less comprehensive and perhaps not assigned as much importance as in military circles. One way of strengthening civil–military relations is through joint contingency planning between civilian police and military responders before a disaster occurs.[38] This not only increases preparedness but also has the potential to increase trust and mutual understanding between the various participants.

Another important area of preparedness concerns developing more effective civil–military coordination mechanisms. Amid the chaos and urgency of responding to a disaster is not the time or place to be discussing complementarity of roles, common language and protocols for communication. Civil–military guidelines and handbooks

do abound, but they are perhaps most useful when tailored to particular national-level situations. For example, in early 2010 the Pakistani military and humanitarian players worked out a memorandum of understanding for coordinating their work in the event of a disaster; although the MOU was not signed by the relevant authorities, it did form the basis for civil–military relations during the Pakistani floods later that year and is widely seen to have been helpful in structuring relations between the two sectors.[39]

On the military side, strengthening bilateral relations between the military forces of different countries can facilitate the rapid mobilisation of assistance[40], and developing 'status of forces' agreements applicable to disaster response can make rapid response more likely. A rapid and effective response by both civilian and military players is easier when governments have engaged in legal preparedness since they then have laws and policies that facilitate the delivery of international relief. Few governments have taken the necessary steps to respond to the host of questions that arise in disaster contexts, such as: Will there be expedited procedures to allow the entry of relief goods and relief workers? And will foreign drivers licences and medical credentials be recognised?[41]

Future responses: five challenges

Responding to urban disasters

The earthquakes in Haiti and Christchurch brought to the fore the particular challenges of responding to urban disasters. As noted, disasters in the future are expected to increasingly affect people living in cities, and this creates a particular set of pressures for the disaster response. Half of the world's population—some 3.3 billion people—currently live in urban areas, and this figure is expected to rise to 5 billion by 2030. Eighty per cent of these urban dwellers will be in the developing world. At present 1 billion people (one-third of the urban population) live in slums.[42] 'Already, around two-thirds of the world's mega-cities with populations greater than five million fall at least partly in low-lying flood-prone areas; possibly a fifth of the urban populations of the poorest countries live in hazard-prone environments'.[43]

Urban areas are physically congested environments, which heightens the risk of secondary impacts from disasters (for example, fires or aftershocks affecting already weakened buildings) and complicates the physical movement of disaster responders. They are also complex environments, with multiple levels of authority and many different actors. It is not enough for either civilian or military responders to

work with national ministries since provincial, municipal and other levels of authority are involved in disaster response. Moreover, urban residents everywhere are more politically active, more aware and more demanding than people living in rural environments. If aid is not delivered quickly to dispersed rural communities, people will suffer, but if this happens in an urban environment there are likely to be protests, riots and political consequences.

Working in urban environments will probably become more dangerous. Urban areas are more violent than rural ones: a variety of armed groups—such as insurgents, criminal gangs, drug traffickers, private security forces and warlords—can come together or compete with one another. When a natural disaster occurs in an urban area such groups can play a role in organising the response or they might take advantage of the situation for their own gain. Relief goods are economic commodities. In these circumstances policing is central to protection of the affected communities.

Responding to disasters in developed countries

The year 2011 was a terrible one for developed countries—floods in Australia, the devastating earthquake in Christchurch, the great eastern Japan earthquake, tsunami and nuclear accident, and drought, wildfires, tornadoes and storms in the United States. The fact that rich countries are vulnerable to disasters has a number of implications. At one level it narrows the gap between rich and poor countries and points to the need for rich countries to adopt measures of disaster risk reduction and preparedness. Rich countries have a hard time responding to offers of international assistance and need to have mechanisms for responding when such offers pour in. The economic losses in developed countries tend to be higher, perhaps eventually affecting their ability to offer assistance to other countries. It is notable in this regard that Japan's official aid agency, JICA, has said it intends to maintain planned levels of official development assistance even in the face of US$300 billion in economic losses and new taxes on its citizens.

Natural disasters in conflict zones

When a natural disaster occurs in an area experiencing conflict people are doubly affected. For example, in the Philippines camps for people displaced by conflict in Mindanao were flooded in 2008, reportedly undermining the victims' coping skills. [44] A natural disaster can lead to further displacement as people displaced by conflict are forced to move yet again because of the disaster. Thus in Sri Lanka some of those displaced by the conflict were displaced again by the 2004 tsunami. Natural disasters occurring in conflict areas can cause increased hardship for communities hosting

the displaced. In Somalia, for example, rural areas hard hit by flooding in 2009 had already been having difficulty growing sufficient food for their communities, and the arrival of Somalis displaced by the fighting in Mogadishu increased the strain on these communities.[45]

Natural disasters occurring in conflict areas often mean greater difficulties for humanitarian agencies in gaining access to affected communities. This is particularly the case when governments are unwilling to extend access to the humanitarian agencies. For example, after the 7.7 magnitude 1990 earthquake in Gilan Province in Iran had killed 50,000 people and devastated entire villages[46] the government initially insisted that the country would handle the crisis on its own and turned away international assistance. By the time the government was willing to enlist assistance from abroad, a major proportion of those affected had reportedly died from otherwise preventable causes.[47] A similar initial rejection of international aid by the Myanmar Government following May 2008's Cyclone Nargis complicated the relief effort. And in the aftermath of severe flooding in Pakistan in July–August 2010 the government facilitated humanitarian access to many of the affected areas but maintained security restrictions for the Federally Administered Tribal Areas and Balochistan, where many thousands had already been displaced by conflict.

In these complex environments national military forces, as in Myanmar and Pakistan, can take the lead and limit the ability of other parties—civilian or military, national or international—to provide assistance. The role of international military forces in responding to disasters in conflict areas will carry with it the baggage of tension and suspicion that characterises the forces' involvement in humanitarian work in complex emergencies. Thus in Afghanistan and Iraq when the US military is involved in drought relief such activity is likely to be perceived as part of the broader military mission.

When natural and technological disasters overlap

The nuclear accident at Fukushima, resulting as it did from the earthquake and consequent tsunami, was a wake-up call. Although there is considerable debate about whether or not this accident could have been anticipated, the reality is that there are nuclear facilities, chemical factories, pipelines and industrial complexes in areas vulnerable to disaster in all regions. In the best of cases strict regulations and safety measures exist to ensure that natural hazards will not cause massive further damage but, as the case of Japan illustrates, such regulation might not be sufficient. In view of the fact that sudden-onset disasters are likely to increase in

severity in the future, it is important that these measures are included. This is an area where the military has a particular advantage in planning and thinking through catastrophic scenarios. Few humanitarian agencies would have the capacity or have done the planning necessary to respond to such situations. Rather, response would fall under the state's disaster plans or military contingency planning.

The humanitarian community needs much more expertise in thinking through and planning for responses to the deadly combination of natural hazards, simmering conflict, and industrial and technological accidents—particularly if they occur in urban areas. For example, damage to a chemical plant caused by an earthquake in an urban area of a developing country is likely to pose enormous challenges for the humanitarian response.

Taking local capacity seriously

> It is firstly through their own efforts, and through the support of community and local institutions, that the basic needs of people affected by disaster or armed conflict are met.[48]

Although international humanitarian agencies acknowledge that the role of local communities is vital, they often fail to work with local communities in devising their assistance programs and, in the worst cases, might even undermine communities' efforts. In virtually every major natural disaster in the past decade, local civil society organisations have complained about being bypassed, ignored and weakened by international humanitarian agencies. The local organisations rightfully argue that they were the first on the scene and will remain in the country long after the internationals have left, but there are cultural, organisational, political and often linguistic barriers to their participation in the response effort. Coordination meetings between representatives of humanitarian agencies are typically held in English, are run by people using a particular jargon, and are based on the assumption that the internationals will play the dominant role.

The principle that it is the responsibility of national governments to respond to the needs of people within their territory is well established in international law. For example, in 1991 the UN General Assembly affirmed:

> Each State has the responsibility first and foremost to take care of victims of natural disasters and other emergencies occurring on its territory. Hence, the affected State has the primary role in the initiation, organization, coordination, and implementation of humanitarian assistance within its territory.

The magnitude and duration of many emergencies may be beyond the response capacity of many affected countries. International cooperation to address emergency situations and to strengthen the response capacity of affected countries is thus of great importance. Such cooperation should be provided in accordance with international and national laws. Intergovernmental and non-governmental organizations working impartially and with strict humanitarian motives should continue to make a significant contribution in supplementing national efforts.[49]

And yet the role of the affected state in responding to disasters varies tremendously. As Paul Harvey has pointed out, governments have four principal roles to play in emergencies: they are responsible for identifying a crisis and inviting international assistance, for providing assistance and protection themselves, for monitoring and coordinating external assistance, and for setting regulatory and legal frameworks governing assistance.[50] In some cases—such as Indonesia, the Philippines and Mozambique—the state has established a relatively strong response capacity and manages to set the terms for international engagement. In others, however—such as Haiti—international agencies simply bypass national and local authorities.

In view of the likelihood that the scale and intensity of natural disasters will increase in the future, it is important that the question of local capacity be taken much more seriously. In the context of civil–military relations, this implies that local and national authorities should be included in coordination mechanisms and that international military and humanitarian actors should ensure—at a minimum—that their activities do not undermine local capacity or state authority. [51]

Conclusion

The international humanitarian system consists of a complex array of many different participants who have different operating procedures, mandates, capacities and cultures. Coordination between these different participants is always difficult and is likely to become more so in the future as even more individuals and groups seek to respond to emergencies. The probable increase in the frequency, severity and impact of sudden-onset natural disasters will challenge both civilian humanitarian agencies and military forces that are likely to be deployed in support of disaster response. As the experience of the 2010 Pakistani floods demonstrated, civil–military coordination can be improved when relationships and roles are sorted out before disaster strikes.

Notes

[1]   'Our world, your move: disaster laws discussion paper', Prepared for 31st International Conference of the Red Cross Red Crescent Movement, Geneva, 28 November – 1 December 2011.

[2]   OFDA/CRED International Disaster Database, Université Catholique de Louvain, Brussels, www.emdat.be. Figures on displacement are taken from the Internal Displacement Monitoring Centre, www.internal-displacement.org. The terms 'sudden onset' and 'slow onset' are widely used to differentiate between disasters that occur with little warning (such as earthquakes and tsunamis) and those that develop over a longer period (such as drought), yet there is no accepted dividing line between sudden-onset and slow-onset disasters.

[3]   Elizabeth Ferris and Daniel Petz, *A Year of Living Dangerously: a review of natural disasters in 2010*, Brookings–LSE Project on Internal Displacement, Washington, DC, April 2011, p. 8. Also see S Jenny, *Time's Bitter Flood*, Oxfam GB, Oxford UK, 27 May 2011, p. 4.

[4]   See for example, Intergovernmental Panel on *Climate Change, Climate Change 2007: impacts, adaptation and vulnerability,* Fourth assessment report, 2007 (www.ipcc.ch/ipccreports/ar4-wg2.htm); 'Climate change and displacement in the 21st century', Background paper, Nansen Conference, Oslo 6–7 June 2011, http://d2530919.hosted213.servetheworld.no/expose/sites/clientweb/default.asp?s=1931&id=1937; Intergovernmental Panel on Climate Change, 'Managing the risks of extreme events and disasters to advance climate change adaptation: a special report of Working Group I and Working Group II', forthcoming 2012, http://ipcc-wg2.gov/SREX/.

[5]   See FAO, '2050: climate change will worsen the plight of the poor, future of agriculture and food security closely linked to climate change', FAO, Rome, 1 October 2009; see also FAO, 'Agriculture to 2050—the challenges ahead: Diouf opens high-level forum on food's future', FAO, Rome, 12 September 2009.

[6]   Cited by Kirsten Gelsdorf, *Global Challenges and their Impact on International Humanitarian Action*, OCHA Occasional Policy Briefing Series No. 1, OCHA, Policy Development and Studies Branch, New York, January 2010, p. 17, http://ochaonline.un.org/OCHAHome/InFocus/ClimateChangeHumanitarianImpact/MozambiquePreparednessinAction/GlobalClimateImplications/tabid/5945/language/en-US/Default.aspx.

[7]   See Intergovernmental Panel on Climate Change, *IPCC Fourth Assessment Report: climate change 2007*, Working Group II, *Impacts, Adaptation and Vulnerability*, IPCC, Geneva, 2007.

[8]   Robin Bronen, 'Climate-induced community relocations: creating an adaptive governance framework based in human rights doctrine', *New York Review of Law and Social Change*, vol. 35, 2011, pp. 356–406.

[9]   Chris Kromm and Sue Sturgis, *Hurricane Katrina and the Guiding Principles on Internal Displacement*, Institute for Southern Studies, Durham NC, January 2008, p. 11.

[10]   Brookings–Bern Project on Internal Displacement, *Inter-Agency Standing Committee Operational Guidelines on the Protection of Persons in Situations of Natural Disasters*, Brookings Institution, Washington DC, January 2011, pp. 55, 58.

[11]   See Nicholas Dickson, 'Preventing future natural disaster casualties: partnering with USAID and the Office of Reconstruction and Development', *Small Wars Journal*, 26 August 2010, http://smallwarsjournal.com, p. 3, citing Ross Stein of National Public Radio; see also OCHA, Chile Earthquake Situation Report #9, OCHA, New York, 29 March 2010.

[12]   'Out of sight, out of mind', *Red Cross Red Crescent Magazine,* issue 2, 2011, p. 20, www.scribd.com/doc/70209252/Red-Cross-Red-Crescent-Magazine-No-2-2011.

13   Elizabeth Ferris and Daniel Petz, *A Year of Living Dangerously: a review of natural disasters in 2010*, Brookings–LSE Project on Internal Displacement, Washington, DC, April 2011, p. 22.

14   Brookings–Bern Project on Internal Displacement, *Inter-Agency Standing Committee Operational Guidelines on the Protection of Persons in Situations of Natural Disasters*, January 2011, www.brookings.edu/reports/2011/0106_operational_guidelines_nd.aspx.

15   IASC, *Operational Guidelines on the Protection of Persons in Situations of Natural Disasters*, Brookings–LSE Project on Internal Displacement, 2011, www.brookings.edu/reports/2011/0106_operational_guidelines_nd.aspx.

16   See www.ifrc.org/en/what-we-do/idrl/international-dialogue-on-strengthening-partnership-in-disaster-response/.

17   Inter-Agency Standing Committee, *Civil–Military Guidelines and Reference for Complex Emergencies*, October 2008, www.unocha.org/what-we-do/coordination-tools/UN-CMCoord/overview. See also Secretariat of the Oslo Guidelines, *Draft Guidelines on the Use of Military and Civil Defence Assets to Support United Nations Humanitarian Activities in Complex Emergencies, 2009.*

18   Robert Kaplan, 'US forces: the world's best relief group', *New York Times*, 12 October 2005, www.nytimes.com/2005/10/12/opinion/12iht-edkaplan.html.

19   Interview with author, Geneva, 26 October 2011. Incidentally, a very similar observation was made about the far more controversial role of the military in complex emergencies by a senior ICRC official in an interview with the author in March 2010.

20   See, for example, Jean-Loup Samaan and Laurent Verneuil, *Civil–Military Relations in Hurricane Katrina: a case study on crisis management in natural disaster response*, Global Public Policy Institute, Berlin, March 2009, pp. 416–17, www.diastergovernace.net/fileadmin/gppi/RTB_book_chp22.pdf.

21   Charles-Antoine Hoffman and Laura Hudson (British Red Cross), 'Military responses to natural disasters: last resort or inevitable trends?' *Humanitarian Exchange Magazine*, September 2009, issue 44.

22   Athol Yates and Anthony Bergin, *More Than Good Deeds: disaster risk management and Australian, Japanese and US Defence forces*, Special report, Australian Strategic Policy Institute, Canberra, December 2011, issue 43, p. 15, www.aspi.org.au/publications/publication_details.aspx?ContentID=322.

23   Chico Harlan, 'A pacifist nation comes to depend on the service of its troops', *Washington Post,* 3 April 2011, p. A12.

24   Andrew Wilder, *Losing Hearts and Minds in Afghanistan*, December 2009, https://wikis.uit.tufts.edu/confluence/display/FIC/Losing+Hearts+and+Minds+in+Afghanistan.

25   Nancy C Roberts 'Spanning "Bleeding" boundaries: humanitarianism, NGOs and the civilian–military nexus in the post–Cold War era', *Public Administration Review*, March–April 2010, p. 217.

26   OCHA, interview with author, October 2011.

27   *Protection of Internally Displaced Persons in Situations of Natural Disasters: a working visit to Asia by the representative of the Secretary-General on the Human Rights of Internally Displaced Persons Walter Kälin*, 27 February – 5 March 2005, Brookings-Bern Project on Internal Displacement, Washington DC, April 2005, pp. 17–18, www.brookings.edu/projects/idp/~/link.aspx?_id=C3E1899CE8B848B2A8F65BF958B923B1&_z=z.

28   Wiley C Thompson, 'Success in Kashmir: a positive trend in civil–military integration during humanitarian assistance operations', *Disasters*, 5 May 2009, pp. 361ff. See also Earl Authors, CDEMA, presentation at civil–military seminar.

29   Wiley C Thompson, 'Success in Kashmir: a positive trend in civil–military integration during humanitarian assistance operations', *Disasters*, 5 May 2009, pp. 361ff.

30   See, for example: www.foreignpolicyjournal.com/2011/11/07/van-earthquake-exposes-turkeys-ethnic-fault-lines/.

31   See, for example, Rory Campbell, 'US accused of annexing airport as squabbling hinders aid effort in Haiti', *The Guardian*, 17 January 2010, www.guardian.co.uk/world/2010/jan/17/us-accused-aid-effort-haiti.

32   Brian Hoyer, 'Lessons from the Sichuan earthquake', *Humanitarian Exchange Magazine*, issue 43, June 2009, www.odihpn.org/report.asp?id=3008.

33   OCHA, *International Search and Rescue Advisory Group Guidelines and Methodology*, www.unocha.org/what-we-do/coordination-tools/insarag/overview.

34   Although ground-based units arrived ahead of the ship, they were not operational until day 22.

35   Richard Malish, David E Oliver, Robert M Rush Jr et al., 'Potential roles of military-specific response to natural disasters—analysis of the rapid deployment of a mobile surgical team to the 2007 Peruvian earthquake', *Prehospital and Disaster Medicine*, January–February 2009, vol. 24, no. 2, pp. 6–7, http://pdm.medicine.wisc.edu/Volume_24/issue_1/malish.pdf.

36   Note that the transition from humanitarian to development response on the civilian side never runs smoothly. Discussion of this is, however, beyond the scope of this paper.

37   See, for example, Yates and Bergin (note 22). They make the case for greater military engagement in disaster risk management. An interesting aside is that the US military has overseen the building of structures such as schools, health clinics and government buildings in Afghanistan that are not earthquake resistant. They are being built to Afghan standards but not internationally recognised good practice. As Dickson notes, failure of those buildings in an earthquake could cause significant deaths and set back US foreign policy significantly: Nicholas Dickson, 'Preventing future natural disaster casualties: partnering with USAID and the Office of Reconstruction and Development', *Small Wars Journal*, 26 August 2010, pp.4–5, www.smallwarsjournal.com.

38   See, for example, Peter Walker, Colin Rasmussen and Sebastian Molano, 'Background paper 3: best practice experience at the national level', Prepared for the International Dialogue on Strengthening Partnership in Disaster Response: Bridging National and International Support, September 2011, www.ifrc.org/PageFiles/90118/Background%20paper%203.pdf.

39   There were, however, still communication problems. See, for example, Nicki Bennett, Civil–military principles in the Pakistan flood response', *Humanitarian Exchange Magazine*, issue 49, February 2011, http://www.odihpn.org/report.asp?id=3167.

40   Anne C Richard, *Role Reversal: offers of help from other countries in response to Hurricane Katrina*, Center for Transatlantic Relations, Paul H Nitze School of Advanced International Studies, Johns Hopkins University, Washington DC, 2006.

41   IFRC, *Guidelines for the Domestic Facilitation and Regulation of International Disaster Relief and Initial Recovery Assistance* [referred to as the 'IDRL Guidelines'], 2007, http://scm.oas.org/pdfs/2010/CEPCD02642e.pdf.

42   Inter-Agency Standing Committee, *Meeting Humanitarian Challenges in Urban Areas (MHCUA): draft assessment*, IASC, Geneva, 2 October 2009, p. 2.

43   Cited by Sarah Collinson, 'Developing adequate humanitarian responses', German Marshall Fund of the US, Washington DC, 2010, p. 3.

44   ICRC, 'Philippines: heavy floods aggravate plight of civilians displaced by conflict', 24 September 2008, cited in Internal Displacement Monitoring Centre, *Philippines: an estimated 8 million people affected by natural disasters in 2008*, www.internal-displacement.org.

45   UN Human Rights Council, *Report of the Representative of the Secretary-General on the Human Rights of Internally Displaced Persons*, Walter Kälin, A/HRC/13/21/Add.2, 21 January 2010.

46   'When the world shook', *The Economist*, 30 June 1990, p. 45, cited in Rohan J Hardcastle and Adrian TL Chua, 'Humanitarian assistance: towards a right of access to victims of natural disasters', *International Review of the Red Cross*, no. 325, December 1998, p. 589.

47   See Rohan J Hardcastle and Adrian TL Chua, 'Humanitarian assistance: towards a right of access to victims of natural disasters', *International Review of the Red Cross*, no. 325, December 1998.

48   Sphere Humanitarian Charter 2010, section 2(1). draft, www.sphereproject.org.

49   UN General Assembly, Resolution 46/182 (paragraphs 3–5), 9 December 1991.

50   Paul Harvey, *Towards Good Humanitarian Government*, Humanitarian Policy Group Brief 37, Overseas Development Institute, London, September 2009, p. 1.

51   www.ifrc.org/en/what-we-do/idrl/international-dialogue-on-strengthening-partnership-in-disaster-response/.