Chapter 9
Human Health Threats and Implications for Regional Security in Southeast Asia*

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9.1   Introduction

Health threats including infectious diseases, natural and man-made disasters and environmental change impact human populations worldwide, but they are especially challenging for vulnerable populations in many of the developing nations of Southeast Asia. These health security issues also represent non-traditional regional and global security challenges, which threaten human security more broadly in multiple, complex ways. In 1994 the United Nations Development Report included health security within its definition of human security, which it defined as, "…safety from such chronic threats as hunger, disease and repression, and protection from sudden and hurtful disruptions in the patterns of daily lives, whether in homes, jobs or communities"(UNDP 1994: 23). This is recognition that the traditional understanding of security as related to military and police issues is no longer adequate.

The most threatening of infectious diseases for developing countries in the region in terms of potential morbidity and mortality include malaria, tuberculosis and HIV/AIDS. These diseases are emerging as more dangerous, drug-resistant forms, particularly in less-transparent nations like Myanmar (Beyrer et al. 2006: e393). Moreover, many infectious diseases such as cholera are exacerbated during natural disasters, and incidence of vector-borne disease including malaria, dengue and Japanese encephalitis is increased through environmental change. While treatments for these diseases exist, the incidence remains inexplicably high among many populations in the region. One explanation for this sustained disease burden has been

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related to the widespread belief and practice of Buddhism in Southeast Asia. Many Buddhists believe that human suffering and hardships provide the catalysts for change and development. Delays in obtaining relief from illness may be a Buddhist stoic response to religious awakening (Young-Eisendrath 2002: 67). In addition, emerging diseases such as Severe Adult Respiratory Syndrome (SARS), Nipah virus and avian influenza create new, unpredictable challenges for national public health systems.

Natural disasters such as cyclones, earthquakes and tsunamis typically are catastrophic, short duration events that cause significant but focal loss of human life associated with extensive infrastructure damage. Despite their transitory initial impact, natural disasters generally compromise human security for extended periods, because they require long term redevelopment efforts to rebuild homes and businesses and re-establish essential government services.

Global environmental change occurs with a longer periodicity and greater persistence than other health threats, so the risks to humans are usually not as acute or as obvious as those posed by infectious diseases or sudden natural disasters. Changes in rainfall patterns alter the concentration and geographic distribution of insect vectors and animal reservoirs of human disease. Rising sea levels as a result of global warming threaten many island nations as well other nations with low elevation coastal zones (LECZ) worldwide. Of the ten countries worldwide that have the largest number of people living in a LECZ four are in Southeast Asia (Indonesia, Vietnam, Thailand, Philippines) (Earth Institute 2007). In addition to the risk of inundation, populations in low-lying coastal areas suffer loss of arable farmland and potable water through the effects of saltwater encroachment. These and other environmental events such as widespread annual flooding in Vietnam or the protracted drought in Australia reduce regional crop yields, which in turn affects food and nutritional security. In the United States, Australia and Europe, money, technology, and research and development enable adaptation to the effects of climate change on food security. Throughout much of Southeast Asia however, this capacity is lacking. In Vietnam for instance, economic development through agriculture, fisheries and forestry still relies directly on natural resources. Such dependence raises conflicts by placing added stresses on the environment such as deforestation, land degradation, flooding, water pollution, overfishing and waste, creating greater human security challenges for many of the country's poor (Ninh and Huy 2006: 10).

These three categories of health threats unfortunately do not always occur independently of each other; and complex interactions between simultaneous events can impose synergistic deleterious effects on susceptible human populations. This chapter examines the major human health threats, individually and as elements of a complex health security system, and relates them to human security in Southeast Asia and to the global security situation. Case studies are included to show how governmental failure to respond effectively to health challenges can compromise national and regional security. Additional case studies demonstrate best practices in preventing and mitigating negative health effects on human security and regional stability. Finally, this chapter argues that multilateral collaboration and cross-sectoral interagency cooperation are required for sustainable health

security; and suggestions are offered for future research on the topic of health security in Southeast Asia.

9.2 Direct Effects of Human Health Challenges on Regional Security

According to the World Health Organization (WHO), health is not only the absence of infirmity and disease but also a state of physical, mental and social well-being (WHO 1946: 100). As disease incidence (the number of new cases of a particular disease within a population over time) increases, the burden on individuals, local health care systems and other government agencies increases. New or re-emerging infectious diseases, particularly diseases contracted from exposure to infected animals (zoonotic disease) such as SARS, Nipah virus and avian influenza spread quickly within a region, creating new, unpredictable crises for national public health systems. For biological and epidemiological reasons not fully understood, most of the new influenza viruses that spread globally each year originate in the Southeast Asian region. Yet treatments may not be equitably shared between countries, and international relations can quickly deteriorate. When Indonesia sought guarantees from the WHO that any vaccine against H5N1 influenza that was based on Indonesian strains of the virus would subsequently be made available to Indonesia at an affordable price, the WHO was unable or unwilling to convince the large pharmaceutical companies to provide such a guarantee (Current Concerns 2009). As a result Indonesia withheld critical virus strains from vaccine research and development, putting itself and the region at risk, for which it was rebuked by much of the international health community.

In 2005 the WHO updated and re-issued its International Health Regulations (IHR), which specifies mandatory infectious disease outbreak reporting requirements for the 194 state parties to the agreement. However the financial and technological burdens of increased disease surveillance inhibited compliance with the regulations among many of the low and middle income nations in the region. In future outbreaks, under authority of the IHR, the WHO may enter a country with regionally-placed teams of experts and supplement that nation's resources in order to protect global public health (WHO 2005). While the benefits of such a policy for regional and global public health are obvious, potential disputes involving state sovereignty create emerging threats to regional security. Diseases with pandemic potential are especially problematic to health security, with the additional potential to cause political unrest and civil disorder, deplete military forces, destabilize nations and contribute to state failure. These diseases also affect regional health security indirectly, through strategic impacts on important Asian neighbors like China. The most populous nation on Earth, China earned the enmity of the entire international health community for its dilatory response to the global outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003 (Maclean 2008: 475). Because of the tremendous disparity between countries in planning and response capabilities for dealing

with pandemics, in any global pandemic such as the H5N1 avian influenza outbreak developing countries in Southeast Asia will likely experience proportionately more morbidity and mortality than developed nations, due to limited access to any vaccines and anti-viral medications like oseltamivir (Tamiflu). Ill-will generated by such health inequity and perceived injustice could potentially damage international relations and impact regional stability.

In 2004 the Global Fund offered $100 million in grants to fight tuberculosis, malaria and HIV/AIDS in Myanmar. However in 2005, because of serious concerns about governance in that country and the unwillingness of the ruling military junta to respect the project's safeguards and performance-based grant implementation the funds were rescinded (Global Fund 2005). As a result these highly infectious diseases rampant in Myanmar have returned as imminent health security threats to neighboring countries. Border regions within Myanmar populated by ethnic minorities and marked by ongoing civil conflict suffer the highest national incidences of malaria. The ramifications for transnational health security are obvious, because regions within India, Bangladesh, Laos, Thailand and China that border Myanmar all have significantly higher incidences of malaria, tuberculosis and HIV/AIDS than other regions of those countries (Beyrer and Lee 2008: 2). Myanmar has one of the largest AIDS epidemics in Asia, and this can be as destabilizing as war. The age demographic affected most directly by AIDS includes the most productive segments of society, such as military and civil servants, business owners, teachers and parents. Higher mortality in these sub-populations results in an increased proportion of the young and the old, creating a less stable and more fragile social situation. By framing infectious diseases as a matter of national security with regional implications, governments and their people will be better prepared to handle sudden outbreaks that endanger human lives and threaten the existence and survival of nation-states (Caballero-Anthony 2005).

Another factor that destabilizes regional human security is the large number of the world's poorest people residing in Southeast Asia who lack access to essential medicines to treat these diseases, which argues strongly for health programs that emphasize prevention of disease. Besides the expense factor, this lack of access is also due to poor infrastructure, lack of technical assistance and uncertain quality of pharmaceuticals (International Dispensary Association 2009). The production, distribution and use of counterfeit medicines represent a thriving transnational crime in Southeast Asia. These fake drugs, either less than full strength or containing no drug at all, also are an increasing public health problem for the region, often with tragic results (Fernandez et al. 2008: 585, Newton et al. 2008: e32). Under-strength drugs are particularly insidious because they contain enough of the active compound to foil screening tests yet not enough to treat the disease, while at the same time the reduced potency accelerates the evolution of drug resistant strains of dangerous human pathogens.

Natural disasters such as cyclones, earthquakes and tsunamis typically are catastrophic, short-duration events that cause significant, immediate loss of human life. The Sumatra tsunami of 2004, generated by an earthquake that measured 9.0 on the Richter scale, caused an estimated 250,000 deaths in Indonesia, Thailand, Sri Lanka,

and several other countries in the region (Thieren 2005: 81). The disastrous Cyclone Nargis that struck Myanmar in May 2008 is estimated to have caused over 100,000 immediate human fatalities (BBC News 2008). As infrastructure is often severely damaged in disasters, normal life is generally not possible until the government provides assistance to rebuild the community. Thus there is a critical linkage between the resilience of the people/community and the management of the built environment that serves those people and communities (Potangaroa et al. 2008: 57). Often, post-disaster settlement and shelter processes address only disaster-related change, and do not consider pre-existing vulnerabilities. The reasons for this are principally funding, capacity issues for organizations, and mandates, especially when organizations are officially invited by a host government to do specific post-disaster work. Yet disasters, even those involving a sudden-onset hazard, inevitably have multiple root causes, including poverty and conflict, which increase vulnerability to the hazard. If those root causes are not considered after the disaster, there is a danger that the same vulnerable state will be rebuilt, or that new vulnerabilities will be created (Kennedy et al. 2008: 24, Kennedy et al. 2007). Deaths and damage resulting from natural disasters and other large scale health emergencies are as much reflective of societal factors as of the naturally occurring event itself. They reveal major public health deficiencies, they may catalyze political violence, and they compromise human security through a lack of proper resources to respond to the disaster.

Direct environmental threats to health security include volcanic emissions, fires, and chemical exposures. These challenges cause acute negative human health effects, which require immediate action to prevent loss of human life. Longer duration environmental threats, often related to global climate change, include floods and droughts, air pollution and contaminated water supplies. Water issues in particular can be highly politicized, and compromise human security in more insidious ways. With every country seeking to satisfy its water needs from limited water resources, the potential for "water wars" between countries competing for the same water supplies is real. Singapore and Malaysia have endured a tense relationship over water rights since the 1960s, with Malaysian politicians periodically threatening to "turn off the tap" on Singapore's water supply, and Singapore flatly stating that if Malaysia reneged on its water treaty obligations there would be "consequences" – widely believed in both countries to mean immediate military action to restore its water access (Mauzy 2009). While this unquestionably is a political challenge for these two countries, should Singapore's water supply be interrupted, the direct (lack of drinking water, poor sanitation) and indirect (conflict) health consequences for impacted populations would be immediate and severe. According to UN Secretary-General Ban Ki Moon, speaking in 2007 on the occasion of World Water Day, "The consequences [of water shortages] for humanity are grave. Water scarcity threatens economic and social gains and is a potent fuel for wars and conflict." Of the 47 nations regarded as being either water stressed or water scarce in 2007, 25 are regarded as facing a high risk of armed conflict or political instability as a consequence of climate change (Smith and Vivekananda 2007: 3). Fortunately however, history shows that cooperation, not conflict, is the most common response to transboundary water management issues. Shared water resources may actually

act as a unifying force to foster trust and promote peace. Over the last 60 years there have been more than 200 international water agreements worldwide and only 37 cases of reported violence between states over water (United Nations 2009). As 30 of these violent incidents were reported from the Middle East, where water supplies are often scarce, this may reflect the seriousness with which regional governments compete for limited water supplies and all that it means for health security for their nations.

9.3 Indirect Effects of Human Health Challenges on Regional Security

Besides the direct health effects of infectious diseases, natural disasters and environmental degradation there are complex secondary effects on human security. National development programs may be scaled back or stopped entirely in order to shift resources to control epidemics or respond to disasters. Disease outbreaks and other major health challenges compromise the ability of governments to provide basic services, and lack of basic services such as clean water and sanitation in turn further exacerbate health challenges, creating a reinforcing negative causal loop (Pegasus 2009) of human insecurity. Similarly, a negative causal loop exists wherein poverty causes ill health, and ill health leads to poverty. High infant mortality rates are often observed in countries where health security is compromised, and a high infant mortality rate has consistently been linked to state failures. Of countries whose infant mortality rates fall in the top quartile worldwide five (Laos, Cambodia, Papua New Guinea, Burma and East Timor) are found in the Southeast Asian region (CIA 2010). While there is no direct causal connection between infant deaths and ensuing political crises, infant mortality appears to be acting primarily as an indicator for the overall quality of material life. Like the canary in a coal mine, whose death indicates serious health risks to miners, high infant mortality serves as a powerful indicator of more broadly deleterious living conditions (Esty et al. 1999). Loss of confidence in government's ability to protect its people leads to civil unrest, refugee migrations into neighboring states, insurgencies and disruption of regional security. Domestic demographic changes including rural to urban shift and Internally Displaced Persons modify the resilience of populations in dealing with health challenges and reduce the ability of governments to ensure human security. Health problems also cause lost productivity, lost wages and medical expenses. These issues in turn highlight inequalities and may further contribute to social disorder.

Malnutrition and starvation continually plague many parts of the developing world. Food insecurity is a major contributing factor to human insecurity, and it unquestionably threatens regional and even global security. Shortages in 2007–2008 of food staples like rice and wheat, leading to soaring food prices, instigated violent protests from Pakistan to Mexico. Food riots can spin out of control and threaten State survival, particularly if they occur in countries where citizens already feel oppressed by authoritarian rule and rampant government corruption.

Famines represent the final stage in an extended process of deepening vulnerability and fracturing of social reproduction mechanisms (McMichael 2009). Rice is a staple for billions of Asians, and supplies of rice are at the lowest levels and the highest prices in over two decades. In Thailand, 55 of the kingdom's 76 provinces are suffering severe drought, including half of the key central rice growing provinces. 6 years of drought in Australia, a major supplier of rice to Southeast Asia, has reduced that country's rice crop by 98% (Kisner 2008; Bradsher 2008). Global stocks of wheat are at their lowest levels in 50 years, and today constitute less than 10 weeks worth of world consumption, according to the United Nation's Food and Agriculture Organization (Leake 2008). Many populations that formerly grew their own food have abandoned degraded land and left agriculture, moved to urban areas, and are now purchasing their food. The World Food Program is concerned that many potential food aid recipients who were not previously in the urgent category are being priced out of the food market, and are now in urgent need of direct food aid. The World Bank now believes that some 33 countries are in danger of being destabilized by food price inflation, while Ban Ki-Moon, the UN Secretary-General, recently asserted that higher food prices risk wiping out progress towards reducing poverty and could harm global growth and security (Clover 2008).

There are other approaches however for improving food security than providing direct food aid. With skyrocketing food prices and distribution costs, a better strategy than sending food aid to poorer countries may be to help farmers grow food domestically. According to the International Food Policy Research Institute, the Southeast Asian region has made significant headway since the Global Hunger Index (GHI) begin tracking food security nearly two decades ago (GHI 2008). Nonetheless the food security status of several Southeast Asian countries such as Indonesia, Myanmar, Vietnam and the Philippines is still classified on the GHI as serious, or even alarming in the case of Laos and Cambodia. Combating the food crisis is a complex challenge that will require international and multi-sectoral cooperation. This will involve more food aid for poor people; much greater investments in agriculture, especially the small farm sector; changes to biofuel policies; measures to calm global food markets; better data collection and improved monitoring of the food and nutrition situation in developing countries (von Grebmer et al. 2008).

Another aspect of food security is food safety. Food and water borne diseases caused by *Escherichia coli*, *Clostridium botulinum*, *Vibrio* spp., *Salmonella* spp. and other microbial pathogens are responsible for more than 600,000 deaths in Southeast Asia each year (WHO 2008). However unsafe food also imposes other, non-health consequences including significant economic impact both domestically and internationally. Developed nations concerned about food safety are reluctant to accept food products produced in Southeast Asia (Le 2007; QFF 2003), which constrains agricultural exports, further depresses local economies, and exacerbates social unrest. When local and national governments are unable or unwilling to deal in a sustainable way with these secondary effects of health security challenges, domestic stability can become threatened, posing spillover security threats for the region.

Global climate change impacts health security in less direct and more insidious ways. The unrelenting penetration and destruction of rainforests worldwide has led

to exposure of humans to viruses and other microbes that otherwise would not have occurred. For example, an outbreak of Nipah virus in Malaysia occurred when pigs penned near fruit orchards contracted the virus from the droppings of bats, whose habitat had shifted as a result of deforestation. The infected pigs then readily transmitted the virus to their handlers (Lal 2007: vii). An emerging challenge in Southeast Asia is what may be termed "environmental migrants," representing individuals or even communities that choose or are forced to migrate as a result of environmental and climatic factors (Morton et al. 2008: 5). While governments and international donors more often concentrate on mitigating the effects of sudden disasters, gradual environmental degradation such as recurrent flood, protracted droughts and failing ecosystems can lead to migration as well. Protection of the environment includes cross-cutting issues, impacting every member of society. However the people who bear the brunt of the consequences of climate change are rarely consulted regarding their situation, their needs or possible options that may shape their future well-being.

9.3.1 Case Study in Failed Policy, Programs and Practice: Myanmar, Cyclone Nargis

In natural disasters, rapid response is essential to save lives at immediate risk and to prevent additional loss of life from post-disaster health challenges such as disease, starvation and environmental exposure. When Cyclone Nargis smashed into Myanmar on May 2, 2008, the full extent of the destruction was not immediately revealed and not likely even comprehended by the government. As word of the disaster spread regionally and soon globally, foreign nations and countless aid organizations rushed to provide goods and services to the beleaguered country. Despite the rapid and prodigious offerings of international aid, relief supplies and relief workers were initially stopped at the Myanmar border. To the consternation of donor nations and Non-Governmental Organizations (NGO), the government of Myanmar unconscionably restricted access to the country, particularly for aid workers and supplies from countries outside of the Southeast Asian region. In a clear manifestation of its xenophobia, the ruling military junta of Myanmar insisted that outside assistance was not needed, and that the national government had sufficient resources to respond to the disaster. Moreover, the government assured the international community that the situation inside their country was not nearly as serious as was being reported by foreign news agencies and aid organizations. Despite these claims by the government of Myanmar, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) estimated on 9 May 2008, 1 week after the disaster, that the death toll in Myanmar from Cyclone Nargis was between 63,000 and 101,000. The following week, on 16 May, the International Red Cross and the United Nations corroborated the OCHA estimate with their own report that the figure exceeded 100,000 (BBC 2008). Countries in the region and the international community were initially frustrated and soon outraged over the recalcitrance of the

Myanmar government, and its apparent indifference to the reality of the situation in terms of human insecurity.

In 2005 all member states of the United Nations reached consensus that states have a primary responsibility to protect their own populations and that the international community has a responsibility to act when these governments fail to protect their citizens. This is the principle of International Responsibility to Protect, or R2P (ICISS 2001). R2P states that "Where a population is suffering serious harm, as a result of internal war, insurgency, repression or state failure, and the state in question is unwilling or unable to halt or avert it, the principle of non-intervention yields to the international responsibility to protect" (Chia 2008). While the United States and some members of the European Union, including the United Kingdom, France, Germany, and Denmark did not rule out "humanitarian intervention" into Myanmar, the Association of South East Asian Nations (ASEAN) remained opposed to forced delivery of aid, because of sovereignty considerations and its fundamental adherence to non-intervention in the affairs of member states. Ultimately, conditions were negotiated under which foreign aid and foreign relief workers were granted access to Myanmar. However access was restricted to relief from ASEAN nations, whose resources were limited and whose capacity to provide urgent medical aid and recovery to avoid a health catastrophe was questionable. Expanded relief efforts did not begin in earnest for nearly 2 months after the cyclone hit, through U.N. agencies such as OCHA, the High Commissioner for Refugees (UNHCR) and the United Nations Children's Fund (UNICEF), plus the World Health Organization and numerous non-governmental organizations.

Much debate has occurred about the negative impacts of the delayed response and poor internal and external coordination by the Myanmar government. It appears probable that ineffective interagency coordination internally, compounded by the government's initial unwillingness to cooperate with outside agencies and non-ASEAN governments may have resulted in unnecessary and avoidable loss of human life in the days and weeks following the disaster. Moreover, from a geopolitical perspective, regional security was threatened. What began as a natural disaster and a domestic health security issue could have completely undermined ASEAN as a regional arbiter if extra-regional powers had decided to proceed with forced intervention.

9.3.2   Case Study in Best Practices: China, Sichuan Earthquake

Just 10 days after Cyclone Nargis devastated Myanmar, Sichuan China was hit by a magnitude 8.0 earthquake that leveled numerous towns and cities in the region and killed over 69,000 people. China is included in this chapter as an example because of its multi-factorial influence on its regional neighbors in Southeast Asia. Despite the widespread destruction, which disrupted most road and rail lines into the region, the response by the Chinese government was impressive, and dramatically different

than the response by the Myanmar government to its cyclone disaster. The Chinese government, which acted quickly in the crisis, welcomed relief assistance from all countries throughout the world with an open attitude, invited and arranged foreign support for disaster relief in China, and offered direct access for contributions of equipment and materiel to the disaster areas through flexible policies (Wenjun and Ivy 2008). Local volunteers were mobilized effectively, and a unified response by all relevant agencies of the Chinese government including full utilization of the Chinese Army was implemented to provide disaster assistance. The US Agency for International Development/Office of Foreign Disaster Assistance (USAID/OFDA) as well as numerous NGOs were permitted immediate and full access to the region and were on site within days with relief supplies, specialized equipment and trained personnel. Despite multiple aftershocks in the ensuing hours and days following the initial quake, some as strong as 6.0, the government maintained a rapid, coordinated response and emphasized transparency in its actions and unrestricted access to the media. This proactive, open and collaborative response to the disaster mobilized international support and drew upon all relevant components of the Chinese government. China's response stood in sharp contrast to the uncoordinated and uncooperative response of Myanmar in Cyclone Nargis, and unquestionably served to limit further loss of life throughout Sichuan province.

9.4   Regional Cooperation on Health Security

Regional health security challenges require regional solutions, because globalization has increased the interdependency of neighboring states. In a globalized world, health security is an element of the international "commons" and thus may be considered a global public good, which Young defines as "lying wholly or largely outside the jurisdiction of any individual member of international society but of interest to two or more of them, or their nationals, as a valued resource" (Young 1997). In addition, health problems cannot be solved by Ministries of Health alone; sustainable solutions to health security problems require a holistic approach. Policymakers must recognize that providing resources in response to a health emergency invariably means shifting resources from other programs, with consequences for the other programs. Scrutiny of the root causes of health emergencies usually reveals additional issues of governance and rule of law, including corruption. So a whole of government strategy employing systems analysis is needed.

9.4.1   *Case Study in Failed Policy, Programs and Practice: Fires and Air Pollution in Indonesia*

For over 10 years Indonesia has been plagued by forest fires on the island of Kalimantan (Borneo), where forests have been cleared by purposeful and uncontrolled

slash and burn techniques, in order to clear land for plantations and production of rice, palm oil and other agricultural products. Smoke from these fires spreads out from Indonesia, covering major shipping lanes like the Malacca Straits, and impacting air travel in the neighboring countries of Singapore and Malaysia. The resulting occurrences of haze currently rank among the world's worst air pollution episodes. The biggest problem of the fires in Indonesia was not the fire itself but the toxic smoke released. Air quality in Indonesia during these fires was many times worse than that of the most polluted cities of the world, and the polluted air affected the health of people living in neighboring countries (Field et al. 2009: 185). The health effects of this air pollution were significant, causing serious morbidity among residents of Indonesia, and seriously degrading air quality in Malaysia and Singapore (Heil and Goldammer 2001: 24). Despite regional complaints and international pressure, for over 10 years the Indonesian government appeared unable or unwilling to confront this serious health security problem, and the underlying causes of environmental mismanagement. As a result, relations between Indonesia and its neighbors deteriorated.

Civil society may consider fires as domestic natural disasters, and not fully appreciate the serious regional health security implications. As a result, governments and agencies in charge of fire and land management may not be held accountable. In 2002 Southeast Asian nations came together to create the ASEAN Agreement on Transboundary Haze Pollution (ASEAN 2002), which entered into force in 2003 with seven nations ratifying the agreement. This agreement was developed by government negotiators from the ASEAN nations, with the support of the ASEAN Secretariat and assistance from the United Nations Environmental Programme (UNEP). Importantly, indigenous knowledge and practices in fire prevention and management were sought and utilized, and public education programs were established. This act of improving health security governance through local involvement and regional engagement was a positive step forward, as local health professionals are often the most effective teachers. However quite noticeably, Indonesia was missing from the list of state parties ratifying the Agreement in 2002, and as of 2010 remains the only ASEAN nation yet to ratify it. This presents a difficult problem for the region since Indonesia is by far the biggest source of the fires and haze. Indonesia's ratification aside, the fact that the Agreement was even adopted is noteworthy in itself, given ASEAN's traditional penchant for non-legal, consensual decision-making and non-interference in member states' internal affairs (Tan 2005). ASEAN countries, particularly Malaysia, even attempted to rationalize Indonesia's lack of compliance on the basis that because the fires were exclusively on Indonesian territory, it was an internal problem best left to Indonesia to handle.

9.4.2 Case Study in Best Practices: SARS and ASEAN

In late 2002 the first case of Severe Adult Respiratory Syndrome (SARS) was reported in Hong Kong. Within 24 h the disease had spread to five other nations, and

within 1 month it was reported on six continents. The disease affected over 8,400 people, killing 10% of those infected (WHO 2003). In an unusually quick response, Ministers of Health from ASEAN+3 (ASEAN plus Japan, China and Korea) met to craft a plan to stop the epidemic. Recognizing that the SARS epidemic was more than just a health security challenge, and that it threatened regional security more broadly, the ministers implemented a multi-sectoral response strategy, with high-level meetings involving labor, transportation, tourism, information and health. Within 2 months the Health Ministers were able to declare ASEAN as a SARS-free region, and note that ASEAN was the first area in the world with a coordinated, region-wide response to SARS (ASEAN 2003). With this official elimination of the health security threat, travel advisories to the region were lifted, enabling economic recovery to begin.

9.5 Opportunities for Regional Collaboration

Today health security is viewed within a more comprehensive regional security framework, and the more relevant referent for security is considered to be the individual rather than state sovereignty and territorial integrity. In addition to health security, this comprehensive security framework emphasizes the importance of other areas such as economics, energy, food supply and the environment, which often threaten individuals more on a daily basis. A people-centered view of security is necessary for national, regional and global stability. In employing multiple lines of effort to solve health security challenges, more holistic, whole of government security policies are developed. This also enables governments to leverage limited security resources more effectively, and develop mutually supportive approaches for international cooperation to expand regional health-security communities. In 2000 the World Health Organization established the Millennium Development Goals (MDG) (WHO 2010). These ambitious goals address global challenges in such areas as poverty and hunger, maternal and child health, and combating HIV/AIDS and other infectious diseases. The Millennium Development Goals Report (United Nations 2008a) details current success worldwide in achieving the MDG. Global progress has been variable, and reports for each Southeast Asian nation are available from the UNDP (United Nations 2008b, c).

Health issues receive greater attention from senior policy-makers when they constitute possible threats to international, regional, national and individual security, or potentially may affect the economic welfare of a country or region (Katz and Singer 2007: 233). However the historical record suggests that only in times of crisis does Southeast Asia grab the attention of international policy makers (Cossa et al. 2009). Negative effects on human security can be mitigated through regional recognition of the threat, new cooperative policies on surveillance and public health that emphasize an interagency approach, and new technologies. While infectious diseases clearly threaten human health, they also may raise opportunities for sustainable improvements in human security. Ancillary benefits include strengthening of institutional

capacities and expanded security communities, leading to enhanced Southeast Asian regional security. The United Nation Development Programme (UNDP) created the Capacity for Disaster Reduction Initiative (CADRI), which focuses on capacity building through developing human resources, enhancing organizational capacity, and strengthening institutions that provide a framework for engagement between the state, the private sector, and civil society (UNDP 2007).

During regional health emergencies, countries may fail to cooperate with their neighbors. There are several potential reasons for such behavior. Governments may fear international scrutiny, stigmatization and potential negative effects on tourism, or they may feel the situation is within their own jurisdiction and capability. During the SARS outbreak of 2003 the epidemic spread throughout Southeast Asia and across the Pacific to North America. While disease reporting from many developing nations in Southeast Asia was unreliable at best, the Canadian city of Toronto cooperated fully with international health authorities in surveillance and mitigation of the epidemic in that city. Despite the Canadian government's aggressive and transparent efforts to control the outbreak, the WHO issued a travel advisory warning people to avoid travel to Toronto, with devastating effects on the city's hotel, restaurant and tourist industries. Even after the epidemic was over, it took more than a year for Toronto's economy to fully recover. The impact of an epidemic like SARS on regional and global economic stability is complex, because there are linkages across sectors and across economies in both international trade and international capital flows. The economic costs from a global disease such as SARS go beyond direct damages incurred in the affected sectors of the disease-affected countries. This is not just because the disease spreads quickly across countries through networks related to global travel, but also any economic shock to one country is quickly spread to other countries through the increased trade and financial linkages associated with globalization (Lee 2009).

In Southeast Asia, the "ASEAN Way" of non-interference and the preeminence of national sovereignty can delay or obstruct regional cooperation. This philosophy is written into the fundamental documents of ASEAN (ASEAN 1976), making it very difficult to gain consensus for humanitarian intervention in an epidemic or other health crisis under the terms of the International Responsibility to Protect, regardless of the security threat posed to regional neighbors or the rest of the planet. Plus, not all health challenges represent security concerns, and there is discomfort among some nations that approaching health challenges from the perspective of their effects on security may direct attention toward a few specific [infectious] diseases and susceptible populations, while other health problems and vulnerable groups will be ignored. Furthermore, characterizing a health issue as a security threat often results in it being addressed through programs and policies developed for law enforcement rather than public health. The result may be that a disproportionate emphasis is placed on assigning responsibility and levying sanctions to control the threat, as opposed to more traditional health models that identify and ameliorate risk factors and behaviors that contribute to the threat (McInnes and Lee 2006: 5). For many countries, disease and global health add to the uncertainty in developing foreign policy; a coherent regional strategy for

Southeast Asia may require a "bi-multilateralism" approach, involving a mix of bilateral and multilateral agreements.

9.5.1   Case Study in Failed Policy, Programs or Practice: The Asian Food Crisis

In the recent food crisis in Southeast Asia the negative impact of rising prices of rice, other food and petroleum products was exacerbated by the lack of regional cooperation. Thailand is the world's largest exporter of rice, and Vietnam and Cambodia also produce large quantities of rice. On the other hand, the neighboring Philippines is the biggest rice importer in the world, and Singapore and Brunei are also rice importers. Regional cooperation to assure rice supplies in Southeast Asia would likely have helped control price speculation in the market, enhancing food security in the region. Instead, rice producing countries unilaterally restricted rice exports within the region, causing widespread public panic and violent protests. ASEAN must take a more proactive leadership role in ensuring regional food security, and consider a shift at least on this issue away from the traditional informal understandings and voluntary arrangements, toward more legally binding agreements. A more unified and effective Southeast Asian policy on this critical component of regional security will also build public confidence in the ability of local and national governments to provide basic goods and services, while at the same time limiting the appeal and penetration of extremist groups. Such groups already ignore national boundaries and exploit popular grievances in order to recruit more members, foment insurgency and launch terror attacks in the region.

9.5.2   Case Study in Best Practices: Transboundary Water Management in Southeast Asia

The Mekong River Commission's (MRC) Mekong Programme is a regional cooperation program for the sustainable development of water and related resources in the Mekong basin (MRC 2010). Its goal is to achieve more effective use of water and related resources to alleviate poverty while protecting the environment. Developing the economic potential of the Mekong River system for food, domestic uses, power generation, transport and tourism is key to fighting poverty, improving health and increasing human security in the region. Through cooperation, planning and regional integration, MRC has implemented a sustainable plan for the region's long-term development. Furthermore, since water use does not recognize borders, it is also clear that for water related developments, regional cooperation at the scale of the entire basin including Cambodia, Laos, Thailand and Vietnam is essential. In addition, a dialogue mechanism has been set up with the two upstream countries

China and Myanmar. Development in one country may have consequences for security in another country, and investments in one sector may affect other sectors within a country. Therefore, there is a need for a joint water resources development program at basin scale, owned and managed by the riparian countries themselves, in close cooperation with the donor community, investment institutions and civil society (Cogels 2005).

9.6   Health Insecurity and the Roots of Conflict

More ominously, health challenges are also related to the roots of conflict and insurgency. To a great extent people will tolerate substandard housing, inadequate education and lack of job opportunities; however they are generally less tolerant of serious health security challenges. When people perceive their government as unwilling or unable to protect them, they seek other sources of support, and become vulnerable to extremists who promise near-term solutions.

The rapid emergence of HIV/AIDS in Southeast Asia particularly in Myanmar, and also including the large regional neighbor China, represents a serious challenge to national and regional security. In certain African nations AIDS has eliminated so many of the key productive members of society in the 25–45 year age group that the standard bell-shaped population age curve now shows a bimodal distribution, with primarily the elderly and the young left to fend for themselves (Stanecki 2000). AIDS orphans and unsupervised young people are particularly vulnerable to ideologues who may recruit them for terrorist activities, transforming a health security challenge into a true national security problem. In Southeast Asia, HIV is rapidly and efficiently spread through intravenous drug use, and via human trafficking in the sex trade. The epidemic, already severely impacting Myanmar, Thailand and Cambodia threatens to increase in incidence throughout the rest of Southeast Asia. This critical and imminent health threat to the region demands immediate, aggressive, cooperative action to limit the spread of this disease and protect regional security.

When the massive tsunami struck Sumatra in Indonesia in 2004, the devastation and loss of human life was almost unimaginable. No government could have been adequately prepared for such a disaster, and Indonesia cooperated with international donors and foreign governments offering aid. The government's response was remarkable because disaster aid was focused largely on Aceh, a province disrupted by a separatist insurgency for over three decades. The protracted conflict had also compromised economic, social and health security, creating conditions that maintained the roots of conflict. While the disaster was tragic in all respects, it formed the catalyst for substantive security changes in the province. In 2002, 48% of the population of Aceh had no access to clean water, 36% of children under the age of five were undernourished, and 38% of the Acehnese had no access to health facilities. The humanitarian emergency triggered by the tsunami provided a critical opportunity for change in Aceh. Following the tsunami, in the process of rebuilding

virtually every element of society in Aceh, the government and its international partners *de facto* addressed many of these underlying causes of the insurgency. The tsunami provided a powerful and catalyzing shock; it produced a focus on common goals of relief, recovery and reconstruction; and it brought increased international attention (Renner 2006). The multinational and multi-sectoral response to the disaster was then able to introduce sustainable improvements in health security as well as socio-economic security.

9.7   Conclusions and Future Proposed Actions

Emerging infectious diseases represent transnational security threats that threaten regional health security. Because of modern rapid transportation systems, weak public health and primary health systems in many Southeast Asian nations permit potentially pandemic diseases to spread internationally and jeopardize global health security. Natural disasters disrupt normal life, threaten the health and well being of individuals, communities and nations, and may compromise regional security through loss of government infrastructure. Ecosystem degradation and environmental mismanagement negatively impact agricultural productivity and diminish food security. Internally displaced populations and refugees lacking adequate food for their families quickly lose confidence in their government's ability to protect them and become vulnerable to recruitment by violent extremists, exacerbating regional security problems. Rising sea levels due to global climate change pose an existential threat to small island nations and many coastal communities.

The case studies presented in this chapter clearly demonstrate that multilateral, multi-sectoral cooperation is mandatory for developing sustainable solutions for health security challenges. Multilateralism means increased participation at global, regional and sub-regional levels, and includes regional platforms like ASEAN, ASEAN + 3, ASEAN Regional Forum and the Asia Pacific Economic Cooperation. Southeast Asian nations need to place higher regional priority on cooperative action in dealing with health security because these countries are geographically close, there is a high concentration of health security threats in the region, and there is a relatively high level of security interaction and interdependence. Best practices also require government cooperation and transparency as essential elements in responding to public health emergencies of international concern, and this also extends to general disease prevention and control. Other best practices include engaging local expertise in health security planning and in responding to health emergencies. Public health is fast becoming an independent marker for good governance.

In addition, original quantitative studies analyzing health security in Southeast Asian nations need to be conducted. Such work should include randomized sampling of populations to assess the most important health insecurities that they have objectively experienced or subjectively felt. A ranking scale should be developed that rates these health insecurities based on how serious a problem they are considered to be. Such studies must be strongly supported by ASEAN and by appropriate

agencies of the World Health Organization such as the Global Health Security Initiative. Data from these studies will inform national and international stakeholders and help them to develop new public health policies, programs and practices to reduce health threats and improve Southeast Asian regional security.

References

ASEAN. (1976). Declaration of ASEAN Concord, Bali, Indonesia. http://www.aseansec.org/1216.htm. Accessed 14 Oct 2009.

ASEAN. (2002). ASEAN agreement on transboundary haze pollution. http://www.aseansec.org/agr_haze.pdf. Accessed 14 Oct 2009.

ASEAN. (2003). ASEAN is SARS free. http://www.aseansec.org/pis_sars.htm. Accessed 3 Nov 2009.

BBC News. (2008, May 16). Burma death toll jumps to 69,000. http://news.bbc.co.uk/2/hi/asia-pacific/7405260.stm. Accessed 17 Sept 2009.

Beyrer, C., & Lee, T. (2008). Responding to infectious diseases in Burma and her border regions. *Conflict and Health, 2*, 2.

Beyrer, C., Suwanvanichkij, V., Mullany, L., Richards, A., Franck, N., Samuels, A., & Lee, T. (2006). Responding to AIDS, tuberculosis, malaria, and emerging infectious diseases in Burma: Dilemmas of policy and practice. *PLoS Medicine, 3*(10):e393. doi/10.1371/journal.pmed.0030393. Accessed 4 Dec 2009.

Bradsher, K. (2008). A drought in Australia, a global shortage of rice. *New York Times*, April 17. http://nytimes.com/2008/04/17/business/worldbusiness/17warm.html. Accessed 1 Sept 2009.

Caballero-Anthony, M. (2005). Security threat from disease. http://search.japantimes.co.jp/cgi-bin/eo20050715a1.html. Accessed 20 Aug 2009.

Central Intelligence Agency. (2010). Country comparison: Infant mortality rates, The World Factbook. https://www.cia.gov/library/publications/the-world-factbook/rankorder/2091rank.html. Accessed 6 Feb 2010.

Chia, H. (2008). Crisis in Myanmar and responsibility to protect, Center for Strategic and International Studies. http://www.reliefweb.int/rw/rwb.nsf/db900sid/RMOI-7F53R6?OpenDocument. Accessed 6 July 2009.

Clover, C. (2008). Food shortages: How will we feed the world? http://www.telegraph.co.uk/scienceandtechnology/science/sciencenews/3340417/Food-shortages-how-will-we-feed-the-world.html. Accessed 1 Sept 2009.

Cogels, O. (2005). The Mekong programme, Mekong River Commission. http://www.mrcmekong.org/mekong_program_ceo.htm. Accessed 29 Dec 2009.

Cossa, R., Glosserman, B., McDevitt, M., Patel, N., Przystup, J., & Roberts, B. (2009). The United States and the Asia-Pacific Region: Security Strategy for the Obama Administration, Center for a New American Security, Washington, DC. http://www.cna.org/documents/CampbellPatelFord_US_Asia-Pacific_February2009.pdf. Accessed 18 Dec 2009.

Current Concerns. (2009). Fairness, transparency and equity in international public health. http://www.tlaxcala.es/pp.asp?reference=7836&lg=en. Accessed 16 Dec 2009.

Earth Institute. (2007). Countries at greatest risk from climate change impacts, Earth Institute News Archive. http://www.earth.columbia.edu/news/2007/story03-29-07.php. Accessed 6 Nov 2009.

Esty, D., Goldstone, J., Gurr, T., Harff, B., Levy, M., Dabelko, G., Surko, P., & Unger, A. (1999). State failure task force report, environmental change and security project report, Issue 5, SAIC. http://www.wilsoncenter.org/events/docs/Phase2.pdf. Accessed 22 Oct 2009.

Fernandez, F., Green, M., & Newton, P. (2008). Prevalence and detection of counterfeit pharmaceuticals: A mini review. *Industrial and Engineering Chemistry Research, 47*(3), 585–590.

Field, R., van Der Werf, G., & Shen, S. (2009). Human amplification of drought-induced biomass burning in Indonesia since 1960. *Nature Geoscience, 2*, 185–188.

Global Hunger Index in Full. (2008). *BBC News*. http://news.bbc.co.uk/2/hi/in_depth/7670229.stm. Accessed 4 Sept 2009.

Heil, A., & Goldammer, J. (2001). Smoke-haze pollution: A review of the 1997 episode in Southeast Asia. *Regional Environmental Change, 2*(1), 24–37.

ICISS (International Commission on Intervention and State Sovereignty). (2001). Responsibility to protect, Report of the International Commission on Intervention and State Strategy, Ottawa, International Research Centre. http://www.iciss.ca/pdf/Commission-Report.pdf. Accessed 6 July 2009.

International Dispensary Association. (2009). Core values. http://www.idafoundation.org/we-are/core-values.html. Accessed 16 Dec 2009.

Katz, R., & Singer, D. (2007). Health and security in foreign policy. *Bulletin of the World Health Organization, 85*(3), 233–234.

Kennedy, J., Ashmore, J., Babister, E., & Kelman, I. (2007). Post-tsunami transitional settlement and shelter: Field experience from Aceh and Sri Lanka. *Humanitarian Exchange Magazine*, 37. http://www.odihpn.org/report.asp?id=2879. Accessed 17 Sept 2009.

Kennedy, J., Ashmore, J., Babister, E., & Kelman, I. (2008). The meaning of 'Build Back Better': Evidence from post-tsunami Aceh and Sri Lanka. *Journal of Contingencies and Crisis Management, 16*(1), 24–36.

Kisner, C. (2008). Climate change in Thailand: Impacts and adaptation strategies, Climate Institute. http://www.climate.org/topics/international-action/thailand.htm. Accessed 1 Sept 2009.

Lal, S. (2007). *Emerging viral diseases of Southeast Asia*. Basel: Karger Publishers.

Le, L. (2007). Stink over Vietnamese food exports. *Asia Times*. http://www.atimes.com/atimes/Southeast_Asia/IL12Ae02.html. Accessed 22 Nov 2009.

Leake, J. (2008). Food shortages loom as wheat crop shrinks and prices rise. *The Times Online*. http://business.timesonline.co.uk/tol/business/industry_sectors/natural_resources/article3423734.ece. Accessed 1 Sept 2009.

Lee, J-W. (2009). Globalization and disease: The case of SARS, The Brookings Institution. http://www.brookings.edu/papers/2004/02development_lee.aspx. Accessed 3 Nov 2009.

Maclean, S. (2008). Microbes, mad cows and militaries: Exploring the links between health and security. *Security Dialogue, 39*(5), 475–494.

Mauzy, D. (2009). Water wars: Singapore versus Malaysia. Available online at: http://www.politics.ubc.ca/index.php?id=3436. Accessed 8 Dec 2009.

McInnes, C., & Lee, K. (2006). Health, security and foreign policy. *Review of International Studies, 32*(1), 5–23.

McMichael, P. (2009). The world food crisis in historical perspective. *Monthly Review, 61*(3). http://www.monthlyreview.org/090713mcmichael.php. Accessed 18 Dec 2009.

Mekong River Commission. (2010). http://www.mrcmekong.org. Accessed 29 Dec 2009.

Morton, A., Boncour, P., & Laczko, F. (2008). Human security policy challenges. *Forced Migration Review, 31*, 5–7.

Newton, P., Fernández, F., Plançon, A., Mildenhall, D., Green, M., et al. (2008). A collaborative epidemiological investigation into the criminal fake artesunate trade in South East Asia. *PLoS Medicine, 5*(2), e32. doi:10.1371/journal.pmed.0050032. Accessed 2 Oct 2009.

Ninh, N., & Huy, L. (2006). Climate change vulnerability: Challenges and opportunities in Indochina, *Global Change Newsletter* 67.

Pegasus Communications. (2009). Causal loop diagrams. http://www.pegasuscom.com/cld.html. Accessed 5 Dec 2009.

Potangaroa, R., Wang, M., & Chan, Y. (2008). Identifying resilience in those affected by the 2008 Sichuan earthquake. http://www.resorgs.org.nz/pubs.shtml. Accessed 17 Sept 2009.

Quick Frozen Foods International. (2003). New FDA food safety regulations in USA worry Thai exporters. *QFFI's Global Seafood Magazine, 45*(2), 40.

Renner, M. (2006). Aceh: Peacemaking after the tsunami, Worldwatch Institute. http://www.worldwatch.org/node/3930. Accessed 17 Sept 2009.

Smith, D., & Vivekananda, J. (2007). A climate of change: The links between climate change, peace and war. *International Alert*, (no vol).

Stanecki, K. (2000). The AIDS pandemic in the 21st century. http://www.usaid.gov/pop_health/aids/Publications/docs/aidsdemoimpact.pdf. Accessed 17 Nov 2009.

Tan, A. (2005). The ASEAN agreement on transboundary haze pollution: Prospects for compliance and effectiveness in post-Suharto era. *New York University Environmental Law Journal*, 13(3): 647–722. http://www3.law.nyu.edu/journals/envtllaw/issues/vol13/3/v13_n3_tan.pdf. Accessed 14 Oct 2009.

The Global Fund. (2005). Termination of grants to Myanmar, fact sheet. http://www.theglobalfund.org/content/pressreleases/pr_050819_factsheet.pdf. Accessed 1 Sept 2009.

Thieren, M. (2005). Asian tsunami: Death-toll addiction and its downside. *Bulletin of the World Health Organization, 83*(2).

UNDP (United Nations Development Programme). (1994). *Human development report 1994*. New York: Oxford University Press.

UNDP (United Nations Development Programme). (2007). Capacity for disaster reduction initiative. http://www.unisdr.org/cadri. Accessed 17 Nov 2009.

United Nations. (2008a). Millennium development goals report. http://www.undp.org/publications/MDG_Report_2008_En.pdf. Accessed 17 Nov 2009.

United Nations. (2008b). Delivering on the global partnership for delivering the millennium development goals, MDG Task Force. http://www.undp.org/mdg/MDG-GAP-TF-Report.pdf. Accessed 17 Nov 2009.

United Nations. (2008c). Tracking the MDGs: Country progress. http://www.undp.org/mdg/tracking_countryreports2.shtml. Accessed 17 Nov 2009.

United Nations World Water Day. (2009). http://www.unwater.org/wwd09/flashindex.html. Accessed 20 Sept 2009.

von Grebmer, K., Fritschel, H., Nestorova, B., Olofinbiyi, T., Pandya-Lorch, R., & Yohannes, Y. (2008). *Global hunger index: The challenge of hunger 2008*. Washington, DC: International Food Policy Research Institute.

Wenjun, Z., & Ivy, R. (2008). Sichuan earthquake and the Chinese response. *Architectural Record*. http://archrecord.construction.com/community/editorial/archives/0807.asp. Accessed 17 Sept 2009.

World Health Organization. (1946). Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19–22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2) and entered into force on 7 April 1948.

World Health Organization. (2003). "Cumulative number of reported probable cases of SARS," Epidemic and pandemic alert and response. Available online at: http://www.who.int/csr/sars/country/2003_06_27/en/index.html. Accessed 3 Nov 2009.

World Health Organization. (2005). "Epidemic and pandemic alert and response," International Health Regulations. http://www.who.int/csr/ihr/en/. Accessed 10 Dec 2009.

World Health Organization. (2008). "The global burden of disease," 2004 Update. http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf. Accessed 17 Nov 2009.

World Health Organization. (2010). Millennium development goals. http://www.undp.org/mdg/basics.shtml. Accessed 17 Nov 2009.

Young, O. (1997). *Global governance*. Cambridge: MIT Press.

Young-Eisendrath, P. (2002). The transformation of human suffering: A perspective from psychotherapy and Buddhism. In P. Young-Eisendrath & S. Muramoto (Eds.), *Awakening and insight: Zen Buddhism and psychotherapy*. New York: Brunner Routledge.