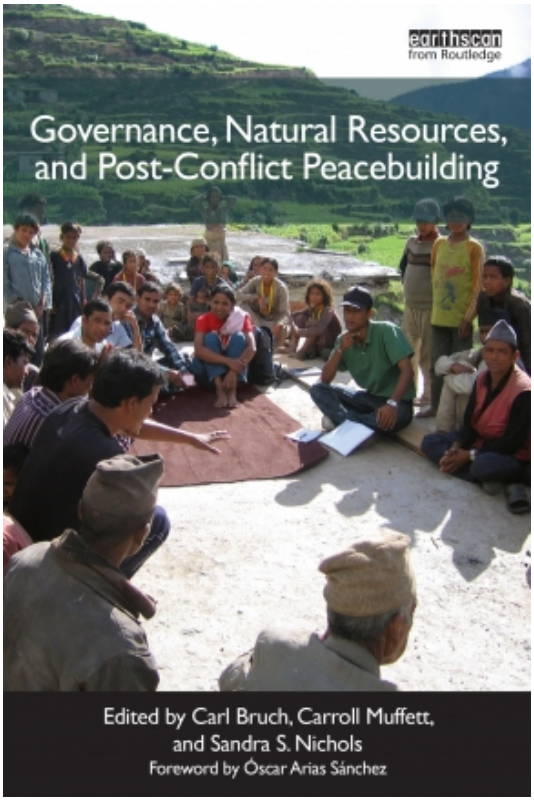

Military-to-Military Cooperation on the Environment and Natural Disasters: Engagement for Peacebuilding

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Military-to-military cooperation on the environment and natural disasters: Engagement for peacebuilding

Geoffrey D. Dabelko and Will Rogers

National militaries and regional security alliances are increasingly taking on nontraditional, nonkinetic roles and missions. From providing humanitarian assistance and disaster relief to policing international waters to protect global fisheries, nonkinetic operations have become mainstream activities in the global security environment as more and more militaries recognize that the sword alone cannot achieve security in a complex global environment. Acclaimed military historian Andrew Bacevich aptly captures the military's motivation for undertaking these wider roles: "Wherever possible, the warrior will rely on 'nonkinetic' methods, functioning as diplomat, mediator, and relief worker" (Bacevich 2008, 134). These operations often have humanitarian ends, but they typically contribute to long-term security objectives as well.

Protecting the environment and preparing for and responding to natural disasters are two nontraditional arenas in which militaries work with each other to advance security ends. Environmental cooperation, joint scientific assessment, and disaster-preparedness training all have tangible and important environmental goals. But militaries also engage in such military-to-military activities to build confidence, foster dialogue, share technology, improve transparency, and develop personal ties—all to support underlying security goals.

Military-to-military cooperation has long been an avenue for states to cooperatively engage in operations that produce security dividends. For the United States, such activities have typically included military sales that bolster partner militaries' defense capabilities, grant programs to help build the capacity of other militaries, and international military education and training programs aimed at professionalization. These exchanges strengthen relations with allied or friendly nations while supporting long-term U.S. national security interests by

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building the capacity of partner militaries to provide for their own security and by supporting regional stability where the United States does not have a perennial footprint.

Military-to-military exchanges, however, have evolved and have become more interdisciplinary in the post–Cold War era. Militaries have used dialogue and cooperation on a range of environmental and natural-disaster challenges to conduct military-to-military interactions with multiple goals—primarily to increase confidence, trust, and stability in a range of peacebuilding settings.

These military-to-military engagements have included scientific assessments of common environmental and natural-disaster challenges; natural-disaster preparedness exercises and actual responses; shared environmental management technologies; and monitoring and capacity building around natural resource management.

These activities are appealing avenues for dialogue for two seemingly contradictory reasons. On one hand, environmental issues can be a safe, or at least less contentious, realm where military-to-military interactions are more feasible than they are on more politicized topics (such as nuclear disarmament, troop deployments, and border delineation). On the other hand, a natural resource such as water might be so strategically important in a post-conflict situation that militaries are driven together by their high levels of interdependence.

Environmental dialogue and cooperation between militaries have the potential to play constructive roles all along the conflict continuum, from conflict prevention to post-conflict peacebuilding. Conflict scholars and practitioners commonly draw sharp distinctions between conflict prevention, termination of conflict, and peacebuilding. However, the high rate at which conflict reignites during post-conflict periods suggests that conflict prevention is intertwined with peacebuilding. Thus, although this examination of military-to-military environmental cooperation draws heavily on cases typically categorized as prevention, these cases are directly relevant to peacebuilding as well.

Scholars and practitioners focusing on the intersection between environment, natural resources, and peacebuilding—as well as military leaders seeking to improve dialogue with their counterparts—should look for ways that environmental action can be both a means to achieving security goals and an end in itself. This chapter discusses some of the advantages of military-to-military cooperation on environmental issues; it examines some of the steps that the U.S. military and others have already taken to utilize environmental cooperation for security ends; it offers some cautionary notes on how militaries should approach environmental challenges; and it examines individual examples of military-to-military cooperation on environmental issues and natural disasters. Examples considered include actions by the North Atlantic Treaty Organization (NATO), the Association of Southeast Asian Nations Regional Forum, and Arctic Military Environmental Cooperation, as well as binational examples from India and Pakistan, Greece and Turkey, and several U.S. military regional commands. As more systematic efforts are adopted to increase efforts at military-to-military cooperation on

environment and disaster management, the growing number of cases for analysis will facilitate a more detailed understanding of the benefits and potential downsides of these activities.

ENVIRONMENTAL ACTION AS A MEANS TO A SECURITY END

Militaries increasingly view military-to-military cooperation on natural resources, environmental issues, and natural disasters as a means of achieving security ends. In some cases, these activities contribute to the achievement of scientific or environmental goals as well. But the primary emphasis for militaries remains on security goals, with the environment serving as a means.

Unlike kinetic operations, in which the tools of force are used, environmental cooperation employs nonkinetic tactics, such as building cross-military relationships, engaging in confidence-building exercises, fostering dialogue, cooperating on shared interests, sharing technology, improving transparency, and sharing information and intelligence. These military-to-military environmental cooperation exchanges can be deployed at all points along the conflict continuum—as a conflict-prevention tool, a lifeline for dialogue during active conflict, and a mechanism for post-conflict peacebuilding.

The overlap between conflict prevention and peacebuilding is especially relevant to conflicts in which natural resource disputes or other underlying environmental grievances are the drivers of violence. Indeed, according to Paul Collier and Anke Hoeffler, conflicts associated with natural resources are twice as likely as others to revert back to conflict, and 47 percent of post-conflict countries revert back to conflict within five years (Collier and Hoeffler 2002). Military-to-military exchanges offer opportunities to share conflict mitigation and management strategies that address the underlying grievances associated with natural resources and the environment, such as inequitable exploitation of minerals and lack of access to adequate water and sanitation. These exchanges can take place during either the conflict-prevention or post-conflict peacebuilding stage.

Military-to-military engagement on the environment can also contribute to long-term environmental sustainability. Militaries can share best practices and technical expertise on natural resource management, and build bonds around shared experiences. Such interactions can also reinforce broader principles, such as maintaining civilian control of the armed forces, reducing corruption within the armed forces, and developing greater cooperation between the military and civil society—goals not specific to environmental dialogue (Butts 1996).

Military-to-military engagement also builds governments' capacity to protect and manage natural resources, and in doing so, can improve their legitimacy. Indeed, there is a growing recognition in the United States that strong, professional militaries in relatively unstable states need to help shore up civilian institutions, such as court systems and civilian police forces, by supporting or restoring the rule of law. In 2010, then-U.S. secretary of defense Robert Gates notes that "the security sectors of at-risk countries are really systems of systems tying together

the military, the police, the justice system, and other governance and oversight mechanisms" (Gates 2010, 4).

That environmental cooperation can support larger peacebuilding and security ends does not ensure that it will. Furthermore, military-to-military environmental cooperation is not always appropriate; nor will it succeed in all situations. Militaries can be part of the problem. They have often been a source of the very instability we are suggesting they can help address. They also have a large environmental footprint of their own. Efforts to reduce militaries' environmental impact should be pursued independently of any potential peace or stability dividends; achieving security benefits should *not* be a requirement for reducing militaries' environmental impacts, as it would unnecessarily limit the rationale for such actions.

FROM THREAT TO OPPORTUNITY

Strategically, environmental issues affect all phases of military operations. New environmental regulations that protect terrestrial and marine environments affect the militaries' operations, training activities, and readiness. The environment also shapes operational strategy in the field. For instance, access to safe and sustainable sources of water is required to sustain military forces, operations, and installations abroad (Zabarenko 2008). New developments in distributed renewable energy sources and desalination are proving to be effective in addressing these constraints and increasing operational flexibility.

Scholars and policy makers have commonly focused on environmental degradation as a threat to stability and security because it can undercut livelihoods and human well-being.[1] Environmental contributions to conflict have been integrated into some security threat assessments and operational guidance in both the civilian and military communities. According to the National Intelligence Council, "[u]nprecedented global economic growth . . . will continue to put pressure on a number of highly strategic resources, including energy, food, and water, and demand is projected to outstrip easily available supplies over the next decade or so," which in turn may usher in a more complex era of instability (NIC 2008, viii). Furthermore, in the U.S. Army field manual on stability operations, military threat assessment now includes strategic analysis of conflicts linked to climate change and competition for natural resources, especially in "nations unable or unwilling to meet the basic needs and aspirations of their people" (U.S. Army 2008, 2).

The U.S. Congress now requires the integration of natural resource and environmental concerns into key national defense documents. The 2008 U.S. Defense Authorization Act requires that key strategy documents—including the National Security Strategy, the National Defense Strategy, and the Quadrennial

[1] For an overview of environmental connections to conflict and peacebuilding, see UNEP (2009). See also Collier (2003); Baechler (1999); Deudney and Matthew (1999); Diehl and Gleditsch (2001); Gleditsch (1997); Homer-Dixon (1999); Kahl (2008); Levy (1995).

Defense Review—consider climate change and the U.S. military's ability to respond to its anticipated effects on current and future missions.[2] The inclusion of natural resource challenges and climate change into these key doctrinal documents is a necessary (but not sufficient) foundation for moving away from perceiving the environment as simply a threat, and toward recognizing the strategic value of environmental action as a tool for improving security and cooperation.

At the supranational level, the European Security Strategy recognizes the link between climate change and natural resource consumption, noting that "[r]eduction of arable land, widespread shortage of water, diminishing food and fish stocks, increased flooding and prolonged droughts are already happening in many parts of the world" (HR and EC 2008, 3) and that "[t]he impact of climate change on international security is not a problem of the future but already of today and one which will stay with us" (HR and EC 2008, 8).

For militaries seeking peacetime or post-conflict engagement, the environment can be a less contentious point of entry than others because of the potential for absolute gains. In addition, militaries do not have to give up strategic advantages in order to cooperate on meeting environmental challenges.

In places where environmental or natural resource issues are not currently the focus of active conflict, such issues offer a suitably nonthreatening avenue for peacetime communication and diplomacy between allies and adversaries (Beebe 2008; Beebe and Kaldor 2010; Butts 2008). Military-to-military engagement can provide person-to-person interactions, increase transparency, and minimize suspicion and misperceptions that could spark tension and acrimony between adversaries.

Militaries are also recognizing the importance of environmental cooperation as part of broader hearts-and-minds campaigns that can achieve security goals by meeting needs of the local populace and thus lowering grievances. By fostering sustainable livelihoods through access to food, water, and sanitation, and by helping communities to develop renewable sources of energy, militaries can create a new positive role for themselves. Building goodwill through such environmental stability operations can provide both governments and militaries with greater legitimacy in the public eye, increasing their political capital and giving them a broader base of support for the pursuit of other objectives.

Many military-to-military engagements also help foster dialogue and new relationships among officers from various militaries. These person-to-person contacts can be tapped for back-channel diplomacy during times of heightened political tension, and networks of cross-military contacts can help to decrease the reaction time of relief operations after natural disasters.

Efficient coordination and quick responses to natural disasters or environmental crises are crucial to mitigating disruptions that could contribute to future instability. Such efforts have a history of support in the United States. In the 1990s, then-U.S. secretary of defense William J. Perry established a preventive

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[2] 2008 U.S. Defense Authorization Act, S931.

defense strategy that aimed to identify areas of instability and engage them with what have become known as Phase Zero operations, in which the military takes action "to prevent the conditions for conflict and to help create the conditions for peace" (Perry 1996). These operations—including environmental cooperation—can help prevent tensions from reaching tipping points. They have lower economic and political costs than combat missions, and they reduce the risk that longer, more costly peacemaking and peacekeeping operations will be necessary. The rationale behind Phase Zero operations holds true in the post-conflict peacebuilding phase as well. Militaries that were not party to the original conflict can execute such operations during the sensitive transition period to promote and maintain the conditions for peace.

If applied responsibly and in consultation with the development and diplomatic personnel of peacebuilding partners, a military-to-military framework that integrates action on environmental and natural resources issues can help to professionalize the military, build capacity, and shore up longer-term stability and security in a post-conflict state.

Building a post-conflict state's military capacity to protect the environment and natural resources and to prepare for natural disasters helps ensure that the state's security sector is capable of responding effectively to environmental challenges that might otherwise contribute to a resurgence of conflict. Military-to-military exchanges can also build civilian institutions' capacity to monitor and manage natural resources and strengthen their oversight and enforcement mechanisms. These partnerships can build the capacity of host nations to respond to natural disasters through coordinated training exercises, such as simulated evacuation, search-and-rescue, and recovery and stabilization activities—all of which are critical in the wake of disasters.

CAUTIONARY NOTES

Environmental cooperation as a military-to-military peacebuilding tool is not appropriate in all situations; nor should the military take the lead in development or environmental work. When the military has a role, it should support civilian governmental and nongovernmental actors, working with, but not supplanting, development agencies and nongovernmental organizations (NGOs) that have established institutional knowledge of the region's environmental conditions and related tensions and grievances. Indeed, environmental cooperation is part of the ongoing struggle to find a productive and acceptable balance between civilian and military development activities, as more militaries active in conflict zones begin to engage in this space.[3]

Without proper consultation, militaries' engagement in environmental and development arenas can easily produce negative consequences. For instance, digging wells is a common development strategy. But depending on borehole placement

[3] In the U.S. context, this space is termed the *Ds*: defense, diplomacy, and development.

and the political, economic, and social dynamics of the region, drilling a well could just as easily precipitate a new conflict as address an existing one. Indeed, if militaries with advanced drilling capacities drop wells without coordinating with civilian officials, these well-intentioned efforts could be counterproductive. Coordination and cooperation with development agencies, NGOs, and communities are essential to avoid creating or exacerbating conflict through environmental interventions.

Furthermore, military-to-military environmental cooperation will not on its own solve larger, high-politics conflicts associated with trade, military operations, ideology, and so on. Environmental cooperation is usually a low-politics framework that can offer additional channels for dialogue, but greater political tensions may overshadow gains made in this area.

Not all militaries will be welcomed into the realm of environmental stewardship. Indeed, many states have traditionally resisted military cooperation, even around the environment, due to fears that such activities could undermine their own sovereignty. For example, efforts by former Soviet premier Mikhail Gorbachev and former United Nations Environment Programme (UNEP) executive director Klaus Töpfer to integrate a Green Helmets initiative into the UN peacekeeping framework ultimately failed because many countries feared a dilution of the principle of sovereign control over their territory and natural resources (Dabelko 2008).[4]

These efforts are being renewed, however. UNEP executive director Achim Steiner said, in 2009, that he had discussed plans with then-UN undersecretary-general for peacekeeping operations Alain Le Roy, for integrating environmental awareness into UN peacebuilding efforts by putting "green advisers . . . with Blue Helmets."[5] Steiner's practical plan to provide environmental advisers to peacekeeping troops seems to hold promise for reducing the environmental impact of conflicts and for choking the supply chain of illegal resources fueling conflicts, while achieving the security and stability goals associated with the UN's traditional Blue Helmets.[6]

A more integrated peacebuilding initiative could help mitigate states' concerns about sovereign rights. Nevertheless, countries attempting military-to-military engagement around the environment need to take account of the social and

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[4] On the emerging collaboration between the United Nations Environment Programme and the UN Department of Peacekeeping Operations to provide green advisors to Blue Helmets (that is, traditional UN peacekeepers), see the Department of Peacekeeping Operations' web site Greening the Blue: www.greeningtheblue.org.

[5] Steiner made these remarks at a March 24, 2009, event launching the report *From Conflict to Peacebuilding: The Role of Natural Resources and the Environment* at the Woodrow Wilson International Center for Scholars in Washington, D.C. For the published report, see UNEP (2009).

[6] For discussions on the role of environmental officers in UN peacekeeping missions, see Sophie Ravier, Anne-Cecile Vialle, Russ Doran, and John Stokes, "Environmental Experiences and Developments in United Nations Peacekeeping Operations," and Annica Waleij, Timothy Bosetti, Russ Doran, and Birgitta Liljedahl, "Environmental Stewardship in Peace Operations: The Role of the Military," both in this book.

political conditions that may prevent such cooperation from gaining traction. Their chances of success or failure are highly dependent on many factors that are beyond the immediate details of each effort, making such initiatives potentially productive in some situations but not in others.

EXAMPLES OF MILITARY-TO-MILITARY COOPERATION

The experience base for evaluating military-to-military cooperation on the environment and natural-disaster preparedness and response is noteworthy but insufficient for a systematic assessment. The following section highlights examples of military exchanges between states whose relationships have been marked by long-standing mistrust and grievances.

These cases demonstrate the broad scope of military-to-military activities. In addition, they may help in the development of a broad framework for military-to-military cooperation on the environment and natural-disaster preparedness and response. Such a framework would help provide a clearer picture of where these cooperative exchanges were successful and where they were not. The majority of instances discussed here involve the U.S. military, which suggests not only that the U.S. has a strong interest in these tools but also the need for further investigation of other countries' efforts.

NATO Partnership for Peace

Since 1994, NATO's Partnership for Peace program, which is intended "to increase stability, diminish threats to peace and build strengthened security relationships between individual Euro-Atlantic partners and NATO, as well as among partner countries," has used a military-to-military framework to engage former Soviet bloc countries in Eastern Europe and Central Asia on environmental security issues like waste management and cleanup (NATO n.d.). Adapting the Partnership for Peace framework to include environmental cooperation helped build relationships between NATO and its former Cold War adversaries throughout the 1990s.

For example, throughout the 1990s, the NATO Committee on the Challenges of Modern Society routinely held workshops with representatives of former Eastern bloc states to discuss "pollution stemming from nuclear and chemical weapons production" (NATO 1995a).[7] In addition, the committee worked with former Eastern bloc states to address the reuse of military lands on and near contaminated Soviet bases (NATO 1995c). Since 2006, NATO has cooperated with Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan to assess contamination around uranium sites, help train specialists, and share effective mitigation practices

[7] See also NATO (1995b); Gleditsch (1997); and Petzold-Bradley, Carius, and Vincze (2001).

(Stegnar 2008). NATO remains active as one of the partners in the Environmental Security Initiative, which is targeted at environmental security threats and opportunities in Eastern Europe, the Caucasus, and Central Asia.

Association of Southeast Asian Nations Regional Forum

The Association of Southeast Asian Nations Regional Forum (ARF), the top security forum in the Asia-Pacific region, provides partner nations with an institutional structure for military-to-military engagement on common security challenges—including disaster response, disease monitoring, and maritime security—in an effort to improve "confidence-building and preventive diplomacy in the Asia-Pacific region" (ARF 2011).

In May 2009, ARF conducted its first disaster relief exercise, a simulated super typhoon off the Philippines. Militaries from ARF member states engaged in land, air, and maritime search and rescue; medical evacuation; and infrastructure and engineering reconstruction. They shared best practices and developed coordinated approaches to managing environmental disasters (U.S. DOS 2009). The exercise also incorporated civilian-military projects, including water infrastructure development.

ARF members have regularly cooperated in relation to maritime security challenges and have pledged to bolster operational exchanges among members to address illegal fishing, hazardous material dumping, and other forms of environmental degradation in the Pacific. ARF members continue to coordinate naval patrols and tactical training exercises, while streamlining operational procedures to improve interoperability around these shared challenges (Oegroseno 2008).

Arctic Military Environmental Cooperation

In 1987, then-Soviet premier Mikhail Gorbachev launched the Murmansk Initiative to promote "ecological security." Although it was aimed directly at a range of common environmental challenges, the initiative provided an opening for going beyond environmental goals to broader confidence-building efforts across the Cold War divide. At the time, the United States dismissed Gorbachev's environmental proposal as a rhetorical play and did not engage in the way the Soviets' neighbor Norway did.

As the Cold War ended, the substance of the Murmansk Initiative became a palatable point of entry for dialogue between Russia and the United States. One notable result was the Arctic Military Environmental Cooperation (AMEC) program. The United States, Russia, Norway, and later the United Kingdom actively cooperated under AMEC, a 1994 initiative signed by the three original countries' defense ministers (Royal Norwegian Ministry of Defence 1996). The AMEC program aimed to improve the capacity of its partner nations to protect the Arctic environment from military waste discharged from early-warning radar

sites and naval and air bases. The countries worked closely on several nuclear and nonnuclear sites. They constructed "a 40-ton prototype cask to store and transport spent nuclear submarine fuel," shared and developed methods to clean up hazardous waste released from Arctic bases and maritime vessels, and developed "radiological monitoring equipment for ballistic missile submarine deactivation sites" (U.S. DOD 2001, 140).

Although fund transfers later became contentious, the United States spent tens of millions of dollars on infrastructure improvements to protect and transfer nuclear waste. In the context of military-to-military engagement goals, AMEC was viewed as a tangible means to develop institutional and personal links between militaries that were emerging from decades of Cold War conflict.

India and Pakistan: High politics and missed opportunities

The October 2005 Pakistani earthquake provides an example of the strong potential for larger tensions to undercut low-politics approaches such as humanitarian and environmental cooperation between militaries. In South Asia, the intractable conflict over Kashmir prevented such cooperation between Pakistan and India, despite Pakistan's desperate need for expanded search-and-rescue capability in the aftermath of a 7.6-magnitude earthquake that devastated the region.

An aptly titled *New York Times* article, "An Earthquake's Pain Unites Two Rivals, for the Moment," offered an explanation for the missed opportunity for India and Pakistan to use military-to-military engagement in the realm of disaster response. The Indian government had offered to provide humanitarian assistance to Pakistan, including "tents, blankets, plastic sheets, food and medicines" (Sengupta 2005a). India also offered to provide military search-and-rescue helicopters. However, despite its need for helicopters for this purpose, Pakistan demurred due to India's insistence that the helicopters be piloted by Indian soldiers (Sengupta 2005b).

Pakistan's rejection of Indian military assistance prompted the Indian government to withdraw its humanitarian support until both sides could amicably agree on how to deliver aid across the Kashmiri Line of Control—the international armistice line that divides Kashmir into Pakistani- and Indian-administered territories. President Pervez Musharaf of Pakistan remarked regarding the tensions over humanitarian aid, "If they don't trust me, I don't trust them. . . . It's mutual." Pranab Mukherjee, the then Indian defense minister, responded that a single earthquake "cannot alter the history of the last 50 years," suggesting that military-to-military engagement between the two states was a futile enterprise given the overarching high-politics tensions associated with Kashmir (Sengupta 2005b).

There is no litmus test for assessing when historically rooted conflicts are ripe for states to engage in environmental or humanitarian cooperation. But this failure to cooperate in the face of dire humanitarian need illustrates the limits of the approach.

Greece's and Turkey's "earthquake diplomacy"

In 1999, Greece and Turkey were struck by devastating earthquakes one month apart. After the Turkish earthquake, Greece dispatched military search-and-rescue teams to assist Turkish first responders with disaster relief and recovery. When Greece was struck by a devastating earthquake the following month, Turkey sent armed forces to assist Greek search-and-rescue teams. This cooperation occurred despite the decades-long dispute over divided Cyprus.

According to Voice of America correspondent Alan L. Heil, Greece's and Turkey's "earthquake diplomacy" helped to further "more open dialogue" and produced "perhaps the most significant easing of tensions between Turkey and Greece since the 1950s" (Heil 2000). Today Greek and Turkish armed forces continue to cooperate on earthquake preparedness to improve their capacity to address future disasters and to expand the foundation for peace (*Kuwait Times* 2009).

U.S. bilateral engagement

The U.S. military has used environmental issues, natural resources, and natural-disaster preparedness training as a focus of multilateral and bilateral military-to-military engagement for at least three decades. This work was advanced during the mid-1990s under the auspices of the newly created office of the Deputy Under Secretary of Defense for Environmental Security, a position held by Sherri Goodman during the two Clinton administrations. The signing of military-to-military environmental cooperative agreements was an engagement tool pursued under the rubric of Secretary of Defense William J. Perry's preventive defense strategy. Although the prominence of and resources available for these endeavors have receded under subsequent administrations, the United States continues to employ environmental cooperation in its joint military exchanges. In particular, historically and to date, the U.S. combatant commands have led efforts to integrate environmental engagement into a longer-term strategy for addressing emerging challenges within a joint military framework.

U.S. Pacific Command

The U.S. Pacific Command (PACOM) has a laundry list of challenges: humanitarian disasters linked to pandemic disease, famine, and drought; natural disasters such as tsunamis, earthquakes, typhoons, and cyclones; and grievances associated with poor environmental stewardship and resource exploitation (Keating 2008). Using these challenges as a basis for cooperation, PACOM has engaged Asian neighbors, including Cambodia, China, India, Indonesia, Laos, Thailand, and Viet Nam.

Following the December 2004 earthquake and tsunami off the coast of Sumatra in Indonesia, the U.S. military provided disaster relief, including aerial

search and rescue and water, shelter, food, and medical support. The U.S. military also transported critically injured persons and deployed the *USNS Mercy* hospital ship to provide medical support to thousands of tsunami victims (Asia Pacific Defense Forum 2005). The U.S. Army dispatched civil-affairs officers to Thailand, Sri Lanka, and Indonesia to help restore these countries' fishing industries, provide engineering support, remove debris, give trauma counseling to families, and improve governments' capacity to meet victims' needs (Asia Pacific Defense Forum 2005; Renner and Chafe 2007). Today, the U.S. military continues to conduct bilateral and multilateral exercises with the militaries of the tsunami-struck nations to improve their capacity to respond to future disasters and to increase interoperability in future joint military responses.

PACOM's senior leadership also engages in exercises with the Chinese military around "common cause issues," such as humanitarian assistance and disaster response in order to develop "the U.S.-China military-to-military relationship" (Keating 2008, 6). Confrontations between the Chinese and U.S. naval forces have also led both governments to call for greater interactions between the two militaries to prevent future incidents and to provide additional political space to build on previous dialogue on joint natural-disaster preparedness training (Phinney and Butts 1998; Butts and Dabelko 2009).

U.S. Africa Command

U.S. Africa Command (AFRICOM) is the first regional combatant command geared toward humanitarian and development assistance, taking a role that combines military and civil functions (Hanson 2007). AFRICOM's primary function is "military-to-military activity: training missions, conducting exercises, and helping to professionalize the militaries of the continent," said AFRICOM then-commander general William E. "Kip" Ward in an interview (USAID 2009). "These activities have an impact on humanitarian efforts and we recognize the importance of 'smart power,' or soft power activities," he added. AFRICOM also engaged in a range of military-to-military assistance projects revolving around biodiversity protection in sub-Saharan Africa during the 1990s (Butts 1994).

In 2009, AFRICOM's naval forces cooperated with Ghana's navy to improve its capacity to combat illegal fishing. Military-to-military engagements on fisheries "tie very closely to our main efforts of developing partner capacity in maritime safety and security, and supporting maritime sector development," said Lieutenant Commander Mike Baker (Crawley 2009). Further, building its maritime security capacity can help Ghana monitor and regulate its resources and reduce illegal activities, such as narcotics trafficking by fishers, which produce revenue used to sustain despotic warlords and militants in other countries in West Africa.

Meanwhile, U.S. naval warships continue to help West African nations—including Cameroon, Gabon, Nigeria, and Senegal—to improve naval patrols and promote regional capacity to address illegal fishing and narcotics trafficking.

U.S. Southern Command

In 1996, the U.S. Southern Command (SOUTHCOM), in collaboration with the Department of State's regional environmental hub at the U.S. embassy in Costa Rica, convened environment and defense ministers from Central American countries at the Environmental Security Conference for Central America and the Caribbean. The conference enabled defense and environmental ministers to collaborate with SOUTHCOM officials to exchange knowledge about environmental security issues and to promote regional defense around emerging common challenges.

The objectives of the environmental conference included strengthening and improving relationships "among the armed forces, police, environmental officials, and civil society in support of the natural resources within the Mesoamerican Biological Corridor" (Butts, Sonski, and Reynolds 2005, 2). The conference also looked to "[c]reate a group of trained military and civilian officials with the capacity to prepare for and respond to the region's natural or manmade disasters," and sought to promote cooperation around transnational challenges, such as biodiversity loss and environmental terrorism (Butts, Sonski, and Reynolds 2005, 2). According to the Center for Strategic Leadership at the U.S. Army War College, SOUTHCOM's "military role in environmental response has built governmental legitimacy and respect for the armed forces" (Butts, Sonski, and Reynolds 2005, 2). These activities have continued with regional forums that regularly bring together defense and environmental ministry officials.

U.S. Central Command

The U.S. Central Command (CENTCOM) has used environmental cooperation to build strong military-to-military relationships with countries in the Horn of Africa, the Middle East, and Central Asia. "[C]ooperation on these issues can promote regional stability and contribute to the ongoing process of conflict resolution," said then-CENTCOM commander general Tommy Franks at a 2001 House Armed Services Committee hearing (Sigler 2005, 56). He added, "Environmental security remains an important element in shaping a future made complex by competition over natural resources" (Sigler 2005, 56).

From 2000 to 2004, CENTCOM sponsored a series of regional environmental security conferences to engage Gulf states on environmental issues such as water, energy, and natural disasters. Officers from regional militaries and CENTCOM convened working groups to share information and concerns regarding natural and human-made disasters. The conferences also built regional capacity and interoperability on "[e]nvironmental security intelligence, detection, and information sharing; . . . [r]egional training and exercises; and [m]anaging health and disease consequences," as well as "enhance[d] disaster preparedness and medical surveillance capabilities in the region" (Sigler 2005, 54).

Strategically, environmental cooperation has been viewed as particularly fruitful in serving the United States' long-term regional interests. According to Rear Admiral John F. Sigler, "The conferences . . . in Central Asia to address earthquakes and Soviet-era environmental legacies fostered increased understanding and cooperation in the region, which were instrumental in persuading Uzbekistan and Kyrgyzstan to allow essential U.S. military bases during Operations Enduring Freedom and Iraqi Liberation" (Sigler 2005, 55).

Meanwhile, CENTCOM's Combined Joint Task Force–Horn of Africa (CJTF-HOA) has worked closely with states in its area of responsibility to coordinate joint training programs and humanitarian operations for natural-disaster preparedness. CJTF-HOA trains local security forces and has been offering civic assistance with "wells, schools, and clinics, and providing medical and veterinary services in remote villages" (Fallon 2007, 21). By addressing environmental concerns through humanitarian operations, CJTF-HOA has helped to professionalize local security forces and has engendered goodwill within the population to help contain the "spread of extremist ideology" (Fallon 2007, 21). Unfortunately, poor coordination of well drilling between the military and civilian development authorities has led to criticism of resource-development initiatives that are undertaken without an understanding of the social and political implications of such actions. In this case, poor execution of defense-delivered development has set back efforts for cooperation among defense and development bodies of the U.S. government, providing a useful reminder of the potential downsides of such activity.

Today military-to-military cooperation on the environment continues to be a central tenet of CENTCOM's readiness posture. "Unresolved issues of border demarcation and disagreements over the sharing of vital resources, such as water, serve as sources of tension and conflict between and within states in the region," then-CENTCOM commander general David Petraeus testified before the Senate Armed Services Committee on April 1, 2009 (Petraeus 2009). He noted that these challenges will require CENTCOM to continue to engage other nations by "[b]olstering the capabilities of partner security forces in the region . . ." to manage and mitigate environmental issues, and by helping to "reform, and in some cases build, governmental and institutional capacity" to address these challenges (Petraeus 2009).

CONCLUSION: NEXT STEPS

The emergence of climate change as a pressing threat is creating additional opportunities for military-to-military environmental engagement. As the U.S. Department of Defense begins to consider the effects of climate change on its current and future missions, some at the department have begun to look at ways in which the military-to-military enterprise can be implemented to "help build the capacity of foreign militaries to aid their civil authorities in adapting to climate change impacts" (*Defense Environmental Alert* 2009). These exchanges

carry potential peacebuilding benefits if they include engagements among adversaries as well as allies.

As climate change takes its toll across the world, developing countries are likely to need the most assistance in adapting to its effects. Military-to-military engagements may serve as a preparatory step toward improving their capacity to respond to extreme weather events, which are expected to increase in frequency and intensity. Indeed, in developed and developing countries alike, the military is a key institution for disaster response and preparedness. As momentum for climate-change adaptation increases, military-to-military engagement may become a tool for building capacity to adapt to climate change rather than simply responding to disasters.

Over the past twenty years, environmental issues have become a more mainstream element of security debates the world over. This creates opportunities to expand military-to-military environmental engagement, to test the robustness of this tactic, and to calibrate its strengths and limitations. It also constitutes another chapter in the often contentious history of civilian-military relations in the development arena.

The lessons learned about military-to-military collaboration as a conflict-prevention tool are also relevant for post-conflict peacebuilding. Because conflicts often reignite, conflict prevention is an explicit goal of peacebuilding. The military-to-military enterprise offers opportunities for militaries to engage in the post-conflict peacebuilding phase, and it keeps them from being marginalized or disenfranchised—dynamics that have undermined the peacebuilding process.

Many of the cooperative military-to-military exchanges in these conflict-prevention examples could be adapted to post-conflict peacebuilding situations. Such exchanges remain underexplored and underanalyzed; understanding their strengths and weaknesses is a key early step toward developing a multidimensional peacebuilding toolkit.

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