Public health officers releasing *P. reticulata* fry into artificial lake in Lago Norte district of Brasília as part of a vector control effort (Fábio Rodrigues Pozzebom/Agência Brasil)

Mosquitoes
A Viable 21st-Century Soft Power Tool

By Mary Raum and Kathleen J. McDonald

Militaries and soft power have been interlinked since Alexander the Great began assisting the populations his armies conquered by rebuilding infrastructures and distributing food and first aid. Humane gestures by armies were considered important to winning loyalties. During the Napoleonic wars, military altruism had become customary enough to be included in soldiers' military science studies. Napoleon viewed humanitarian assistance as a form of philanthropy that helped change civil social order among those populations his troops defeated on the European continent. Over time, measures of humanitarian aid have shifted as the sizes, types, and durations of conflicts have changed. Military roles now involve functioning as relief agents, participating as surplus disposal entities for old or outdated materials and machines, acting as international peacekeeping forces or as liberators, and delivering organized and rapid natural disaster relief. The latest addition to these scenarios is the performance of long-term humanitarian roles in peaceful settings with nations that may have a future potential value as allies.[1]

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Frederick Cuny, a world-class humanitarian specialist who led many projects in the largest conflicts of the late 20th century until his forced disappearance in the Chechen war of 1995, believed the military had been drawn into five common humanitarian scenarios:

- undertaking rapid logistical-based relief deployment for natural disasters
- operating as martial law constituents at the conclusion of a conflict
- overseeing Phase Four reconstruction and peacekeeping efforts
- overseeing point relief for civilian populations between two warring parties
- acting as interventionists for civilian victims in conflict zones.

Each scenario requires a military to perform a diverse set of noncombat roles under fundamentally different mission models. Militaries are expected to be good at detached deployment, augmenting civil manpower, substituting for civilian workers, acting as police forces, and secondment (what the military calls individual augmentation of troop personnel). Nations go to militaries because they have at their disposal high-end communication equipment, a massive self-supporting manpower base, established organization due to a chain of command structure, and sophisticated command and control systems. According to Cuny, thinking of a military as both combatant and altruistic helper has evolved because of militaries' talents to perform as "cornucopias of assistance." Added to the five common roles within the cornucopia is a growing belief that the military should conduct aid operations permanently and on a long-term basis.

One of the least operationally antagonistic and organizationally disruptive ways for the U.S. military to serve as soft power agents on a long-term basis is through the Services' medical corps. Medical professionals act in dual roles as supporters and defenders of the Constitution against foreign and domestic enemies and as servants of the covenants of the Hippocratic oath. The oath obligates the taker to share scientific gains, look to disease prevention rather than cures, benefit the sick without reservation, respect the privacies of those being treated, tread lightly on matters of life and death, and remember that treating illnesses is the treatment of human beings and that the economic status of the ill should not drive choice of treatment. Each of these is to be remembered in light of the idea that medical professionals hold special obligations to society and as such should strive continually to seek the "true joy of healing others."[2] Current ideology in support of using medical soft power within military theaters of operation is that healthy populations are more secure populations, which in turn are more stable populations. Soft power medical programs expand access and influence and strengthen military and diplomatic relationships.

Globalization and Disease

Public health is more important than ever due to the global integration that is occurring as a result of rapid globalization, interrelated financial systems, and the ability of populations to afford travel. For all the positives of a borderless globe, a damaging consequence of this dynamic has been the ease with which diseases spread. The Severe Acute Respiratory Syndrome (SARS) outbreak of 2003 is a clear example. Beginning in China, the syndrome was brought into Canada by a passenger on a commercial airliner and then spread to other countries in North America, South America, Europe, and Asia before being contained. In 2009, an H1N1 influenza pandemic commonly known as Swine Flu, which had not appeared in society in equal magnitude since 1918, spread from the state of Veracruz, Mexico, to several continents, hitting North America when a 10-year-old patient in California was diagnosed with the disease. Eighteen thousand people were killed by the virus within 1 year. These events and others like them make public health programs a key consideration as a primary choice of military soft power projects.

Even graver in proportion than H1N1 and SARS is dengue fever, followed by Lyme disease, HIV/AIDS, human papilloma virus, and diabetes.[3] Of great concern is that in the last 25 years, unusual manifestations of dengue are appearing and showing cerebral symptoms, which are associated with the functioning of the central nervous system, and hepatic symptoms, which affect the liver.[4] There is no specific treatment for dengue, and there is no vaccine.

The U.S. military has had a long-term relationship with the ailment. During the Spanish-American War, the virus caused major illness among Servicemembers, and throughout history, high incidence of the disease occurred during operations in Somalia, Haiti, and the Philippines. In Asia and the South Pacific during World War II, the Korean War, and the Vietnam War, attack rates on troops were as high as 80 percent:[5]

It is probably soldiers who caused the original spread of dengue fever around Southeast Asia during World War II. . . . A Japanese scientist first isolated the virus during the war, and a United States Army physician, Albert Sabin, made the discovery that there were distinct virus types. . . . you had a movement of soldiers from England, the U.S., Australia and Japan. . . . soldiers flew from city to city. . . . In the 1900s, during the Philippine tour of duty, approximately 40% of newly arrived troops contracted dengue within one year.[6]

For over 100 years, the Army has documented and conducted research pertaining to numerous facets of the disease. Since the 1990s, the Services have been developing and testing possible vaccines in its medical research facilities in the United States and Thailand. This long-term study by military personnel from 1900 onward has resulted in extensive knowledge regarding how and why the disease spreads. Presently, at the Armed Forces Research Institute of Medical Sciences Bangkok, two experimental variations of vaccines are being studied in conjunction with the pharmaceutical company GlaxoSmithKlein and regional community health institutions.

What Is Dengue?

The World Health Organization (WHO) defines *dengue* as a mosquito-borne viral infection that causes a

flu-like illness and frequently develops into the potentially lethal complication of dengue hemorrhagic fever (DHF). Infected mosquitoes bite their victims primarily in the daytime, rarely travel more than 100 yards from their birthplace, and cannot survive freezing weather.[7] Occurring in four different forms, dengue is considered one of the most complicated viruses known today. Symptoms include high fevers; severe headaches; eye, muscle, and joint pain; rashes; and extreme nausea. In its severest forms, it causes internal bleeding and organ shutdown or impairment.[8] International deaths from dengue fever have at times ranked equally with those caused by yellow fever and have exceeded deaths from all other viral hemorrhagic fevers combined, including ebola, Marburg, Lassa, Korean, and Crimean-Congo.[9]

A 2014 WHO Global Alert and Response notification, which relays the severity of dengue, states that since 1964, the disease has increased 30-fold, that 2.5 billion people live in over 100 endemic countries where the virus can be transmitted, and that up to 50 million cases occur annually with its more extreme form, DHF, occurring in over half a million individuals, with death rates among children reaching 22,000 annually. Ninety percent of childhood deaths are patients under the age of 1 year. Current statistics, while staggering, constitute only estimates because accurate and timely reporting remains problematic. In addition, dengue fever (DF) and DHF are leading causes of hospitalization globally, accounting for 1,000,866 cases reported from 1991 to 2004, with the highest numbers in the Western Pacific.[10] A January 2008 issue of the *Journal of the American Medical Association* noted that global urbanization and increasing air travel are expected to make dengue fever a growing international health concern for the foreseeable future. The transmission profile of the disease is multifactorial due to the weakening of control measures in affected areas, rapid urbanization, unreliable water supplies, high population densities, and global warming. Due to international trading in plastic wastes and used tires, two important mosquito breeding grounds have emerged. These used materials serve as quality incubating habitats for larvae due to their structural qualities, which are highly conducive for housing water breeding pools for extended periods of time.

Asia-Pacific Region

In 1947, U.S. Pacific Command (USPACOM) was established to manage and direct forces that fought in the Pacific theater of World War II. Today, it covers approximately half the Earth's surface, from the U.S. West coast to western India and from the North Pole to Antarctica. As the largest of the six U.S. military geographic commands, it collectively represents one-fifth of America's total military strength. Six nations in the region—Australia, New Zealand, Japan, South Korea, the Philippines, and Thailand—are allied with the United States through mutual defense treaties, and key strategic relationships exist with Singapore, India, Taiwan, and Indonesia.[11] American Active-duty troops number 300,000 as part of 5 aircraft carrier strike groups; 2,000 aircraft; 2 Marine Expeditionary Forces; and 5 Stryker brigades.

The Asia-Pacific region, which is in the USPACOM area of responsibility (AOR), is being particularly hard hit by dengue. DF and DHF are upward trending in Southeast Asia overall with an attack rate in the range of 300–400 cases per 100,000 members of the population. Dengue attacks are the leading cause of hospitalization of children in Southeast Asia in general and within Vietnam in particular.[12] In Vietnam, cases are observed from the northeast to the Mekong River Delta all year round, with a slight peak in autumn. In a 2013 global health action report for Hanoi, the situation in Vietnam was called a "major threat," with the numbers of recent outbreaks generating significant international health authority concern.

Other upward trends are being experienced in Singapore and Thailand. Singapore had an outbreak in 2005, and in 2012–2013, reported cases rose from 4,632 to 10,257 in 12 months. Thailand experienced epidemics in 1987 and 1988, and 43,609 cases were reported resulting in 60 deaths in a 6-month timeframe in 2013. The Philippines reported one of the highest numbers of incidents in the region, and in the first 6 months of 2013, Malaysia reported over 10,000 cases. The Association of Southeast Asian Nations (ASEAN) news source, *The Diplomat*, reported that "because of changing climate patterns and the inevitable rise of mega cities, the dengue virus will continue to terrorize many tropical nations . . . . If left unchecked, it could lead to bigger outbreaks that governments may not be able to adequately handle."[13]

Vietnam in Context

In this vast and socially complex part of the globe, where 50 percent of the world's population resides, sits the Socialist Republic of Vietnam. It is an ancient country dating to the 2nd century BCE, having achieved its independence from China in 938 CE. Only 25 miles wide at its narrowest point, and with a coastline of 2,140 miles, it is bordered on the north by China, to the west by Laos and Cambodia, and to the east by the South China Sea. Since the 20th century, the nation has been impacted by French occupation, an overthrow by Japan, internal revolutions, an invasion by China resulting in a separation of peoples into northern and southern partitions, coups, and internal struggles with communist political movements such as the Pathet Lao.[14]

Contemporary American military connections began with the country in 1950 during the French Colonial Administration. Combat action began in 1960 when 100 U.S. Special Forces troops were sent in after 2 Americans were killed in a guerrilla strike east of Ho Chi Minh City. From 1963 until the U.S. withdrawal in 1973, over half a million ground, sea, and air force personnel were deployed for a variety of military actions. Twenty years after the Vietnam War, President Bill Clinton announced the normalization of diplomatic relations between the two countries. Several U.S. and Vietnam cross-nation agreements have

Medical task force from Australia helps manage dengue fever outbreak and treats patients at National Referral Hospital in Honiara, Solomon Islands (Courtesy AusAID)

occurred since the mid 1990s: an annual bilateral human rights dialogue, bilateral trade agreement, counternarcotics letter of agreement, civil aviation agreement, and approval of permanent normal trade relations. A Pew Research Center poll notes that 71 percent of Vietnamese people view Americans in a favorable light.[15]

American military medical aid is not uncommon within USPACOM. A recurring joint/combined humanitarian assistance mission, Operation *Pacific Angel*, has been ongoing since 2007. Other operations have involved setting up medical, dental, optometry, and women's health programs, performing children's surgical operations, repairing hospital equipment, and conducting civic action programs in the form of reconstruction of hospital facilities.[16] The United States Embassy in Hanoi describes Department of Defense (DOD) support for a variety of Overseas Humanitarian Disaster and Civic Aid funded projects. Sixteen thousand U.S. military personnel assisted during the 2004 natural disaster that affected 11 South Asian and Southeast Asian countries when nearly a half million people were displaced. Joint task forces for humanitarian assistance have helped Burma and the populations along its coast. Since the 1990s, the United States has aided victims of typhoons and floods and has conducted aid operations by participating in both ad hoc and multilateral assistance programs after several earthquakes, tsunamis, and cyclones. These assistance programs have been short-term interventions that are geared toward easing immediate suffering.

Though smaller in geographic size and military strength than other countries in Asia, Vietnam is growing in terms of military strategic importance. In part, this is due to the U.S. National Security Strategy's pivot to the east. A military buildup and modernization are taking place in the region, and East Asian countries in particular are upping their naval arms race, which is increasing the risk of military confrontations. The area's strategic economic importance and some of the rapidly expanding economies in the theater have the potential to inflate stress as these nations vie for scarce resources.[17] Regional development of seapower is of distinct interest with the introduction of China's first aircraft carrier in 2012 and Japan's helicopter carrier. In Vietnam, the government has introduced the first of six planned Russian *Kilo*-class submarines, adding it to the ranks of several South East Asian nations including Malaysia, Indonesia, and Singapore that have submarine capabilities.

Current Initiatives

With a population of 90 million people of 54 ethic nationalities, Vietnam is the

second largest country in Southeast Asia and the 13th most populous country in the world. In the densely forested highlands and tropical lowlands, dengue has spread to six of its eight regional provinces. In February 2013, Hanoi announced that there were 62,039 cases reported in the southern region alone, indicating an increase of 11.2 percent as compared to 2011.[18]

Diseases such as dengue become key factors in the ability to retain community stability because of major healthcare costs to populations in a nation with an average per capita income of approximately $4,000 per year. The economic burden is alarming, with the average cost for a patient in 2007 costing $167. More importantly, in terms of impact on family economics, 47.2 percent of families had to borrow money for treatment, and after 6 months, 71.7 percent had not begun or had only managed partial repayment. Approximately 72.9 percent of the infected population indicated that the cost of supporting a dengue fever patient had affected the family's ability to function normally, with an average monetary loss being 36 percent of the annual income in the lowest economic quartile.[19] In Pacific Asia, the disease goes uncared for because of financial distress.

In the past decade, several short-term military assistance programs based on logistics, training, and reconstruction efforts have taken place in Vietnam. Since 2006, eight U.S.-supported medical clinics have been built in Thua Thien-Hue Province in the center of the country. A DOD-backed medical clinic was constructed in 2006 in the Quang Ninh District of Quang Binh Province along the north central coast. Other programs included building a disabled children's center in Dong Hoi Town of the Quang Binh Province and a primary school and a secondary school in Gio Viet Commune on the north central coast. DOD has also made at least three donations of excess medical property valued at over $2 million. Recipients of the supplies were hospitals located in the former imperial capital city of Hue and the General Hospital at Can Tho, the fourth largest city in the nation, which is located in the extreme south central portion of the country. U.S. Navy medical personnel have joined with Vietnamese army doctors and nurses to conduct clinics and give medical education and training programs in patient care and surgical management. The U.S. Naval Research Medical Unit hosted a 2004 conference on developing an Early Warning Disease Outbreak Recognition System at Vietnam's Pasteur Institute. The institute, which has been in existence since 1891, conducts research in dengue fever, diarrheal disease, HIV, leprosy, and polio.[20]

Medicine and Soft Power

The Vietnamese DF situation is a formidable candidate as a trial case for creating a proactive military-backed public health improvement program. Reasons why this choice makes sense are numerous. Dengue is common in nations in the USPACOM AOR, and the command should be an imperative player in the current national security strategy of pivoting to Asia. The health and well-being of American troops in the region are a cause for concern, as is their potential candidacy, as global travelers, for spreading the disease. There are numerous U.S. military medical resources already in the region, and there is a history of medical exchange with the country. The geographic closeness of the country to China and Korea may result in a higher likelihood of having Chinese and Korean medical professionals available for a multinational pilot program. Vietnam is small enough geographically to be able to develop a dengue trial program for both rural and high population areas without expending exorbitant levels of resources. Allies such as Australia already have established dengue programs in Vietnam, making it possible to work with existing programmatic efforts, international networks, and facilities. The U.S. Army is nearby in Singapore working on a dengue vaccine. A formal Vietnamese national dengue control program exists, although it operates in a reactionary fashion to dengue outbreaks.

On a larger scale, developing a soft power program based on dengue makes sense because the disease is a health concern that exists across all U.S. combatant commands. Lessons learned from an official USPACOM incubator program would be transferrable to many other health engagement opportunities around the globe. Prevalence of the disease's existence globally, its effects on the health of the world, and the likelihood of dengue remaining a health threat for several more years make the incubator program of long-term interest and one that allows soft power relationships to be built with numerous countries at the same time. Developing a dengue program also supports one of the top six key Sphere Project standards, which assist in the mitigation of endemic disease and endemic disease rates.[21]

A Way Ahead

To determine how an incubator program could be built, it is useful to look at how the military currently approaches humanitarian aid. The most common approach used to promote medical soft power is the medical civic action program (MEDCAP). Such programs are routinely undertaken to enhance nation-building to indirectly influence or enhance theater security by promoting a caring face to nonmilitary populations. Most U.S. MEDCAPs are formed around the three themes of dental, medical, or veterinarian assistance. The Peacekeeping and Stability Operations Institute of the U.S. Army has noted some negative aspects of MEDCAPs: they can be "counterproductive and hamper long term capacity development, leading often to dependency on part of the host nation."[22]

Problems with current practices and procedures in implementing soft power medical programs are numerous. In a series of articles in the online repository of PubMed.gov, individuals who have been involved in humanitarian assistance programs for decades relate some of the issues they have faced. The largest concern is the lack of measures of effectiveness related to the reduction of disease burdens. Without metrics, programs are less likely to be of true use to

Commander of 1st Area Medical Laboratory mixes two dengue affected insects with dozens of healthy ones to determine if his scientists could analyze and deliver correct diagnosis (U.S. Army/Carol McClelland)

the host nation because no one will know how the soft power program benefited it. Other apprehensions are that, first, DOD does not have any formal evaluation system for its humanitarian aid projects. Second, due to the multiple roles military personnel are required to perform, solid coordination with private and volunteer organizations and host nation officials is less than effective. Third, there is no central repository of information for analysis of lessons learned. Since feedback is rare, projects of similar scope are reinvented each time they are undertaken. Fourth, DOD does not implement health sector humanitarian assistance impact assessments such as those existing within the humanitarian aid community.

Traditionally, the U.S. military uses a clinically based input-output management measurement model that does not emphasize outcomes or the why and how of program effectiveness. This results in a lack of understanding of which soft power medical programs have been effective. The input-output model system does not often document useful lessons learned among the host nation, the receiving nation, and partners from the international aid community. There is some consensus with humanitarian aid experts that the military focus should shift from instigating a short-term operational clinic environment toward thinking of medical aid as a larger category of public health improvement.

Relying on the normal clinical approach as the medical resolution model for disease assistance programs may not always be the most effective tool for international military healthcare agendas. This should not suggest that the clinical approach is not valuable, for it has numerous strengths such as its ability to focus on the physical and biological aspects of disease and conditions and its efficiencies in identifying, in person, defects and dysfunctions of disease using patient histories, physical examinations, and diagnostic testing. The clinical systems thinking model is based on the 19th- and 20th-century approach to rapid, centralized, short-term medical guidance that is inherent to field medicine mission sets, which should be primary to all military services because of their frontline associations with combat and the necessity for saving life under horrific circumstances. Training for war should continue to be a primary goal of military medicine. However, the increased use of militaries for humanitarian aid and pre- and post-reconstruction activities gives military medicine another set of problems to deal with. In these new circumstances, the tried and true clinical attitude so effective in war and conflict is too reactive for uncustomary mission sets categorized as health improvement programs.

Thinking of a health-improvement entity rather than a clinical-systems entity requires some modifications in medical delivery philosophy. To make the shift, one proposed dengue engagement model might be created using four key action areas developed by the U.S. Centers for Disease Control and Prevention over decades of experience in resolving national and international medical and health issues. To deliver a health improvement dengue program, four perspectives of importance should serve as a base for action: epidemiology and surveillance, understanding the environment, health systems intervention, and community-clinical linkages.

Epidemiology, the study of frequency and distribution of disease and surveillance, refers to knowing the location and content of existing global data and information banks as well as providing the right expertise for management and delivery. At a meeting in Manila in September 2013, WHO urged nations with endemic proportions of dengue fever to invest in chemical vector eradication on a year-round basis. Vector control methods to limit disease pathogens follow one of several strategies: controlling mosquito habitats, reducing human contact with mosquitoes, or chemical and biological controls using bacterial toxins or botanical compounds. WHO further stipulated that outbreak response and regulation begin with education of the population to recognize symptoms to seek treatment as early as possible in the disease cycle.[23]

Understanding the environment would mean comprehending and appreciating existing cultural behaviors toward disease as well as determining several issues: What are the available health access structures (such as clinics)? What are the level and content of available medical supplies? What geographic components such as water and sewer systems exist? What are the number and type of available in-country healthcare professionals? A variety of approaches currently exist in Asia to build communication channels from. An ASEAN Dengue Day was sponsored on June 15, 2013, to promote disease awareness. Singapore sponsored a 4-week campaign to eradicate mosquitoes in which more than one million jars of insecticide were delivered to households. In Thailand, the government proposed that its 77 provinces open dengue "war rooms" to keep families apprised of outbreaks. A Filipino campaign called the "4 o'clock habit" encouraged families to stop daily to look for dengue-related problem areas in their immediate surroundings. Malaysians established a Web portal showing updates as to where dengue outbreak case clusters are occurring.[24]

Health systems intervention relates to gathering information about and understanding the number, type, and location of prevention, detection, risk mitigation, and health management programs that exist not only within the country of operation but also elsewhere in other geographic commands. Joint international programs are also evolving. From 1995 to 2000, the Australian Foundation for the Peoples of the South Pacific, in collaboration with the Australian Government Overseas Aid Program, National Institute of Hygiene and Epidemiology, and Ministry of Health in Vietnam, undertook a 5-year project to reduce the incidence of dengue in target areas. The multilateral approach is fostering institutional capacity-building and sustainability through low-cost community-based educational programs.[25]

No matter the final form a dengue program might take, five common dilemmas inherent to soft power medical programs will need ongoing and thoughtful consideration. Military personnel will have to deal with conflicting social values of the host nation as well as conflicting perceptions of disease control methods and procedures. Military professionals will constantly need to regulate themselves to fit the nuances of a military's involvement in a noncombat role. They will also need to keep in mind that the mantle of neutrality in all instances is important to program success. This means keeping a broad understanding of multiple sides, keeping true to the concept of not helping for political gain, and not collaborating with political bodies. In the end, an incubator program such as the one that could be developed with Vietnam may result in developing a body of in-house expertise on programmatic components of effectual civilian disaster relief to be shared with all Service branches and all combatant commands. The Vietnam example is worth pursuing. A tiny mosquito could be the foundation for instigating a new soft power philosophy based on public health improvement rather than a MEDCAP mentality. **JFQ**

Notes

[1] Frederick C. Cuny, "The Lost American: Use of the Military in Humanitarian Relief," *Frontline*, available at <www.pbs.org/wgbh/pages/frontline/shows/cuny/laptop/human-relief.html>.

[2] Johns Hopkins University Library Guide to Bioethics, "Hippocratic Oath, Modern Version," available at <http://guides.library.jhu.edu/content_mobile.php?pid=23699>.

[3] "Five Fastest Growing Diseases in the World," Sierra Express Media, December 23, 2011, available at <www.sierraexpressmedia.com/archives/33424>.

[4] C. Pancharoen et al., "Dengue Infection a Global Concern," *Journal of the Medical Association of Thailand* 85 (June 2002), suppl. 1, S25–33.

[5] Robert V. Gibbons et al., "Dengue and U.S. Military Operations from the Spanish American War Through Today," *Emerging Infectious Diseases* 18, no. 4 (2012), 623–630.

[6] "Spotlight on Dengue: Spread and Impact of Dengue on the U.S. Military and Civilians Before, During, and After WWII," *Denguematters.info*, Issue 11, November 3, 2008, available at <www.denguematters.info/content/issue-11-spotlight-dengue>.

[7] Thomas Fuller, "The War on Dengue Fever," *The New York Times*, November 3, 2008, available at <www.nytimes.com/2008/11/04/health/04denguefever.html?_r=0>.

[8] Center for Disaster and Humanitarian Assistance, Uniformed Services University of the Health Sciences School of Medicine, "Guiding Principles for Global Health Engagements," available at <www.cdham.org/wp-content/uploads/2013/05/guiding-principles-of-ghe.pdf>.

[9] Ibid.

[10] Ibid.

[11] Bruce Vaughn, *Report for Congress: U.S. Strategic and Defense Relationships in the Asia Pacific Region*, RL33821 (Washington, DC: Congressional Research Service, January 22, 2007).

[12] World Health Organization, "Dengue/Dengue Hemorrhagic Fever," available at <www.who.int/csr/disease/dengue/en/>.

[13] Mong Palatino, "Dengue Scare Sweeps Southeast Asia: Southeast Asia Is Suffering

Covering water to prevent dengue, Baguio, Philippines (Courtesy AusAID)

a Dengue Outbreak, Calling for a Regional Response," *The Diplomat*, June 19, 2013, available at <http://thediplomat.com/2013/06/dengue-scare-sweeps-southeast-asia/>.

[14] Encyclopedia of the Nations, "Country Overview: Socialist Republic of Vietnam," available at <www.nationsencyclopedia.com/economies/Asia-and-the-Pacific/Vietnam.html>.

[15] Pew Research Center, "Pew Research Global Attitudes Project: Global Indicators Database," available at <www.pewglobal.org/database/>; Richard Graham, "Timeline of U.S. Involvement in Vietnam Conflict," *Mahargpress.com*, available at <http://mahargpress.com/wounded/additional-material/timeline-of-vietnamconflict/>; "Vietnam War Statistics," *Statisticsbrain.com*, available at <www.statisticsbrain.com/vietnam-war-statistics/>.

[16] U.S. Pacific Command (USPACOM), "Headquarters, USPACOM," available at <www.pacom.mil/AboutUSPACOM.aspx>; Rodion Ebbighausen, "Southeast, Asia Build Up Naval Capabilities," *Deutsch Welle* online, January 13, 2014, available at <www.dw.de/southeast-east-asia-build-up-naval-capabilities/a-17358069>.

[17] Ebbighausen.

[18] USPACOM.

[19] Ibid.

[20] Craig H. Llewellyn, "Military Medicine to Win Hearts and Minds: Aid to Civilians in the Vietnam War," *Bulletin of the History of Medicine* 80, no. 4 (Winter 2006), 795–797.

[21] "The Sphere Project is a voluntary initiative that brings a wide range of humanitarian agencies together around a common aim—to improve the quality of humanitarian assistance and the accountability of humanitarian actors to their constituents, donors and affected populations." See the Sphere Project, "About Sphere," available at <www.sphereproject.org/about/>.

[22] Mark Bradbury and Michael Kleinman, "Winning Hearts and Minds? Examining the Relationship between Aid and Security in Kenya," Case Study, Feinstein International Center, Tufts University, April 2010, available at <http://fic.tufts.edu/assets/WinningHearts-in-Kenya.pdf>.

[23] World Health Organization, "WHO Resources for Prevention, Control Outbreak and Response, Dengue, Dengue Hemorrhagic Fever," available at <www.who.int/csr/disease/dengue/DengueResources.pdf>.

[24] "ASEAN Day against Dengue Fever Marked in Hanoi," *VietnamBreakingNews.com*, June 15, 2013, available at <www.vietnambreakingnews.com/2013/06/asean-day-against-dengue-fever-marked-in-hanoi/>.

[25] J. Drifmeyer and C. Llewellyn, "Overview of Overseas Humanitarian, Disaster and Civic Programs," *Military Medicine* 168, no. 12 (December 2003), 975–980.