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Promoting Peace and Maintaining the Status Quo in the Taiwan Strait; Strengthening Defense Readiness and Disaster Relief Capabilities

The ROC's 2012 presidential election marked another step forward to achievement of a mature democracy. President Ma, re-elected and becoming the ROC's 13th president, announced that in his second term the nation will continue to be an international peacemaker, a provider of humanitarian assistance, a promoter of cultural ties, a creator of new technologies and business opportunities, and a standard-bearer for traditional Chinese culture. At the same time, under the framework of the ROC Constitution, the government will continue to promote the cross-Straits status quo of "no-unification, no-independence, and no use of force." It will also continue to promote the development of peace across the Taiwan Strait on the basis of the 1992 Consensus. In the future, the Ma administration will keep moving forward based on the Consensus to ensure the ROC's sovereignty and security and create a solid foundation for stability. Moreover, improving cross-Straits relations involves risk management. "Minimizing risk while maximizing opportunity" has been the ROC's unchanging principle for interaction with Mainland China. This principle is further exemplified by the government's cross-Straits policy of "economic issues before political ones, urgent issues before non-urgent ones, and easier issues before difficult ones." Based on this, the Ma administration asserts that the time has not come for a cross-Straits peace agreement.

Establishing "small but superior, small but strong, and small but smart" military force has been the longstanding objective of the ROC's military preparations. The Legislative Yuan's passage of the revised Military Service Act has introduced volunteerism, and facilitated the recruiting of highly competent personnel to serve longer periods in the military. This change will promote modernization of the military and create more streamlined and elite fighting forces. Moreover, building leaner but stronger forces along with President Ma's recent declaration of "implicit national defense," which comprises enhancement of cross-Straits trade and investment as well as cultural and educational exchanges, will improve ROC's overall security environment.

The ROC is located in a typhoon-prone area. When the typhoon season starts around May every year, the ROC Armed Forces must engage in extensive disaster relief and flood prevention work. In January 2012, the Ma administration reiterated that disaster prevention is one of its top priorities, and stated that the ROC Armed Forces must actively strengthen its relief capabilities, maintain the attitude that "disaster relief is akin to fighting a battle," and stay prepared for disasters. The Armed Forces must deploy troops with an eye to disaster preparedness while not affecting defense readiness. The Army's future development trends will therefore include enhancement of disaster prevention and relief capabilities and improvement of disaster prevention mechanisms.



Non-Traditional Security: Taiwan's Defense and the Struggle with Natureⁱ

Mark Stokes

Introduction

The beauty and rich complexity of the Republic of China (ROC, or Taiwan) can be mesmerizing. Yet multiple typhoons that can linger over Taiwan, frequent earthquakes that jolt the island, and a growing arsenal of increasingly accurate and lethal conventional ballistic missiles opposite the island are stark reminders of the diverse range of threats that the island's population faces.

Taiwan's annual typhoon season reminds residents of the human, economic, and political devastation that natural disasters can produce. In 2009, Typhoon Morakot, the deadliest typhoon in Taiwan's recorded history, took more than 500 lives and imposed more than US \$3 billion in economic damage.

Climate change poses a severe threat to the national security of Taiwan. An accelerated rise in the Earth's surface and atmospheric temperature reportedly is contributing toward more frequent and extreme weather events. Even a modest rise in temperature can have significant effects on climate. For Taiwan, a one degree (Celsius) rise in surface temperature can result in a 140 percent increase in extreme precipitation.¹

Because of the relatively frequent natural disasters, such as typhoons, earthquakes, and floods, Taiwan's government must manage some of the world's most severe and complex security challenges. Taiwan has therefore accumulated an extensive record of disaster relief experiences, its emergency management may offer a new paradigm for deepening and broadening the US-Taiwan security relationship.



Taiwan is vulnerable to natural disasters. The ROC Armed Forces personnel and facilities are essential to the nation's crisis management mechanism. (Source: MND, ROC)

This article examines the challenges that global climate change poses to Taiwan, the island's record of managing disasters, the effects of typhoon Morakot, and outlook for the future. This brief concludes that the United States should leverage Taiwan's experiences in managing natural disasters, establish disaster relief cooperation as a core component of the unofficial US-Taiwan relationship, and jointly explore technical solutions that could enhance disaster warning, recovery, and response.

Non-Traditional Threats to Taiwan's Security

Natural disasters have the potential to pose significant challenges to lives and prosperity on Taiwan in the manner not unlike the PLA's military threat. What all disasters and emergencies have in common is the sense of urgency and a need for a prompt reaction to prevent a further, often instant, deterioration of the situation. To meet the full range of challenges in a resource constrained environment, only comprehensive, asymmetric, indirect, and cost effective solutions are possible. These include the requirement for detailed planning, surveillance and warning, effective and survivable communications systems, and rapid emergency response.

As an illustration, this article examines the following and draws links between these non-traditional threats and conventional defense requirements: 1) disaster warning, recovery, and response; 2) terrorism/extremism; 3) border control; and 4) pandemics.



The ROC Armed Forces engage in extensive disaster relief works. The picture illustrates evacuees on military vehicles in a typhoon-affected area. (Source: MND, ROC)

The United States could leverage Taiwan's experiences in managing natural disasters and establish disaster relief cooperation as one of core components of the unofficial US-Taiwan relationship.

Natural Disaster Warning, Recovery, and Response

When it comes to the forces of nature, Taiwan is one of the most dangerous places on earth. A joint World Bank-Columbia University study, *Natural Disaster Hotspots: A Global Risk Analysis*, concludes that "Taiwan may be the place on Earth most vulnerable to natural hazards." Among the natural disaster threats are earthquakes, typhoons, floods, and tsunamis.

Sitting astride the Pacific Ring of Fire, Taiwan faces a significant threat from earthquakes.² Like military actions, earthquakes can have a significant impact on the operability of critical infrastructure. The 921 earthquake caused serious damage to infrastructure, especially roads, in Taiwan's mountainous areas that are still affecting transportation until today. The loss of power and damage to sensitive equipment in Hsinchu Science Park halted the world supply of semiconductor, sending ripple effects throughout the world. Water supplies were disrupted to almost 80% of the island's population and electric power was cut off to most area in northern Taiwan. In addition, at least 43 schools were destroyed in that earthquake, as well as more than 50 police stations and the same number of bridges.³ To prevent and reduce damages, sensors can help warn of impending danger, a command and control capability is required for effective response and recovery.

Typhoons make up at least 70% of Taiwan's natural disasters and the country often suffers significant human casualties and economic loss from the violent winds and extreme rainfall. According to one estimate, typhoons result in an annual economic loss of around NT \$20 billion.⁴ The deadliest typhoon in recorded history, the 2009 Typhoon Morakot, left a toll of over 500 victims and estimated financial losses of US \$3.4 billion (NT \$110 billion). Morakot also caused

significant damage to the island's communications, including loss of 1700 wireless base stations and six undersea cables carrying international traffic.⁵ Due to its unprecedented severity, typhoon Morakot served as a watershed event that sets the bar higher in managing the effects of climate change.

Related to typhoons are floods. Taiwan is rich in water resources, which are critical to Taiwan economy and society. However, natural conditions make management of water resources difficult. Rainfall is not distributed evenly throughout the year, and heavy rains, such as those that come with typhoons, can cause flooding. Taiwan's rivers have some of the steepest grades in the world. When faced with heavy rains and typhoons, the high gradients also give Taiwan the dubious distinction of having the fastest discharge per unit drainage area and fastest flood peak time. The intense rainfall and rapid water flow cause erosion, a problem that is compounded by frequent earthquakes that undermines the stability of mountains and hillsides.⁶

Often forgotten are tsunamis, which are low-probability disasters with very large impacts that can be caused by underwater earthquakes, such as the 2004 Indian Ocean tsunami which released the energy equivalent to 23,000 Hiroshima-type atomic bombs.⁷ Localities in the Asia-Pacific region experience damage from a tsunami every year or two, and region-wide events occur a few times each century. The Deep-Ocean Assessment and Reporting of Tsunamis (DART) project is one regional effort intended to provide warning to members of the regional community. Dual-use of the US Navy's Sound Surveillance System



C4ISR systems increase warning time of emergencies and facilitate the sharing of information within an emergency response network. (Source: MND, ROC)

(SOSUS) has led to fundamental discoveries into seafloor volcanism, oceanic seismicity, and a vast expansion in the database on oceanographic research. Many in Taiwan's scientific community have called for fielding a system capable of providing early warning of off-shore seismic and other events, perhaps linking in to the Pacific Tsunami Warning Center.⁸

Terrorism/Extremism

Beyond natural disasters, Taiwan also faces hazards associated with proliferation of weapons of mass destruction and terrorism/extremism. In examining challenges, a number of scenarios could be developed to illustrate the possible threats Taiwan could face. Taiwan plays an important role in the global economy as a critical node in international information technology supply chain. Taiwan's growing economic interdependence with the mainland— and, by extension, the mainland's finance interdependence with the United States— could draw the attention of terrorists seeking to affect the global economy and using Taiwan as the vehicle.⁹

An interoperable all-hazards C4ISR system could enhance the effectiveness and efficiency of the national command and control system under stressful conditions.

Border Control

The defense of Taiwan, especially in an invasion scenario, is a border control exercise on a massive scale. Its coastal areas, coastlines, airports, and other points of entry require constant vigilance. However, in the case of peacetime border control, the problem transcends that of the PLA. Illegal drugs and immigrants, diseases, terrorists, and weapons of mass destruction are able to cross borders easier than at any time in history. In particular, illegal migration has posed a problem since the lifting of martial law in 1987. Experts point out that the actual number of illegal Chinese immigrants to Taiwan who have successfully evaded arrest or detention could be three to five times higher than official numbers indicate.¹⁰

Various threats exist against Taiwan's borders and solutions to control the entry of illegal goods and people also exist. Similar to sensors needed for early warning of

PLA use of force, border control surveillance technologies include ground sensors, aerial vehicles, and maritime surveillance. Possible ground sensors include magnetic detectors for metal objects, seismic sensors that detect land movement, infrared and electro-optical sensors, as well as radar systems. Capitalizing on ranges that span from tens of meters to several kilometers, sensors can constantly provide different types of data that could also be integrated for a comprehensive picture. New generation radar systems have become multi-purpose sensors that can detect aircraft, vehicles, and pedestrians for both critical infrastructure protection and border control. Sensors also could be installed on surface vessels patrolling coastal waters, on undersea multi-purpose vehicles, on the ocean floor, and on unmanned aerial vehicles that could provide broad area surveillance out to hundreds of kilometers.

Disease Control

Epidemics and pandemics also pose challenges. Scientists believe that an influenza pandemic, emerging from birds and pigs, is almost unavoidable, and that the epicenter is most likely to be Mainland China or Southeast Asia. Taiwan is susceptible because it is one of the most important transportation hubs in the western Pacific region with frequent interactions with Mainland China and countries in Southeast Asia, which is believed to be the region where the next pandemic is most likely to break out.¹¹ Preparing and responding to an epidemic holds much in common with military planning and operations. Early warning of a pandemic and the ability to closely track the spread of infectious disease are critical to being able to rapidly employ resources to contain its spread. Effective communications are essential to empower the public to respond appropriately, protect themselves and care for each other.¹²

An "All Hazards" Approach to Emergency Response?

The PRC presents a daunting and growing military threat that is rivaled only by the dizzying array of non-traditional security hazards that often go unheeded. Taiwan's society is one of the world's most vulnerable places to natural disasters, and is also challenged by the prospect of pandemics, control of its borders, and terrorism and forms of extremism. Whether military or civilian, responses to all hazards require maximal situational awareness and the means to react efficiently and effectively to prevent a further deterioration of the situation.

Although Taiwan faces a multitude of security challenges, all of the threats above share commonalities that could be mitigated by an integrated all-hazards approach. An

integrated all-hazards approach to emergency management ties together the central government resources to prevent, prepare for, response to, and recovery from the military use of force, major natural disasters, terrorism, and other emergencies. Individual threat scenarios require tailored responses and mission-specific C4ISR systems, but an interoperable all-hazards C4ISR system could enhance the effectiveness and efficiency of the national command and control system under stressful conditions.

Since 1999, Taiwan has implemented a range of measures to plan for emergency responses, including the establishment of a central disaster prevention and response council, drafting of national and local level contingency plans, and formation of emergency response command centers at both the national and county/city level. In the wake of Typhoon Morakot, the Ma administration took a number of steps to shore up Taiwan's bureaucratic capacity for responding to natural disasters, including legislative revisions to raise the status of organizations involved in disaster protection and prevention. The revisions also granted legal authority for the mobilization of military disaster response teams, a procedure that previously required authorization from the President. Media reporting highlighted Taiwan's disaster response establishment has increased the frequency and intensity of training.

Summary

In summary, Taiwan's government effectively manages some of the world's most severe and complex security challenges. While much progress has been made, greater resources could be dedicated toward non-traditional security threats, such as natural disasters, without negatively affecting military preparedness. More and increasingly complex interagency training exercises, assured communications and command and control under the most stressing of situations, and greater investment into "all-hazards" technologies and systems would further enhance Taiwan's capacity for emergency management.

For the purposes of emergency management, no capability is more important than C4ISR. Given this severe set of security challenges, Taiwan has powerful incentives to field one of the most advanced and networked all-hazards emergency management C4ISR systems in the world. C4ISR systems reduce surprise, increase warning time of emergencies, and facilitate the sharing of information within an emergency response network. For example, emergency management centers for disaster warning and response, with fused sources of data and alert systems and command and control systems, could serve as viable back up military command centers at the central and local levels. Satellite



The ROC government manages some of the world's most severe and complex security challenges and has accumulated an extensive record of disaster relief experiences. (Source: MND, ROC)

remote sensing could support strategic and operational-level early warning operations. Airborne command and control systems could serve as emergency responders. Whether for reasons of economic security, environmental protection, space debris monitoring, island defense, counter-trafficking, or any combination of these reasons or others, maintaining awareness in all domains is a goal envisioned by most countries in the world. For the US, Taiwan may be a valuable partner in monitoring activities in the region in all domains, from deep under the ocean to the outer reaches of space. Enhancements in the area of maritime domain

awareness and investing in dual use space systems could better prepare the island's civil and military leadership for emergency situations. Furthermore, Taiwan's experiences to date may have much to offer the international community. The growing complexity of Taiwan's emergency management challenges may mandate a review and possible new paradigm for deepening and broadening the US-Taiwan security relationship.

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- i To prevent confusion and for reading convenience, in this article, "Republic of China" is indicated as "Taiwan", while "China" means "Chinese Mainland.". The views expressed in this article should not be interpreted as those of the Ministry of National Defense or any agency of the ROC government.
1. "Extreme Events and Disasters Are the Biggest Threat to Taiwan: Typhoon Morakot," Environmental Protection Administration, Executive Yuan (Taipei, 2009), p.3, http://ivyl.epa.gov.tw/unfccc/english/_uploads/downloads/01_Extreme_Events_and_Disasters_from_Typhoon_Morakot-the_Biggest_Threat_ever_to_Taiwan.pdf.
2. A 7.6-magnitude earthquake in central Taiwan in September 1999 killed more than 2,300 people, injured more than 10,000, left up to 100,000 homeless, and resulted in at least US \$10 billion in economic damage. The seismic event, known as the 921 Earthquake, was the most devastating one to hit the island since 1935, when tremors in the Hsinchu/Taichung area resulted in the loss of at least 3500 lives.
3. "Number Of Occurrences of Perceptible Earthquakes," Statistical Yearbook Of The Republic Of China, 2005 (edited in 2006); and Event Report: Taiwan Chi-Chi Earthquake, Risk Management Solutions (RMS), October 10, 1999. The epicenter was in the mountainous and relatively lightly populated area of central Taiwan. If it had been on the densely populated coastal plain to the west, the disaster would have been even worse. In 2005, Taiwan disaster relief authorities detected 1084 seismic events, with more than half – 609 – occurring on the east coast (only five were detected in the Taipei area). Taiwan's peak year for number of earthquakes was 1999, when 2945 earthquakes were detected.
4. See Ben Jong-Dao Jou, "The Improvement of Emergency Operation and System Framework on Typhoon in Taiwan," paper presented at International Workshop on Emergency Response and Rescue, October 31-November 1, 2005.
5. See "UN Report on Typhoon Morakot," United Daily News, August 20, August 2009, at <http://udn.com/NEWS/NATIONAL/BREAKINGNEWS/5089937.shtml>. In 2000 seven typhoons (Kaitak, Bilis, Prapiroon, Bopha, Yagi, Xangsane, and Bebinca) ravaged Taiwan, the most severe being Xangsane that resulted in 64 deaths.
6. Lynne Curry, "Taiwan's Perennial Water Woes," Taiwan Business Topics, Vol. 36, No. 4, April 2006, pp. 21-31.
7. This assertion is based on US Geological Survey estimates.
8. Chen Po-Fei, "Tsunami Arrival Time Database And Warning System Of Taiwan," International Workshop On Emergency Response And Rescue, October 31-November 1, 2005. Also see Wu Tso-Ren, "An Overview of Current Tsunami Activities in Taiwan," conference on disaster preparedness, Taipei, Taiwan (ROC), December 5, 2007.
9. The Executive Yuan develops Taiwan's counter-terrorism policy. The Ministry of Interior's National Police Agency (NPA) is responsible for counter-terrorism, senior leadership protection, and critical infrastructure protection (CIP). The NPS's Special Security Service Forces (wei'an) have three corps (1st, 4th, and 5th) to cover the island. The NPA's 2nd Corps handles CIP duties for facilities, including nuclear power plants, under the National Science Council and Ministry of Economic Affairs. The NPA's 3rd Corps is responsible for border control and its 6th Corps for senior leadership protection. The military also has specialized counter-terrorism units under the Military Police, Army, and Marines.
10. Responsibility for monitoring and controlling Taiwan's borders lies with the Coast Guard Administration and NPA. The Coast Guard monitors Taiwan's coastal waters, while the NPA oversees access.
11. James E. Hollenbeck, "An Avian Connection as a Catalyst to the 1918-1919 Influenza Pandemic," International Journal of Medical Sciences, February 2005, pp. 87-90; and Robert G. Webster, "Predictions for Future Human Influenza Pandemics," The Journal of Infectious Diseases, Vol. 176, August 1997, pp. S14-19. Also see Laurie Garrett, "The Next Pandemic?," Foreign Affairs, July/August 2005. As Laurie Garrett, a renowned global health specialist, published in a landmark 2005 Foreign Affairs article, "if the relentlessly evolving virus becomes capable of human-to-human transmission, develops a power of contagion typical of human influenzas, and maintains its extraordinary virulence, humanity could well face a pandemic unlike any ever witnessed." She also writes that "aquatic flu viruses are more likely to pass into domestic animals -- and then into humans -- in China than anywhere else in the world."
12. Utah Department of Health, Governor's Taskforce on Pandemic Influenza Preparedness: Final Report to Governor, Salt Lake City, Utah, April 2007.

Non-Traditional Security Challenges in the Asia-Pacific Region and Implications for Taiwanⁱ

Roy D. Kamphausen

Introduction

This paper examines the issue of non-traditional security (NTS) challenges in the Asia-Pacific region.

The paper analyzes the development of NTS challenges; categorizes the types of non-traditional security challenges as natural or man-made, and then briefly addresses the key elements of each type of non-traditional security challenge and its applicability to Taiwan; and then makes some judgments about implications of non-traditional security capabilities and cooperation for Taiwan.

The paper reaches several preliminary conclusions. First, although the Asia-Pacific has numerous “traditional security” flashpoints, non-traditional security challenges remain the most likely, even if not regime-threatening, challenges to emerge in the Asia-Pacific region. Many of these challenges result from natural disasters while others are the outcome of human acts or government policies, sometimes in conjunction with natural disasters. Taiwan is mercifully free from many of the man-made NTS that plague much of the rest of the Asia Pacific region, but responding to the natural disasters component of non-traditional security challenges will continue to be an important role for Taiwan’s Ministry of National Defense. Indeed, while the military threat from China remains a more existential threat to Taiwan, responding to natural disasters likely lags not far behind in terms of the importance it represents for Taiwan’s Ministry of National Defense. Finally, response to natural disasters presents an opportunity for Taiwan to make contributions to regional security.

Non-Traditional Security Challenges

Non-traditional security (NTS) challenges are those set of issues that extend beyond the well-known set of realpolitik traditional security issues of competing military modernization programs (or arms races), border disputes, aggressive air and naval patrols, in short all the “traditional” dimensions of war and peace that shape the security interactions of states. For the purposes of this paper, NTS challenges are defined as conditions or acts that are not the work of states but nonetheless require timely responses by national security and armed forces of governments (thus

excluding some modern challenges such as transnational crime or the security of food supply which are sometimes included as NTS challenges), yet the actions and the responses often fall well short of the threshold of armed conventional conflict. NTS challenges can pose very real risks and can impose very high costs on responding states, which often are unable to do more than remediate the consequences of the acts and not address their root causes.

NTS are not new phenomena. The world has long had earthquakes, typhoons, and floods and military forces have long been the most rapid and capable responders to natural disasters whose scale, scope and devastation can approach that caused by conventional war. And violent non-state actors are likewise not a recent development nor have militaries just begun fighting terrorists and pirates. Nonetheless, NTS have gained an increasing amount of attention and consideration of NTS as become an important factor for national and homeland security planners around the world. These factors include at least: an evolving world order in the post-Cold War era in which the ever more complex interactions of states has created new frictions that have spawned new responses, including more violent and extremist non-state actors; a seeming increase in the sorts of weather extremes that create new natural conditions, in some cases violently upsetting existing conditions; population growth, especially in poorer and more at risk communities;



When natural disaster occurs, the ROC Armed Forces mobilize appropriate forces and equipments in a timely manner to reduce human and economic losses. (Source: MND, ROC)

instant global communications systems and perpetual news networks that feast on disaster coverage; and an increase in the quantity and capabilities of international organizations to respond to natural disasters and other global crises.

In short, what sets non-traditional security challenges apart are the diverse nature of their origins, the complexity of the responses they demand, and the inconclusiveness of their resolution – one rarely gets to declare victory after an NTS response.

Natural disasters

The Asia-Pacific region is the most natural disaster prone region of the world, according to a 2010 report by the U.N. Economic and Social Commission for Asia and the Pacific and the U.N. International Strategy for Disaster Reduction. Indeed, more than eighty-five percent of global deaths from natural disasters occur in the Asia-Pacific. Moreover, residents of the Asia-Pacific region are twenty-five times more likely to suffer from the effects of a natural disaster as their counterparts in Europe or North America.¹ The United Nations Environmental Program estimates that half of the world's major natural disasters have taken place in the Asia-Pacific region.²

The Asia-Pacific region is home to the so-called “ring of fire” where nearly 90% of the world's earthquakes occur making the Asia-Pacific the most earthquake prone region on earth. For instance, since January 1, 2011 the United States Geological Services reports that the region has suffered thirty earthquakes of magnitude 6.0 or greater.³ The massive June 2008 earthquake in difficult terrain in southwestern China or the October 2008 in Baluchistan province in Pakistan are indicative of the size and complexity of the required response to these kinds of events.

The maritime nature of the Asia-Pacific region compounds the challenge of Asia's earthquakes in the form of the tsunami, that is the massive waves that derive their energy from ocean earthquakes. Not surprisingly, given the large number of earthquakes in the region, more than 80% of the world's tsunami occur in the Asia-Pacific region. An infamous example of an earthquake-tsunami in recent years was the December 26, 2004 “Boxing Day” tsunami that devastated much of the coasts of Indonesia, southern Thailand, and East Timor, killing more than 230,000 people and causing untold billions in damage, the response to which galvanized the world's philanthropic attention and resulted in the formation of an international military and security force coalition led and encouraged by United States Pacific Command.

Of course, it was a 9.0 level earthquake that was followed by a massive nearly thirty meters high tsunami that started the tremendous triple disaster of March 2011 off the

Pacific coast of Tohoku, Japan. The tsunami's destruction then resulted in the disablement and partial meltdown of several of the six reactors at the Fukushima nuclear power plant. With more than 20,000 dead, 125,000 homes utterly destroyed, millions displaced and with related costs climbing into the hundreds of billions, the toll on Japan and the Japanese people was extraordinary. Operation Tomadachi (Friendship) resulted in the combined efforts of more than 100,000 Japan Self-Defense Forces in addition to more than 20,000 US forces and others to remediate the aftermath of the triple disaster.

Asia's second major type of natural disaster is the tropical cyclone or typhoon. About forty percent of global typhoons or tropical cyclones take place in the Asia-Pacific region with hundreds of lives lost annually and billions of dollars of property destroyed. Typhoon Morakot, which struck the Philippines and Taiwan in August of 2009, was particularly noteworthy for the flooding and landslides that ensued after tremendous volumes of water fell in short periods of time without opportunity for adequate drainage. Bangladesh, as well, given its low-lying coastal areas, has often suffered from grievous flooding after cyclones, including the massive April 1991 category five cyclone that killed nearly 140,000 people. The United States military Operation Sea Angel played a critical role in mitigating the after-effects of the cyclone.

Half of the world's major natural disasters have taken place in the Asia-Pacific region, making it the most disaster prone area in the world.

Man-made

The two principal solely man-made non-traditional security challenges in the Asia-Pacific are piracy and terrorism. Piracy is an issue that has long plagued the Asia-Pacific. The nearly thirty thousand islands of the archipelagic states of Japan, Philippines and Indonesia, intersected by the vital straits that carry up to half of the world's maritime trade present tremendous opportunities for pirates. Yet cooperation among littoral and user states, while still requiring much more effort, has largely resulted in the neutralization of this challenge. Security forces remain on the alert to the potential for expansion of pirate networks eastward from their current hub off the coast of Africa, but at least at present the threat has not developed; in the first quarter of 2010 no piracy acts were reported.⁴ Nonetheless, regional states remain alert to new and adaptive techniques

by pirates who might operate in the Asia-Pacific.

Terrorist acts are a principal non-traditional security challenge in much of Asia and the major regional terrorist groups include the Jemaah Islamiyah in Indonesia, Lashkar e-Tayyiba in the Pakistani Kashmir, Al Qaeda, the Abu Sayyaf Group and Moro Liberation Front in the Philippines. The goals of each are distinct yet somehow interconnected, and are linked by their common pursuit of violent and extreme versions of the Islamic faith. Ultimately, each is using unconventional means as a way to shape political structures and power to the benefit of themselves and their supporters.

Implications for Taiwan

In a recent study, it was argued that some of the capabilities necessary for providing a strong defense against potential military activities of China's Peoples Liberation Army (PLA) against Taiwan might also be applied flexibly to domestic disaster relief response. In particular, the authors argue that either scenario requires among other things, a state-of-the-art command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) system.⁵ In an era of constrained national resources and in the face of ever-modernizing PLA capabilities, this is an approach that makes good sense.

Building on that point, this paper suggests that a fully capable Taiwan military disaster relief/non-traditional security response can both contribute to better deterrence of PLA coercive efforts against Taiwan as well as efforts to grow Taiwan's international space. Taiwan's 2011 National Defense Report's inclusion of a new chapter on disaster response suggests that the idea already resonates among Taiwan's strategic planners. While there are differences in preparation and capabilities required for response to non-traditional and conventional military operations, the

resiliency of a military force in responding to the latter certainly has impacts on domestic and regional perceptions of the capability of an armed force.

To be sure, there are significant obstacles to this development, both political and bureaucratic. Still, there are several steps that in the Taiwan might consider. First, Taiwan must be seen as having a leading set of capabilities to assist the region, and a demonstrated ability to respond. Key capabilities might include helicopter lift, military hazardous material (HAZMAT) teams, air-portable forklifts and front-end loaders and others. And then Taiwan's Ministry of National Defense needs to demonstrate an ability to respond quickly and effectively to any future natural disasters on Taiwan itself.

Secondly, building on demonstrated capabilities at home, Taiwan might consider reaching out to the region. Non-traditional security challenges that present the most likely opportunities for Taiwan contributions are those that Taiwan faces at home – e.g., natural disaster response – or which materially affect Taiwan – e.g., response to piracy as a means to help sea lines of communication on which Taiwan's maritime trade depends.

In terms of regional structure, it would appear that participating in Association of South-East Asian Nations (ASEAN) efforts would be the most likely starting point, both due to geographical proximity of ASEAN and Taiwan to the entire region and because the large number of natural disasters as well as the increase of man-made non-traditional security challenges that the Asia-Pacific region regrettably experiences on a regular basis, provide ample opportunity to respond.

In May 2006, the first ASEAN Defense Ministers Meeting (ADMM) was held in Kuala Lumpur. Within four years, as part of the open regionalism characteristic of ASEAN, the ADMM had determined to broaden the participation with the establishment of an ADMM+ dialog forum that would include additional participating states. As noted in the ADMM+ Concept Paper, chief goals of the ADMM+ formulation were to broaden the engagement of ASEAN Member countries with other partners, both within and outside of ASEAN, and to pursue an “open and inclusive” framework for cooperation, in view of the increasingly complex and multiplying security challenges in the region.⁶ In October 2010, the inaugural ASEAN Defense Ministerial Meeting (ADMM+) meeting occurred held in Hanoi, and included official representation from Australia, China, India, Japan, New Zealand, Russia, South Korea, and the United States, in addition to the ten ASEAN countries. Responses to ADMM+ initiatives were positive as, among others, US Secretary of Defense Robert Gates referred to the innovative approaches afforded by the new forum and Chinese Minister of Defense General Liang Guanglie



Natural disasters constitute a major security threat in the Asia-Pacific, multinational cooperation must be established in order to achieve an immediate and efficient response. (Source: MND, ROC)

asserted "Non-traditional security threats are transnational and unpredictable, and require joint response. We support ADMM-Plus in focusing on non-traditional cooperation."⁷

At least superficially, ASEAN-Taiwan interaction on the level of response to non-traditional security challenges makes great sense, especially in an era of declining resources and growing regional NTS challenges of all varieties. Moreover, ASEAN's commitment to open engagement would appear to augur well for the participation of Taiwan in some capacity at some point. However, ASEAN limits participants to sovereign states. Moreover, China's unwavering principled opposition to any incremental increase in participation by Taiwan in international bodies would likely result in fierce lobbying of the voting ASEAN Member states against participation by Taiwan in any capacity, including as a ASEAN Dialog Partner, even though Dialog Partner status does not require sovereign status.⁸ Nonetheless, ASEAN as a regional security structure has matured tremendously in recent years. It does not stretch credulity to imagine a future circumstance in which a self-governing entity located within close geographical proximity to ASEAN and possessing demonstrated capabilities in responding to non-traditional security challenges might indeed play a useful contributing role.

Third, on the path to participation with ASEAN, Taiwan might well consider the development of Japan's own participation in cooperative security activities. Indeed, the trajectory of growth in Japan's own response to non-traditional security challenges might provide some clues as to how Taiwan might develop over time, albeit for entirely different reasons. Japan, as we know, in the aftermath of the Second World War, has eschewed participation in international security operation. While possessing Self-Defense Forces, Japan's constitution prohibits participation in collective security actions and perhaps more importantly Japan's collective political consciousness has forbid consideration of meaningful participation in international coalition efforts. Thus, Japan's Maritime SDF joining, even if in a limited way, the international coalition that has responded to the fight against terrorism in Southwest Asia was a milestone for the country. Despite opposition

at home and fears in parts of the region about a "resurgent militarism" Japan has pressed on and is making an important contribution

Taiwan's robust response to non-traditional security threats at home can be a bridge to strengthened cooperation in the broader Asia-Pacific region.

Conclusions

The paper reaches several preliminary conclusions. First, non-traditional security challenges, particularly natural disasters, remain the most prevalent type of challenges to Asia-Pacific regional security. Some of these challenges result from man-made policies while others are a factor of natural disasters. In most cases, they are not regime threatening, but they certainly can contribute to regime weakening. Responding to natural disasters will continue to be an important role for Taiwan's Ministry of National Defense. Indeed, while the military threat from China remains a more existential threat to Taiwan, responding to natural disasters likely lags not far behind in terms of the importance it represents. Finally, robust response to non-traditional security challenges at home can be a bridge to strengthened cooperation in the broader Asia-Pacific region. While it would necessarily involve a methodical step-by-step process, one could imagine a path in which Taiwan develops disaster relief and emergency response forces that, having demonstrated the ability to respond in robust and timely ways to domestic crises, are invited to join broader response to regional non-traditional security challenges.

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- i To prevent confusion and for reading convenience, in this article, "Republic of China" is indicated as "Taiwan", while "China" means "Chinese Mainland". The views expressed in this article should not be interpreted as those of the Ministry of National Defense or any agency of the ROC government. An earlier version of this paper was delivered at the 5th Taiwan Ministry of National Defense Defense Forum, Taipei, August 30-31 2011
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- 6 ASEAN DEFENCE MINISTERS' MEETING-PLUS (ADMM-PLUS) – CONCEPT PAPER. Accessed at: <http://www.asean.org/21216.pdf>
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Non-Traditional Security Challenges and Responses : Changing Role for the Military

Chung-Young Chang

The concept of so-called “Non-Traditional Security (NTS)” began to emerge in many countries around the end of the Cold War, and this concept received increasing attention in the wake of the 911 terrorist attacks, in part because of the natural disasters and diseases outbreaks of the last decade. While terrorist attacks against the general public and critical national infrastructure remains a potential but serious threat to homeland security, natural disasters such as earthquakes, typhoons or hurricanes, floods, droughts, mudslides, and pandemics are moving into the center of various country's security policy focus due to their grave human and economic losses. It is also important to note that the military has often been called upon to carry out the counter-terrorist operations and disaster management missions, and is commonly perceived as an effective responder, if not the responder of last resort, to these NTS threats.

Challenges

While NTS threats are complex in nature, transnational in scope and comprehensive in type, terrorism and natural disasters are often singled out as the two most prominent threats to homeland security in both developing and developed countries. These two NTS threats are also often recognized as common challenges to the international community as a whole, and there have been few countries that have not been affected by either one of them.

Modern terrorism did not begin with the 911 terrorist attacks, and the death of Al Qaeda leader Osama bin Laden and demise of his terror network will not end the scourge of terrorism. As long as religious conflicts and clashes between civilizations remain unresolved or mismanaged, terrorist will present a threat. In fact, homegrown terrorists, inspired and radicalized by extreme religious beliefs, are now considered as an emerging threat to homeland security in major western European and North American countries. The very recent terrorist attack resulting in 77 casualties that occurred in Norway in July 2011 was just one example of how modern homegrown terrorism can undermine the public order and homeland security.

Judging from recent terrorist attacks, which have included bombings of resort hotels, railway and subway systems, commercial airlines and cargo jets, it can be seen that these attacks have tended to focus on so-called “soft targets” and critical national infrastructure, and attempt to



Various ROC Armed Forces helicopters, materials, and heavy equipments can be used for emergency and disaster rescues to ensure people's physical and economic security. (Source: MND, ROC)

cause massive casualties, economic losses, and social unrest. Terrorist groups having access to modern technology, and even weapons of mass destruction (WMD), are deemed to be highly dangerous and regarded as a major security nightmare by many governments.

As for security implications of natural disasters, according to statistics from the WHO's Emergency Events Database (EM-DAT), the frequency and impact of recent natural disasters have been on the rise: 4,491 disaster events occurred in the period of 2000-2009, which represented an increase of 51% compared the previous period of 1990-1999, and these disasters caused more than 800,000 deaths and affected 2.3 billion people. Other statistics provided by WHO Collaborating Centre for Research on the Epidemiology of Disasters (CRED) indicated that, while 750 disasters occurred during 1980-84, the number of disasters had risen to 2,000 by 2000-04, and the number of affected people also increased from 500 million to 1.4 billion.

It should be noted that Asia suffered most for the hydro-meteorological and geological disasters during the period of 1991-2005. Taking the island of Taiwan as an example, at least 74 typhoons and floods occurred during 2000-2009, and the average number of hydro-meteorological disasters occurring annually over the past 50 years increased from 4.77 to 7.4. As for geological disasters during the same period, the average number of earthquakes annually also rose from 0.48 to 1.0, with an average of 43.2 deaths per

earthquake. Disaster-related property losses and disaster management expenditures have also been growing rapidly.

In fact, as noted in *Natural Disaster Hotspots: A Global Risk Analysis* of 2005, Taiwan has been deemed an area with the highest level of vulnerability to natural disasters, with 73% of its land and population in hazardous environments vulnerable to three or more kinds of natural disasters. This assessment was illustrated in August 2009 when typhoon Morakot hit south Taiwan and caused 670 deaths and huge economic losses due to massive flooding and landslides. The cost of post-disaster recovery and reconstruction was estimated at 120-200 billion dollars.

In summary, the security environment of today's world has become harder to predict and manage. The risk of transnational or domestic terrorist attacks is down but remains, especially in the domain of information and cyber security and other critical infrastructure sectors. As a result of global climate change and other related factors, the impact of natural disasters may continue to worsen due to an increasing frequency of extreme weather and a decreasing level of national disaster resilience. Looking into the future, there is little room for much optimism. Greater and better responses to NTS challenges will be required in such areas as national preparedness, emergency management, governmental coordination, and international cooperation.

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Responses

In the face of increasing NTS threats, particularly terrorism and natural disasters, international organizations (IOs) and states are beginning to take a more active stance in strengthening collective security cooperation and providing mutual security assistance.

At the multilateral level, a number of security agreements, arrangements and practices have resulted from the collective efforts of the following IOs: The UN and its specialized agencies have established at least 13 counter-terrorism conventions and formed several special mechanisms to deal with terrorism and disaster relief issues; the EU and its umbrella organizations have relied on the European Convention on Counter-terrorism and

some organizations, such as Europol, for security missions; ASEAN passing several agreements concerning the management of transnational security issues; APEC forming some special working groups for counter-terrorism, trade security, and disaster recovery purposes; and the Shanghai Cooperation Organization (SCO) has acted as regional security mechanism for counter-terrorism and disaster management. Most member countries of these IOs have now agreed to work together to form a security community network and look for better solutions to today's NTS threats.

It is beyond question that the role of US-led multilateral efforts is imperative to the successful management of today's NTS issues. In 2002, the US encouraged international participation in the Container Security Initiative (CSI), addressing the potential threat to border security and global trade posed by the terrorist use of cargo containers to deliver weapons. It also pushed for the Megaports Initiative in 2003 and Secure Freight Initiative (SFI) in 2007; these constituted security arrangements involving nuclear and radiation detection in support of CSI's efforts to safeguard global trade and homeland security. In addition, the US took another major step in 2003 by launching the Proliferation Security Initiative (PSI), which has sought to link like-minded countries in a network to stop trafficking of WMDs and their delivery systems and relevant materials. There are currently 58 foreign ports participating in CSI, 26 ports participating in the Megaports Initiative, six ports in the SFI and 98 countries endorsing PSI as of 2011.

At the national level, the governments of major countries have begun focusing on the security implications of NTS issues since the early 21st century. For example, sections focusing on and policy responses to both natural and man-made disasters can be found in Canada's National Security Policy of 2004, Singapore's National Security Strategy of 2004, the US National Strategy for Homeland Security of 2002 and 2007, the UK's National Security Strategy of 2008 and 2010, and the ROC's National Security Report of 2006 and 2008. In addition, it should be noted that these documents share the themes of greater interagency coordination under the principle of whole-of-government and a new role for the military in support of civilian government in disaster and emergency management.

Several countries started a process of government reform in the past decade in an effort to enhance their counter-terrorism response or homeland security resilience: The US integrated 22 federal agencies or units into a new Department of Homeland Security (DHS), which took the lead in a number of security strategies and enforcement measures; Canada merged 6 federal agencies into the new Public Safety Canada, which spearheaded a series of security cooperation undertakings with the US; and Singapore adopted a new government framework with an

emphasis on security enhancement. Many other countries have jumped on the bandwagon of homeland security reform and taken steps to strengthen their preparedness for and responses to NTS issues.

As for the ROC, the Executive Yuan proclaimed the establishment of a so-called “Homeland Security Net” in 2003 in the wake of SARS outbreak for the purpose of further coordinating and integrating several separate emergency management systems and boosting the effectiveness of inter-agency coordination. However, except for the amendment of Communicable Disease Control Act to enhance resilience against emerging pandemic disease, most of the policy momentum of this initiative has weakened, if not dissipated entirely. The establishment of a new Ministry of Interior and Homeland Security, chiefly consisting of police, fire, and immigration agencies and the Coast Guard, was proposed in 2005, but later abandoned because of inter-departmental vested interest. In addition, counter-terrorism legislation was proposed twice to the Legislature Yuan in 2005, but rejected due to lack of consensus among lawmakers and within government.

The ROC began another round of government reform focusing on disaster resilience in the wake of typhoon Morakot in August 2009. With strong political support from the top due to public pressure, the Disaster Prevention and Protection Act was amended in 2010 and funding and manpower for disaster management increased significantly. In addition, the military has been asked to actively and proactively provide assistance with disaster prevention, response, and recovery missions. The purpose of these efforts is to strengthen policy planning, coordination, and control of disaster management, with an aim to enhance Taiwan's disaster resilience.

New Tasks for the Military

It is recognized that the role of the military has been gradually expanding from war-fighting and homeland defense operations to assistance in disaster management and homeland security tasks since the end of the Cold War. This trend has been particularly noticeable since the beginning of NTS era in the wake of the 911 terrorist attacks and the many recent natural disasters. Japan's Self Defense Forces played a significant role in disaster management after the Kobe earthquake of 1995 and the Fukushima disaster of 2011, as did the US National Guard following Hurricane Katrina of 2005, and the ROC military after the Chi-Chi earthquake of 1999 and Morakot typhoon of 2009. As the history of these military operations other than war (MOOTW) shows, the military is frequently tasked with the crucial, and indispensable, role of providing assistance in managing disasters, both man-made and natural.



Abiding by the Disaster Prevention and Protection Act, the ROC Armed Forces actively engage in disaster prevention and relief, and become an important part of the nation's crisis management system. (Source: MND, ROC)

The ROC's military has been keeping up with these international trends. An element of counter-terrorism and national emergency response has been included in the Military Strategy since 2003. In addition to the president's pledges, providing disaster management assistance in support of civilian government was clearly codified among the major missions of the ROC's defense forces in National Defense Act of 2010. An amendment was also made to the Act of Military Service System that will authorize disaster management mobilization and training for reserve military personnel. As a result of demands from the top, assistance in disaster management seems to be one of the major roles for the military.

In the light of changing security environment that the ROC has been experiencing during the past decade, in which traditional military threats across the Taiwan Strait are coupled with NTS threats around the Island, it is important to note that the need for the ROC military to assume this new role will have long-term impacts in terms of the military's strategic thinking, defense posture, force structure, training & exercises, and resource allocation. While cross-Strait relations have been quite peaceful and stable since 2008, and no major changes are foreseen in the near future, the ROC's military will still have to play dual roles in homeland defense and homeland security as long as Mainland China maintains its claim of sovereignty and remains a security threat to the ROC.

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Non-Traditional Security and the Role of the ROC Armed Forces

Chia-Sheng Chen



ROC S-70C helicopter, a major aircraft to deliver rescue support and supplies, in a disaster relief mission. (Source: MND, ROC)

Non-traditional security threats are having a growing impact on the Republic of China on Taiwan. These issues involve international terrorism, food and water resources, economic security, energy security, contagious diseases, natural disasters, and others. Along with many of the other countries of East Asia, Taiwan often suffers natural disasters in the form of typhoons, earthquakes, torrential rains, mudslides, and floods, and is affected by other security issues that may cause public panic, including contagious diseases such as avian influenza. On many occasions a combination of threats may occur. For example, when Typhoon Morakot struck southern Taiwan on August 8, 2009, it left at least 700 people dead or missing and over 7,000 people homeless. In addition, the September 21, 1999 earthquake claimed more than 2,000 lives. The devastating impact of these disasters illustrates the non-traditional security threats that Taiwan should prioritize as part of its national security policy.

Non-traditional security threats require government responses that integrate national capabilities. For past two decades, climate change has been a focal point drawing much attention from the international community. From the Kyoto Protocol to the 2009 Copenhagen Summit, 2010 Cancun Climate Conference, and the 2011 Durban Climate Conference, international discussion has centered on the possible impact of climate change on human survival and prosperity. More specifically, regional weather patterns have continued to deteriorate, causing severe harm to people's lives and property. For instance, the magnitude of such natural disasters as typhoons, earthquakes, torrential

rains, mudslides, and floods may become so huge that local governments are unable to deal with them unassisted. A few examples serve to illustrate the devastation caused by such disasters: Central Taiwan's September 21, 1999 Earthquake, the flooding of New Orleans caused by Hurricane Katrina in 2006, southern Taiwan's Typhoon Morakot in 2009, and Japan's March 11, 2011 tsunami and nuclear disaster. These are only a few of many cases in which local government also fell victim to the disaster and was therefore unable to function effectively. Even a central government may be unable to respond to a threat in some cases, and may need external help. In view of the magnitude of potential damage, natural disasters therefore constitute a major non-traditional security threat, and multinational cooperation must be established in order to achieve an immediate and efficient response. In short, integrated efforts will not only enable an immediate response, but also significantly reduce the cost of disorganized actions and time lost due to slow response.

The ROC Armed Forces uphold the doctrine that "prepare for disasters in advance, deploy troops with an eye to disaster preparedness, and ensure readiness for rescue operations."

The ROC Armed Forces also bear the responsibility for assisting the resolution of non-traditional security issues in Taiwan. Article 2 of the National Defense Act specifies the responsibilities of the Armed Forces as: "*The national defense of the Republic of China is aimed at utilization of comprehensive national power to establish a national defense military force, assist disaster prevention and rescue, safeguard national security and maintain world peace.*" Article 3 further prescribes: "*The national defense of the Republic of China consists of all-round national defense, and encompasses matters pertaining to military, civil defense, and prevention and rescue aspects, as well as the political, society, economic, psychological and technological domains, which may directly or indirectly contribute to the national defense.*" The National Defense Act thus illustrates that, in addition to their military responsibilities,

the ROC Armed Forces have incorporated disaster relief and rescue as an auxiliary mission. Although the Armed Forces play an auxiliary role in this regard, they are vital to the implementation of many the missions also involving other ministries.

President Ma Ying-jeou has stressed the need to establish a specialized cabinet-level agency responsible for disaster relief and rescue and able to take the place of fire departments and other agencies. Establishing such an agency is especially important in view of the fact that lack of coordination between different units may contribute to the failure of rescue missions addressing non-traditional security threats. Furthermore, plans call for the reassignment of certain military equipment to reflect disaster relief and rescue needs. For instance, the Armed Forces have purchased 60 Blackhawk helicopters from the United States; when these helicopters are delivered in the near future, 15 of them will be assigned to the new specialized agency for rescue missions. Although the ROC Armed Forces play an auxiliary role in disaster prevention and relief, they uphold the doctrine that "disaster relief is akin to fighting a battle," "prepare for disasters in advance, deploy troops with an eye to disaster preparedness, and ensure readiness for rescue operations," and "emphasize disaster prevention over disaster relief, and prioritize disaster avoidance over disaster prevention."

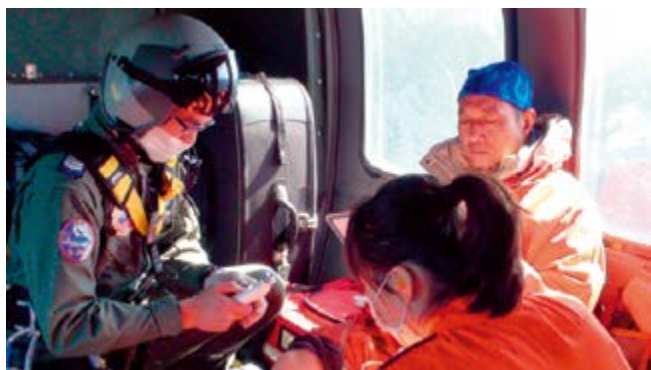
Nowadays, some non-traditional security threats are so severe that a single country may not be able to overcome them alone, and require international cooperation. Here Japan's 311 earthquake and tsunami present an illustrative example. These disasters, which unfolded on March 11, 2011, included a colossal earthquake with a magnitude of 9.0, massive tsunami, and a nuclear crisis, and crippled several cities in northeastern Japan. Apart from the shock and trauma that it caused to the Japanese government and people, the huge extent of the devastation also showed that no single government can cope with the most severe non-traditional security threats unaided. Responding quickly to



The ROC Armed Forces take part in recovery work in typhoon-affected areas. (Source: MND, ROC)

the aftermath of Japan's 311 earthquake and tsunami, the ROC government immediately acted to render assistance. Relief goods and equipment were transported directly to the disaster-stricken areas by Taiwanese officials. In addition, the people of Taiwan donated a total of US\$50.6 million to victims of the disasters, which made the ROC the international leader in donations. When the first anniversary of the 311 disasters arrived on March 11, 2012, the Japanese government produced a special broadcast shown by Taiwanese TV stations expressing appreciation to the people of Taiwan. This case of international assistance is only one of many examples showing the need for international cooperation when countries face overwhelming non-traditional security threats.

President Ma's concept of "Three Lines of Defense" is an important redefinition of the ROC's national defense. The first line consists of the institutionalization of the cross-strait détente, the second consists of enhancing Taiwan's contributions to international development, and the third consists of aligning Taiwan's defense with diplomatic initiatives. International cooperation is a major part of the "Three Lines of Defense," and one of the most effective ways of realizing this concept is to call on the international community to work together in response to non-traditional security threats.



The military medical teams carry out emergency medical missions and provide patient care and evacuation aid in disaster areas. (Source: MND, ROC)

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Introduction to the ROC Armed Forces' Humanitarian Assistance and Disaster Relief Missions

Li-Te Chang

Addressing Non-Traditional Security Threats

Formosa is an old Portuguese name for the Republic of China on Taiwan with the meaning of “beautiful island,” which implies Taiwan is rich in geographic splendor and natural resources. However, being located in the East Asia seismic belt and a typhoon-prone area, Taiwan faces numerous natural threats, including earthquakes, typhoons, floods, and landslides.

Moreover, due to increasingly convenient international transportation, there is a greater likelihood of infectious diseases spreading globally than in the past; examples include avian flu and the SARS outbreak in 2003, which had caused harm to the health of Taiwanese people and had serious social and economic consequences. Furthermore, even if their probability is low, the tremendous potential hazards of chemical and nuclear accidents can never be ignored. In addition, complex disasters are among the most severe threats to national security.

While Taiwan is not at high risk of terrorist attack, in view of the possibility that potential enemies may utilize

special operations attacks on key infrastructure in Taiwan, counter-terrorism prevention and preparedness measures are still an essential part of strengthening the ROC Armed Forces' overall non-traditional security threat response capabilities. Maintaining counter-terrorism and special operations capabilities are absolutely necessary elements of homeland defense.

With its surveillance equipment and capabilities, the ROC Armed Forces can acquire first-hand information concerning disaster zones, while providing the government with accurate analysis.

The Roles of the ROC Armed Forces

Along with medical, police and fire-fighting systems, the ROC Armed Forces are an important part of the nation's crisis management system. When facing disasters in which local emergency agencies lack adequate response capabilities, the ROC Armed Forces are able to promptly deploy troops, materials, heavy equipment, and sea-air-land transporters. With its surveillance equipment and capabilities, the ROC Armed Forces can acquire first-hand information concerning disaster zones, while providing the government with accurate analysis. Moreover, the Armed Forces communications units can deploy C4 networks with the coverage encompassing an entire disaster area; transport units, with their sea-lift and beach landing capabilities, are ideal for providing assistance to remote and isolated disaster areas; special operations forces equipped with satellite telephones can access affected areas even when encountering adverse terrain and weather. Early warning aircraft is able to control the entry and exit of search-and-rescue aircraft in disaster areas, while also serving as a communications relay between rescue teams and command centers. Military logistic and medical systems can offer urgently needed supplies and field medical services to victims.



The ROC Armed Forces play an important role in providing victims with assistance and offering reconstruction support to disaster area. (Source: MND, ROC)

For decades, the ROC Armed Forces have actively engaged in humanitarian assistance and disaster relief (HA/DR) missions, acquiring plentiful experience, and have developed standard HA/DR operating procedures, civil material mobilization procedures, and a database for disaster relief resources. Complying with the guidance of President Ma, the Armed Forces are paying increasing attention to potential damage caused by natural disasters, and have shifted their mobilization priority from “rescue after a disaster strikes” to “active preparation for disasters and deployment of units with an eye to disaster preparedness.” This change reflects the Armed Forces' emphasis on providing disaster victims with every possible assistance at the earliest possible time.

Last but not least, the ROC Armed Forces, Coast Guard, special service teams, special forces, chemical corps, and SWATs are learning to work together to deal with terrorism and nuclear, biological, and chemical accidents.

Challenges and Responses

The ROC Armed Forces are endeavoring to fulfill their ultimate missions of force buildup and defense readiness. As a consequence, the focus of armament procurement and personnel training must satisfy the need for a robust national defense and preparedness against possible enemy threats. In comparison with the National Fire Agency and other governmental disaster relief agencies, the Armed Forces are relatively lacking professional rescue equipment and skills. Furthermore, in the face of complex large-scale disasters, the Armed Forces must be ready to initiate relief missions in a timely manner. However, in view of resource and budget limitations, rescue tasks and recovery efforts cannot be accomplished without mobilizing governmental and civil machinery, material, and medical resources throughout Taiwan.

Being aware of these challenges and the need to strengthen professional HA/DR capabilities, the Ministry of National Defense has included disaster prevention and relief courses in the basic education of military academies since 2010. In addition, starting from 2010, military personnel have been selected to take disaster relief and management courses and attend nuclear accident decision-making training programs offered by the National Fire Agency and the Atomic Energy Council respectively. Furthermore, military personnel are also sent to non-governmental rescue teams, such as those run by the Red Cross Society, for training. The Armed Forces is also emphasizing procurement of disaster relief equipment, including life detectors and dual-purpose equipment with both operational and HA/DR capabilities, such as helicopters, amphibious ships, and engineering equipment.



The ROC military helicopter in disaster relief efforts. (Source: MND, ROC)

Most importantly, when conducting major rescue missions involving large number of troops, the ROC Armed Forces must never relax its defense readiness to handle any contingency so as to safeguarding the homeland.

Increasing Participation in International Humanitarian Assistance and Disaster Relief

The 921 Earthquake in 2001 and flooding in the wake of Typhoon Morakot in 2009 caused tremendous damage to Taiwan, but this damage would have been much more severe had international rescue teams not provided assistance. Being grateful for international support and wishing to serve as a responsible stakeholder in the international community, the ROC Armed Forces are vigorously engaging in HA/DR worldwide. Taking the 2004 Indian Ocean Tsunami and 2010 Haiti Earthquake as examples, not only did the government of Taiwan send C-130H transport aircraft to deliver rescue supplies, but non-governmental medical organizations and charities also volunteered to participate in HA/DR activities. During the last few years, the National Fire Agency's special search and rescue teams also took part in such missions in New Zealand and Japan.

Given the fact that Mainland China has hindered Taiwan from participating in international affairs, Taiwan, by using humanitarian work as a platform for engagement, has contributed to disaster relief efforts around the world. This has helped the nation gain a higher moral ground in international politics. In the future, the ROC Armed Forces will seek to participate more actively in HA/DR missions with the hope to enhance the contribution to international security and stability.

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The PLAN's 11th Gulf of Aden Anti-Piracy Expedition

Immediately prior to the fifth meeting of the 11th Chinese People's Political Consultative Conference (CPPCC) and the National People's Congress (NPC), the People's Liberation Army Navy (PLAN) sent its 11th task force to the Gulf of Aden near Somalia for an anti-pirate patrol, a



A British frigate en route to the Gulf of Aden for counter piracy operations in the area. (Source: DefenceImages.mod.uk)

mission Mainland China has participated in since 2008. This task force is the first from the PLAN's North Sea Fleet and consists of the Type 052 destroyer *Qingdao*, Type 054A frigate *Yantai*, and the supply ship *Weishanhu*.

Although this escort mission has not elicited a response from other countries, Mainland China's growing expeditionary capabilities have been driving increasing investment in naval hardware modernization and personnel training. In terms of hardware, Mainland China has already embarked on the production of a series of 054 frigates. In the meantime, Mainland China has organized a 14-day training program for the 12th and 13th task forces in an effort to standardize its training mechanisms for escort personnel. The PLAN's accumulated anti-piracy mission experience is earning growing recognition in the international arena (Mainland China held the first International Symposium on Counter-Piracy and Escort Operations in Nanjing in February 2012, and shared its experience in fighting against piracy), and also entailing greater equipment and training costs. In the foreseeable future, Mainland China's increasing interests beyond its littoral waters will cause its defense budget to swell.

US Aims to Beef up Presence in the Asia-Pacific Region

Echoing a new defense strategy entitled *Sustaining US Global Leadership: Priorities for 21st Century Defense*, the US has recently begun adjusting its military presence in the Asia-Pacific region and the South China Sea. New changes include deploying littoral combat ships (LCSs) in Singapore and the Philippines, stationing up to 2,500 soldiers on Australian military bases (where the US enjoys permanent use of facilities), and dispatching one third of its warships to the region. In addition, according to US Naval Institute, the US may deliver P-3C or P-8A maritime patrol aircraft or UAV to the Philippines or Thailand in the next decade. All of these moves may be attempts to counterbalance the rise of Mainland China as a regional power. It is in America's national interests that sea lanes in the region remain open and its regional allies do not pivot toward China. From a military perspective, the actions will enable US forces to better access the region and reinforce the southern section of the C-shaped regional containment against Mainland China. It will also allow the US to swiftly respond to regional disasters and



The US littoral combat ship (LCS2) (Source: US Navy)

support military operations other than war (MOOTW). The moves will thus not only sustain US prestige overseas, but also reassure uneasy regional allies with stronger US commitment to regional stability and security.

Mainland China's Space Advancement

The US Defense Intelligence Agency indicated in late February that Mainland China currently operates more than 60 satellites performing communications, navigation, weather, and ISR missions. It is estimated that roughly 20 of these are military reconnaissance satellites with image resolution of 1-3 meters, which are used to monitor Taiwan and Asia-Pacific targets and movements. The *YaoGan* and *JianBing* reconnaissance satellites, which may be equipped with EO/IR systems and synthetic aperture radar, have improved the PLA's reconnaissance network. *HaiYang-3* ocean surveillance satellites use remote sensing technology to perform offshore detection of targets both on the surface (such as carrier strike groups) and underwater (such as submarines in shallow water). The *Beidou* (Compass) navigation system consists of 10 satellites and covers Mainland China and its neighboring countries; it has been in operation since the end of 2011. Another six *Beidou* satellites are expected to be launched in 2012, extending coverage to the entire Asia-Pacific region. By 2020, the PLA plans to complete a global navigation system consisting of 35 *Beidou*

satellites and offering better accuracy (its current accuracy is around 10 meters.) The *TainLian*-1 and -2 satellites launched by Mainland China in 2008 and 2011 provide initial digital transmission capabilities, and together with the *FengHuo* and *ZhongXing* satellites, have strengthen Mainland China's overall communications capacity. During the period from 2006 to 2011, Mainland China launched 67 rockets, sending 74 satellites, two lunar probes, and two spacecraft into space. The China Aerospace Science and Technology Corporation has announced a plan to launch 12 rockets and 30 satellites in 2012. The resulting satellite system will significantly enhance the PLA's ISR capabilities by providing coverage beyond the Asia-Pacific region, and will greatly improve the PLA's anti-access and area denial capabilities. For instance, the *Beidou* satellite will be able to guide the PLA's precision weaponry and other operational platforms, improving operating effectiveness by a reported 100-1,000 times. It is no secret that Mainland China has ambitious space goals. The profound implications of Mainland China's space program should be a major concern for many nations.



Yinghao-1, the Mainland Chinese Mars-exploration space probe, was launched in November, 2011.
(Source: Military Link Magazine)

Office of Defense Studies Seminars and Publications Serve as Platforms for Scholarly Discussion

Dedicated to research on cross-Straits security and ROC defense policy, the Office of Defense Studies (ODS) publishes two Mandarin journals—*National Defense Affairs Biweekly* and *Quarterly Journal of Defense Strategy and Assessment*—and the English journal *Defense Security Brief*. The *National Defense Affairs Biweekly* contains five to seven shorter papers which provide timely analysis of international security and political affairs, as well as policy recommendations. The *Quarterly Journal of Defense Strategy and Assessment* presents in-depth academic research papers offering the results of detailed investigation of a wide range of topics concerning international security. *Defense Security Brief* aims to publicize the latest ROC

defense policies to the international community, introduce ODS publications and events, and serve as a platform for scholarly discussion. Distribution of the *National Defense Affairs Biweekly* is restricted to the Ministry of National Defense, National Security Council, and legislators and scholars in defense-related fields. The *Quarterly Journal of Defense Strategy and Assessment* are both available as free PDF downloads from the ODS website and in print format from public libraries. *Defense Security Brief* is distributed to international think tanks and Taipei representative offices worldwide, and it can also be downloaded from the ODS website.



In addition to publications, ODS seminars, which are often attended by government officials, university faculty, scholars from various research institutes, and military journalists, provide forums for lively discussion and generate fruitful results. At the beginning of the year, the ODS had the honor to invite Dr. Denny Roy from the East-West Center, along with Dr. Cheng-Yi Lin from Academia Sinica, Dr. Ta-Chen Cheng from the National Security Council, Dr. Kuang-Hua Lui from Ming-Chuan University, and MG. Wen-Farn Chen and Mr. Tsung-Chi Yu from National Defense University, to discuss the implication of the US report *Sustaining US Global Leadership: Priorities for 21st Century Defense* for the ROC. The new US defense directive states that the United States' future strategic focus will be on the Asia-Pacific, and it will maintain a sufficient military presence in the region to fulfill its security commitments. To counterbalance the PLA's A2/AD tactics, the Pentagon will seek to strengthen naval and air force capabilities in the Pacific, while simultaneously deepening relationships with US allies and friends in Asia. This US policy implies that the US intends to build a stronger and more robust security network in the region, and plans to maintain its role as a Pacific power while preventing Mainland China from taking over America's influence. The ROC should take the current circumstances as an opportunity to demonstrate its unique value and find an irreplaceable position in the US security map. Some have suggested that the ROC provide the US with some assistance, such as proposing a shared ISR mechanism assisting America's AirSea battle concept. The new US defense directive, however, has also aroused some domestic concern as being budget driven. Some even consider it to be



Dr. Denny Roy from the East-West Center and Dr. Cheng-Yi Lin from Academia Sinica participate in an ODS seminar.

part a presidential election campaign strategy meeting the public's wish to prioritize economic issues, throwing doubt on whether the directive will actually be implemented after the election. Internationally, the directive has attracted the close attention of America's Asian allies, who will be mostly concerned about the amount of resources the US dedicates to the Asia and may further adjust their US policies accordingly. Even though the Obama administration's intention to adjust global troop deployments can be clearly seen from the directive, it lacks concrete implementation methods and relevant statistical information. How, and to what extent, the directive will be implemented awaits further observation.



Scholars are invited to discuss the implication of the new US defense strategy for the Asia-Pacific.

Office of Defense Studies (ODS) is the preparatory office of National Defense Think Tank.

The institute is dedicated to the studies of international security and track II interactions.

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The opinion expressed in the journal are solely those of the authors and do not necessarily reflect the views of The Ministry of National Defense.

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