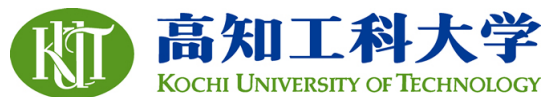


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The Role of ROC Armed Forces in Disaster Prevention and Relief and Defense Mobilization

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1. Introduction
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Abstract: Exploration of the Role of ROC's Armed Forces in Disaster Prevention and Relief and Defense Mobilization can be divided into two aspects: theoretical legal system and practical operations. In the aspect of theoretical legal system, after the Earthquake on September 21st, 1999 in Taiwan, a "Disaster Prevention and Protection Act" was enacted to specifically administer disaster prevention and relief efforts. Pursuant to the Act, the Framework for Disaster Prevention and Relief was erected and relevant laws for Defense Mobilization were enacted. Japan's compound disaster on March 11th in 2011 prompted Taiwan to reform its functional organizational chart for compound disaster. In accordance with the "Act of All-Out Defense Mobilization Preparation," Taiwan's Ministry of National Defense acts as a Secretary for the "Executive Yuan Mobilization Meeting" and integrates related agencies and all level governments in the joint implementation of mobilization preparations in eight major fields. Although the Ministry of National Defense may initiate disaster relief efforts, the armed forces primarily play an assistant role. In practical operations, when assisting local government to carry out relief efforts during drills, the armed forces find some major problems, including: professionalism and verisimilitude need improving in simulation drills; local governments lack realist understanding of the relief capabilities of the armed forces; critical details lack conclusive planning efforts; evacuation and reception mechanisms need improving. In the future, the Ministry of National Defense will follow the policy guidance, such as "prepare for disaster in advance, deploy troops with an eye to disaster preparedness, and ensure readiness for rescue operations," make efforts to enhance its coordination with local governments, and consolidate its relief education and training programs, so as to protect the lives and assets of the people whenever the need arises.

Keywords: compound disaster; disaster prevention and relief; defense mobilization

1. INTRODUCTION

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After Japan's 3/11 disaster, according to a Wall Street Journal survey, all of the four nuclear power plants in Taiwan are situated in high-hazard areas; especially, Chinshan nuclear power plant and Kuosheng nuclear power plant are vulnerable to double threats of earthquake and tsunami.¹ The Taiwan Power Company said that the nuclear power plants are designed to withstand earthquakes of magnitude seven on the Richter Scale and resist 12 meter high waves. However, people in Taiwan have to face the fact that violent climate change is transforming the landscape, that earthquake intensity is steadily increasing, and that the south Asian tsunami waves is already higher than 12 meters.² The Fukushima facility is located in a moderate-risk zone; yet Japanese have to cope with the devastation inflicted by the catastrophe. The fact that all of Taiwan's nuclear reactors are located in high-activity areas reminds all people in the island republic to prepare for the threat of compound disasters and to consolidate the disaster prevention and defense mobilization system of Taiwan. In particular, according to a 2005 World Bank's report, *Natural Disaster Hotspots: A Global Risk Analysis*, 73% of the population and the land in Taiwan are exposed to more than three kinds of natural disasters, the highest in the world.³ *2010 Asia Pacific Disaster Report* issued by the United Nations further indicated that Asia Pacific is the region most vulnerable to natural disasters in the world, around 250 hits annually.⁴ British risk analysis firm Maplecroft's *Natural Hazards Risk Atlas 2011* specifically states that Taiwan ranks number 4 with regard to overall coast from a natural disaster, categorized as "extreme risk" along with

¹ Richard D. Fisher, "Scores of Reactors in Quake Zones," *Wall Street Journal*, March 19 2011.

² Editorial, "Can Nuclear Power Plants on Taiwan Withstand Big Quakes and Tsunamis?," *China Times*, <http://www.kmt.org.tw/english/page.aspx?type=article&num=113&num=9354> (accessed July 21, 2011).

³ Margaret Arnold et al., *Natural Disaster Hotspots: A Global Risk Analysis* (Washington DC: World Bank, 2005).

⁴ Sanjaya Bhatia et al., "Protecting Development Gains The Asia Pacific Disaster Report 2010," (Bangkok: Economic and Social Commission for Asia and the Pacific, International Strategy for Disaster Reduction, 2010), pp. 1-3.

the US, Japan, and China.⁵

Non-traditional security threats such as natural disasters have always been part of life for the Taiwanese. The island republic has to prepare itself for compound disasters and continue its exploration on issues regarding disaster Prevention and Relief and defense mobilization so as to minimize the loss of lives and assets when disaster strikes.

Therefore, the research goals of this paper include the following:

1. Explore the tendency of disasters that could inflict pain and distress on Taiwan;
2. Explore the development of the current disaster Prevention and Relief structure and defense mobilization system;
3. Explore the role and functions of the Armed Forces with regard to disaster Prevention and Relief and defense mobilization, and find ways for enhancing its contribution in protecting the lives and assets of people.

2. FREQUENTLY SEEN DISASTERS AND COMPOUND DISASTERS IN TAIWAN

After 9/21 earthquake in Taiwan, "Disaster Prevention and Protection Act (《災害防救法》)" was enacted in order to coordinate inter-agency disaster Prevention and Relief efforts. In accordance with the Act, "disaster prevention and protection" refers to measures including mitigation and preparedness before disaster, response actions during disaster, and recovery after disaster. That is, disaster prevention and protection is comprised of three stages: disaster prevention; disaster response measures; and post-disaster recovery & reconstruction.

The easiest way to define a compound disaster is to consider the factors which contributed to the disastrous impact.⁶ It is an

⁵ "Natural Hazards Risk Atlas 2011 Press Release," Maplecroft, http://maplecroft.com/about/news/natural_hazards_2011.html (accessed Aug 13, 2011).

⁶ Charles Kelly, "Field Note from Tajikistan Compound Disaster - A New Humanitarian Challenge?," *Journal of Disaster Risk Studies*, Vol. 2, no. 3 (2009),

emergency situation caused by an original disaster which triggers chained adverse consequences. Compound disaster has a tendency to exacerbate consequences, increase victims' issue, make search and rescue and other response and recovery tasks more difficult, and significantly increase the risk of harm to victims and responders alike.⁷ The people of Taiwan are not strangers to compound disasters. Most part of Taiwan is exposed to the danger of earthquake, typhoon, and concomitant mudslide and surging tide; the people often have to suffer severe loss of lives and assets. For instance, typhoon Morakot that ravaged Taiwan in 2009 was a compound disaster comprised of windstorm, flooding, mudslide, and landslide. Typhoon Morakot ruined many sloping lands, roads, bridges, river and seashore banks, rice fields, irrigation systems, life-sustaining systems, public facilities, personal houses; altogether, it claimed nearly 700 lives and caused economic loss of around \$US 3.4 billion (\$NT 110 billion) which accounted for 0.91% of GDP that year.⁸

Since the beginning of the twenty-first century, climate change has been a dreadful phenomenon. Before the end of this century, global temperature could rise 1.8-4 °C as a result, sea level might rise 40-120 centimeter.⁹ One of the most pressing impacts brought about by climate change to Taiwan is extreme precipitation, which implies that increasing heavy rainfalls may cause more devastating flooding and landslides, while decreasing medium and light rainfalls may cause decline of soil moisture content and

<http://acds.co.za/uploads/jamba/vol2no3/kelly.pdf> (accessed January 7, 2012).

⁷ Damon P. Coppola, *Introduction to International Disaster Management*, 2 ed. (Burlington: Elsevier, 2011), p. 30.

⁸ Wei-Sen Li et al., "Disaster Survey and Analysis of Morakot Typhoon (莫拉克颱風之災情調查與分析)," (Taipei: Executive Yuan National Science Council, 2010), pp. 49-581.

⁹ "Yinying qihou bianqian zhi guotu kongjian guihua yu guanli zhengce jianyi shu (因應氣候變遷之國土空間規劃與管理政策建議書, Recommendations for Homeland Space Planning and Management Policy in Response to Climate Change)," (Taipei: Academia Sinica, 2011), pp. 4-6.

exacerbate the threat of drought.¹⁰ If global temperature rises 1°C, Taiwan's top 10% intense precipitation will increase 140-150%, which means there will be remarkably higher probability to see more heavy precipitation like that brought about by typhoon Morakot.¹¹ As a consequence, more compound disasters and droughts will inflict pain and distress upon the people in Taiwan in the foreseeable future. Consolidation of disaster Prevention and Relief system is becoming an increasingly urgent issue for the island republic.

3. ROC ARMED FORCES IN THE DISASTER PREVENTION AND RELIEF SYSTEM

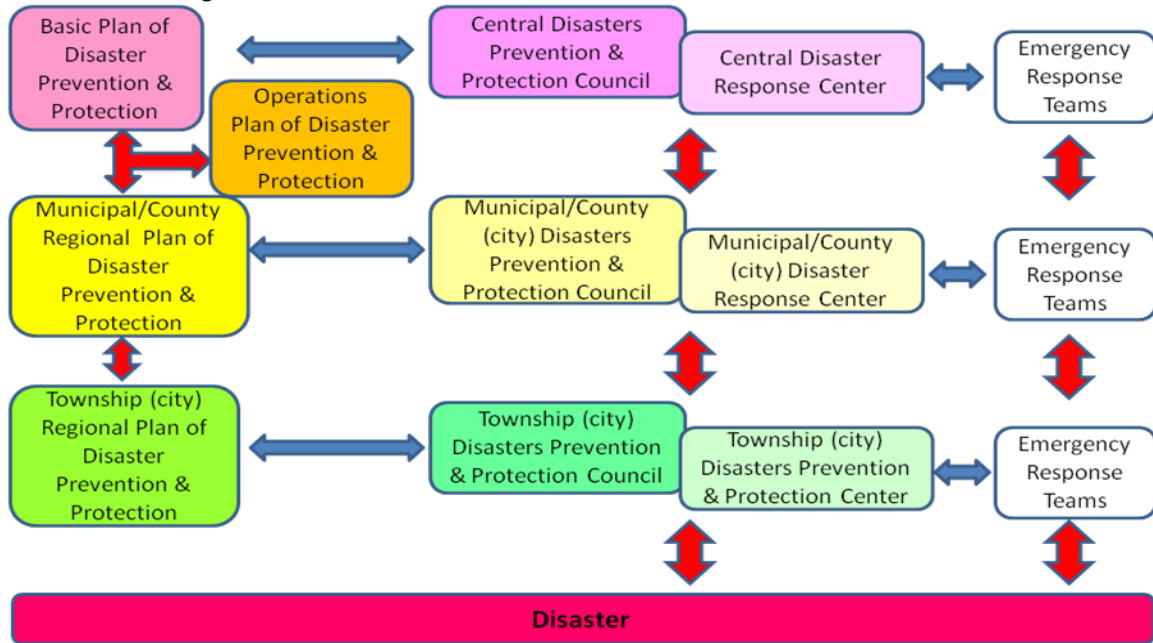
3.1 Disaster Prevention and Relief Framework

In accordance with the Disaster Prevention and Protection Act, disaster Prevention and Relief system is divided into three levels as shown in figure 1: the Central Disasters Prevention and Protection Council; the Municipal/County (city) Disasters Prevention and Protection Council; and the Township (city) Disasters Prevention and Protection Council. The Central Disasters Prevention and Protection Council is the highest authority in charge of disaster Prevention and Relief; governed by the Council, the Central Disaster Response Center is the pivot for the operations of nationwide disaster response. After the establishment of Central Emergency Operation Center at the highest level when disaster strikes, the Municipal/County (city) government shall be immediately notified to establish the Municipal/County (city) Disaster Response Center at the second level. Likewise, the Township (city) Disasters Prevention and Protection Center shall be established. The local Disaster Response Center at the second and third level is responsible for relief work at the first line, while Central Disaster Response Center is responsible for formulating plans and coordinating resources so as to support local relief efforts.

¹⁰ Ibid., p. 7.

¹¹ Ibid., pp. 8-9.

Figure 1: The Disaster Prevention and Relief Framework of the ROC



Source: Central Disaster Response Center

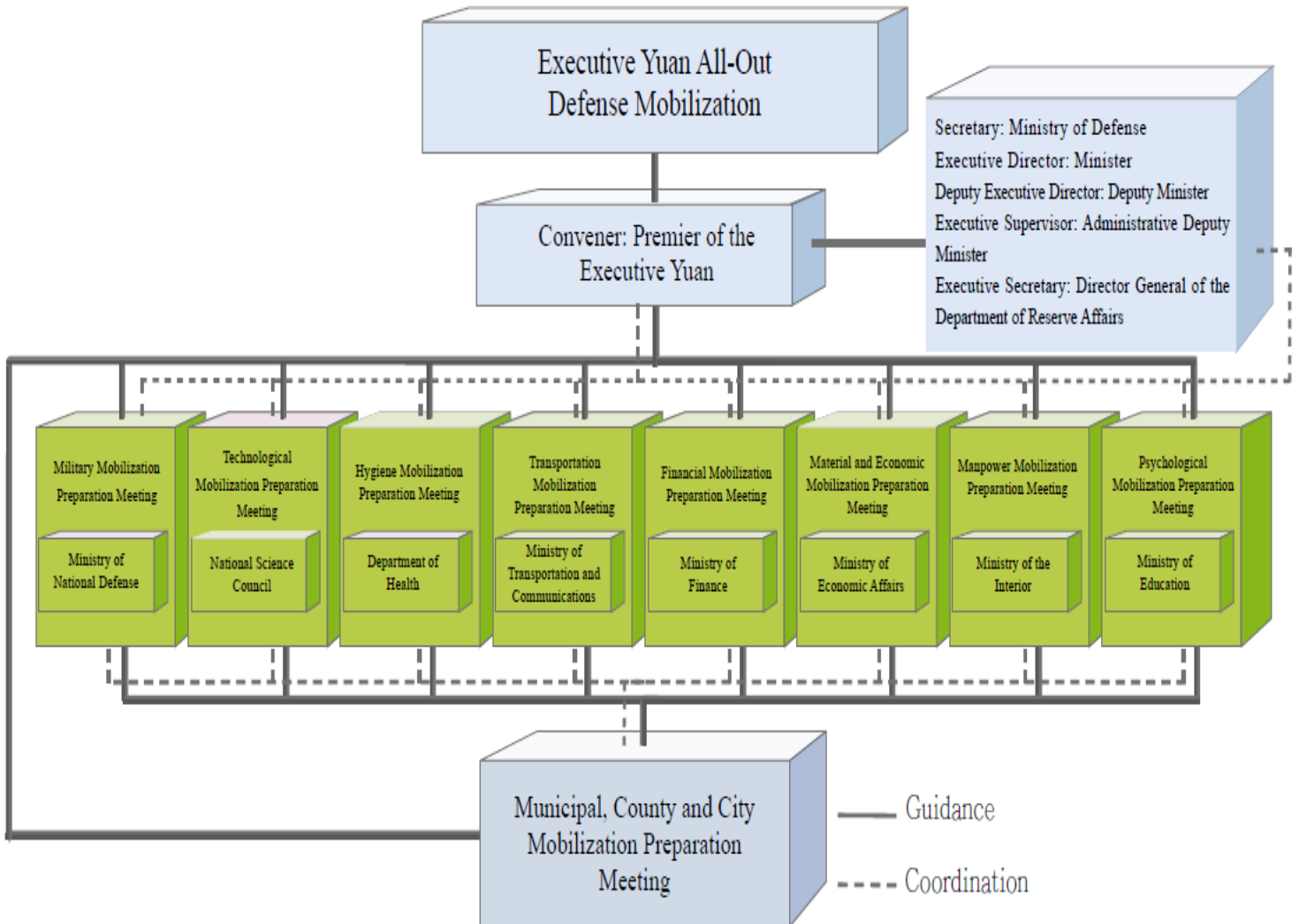
3.2 Role and Functions of the Armed Forces in Defense Mobilization System

“Disaster Prevention and Protection Act” is the basic law that leads to the enactment of the related laws concerning the defense mobilization system. Article 15 of the Act stipulates: The disaster prevention and protection council at each tier shall joint the civil defense mobilization and preparation system in implementing affairs related to disaster prevention and protection, response with the enforcing regulations duly enacted by Ministry of the Interior and related government agencies. The Ministry of the Interior and the Ministry of Defense accordingly jointly promulgated the “Regulations on the Implementation of Disaster Prevention Response and Muster Measures in Coordination with the All-Out Defense Mobilization (《結合全民防衛動員準備體系執行災害防救應變及召集實施辦法》)” in August 2001. Then the “Act of All-Out Defense Mobilization Preparation (《全民防衛動員準備法》)” was promulgated in November 2001. Article 8 of the “Act of All-Out Defense Mobilization Preparation” assigns the Ministry of National Defense as Secretary of the Executive Yuan Mobilization Meeting. Theoretically, the

Ministry of National Defense is supposed to have full support from three levels of Disasters Prevention and Protection Councils illustrated above: the Central, the Municipal/County (city); and the Township (city). The Ministry of National Defense supervises periodic related resources surveys conducted by three levels of government agencies so as to accurately integrate and dispatch mobilization capabilities.¹² The role and functions of the Armed Forces in the Defense Mobilization System is illustrated in figure 2 below.

¹² Ministry of Justice, "Quanmin fangwei dongyuan zhunbeifa (Act of All-Out Defense Mobilization Preparation, 全民防衛動員準備法)," (Laws and Regulations Database of the Republic of China, 2001). English version of the Act is not available. See also "Republic of China National Defense Report 100th Anniversary," ed. Ministry of National Defense (Taipei: MND, 2011), p. 212.

Figure 2: All-Out Defense Mobilization Mechanisms



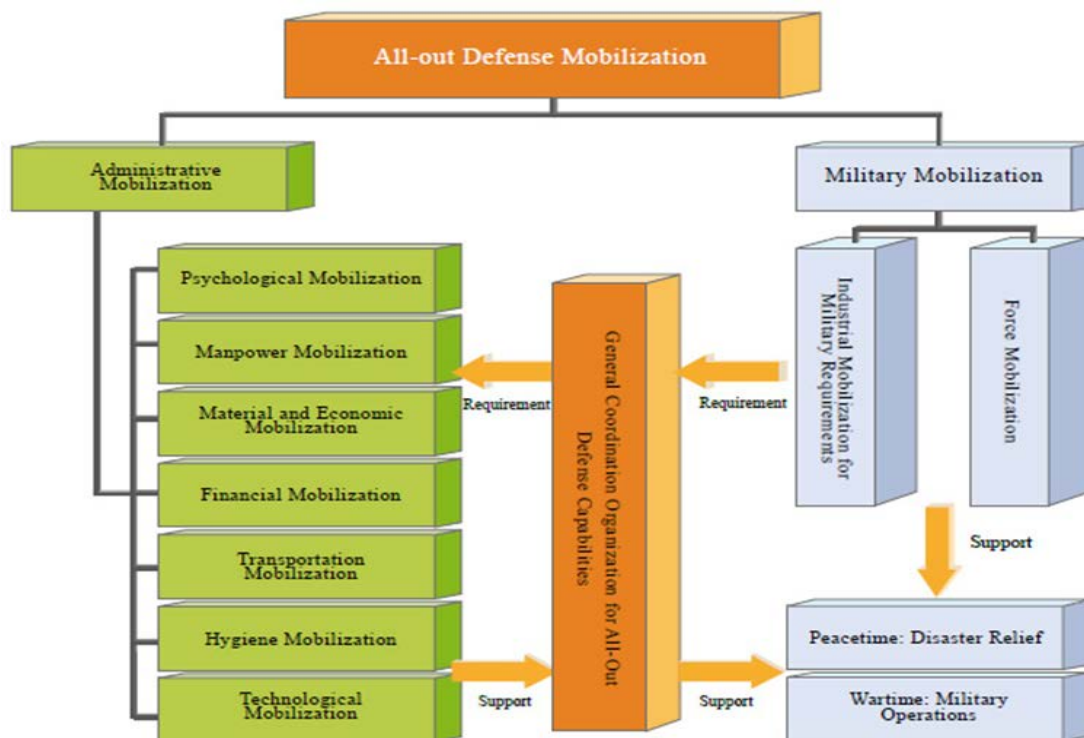
Source: National Defense Report 2011, p212

In accordance with the Act, mobilization is divided into phases: mobilization preparation and mobilization implementation. The former is designed to combine administrative measures to complete preparation that integrates manpower, material, financial, scientific and technical, and military resources so as to accumulate total fighting capacity and to support disaster Prevention and Relief efforts. The latter is designed to employ the comprehensive capacity of the people to support military combat and to deal with

emergency situations.¹³ As an integral part of the country's crisis management mechanism, the All-Out Defense Mobilization System not only supports military operations in wartime, but also supports disaster Prevention and Relief when disaster strikes. Figure 3 is an illustration of the two mobilization phases.

¹³ Ministry of National Defense and Ministry of the Interior, "Guojun xiezhu zaihai fangjiu banfa (Regulations for Armed Forces to Assist Disaster Prevention and Protection, 國軍協助災害防救辦法)," (Laws & Regulations Database of the Republic of China, 2010).

Figure 3: The two phases of mobilization of the ROC



Source: National Defense Report 2011, p213

In July 2004, the Executive Yuan proposed establish a “homeland security network” and directed to closely integrate all contingency mechanisms such as mobilization, civil defense, emergency medical aid, counter-terror, disaster Prevention and Relief, and nuclear incidents.¹⁴ As Secretary of the Defense Mobilization System, the Ministry of Defense published *Collection of Laws on All-Out Defense Mobilization System* (全民防衛動員體系法規彙編) is issued in 2007. The collection is divided into 5 categories—general, All-Out Defense mobilization, disaster Prevention and Relief, civil defense, and military service, and includes 52 laws and 1 administration regulation.¹⁵ The volume is an indication of the

commitment of the Ministry of National Defense in disaster Prevention and Relief efforts. However, violent climate change pushed the Armed Forces to take more responsibility.

3.3 Guiding Principles & More Supplementary Laws/Regulations

Originally, in all kinds of disaster Prevention and Relief efforts, the military forces would provide support after receiving requests from the municipal, or county (city) government, or the central disaster prevention and protection operation regulating authorities. After Typhoon Morakot slammed Taiwan in 2009, President Ma Ying-jeou (馬英九) directed the Ministry of Defense to incorporate disaster Prevention and Relief as one of its core missions. Afterwards, the *2009 National Defense Report of the ROC* stipulates that disaster Prevention and Relief is one of the central missions of the military forces; ever since, the military forces are supposed to

¹⁴ <游揆：全民防衛動員準備是建構「國土安全網」的基礎工作>，《行政院新聞局》，2011年9月2日，<

<http://info.gio.gov.tw/ct.asp?xItem=17992&ctNode=4618&mp=1>>。

¹⁵ 《全民防衛動員體系法規彙編》，（台北：行政

院全民防衛動員準備業務會報，2007），目錄。

proactively coordinate and execute disaster Prevention and Relief efforts.¹⁶ Pursuant to Article 34 of the “Disaster Prevention and Protection Act” amended in 2010, the national army shall actively support responsive measures of major disaster rescue.¹⁷ The Ministry of National Defense and the Ministry of the Interior further jointly promulgate the “Regulations on the ROC Armed Forces’ Assistance in Disaster Prevention and Relief (《國軍協助災害防救辦法》)” in October 2010. Article 7 of the Regulations stipulates that in peacetime, areas of responsibility be assigned, areas prone to flooding and landslide be identified, strategic points for responsive measures be designated in advance; that in time of crisis, responsive forces push to the designated strategic points for conducting disaster relief efforts.¹⁸

The Ministry of National Defense further asserts the policy guidance with regard to disaster prevention and relief includes:

1. Disaster relief is akin to fighting a battle;
2. Prepare for disasters in advance (超前部署), deploy troops with an eye to disaster preparedness (預置兵力), and ensure readiness for rescue operations (隨時防救);
3. Disaster prevention takes precedence over disaster relief, and disaster avoidance over disaster prevention.¹⁹

The Ministry of National Defense has not only laid down plans to assist disaster prevention and relief, but also designated strategic points for specific forces assigned to guard certain disaster-

prone areas in peacetime. Each armed force is required to actively coordinate and communicate with local governments, get necessary equipment ready, and to prepare for disaster prevention and relief. When an alert is issued, the assigned forces execute forward deployment and conduct disaster relief efforts immediately whenever the need arises, so as to protect the lives and assets of the people. Besides, the Ministry of National Defense shall mobilize reserve forces to support disaster rescue.

Furthermore, in January 2011, the Ministry of National Defense and the Ministry of the Interior jointly revised the original “Regulations on the Implementation of Disaster Prevention Response and Muster Measures in Coordination with the All-Out Defense Mobilization (《結合全民防衛動員準備體系執行災害防救應變及召集實施辦法》)” and renamed it as “Regulations on the Implementation of Disaster Preparations and Response Measures in Coordination with the Civil and All-Out Defense Mobilization Preparation System” (《結合民防及全民防衛動員準備體系執行災害整備及應變實施辦法》). This is the latest defense mobilization law of the ROC. The law finally erects the Mechanism of Three Meetings. The municipal or county (city) government conducts disaster prevention and relief meeting (災害防救會報), All-Out Defense mobilization preparation affairs meeting (全民防衛動員準備業務會報), and capability integration and coordination (全民戰力綜合協調會報). The township (city) office is supposed to conduct its disaster prevention and relief meeting and implement related disaster preparation and contingency plans under the joint guidance of the Three Meetings of its superior government.²⁰ With the help of the Mechanism of Three Meetings, the Ministry of National Defense is

¹⁶ "National Defense Report Building an Elite Armed Forces," ed. Ministry of National Defense (Taipei: MND, 2009), p. 194.

¹⁷ Ministry of Justice, "Disaster Prevention and Protection Act," (Laws and Regulations Database of the Republic of China, 2000).

¹⁸ Ministry of National Defense and Ministry of the Interior, "Guojun xiezhu zaihai fangjiu banfa (Regulations for Armed Forces to Assist Disaster Prevention and Protection, 國軍協助災害防救辦法)." English version is not available so far.

¹⁹ "Republic of China National Defense Report 100th Anniversary," p. 221.

²⁰ Ministry of Justice, "Jiehe minfang ji quanmin fangwei dongyuan zhunbei tixi zhixing zaihai zhengbei ji yingbian shishi banfa (Regulations on the Implementation of Disaster Preparations and Response Measures in Coordination with the Civil and All-out Defense Mobilization Preparation System, 結合民防及全民防衛動員準備體系執行災害整備及應變實施辦法)," (Laws and Regulations Database of the Republic of China, 2011).

expected to integrate and harness all related resources under due authorities' jurisdiction and advance military-civil coordination in order to consolidate disaster response capabilities. The following table is a collection of the regulating

authorities, the category of disasters, the primary laws, and the major laws governing the role and functions of the Ministry of National Defense in the disaster prevention and defense mobilization system.

Table: Regulating authorities, Category of disasters, related laws, and functions of MND

Regulating authorities	Category of disasters	Primary Laws	Laws Governing the Functions of MND
Ministry of the Interior	windstorm; earthquake; fire; explosion	Disaster Prevention and Protection Act	<ul style="list-style-type: none"> ● National Defense Act, Article 28: civil defense organizations may be established to participate in disaster prevention or medical activities in peacetime ● Disaster Prevention and Protection Act, Article 34: If the municipal, or county (city) government, or the central disaster prevention and protection operation regulating authorities fails to cope with the disaster, it may request supports from the national army. However, the national army shall actively support responsive measures of major disaster rescue. ● Regulations on the ROC Armed Forces Assistance in Disaster Prevention and Relief: Erect guidelines such as “Prepare for disasters in advance, deploy troops with an eye to disaster preparedness, and ensure readiness for rescue operations.” The Ministry of National Defense shall mobilize reserved servicemen's organizations to support responsive measures of major disaster rescue. ● “Regulations on the Implementation of Disaster Preparations and Response Measures in Coordination with the Civil and All-Out Defense Mobilization Preparation System”: erects the Mechanism of Three Meetings and integrates the Ministry of National Defense into the disaster prevention defense mobilization system.
Ministry of Economic Affairs	flooding; drought; public gas, fuel pipe line and power transmission line failure; mining disasters	Disaster Prevention and Protection Act	
Council of Agriculture	frost; debris flow; forest fire	Disaster Prevention and Protection Act	
Ministry of Transportation and Communication	air crash, shipwreck, land traffic accidents	Disaster Prevention and Protection Act	
Environmental Protection Administration	toxic chemical materials disaster	Disaster Prevention and Protection Act; Toxic Chemical Substances Control Act	
Department of Health	infectious disease prevention and control	Disaster Prevention and Protection Act; Communicable Disease Control Act	
Atomic Energy Council	nuclear accident	Nuclear Emergency Response Act; Disaster Prevention and Protection Act	
Office of Homeland Security	chemical, biological, radioactive, and terrorist attack	Regulations on the Establishment of Counter-Terrorist Team of the Executive Yuan; The Organizational Framework and Operational Mechanism of Counter-Terrorist Team; Counter-Terrorism Act; Disaster Prevention and Protection Act; Regulations on the Implementation of Disaster Preparations and Response Measures in Coordination with the Civil and All-Out Defense Mobilization Preparation System	

Source: integrated by the author

4. ACCOMPLISHMENTS AND FUTURE DIRECTIONS

In the All-Out Defense Mobilization System, the “capability integration meeting” at each level is the key element that requests statistics of human and material resources with its jurisdiction from due authorities every six month. It has its own regime of inspections, validation, periodic requisitions exercises, wartime budgeting producers and requisition enforcement agencies.²¹ According to the statistics of the Ministry of National Defense, the total manpower mobilization capability is 1.13 million persons. The Ministry of National Defense requisitions by purchase 240 supply items which covers categories such as minerals, basic metals, machinery, fibers, leather, plastic, cotton, chemical products, medical supplies, construction materials, transportation tools and communication equipment. Besides, requisition of 24,000 fixed facilities has also been included in the annual plan.²² These accomplishments result from sound laws, regulations and mechanism developed during the past decades.

Moreover, the Ministry of National Defense has been validating mobilization preparations via exercises, improving reserve force training, and building consensus on All-Out Defense.²³ However, despite tangible accomplishments in improving disaster Prevention and Relief capabilities, the Armed Forces still have to watch challenges as follows:.

(1) Inter-agency Operational Issues

The primary issues with regard to Armed Forces participation in disaster Prevention and Relief mainly include: the Armed Forces lack understanding of the operations plans of the ministerial level; the commanding and coordinating mechanisms between the Armed Forces and local governments needs improving; flexibility in earmarking and expending of budget related to disaster Prevention and Relief needs

²¹ "Republic of China National Defense Report 100th Anniversary," p. 212.

²² *Ibid.*, pp. 212-13.

²³ *Ibid.*, pp. 213-16.

improving; the appropriateness of equipment and training needs improving; the Armed Forces lack jurisdiction equivalent to that of the police.²⁴ The authorities concerned have to overcome such practical issues which involve inter-agency integration soon so as to face the threats of more severe compound disasters in the near future.

(2) Post-Disaster Recovery & Reconstruction

Regular forces are designed for military operations but not for long-term post-disaster recovery and reconstruction efforts. When need of long-term post-disaster commitment arises, it is recommended that civil defense and reserve forces play an important role for reconstruction efforts.²⁵

(3) Procurement of Specialized Disaster Relief Equipment

The vehicles, facilities, and equipment of the Armed Forces that possess large-scale disaster relief capacity are procured for combat mission. They do not quite meet disaster relief-required characteristics such as high mobility and easy maneuverability. In order to enhance the effectiveness of disaster relief, the Ministry of National Defense needs to put vehicles, facilities, and equipment specialized in disaster relief in their ten-year military buildup plan and five-year force structure requirements.²⁶

(4) Enhancement of Readiness Rate & Availability of Disaster Relief Equipment

The issue of unsatisfactory rate of

²⁴ Liang Hua-chieh (梁華傑), "Lun jianju zuozhan yu jiuza renwu zhi lujun budui bianzhi nengli biange (On the Reform of Army's Complement and Capability to Suffice Dual Missions of Combat and Disaster Relief, 論兼具作戰與救災任務之陸軍部隊編制能力變革)" (paper presented at the First Quarterly Disaster Prevention and Relief Conference in 2011 (100 年第一季「災害防救」學術研討會), Bade, Apr 22 2011), p. 103.

²⁵ *Ibid.*, p. 100.

²⁶ "Zhonghua minguo 98 niandu zhongyang zhengfu zongjuesuan shenhe baogao (2009 Annual Expenditure Audit Report of the ROC Central Government, 中華民國 98 年度中央政府總決算審核報告)," ed. National Audit Office (2010), pp. 乙 73-74.

allocation and availability of disaster relief equipment was exposed as a result of the ravage of Typhoon Morakot. Besides, some desperately needed equipment has not yet been requested by the Armed Forces yet. This is an issue that needs addressing soon.²⁷

(5) Formulation of Specialized Doctrine for Disaster Prevention and Relief

In order to promote professionalism of disaster relief operations, 2009 Annual Expenditure Audit Report of the ROC Central Government required that the Armed Forces have to develop disaster relief doctrine and manuals and incorporate All-Out Defense Mobilization (Wan An, 萬安) Exercises and Military Mobilization (Tung Hsin, 同心) Exercises into annual war gaming and major exercises.²⁸ According to annual defense report, this issue has been addressed in 2011.

(6) Overwhelming Catastrophe Needs Swift, General Mobilization

Natural disasters have seemingly become an alternative for Japan's Self-Defense Forces to validate its mobilization capability and accumulate practical combat experience.²⁹ After 3/11 disaster, Defense Minister issued general mobilization order and the Self-Defense Forces sent 100,000 military personnel accounting for 43.5% of its total force in less than 48 hours for immediate disaster relief efforts at the first line.

(7) Looming Threat from Nuclear Power Plant Accident

Along the coast of mainland China, 6 nuclear power plants are operating, another 7 are under construction, and 3 more have been approved. As of 2015, mainland China will become the biggest nuclear power in terms of

²⁷ Ibid.

²⁸ Ibid., pp. 乙 73-74.

²⁹ Ho Si-shen (何思慎), "Ribei fuheshi zaibian dui wo zhengfu fangjiuzai zhi qishi (Edifications to ROC Government's Disaster Prevention and Relief Brought about by Japan's Compound Disaster, 日本複合式災變對我政府防救災之啟示)" *Asia-Pacific Peace Monthly* (亞太和平月刊), Vol. 3, no. 5 (2011), <http://www.faps.org.tw/issues/subject.aspx?pk=197> (accessed).

scale.³⁰ Soon the Taiwan Strait will become number one area with highest density in nuclear power plants. The looming threat of nuclear power plant disaster needs long-term joint commitment from regional decision makers.

5. CONCLUSION

This paper aims to explore the tendency of disasters for Taiwan, the role and functions of the ROC Armed Forces with regard to disaster Prevention and Relief and defense mobilization, and find directions for improvement in protecting lives and assets of people.

Many authoritative reports point out that Taiwan is very vulnerable to natural disasters and even compound disasters. Although people in Taiwan are not strangers to compound disasters, climate change is going to exacerbate the threat of flooding, landslides, and drought. Consolidation of disaster Prevention and Relief system is becoming an increasingly urgent issue.

Taiwan has a three-tier Disaster Prevention and Relief Framework. Since 2001, the Ministry of the Interior and the Ministry of Defense has been assigned as Secretary of the Executive Yuan Mobilization Meeting, supervising periodic related resources surveys conducted by three-tier government agencies so as to accurately integrate and dispatch mobilization capabilities. The Ministry of National Defense plays a central role in transition between mobilization preparation and mobilization implementation. Despite the Ministry of National Defense's commitment to disaster Prevention and Relief, extreme weather is pushing the Armed Forces to take more responsibility.

The rise of extreme typhoon in 2009 prompted a transition of ROC Armed Forces' role

³⁰ Chen Chia-chun (陳家鈞), "Huaxuebing budui suixing lianhe zaihai jiuyuan nengliang zhi yenzhi (A Study on Chemical Troops' Capacity in Conducting Joint Disaster Relief, 化學兵部隊遂行聯合災害救援能量之研究)" (paper presented at the First Quarterly Disaster Prevention and Relief Conference in 2011 (100年第一季「災害防救」學術研討會), Bade, Apr 22 2011), p. 73.

from passive support provider at the request of regional government to active relief coordinator in case of major disasters. Since then, disaster Prevention and Relief has become one of the core missions of the Ministry of National Defense. The enactment of “Regulations on the ROC Armed Forces’ Assistance in Disaster Prevention and Relief” in 2010 erects three guidelines—prepare for disasters in advance, deploy troops with an eye to disaster preparedness, and ensure readiness for rescue operations—for the Armed Forces. The enactment of “Regulations on the Implementation of Disaster Preparations and Response Measures in Coordination with the Civil and All-Out Defense Mobilization Preparation System” in 2011 further introduces the Mechanism of Three Meetings. The Ministry of National Defense is supposed to harness all related resources and consolidate disaster response capabilities more effectively.

To strengthen its role and functions in disaster Prevention and Relief, the Ministry of National Defense has been validating mobilization preparations via exercises, improving reserve force training, and building consensus on All-Out Defense in recent years. Despite some tangible progress in improving disaster Prevention and Relief capabilities, the Armed Forces still have to strengthen inter-agency coordination in operational issues, make recommendation for the civil defense and reserve forces to commit to long-term post-disaster recovery and reconstruction, procure specialized disaster relief equipment, enhance the readiness rate and availability of disaster relief equipment, formulate specialized doctrine for disaster Prevention and Relief, speed up mobilization for overwhelming catastrophe, and gear up for the looming threat of nuclear power plant radiation accident.

Romanization and Names Convention

The Chinese Pinyin system, without tone/diacritical marks, has been used as the principal romanization system in this thesis. Given the widespread use of Chinese Pinyin throughout the academic community, and the promotion of globalization across the Taiwan Strait, use of this system seems appropriate. In

particular, the titles of Chinese sources are romanized in accordance with this system. In addition, the Wade-Giles system will be used for names such as Chiang Kai-shek, Sun Yat-sen, Taipei and Kuomintang.

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