

IV. Appendix

• Presentation Documents: Dr. Narushige Michishita

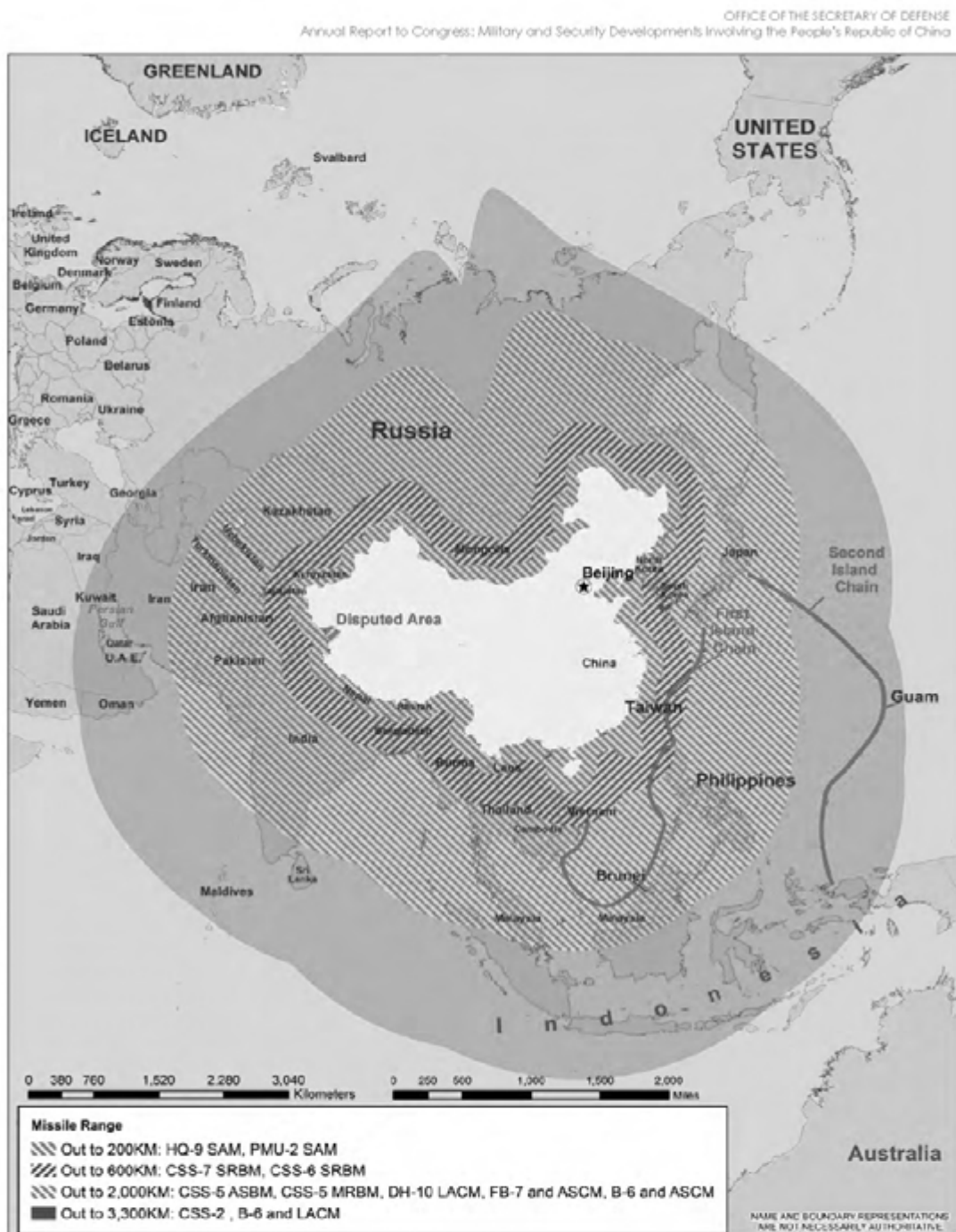


Figure 3: Conventional Strike Capabilities

APPENDIX III: ADDITIONAL MAPS AND CHARTS

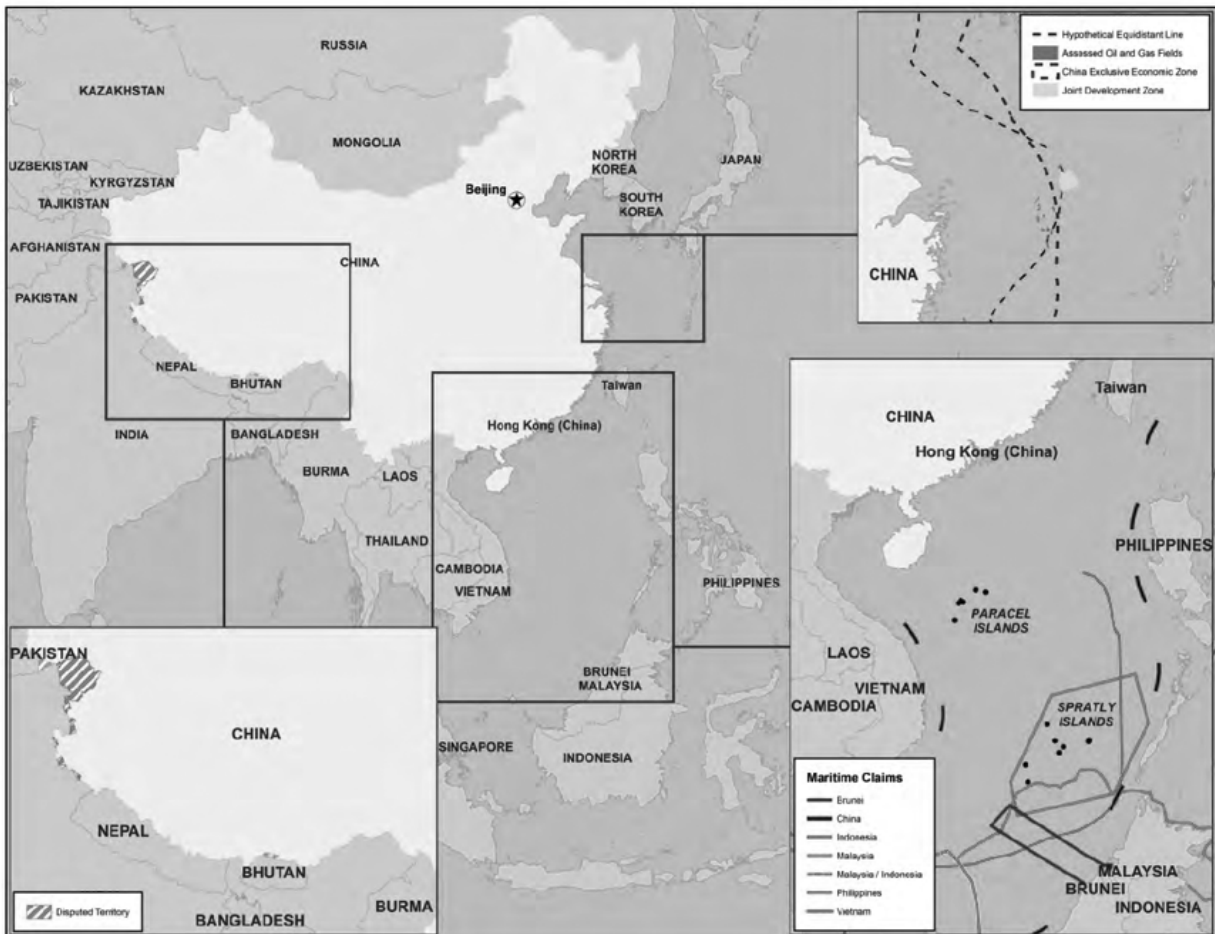
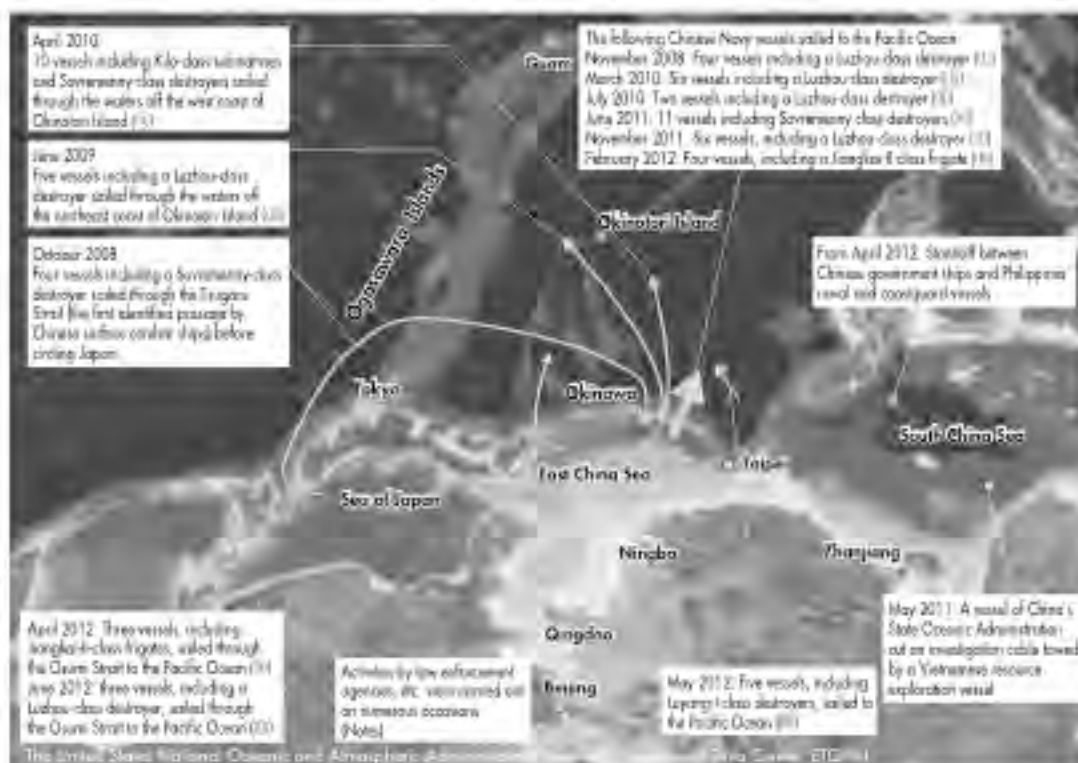


Figure 1: China's Sovereignty Claims

Fig. 1-1-1 Recent Chinese Activities in Waters near Japan



Advancements to the Pacific Ocean by Chinese naval vessels have been confirmed every year since 2008. Figures above in parentheses show chronological order of incidents. Each incident's major characteristics is as follows:

1. A state-of-the-art Luchou-class destroyer was confirmed for the first time.
 2. A ship-based helicopter flight was confirmed in waters approximately 260km northwest of Okinawa Island.
 3. It is reported that, after the naval unit advanced into the Pacific Ocean, it passed through the Bashi Channel into the South China Sea, sailed around the Spratly Islands, and conducted a military exercise in waters near the Forstall Islands.
 4. A part of the naval unit conducted an exercise in waters in the middle of the East China Sea before advancing into the Pacific Ocean. At that time, a ship-based helicopter flew close to Japan's destroyer Spentner, which was conducting surveillance activities. At its closest, the helicopter was about 90m away horizontally and about 20m above the ship. Because this was very dangerous from the perspective of the safe navigation of the ship, Japan approached the Chinese Government through a diplomatic channel with a request to ascertain the facts of the matter. Subsequently, a ship-based helicopter approached and flew around Japan's destroyer Asayuki, which was conducting surveillance in regard to these vessels in the Pacific Ocean. At its closest, the helicopter was about 90m away horizontally and about 50m above the ship. Because this kind of incident occurred again, which was dangerous from the perspective of the safe navigation of the ship, Japan made a protest to the Chinese Government through a diplomatic channel.
 5. This was the third advancement into the Pacific Ocean in a year, which hit an all-time high.
 6. A reconnaissance ship was confirmed to be accompanying a naval unit for the first time. As well as conducting a target exercise in waters approximately 450km southwest of Okinawa Island, the naval unit conducted drills involving unmanned aerial vehicle (UAV) and ship-based helicopter flights. Drills involving UAV takeoff tests and landing on a barge, helicopter takeoff from and landing on a vessel, and night-time training of sea were confirmed for the first time.
 7. Five naval vessels of the naval unit conducted drills involving ship-based helicopter flights and mid-ocean refueling in waters approximately 800km southwest of Okinawa Island.
 8. The naval unit conducted drills involving ship-based helicopter flights and mid-ocean refueling in waters approximately 900km southwest of Okinawa Island.
 9. Chinese naval vessels had been confirmed to have passed through the Otsu Strait for the first time since a Ming-class submarine vessel was through the strait in November 2003. Three vessels conducted UAV flight drills in waters approximately 700km east of Okinawa Island.
 10. A Luchou-class destroyer and a Yuzhao-class landing ship were confirmed for the first time. The naval unit conducted drills involving ship-based helicopter flights and formation maneuvers in waters southwest of the main island of Okinawa.
 11. The naval unit conducted drills involving ship-based helicopter flights in waters approximately 900km north of Okinawa Island and mid-ocean refueling in waters approximately 600km southwest of Okinawa Island.
- (Note)
- 1. In December 2008, two "Hsinan" ships entered Japan's territorial water near the Senkaku Islands, loitering for a while and then sailing around.
 - 2. In September 2010, a Chinese fishing trawler collided with patrol vessels of the Japan Coast Guard in Japan's territorial water near the Senkaku Islands. Subsequently, "Yuchang" navigated Japan's contiguous water area near the Senkaku Islands on multiple times.
 - 3. In August 2011, two "Yuzheng" ships entered Japan's territorial water near the Senkaku Islands.
 - 4. In March 2012, a "Hsinan" ship entered Japan's territorial water near the Senkaku Islands.


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Table 3.3. The 15 countries with the highest military expenditure in 2012

Spending figures are in US\$, at current prices and exchange rates. Countries are ranked according to military spending calculated using market exchange rates (MER).

Rank 2012 (2011)	Country	Spending (\$ b., MER)	Change, 2003–12 (%)	Share of GDP (%) ^a		World share (%)	Spending (\$ b., PPP) ^b
				2012	2003		
1 (1)	USA	682	32	4.4	3.7	39	682
2 (2)	China	[166]	175	[2.0]	[2.1]	[9.5]	[249]
3 (3)	Russia	[90.7]	113	[4.4]	[4.3]	[5.2]	[116]
4 (5)	UK	60.8	4.9	2.5	2.5	3.5	57.5
5 (6)	Japan	59.3	-3.6	1.0	1.0	3.4	46.0
Subtotal top 5		1 059				60	
6 (5)	France	58.9	-3.3	2.3	2.6	3.4	50.7
7 (8)	Saudi Arabia	56.7	111	8.9	8.7	3.2	63.9
8 (7)	India	46.1	65	2.5	2.8	2.6	119
9 (9)	Germany	[45.8]	-1.5	[1.4]	1.4	[2.6]	[42.8]
10 (11)	Italy	[34.0]	-19	1.7	2.0	1.9	31.0
Subtotal top 10		1 301				74	
11 (10)	Brazil	33.1	56	[1.5]	1.5	[1.9]	[34.4]
12 (12)	South Korea	31.7	44	2.7	2.5	1.8	44.2
13 (13)	Australia	26.2	29	1.7	1.9	1.5	16.3
14 (14)	Canada	[22.5]	36	[1.3]	1.1	[1.3]	[18.3]
15 (15)	Turkey ^c	[18.2]	-2.1	2.3	3.4	[1.0]	[25.9]
Subtotal top 15		1 432				82	
World		1 753	35	2.5	2.4	100	

[] = estimated figure; GDP = gross domestic product; PPP = purchasing power parity.

^a The figures for national military expenditure as a share of GDP are based on estimates for 2012 GDP from the International Monetary Fund's (IMF) World Economic Outlook database, Oct. 2012.

^b The figures for military expenditure at PPP exchange rates are estimates based on the projected implied PPP conversion rates for each country from the IMF World Economic Outlook database, Oct. 2012.

^c It is possible that the United Arab Emirates (UAE) would be in 15th position in place of Turkey, but data is not available for the UAE in 2012. In 2011, the UAE's military spending (in current prices) was estimated by SIPRI to be \$19.2 billion.

Sources: SIPRI Military Expenditure Database, <<http://www.sipri.org/databases/milex/>>; and IMF, World Economic Outlook database, Oct. 2012, <<http://www.imf.org/external/pubs/ft/weo/2011/02/weodata/index.aspx>>.

(for their exclusive use) was concentrated in Okinawa. Utmost efforts must therefore be given to reduce the burden on Okinawa while keeping in mind the aforementioned security

considerations.
(See Fig. III-2-1-6)

Fig. III-2-1-6 The Geopolitical Positioning of Okinawa and the Significance of the U.S. Marine Corps Stationed There



1. Reasons for Stationing the U.S. Marine Corps in Okinawa

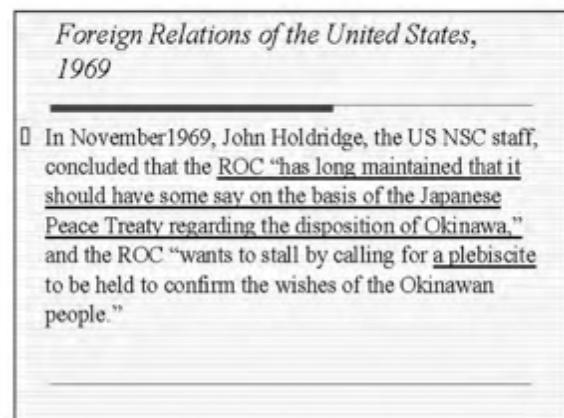
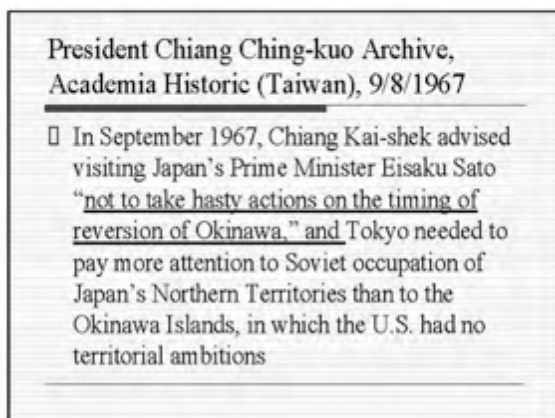
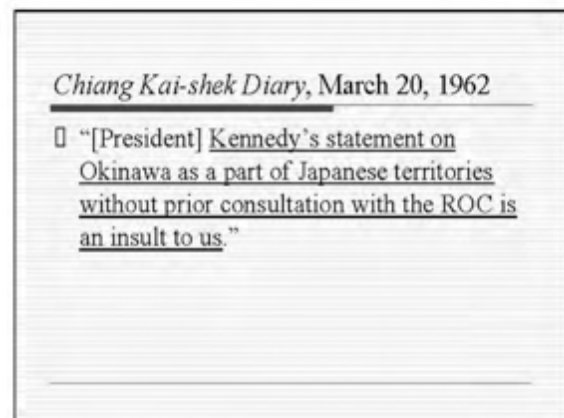
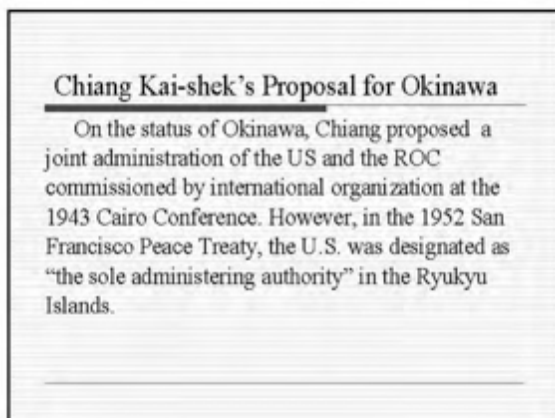
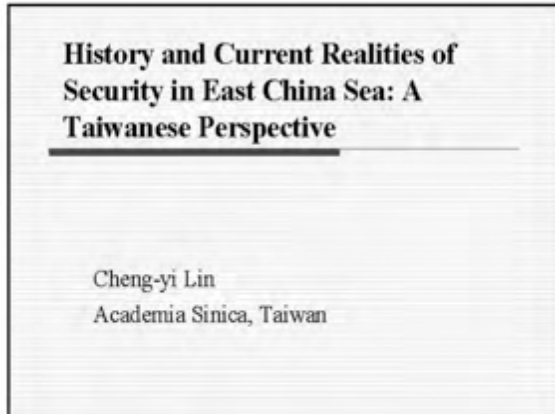
- Compared to locations such as the U.S. mainland, Hawaii and Guam, Okinawa is closer to various regions in East Asia.
- In the event of an urgent deployment within this region is required, the U.S. military in Okinawa can respond rapidly.
- Okinawa has the geographic advantage of being located in a place with certain distance from Japan's neighbors.
- Okinawa is in a crucial strategic position in terms of the access to the Eurasian Continent and the Pacific Ocean, as it is located more or less in the center of the Nansei Islands, close to Japan's sea lanes.

2. The Significance & Roles of the U.S. Marine Corps in Okinawa

- With their high levels of mobility and readiness*, the U.S. Marine Corps in Okinawa plays various roles, including securing the peace and safety of the region through such endeavors as assisting in the defense of Japan and providing support after the Great East Japan Earthquake as well as dealing with the Java earthquake in Indonesia in May 2006.
- Thanks to the Marine Corps's high level of mobility and readiness, as well as their ability to carry out a wide range of duties, the stationing in Okinawa (with its particular geographic characteristics) of the U.S. forces including the Marine Corps which deal with a variety of emergencies, contributes significantly to the security of Japan and the peace and stability of the Asia-Pacific region as a whole.

* The Marine Corps constantly utilizes all combat elements (land, sea and air) during its drills and deployments, so it is suited to providing a rapid response in the event of all kinds of situations.

• Presentation Documents: Dr. Cheng-Yi Lin



Joint Statement of Japanese Prime Minister Sato and U.S. President Nixon, 11/21/1969

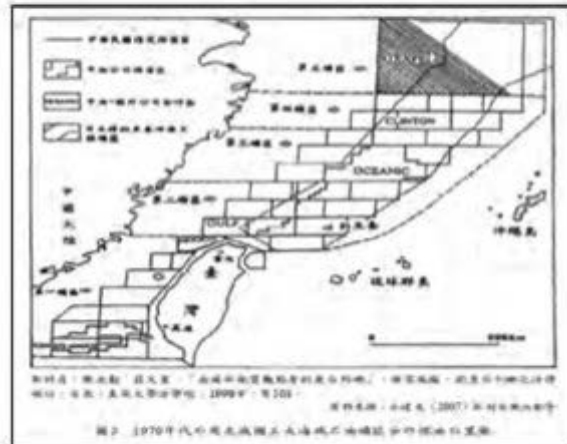
- “The President referred to the treaty obligations of his country to the Republic of China which the United States would uphold. The Prime Minister said that the maintenance of peace and security in the Taiwan area was also a most important factor for the security of Japan.”

Emery Report, 1969

- In 1968, United Nations Economic Commission for Asia and the Far East (ECAFE) geographic survey team, comprised of scientists from Taiwan, Japan, the US and South Korea, concluded in the Emery Report “A high probability exists that the continental shelf between Taiwan and Japan may be one of the most prolific oil reservoirs in the world.”

Taiwan and the U.S. Oil Exploration Surveys, 1970

- After the 1969 Emery Report, the ROC government was prompt to ratify the 1958 Continental Shelf Convention in August 1970. The Chinese Petroleum Corporation (Taiwan) was able to secure three contracts with US oil corporations such as Gulf (1970/7), Oceanic (1970/8), and Clinton (1970/9) in joint exploration and exploitation surveys north of Taiwan, before the signing of Okinawa Reversion Agreement. Japan immediately protested.



Taiwan and the US on Diaoyutai

- On September 16, 1970, ROC Ambassador to the U.S., Chow Shu-kai, presented a four-page aide-mémoire to Marshall Green, Assistant Secretary of State for East Asia and Pacific Affairs, insisting that the Diaoyutai Islands constitute an integral part of the sovereign territory of the Republic of China “by reason of geographical location, geological structure, historical association, and, above all, by reason of the long and continued use which the inhabitants of Taiwan have made of these islets.”

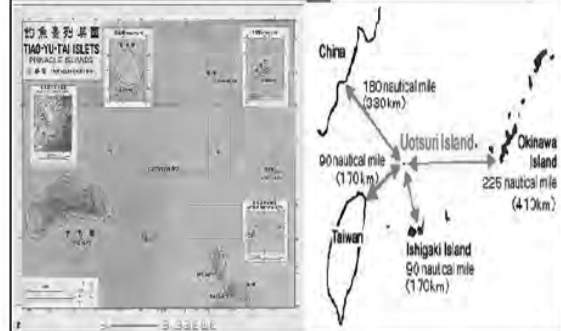
Chiang Kai-shek Diary, April 7, 1971

- It was not possible for a military solution of the Diaoyutai dispute because of the lack of sufficient defense capabilities to control those islands. One viable option was to seek legal settlement in the International Court of Justice if the U.S. transferred sovereignty over the Diaoyutais to Japan.

“The Senkaku Islands Dispute: Oil Under Troubled Waters?”

□ A CIA Report argued that the Chinese Nationalists’ “true and pragmatic goal is to obtain a fair share of the economic benefits to be had from the exploitation of the continental shelf oil in that part of the East China Sea area to which they conceivably have a justifiable claim.” May 1971

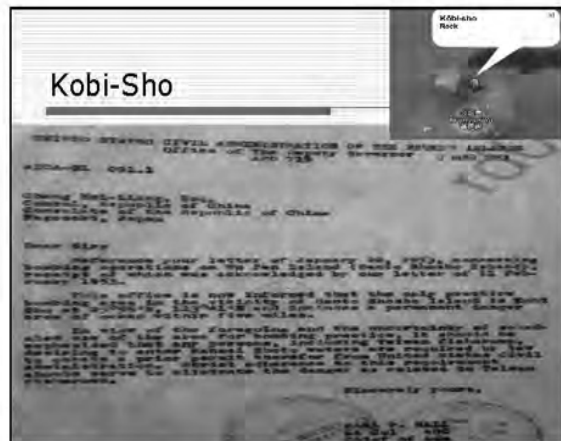
Diaoyutais/Senkakus



ROC Urged the U.S. to Use the Diaoyutais as US Practice Bombing Area

□ ROC Ambassador to the US James C.H. Shen (沈劍虹) indicated the idea to the State Department, May 13, 1971. Again, Chow Shukai, Minister of Foreign Affairs, on March 26, 1972, mentioned to Walter McConaughy, US Ambassador to Taiwan, it was better to use the Diaoyutais as US practice bombing area.

Kobi-Sho



Lee Teng-hui, Okinawa, and Diaoyutai

President Lee Teng-hui tried to strengthen ties between Taiwan and Okinawa through economic and cultural exchanges, and he regarded Okinawa as a Japanese gateway to Southeast Asia.

Lee Teng-hui publicly argued in 2002 that the Diaoyutai Islands, forming a part of the Okinawa Islands, belong to Japan, and the major interest of Taiwan is to secure the fishing rights over waters surrounding the Daiyoutais.

Chen Shui-bian and Okinawa

□ The Chen Shui-bian government promulgated in November 2003 a temporary enforcement line of Taiwan’s EEZ covering the East China Sea and the Bushi Channel. In 2006, President Chen Shui-bian decided to change the name of Taiwan’s representative office in Okinawa, from “Sino-Ryukyuan Cultural and Economic Association Ryukyu Office,” into “Naha Branch, Taipei Economic and Cultural Representative Office in Japan.”



The Okinawa Role in Taiwan's Security

- The U.S. transferred weapons from Okinawa to Taiwan and Kinmen (Quemoy) in the 1958 Taiwan Strait crisis.
- 8-inch howitzer 1958 Taiwan Strait Crisis



The Okinawa Role in Taiwan's Security

- A Japanese security expert, Kazuhisa Oga once calculated that “the U.S. units in Okinawa are important especially for deterring escalation of cross-Strait tensions,” and about “1000 Marines can deploy immediately from Okinawa to Taiwan” in a Taiwan Strait crisis. July 2010.



- But U.S. Defense Sequester

Lee Teng-hui and Chen shui-bian

- For Presidents Lee and Chen, the strategic location of the Okinawa Islands could serve a shield for the security of Taiwan.
- From the mid-1990s to 2008, cargos and ships navigating between Taiwan and Eastern China were instructed to use the Ishigaki Island as the intermediary stop because of the prohibitions of direct cross-Strait navigation.

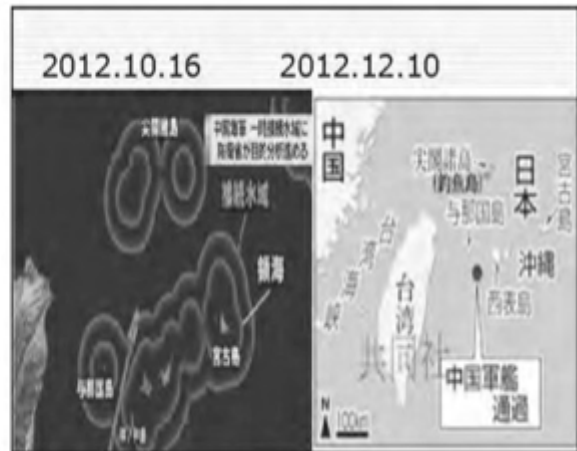
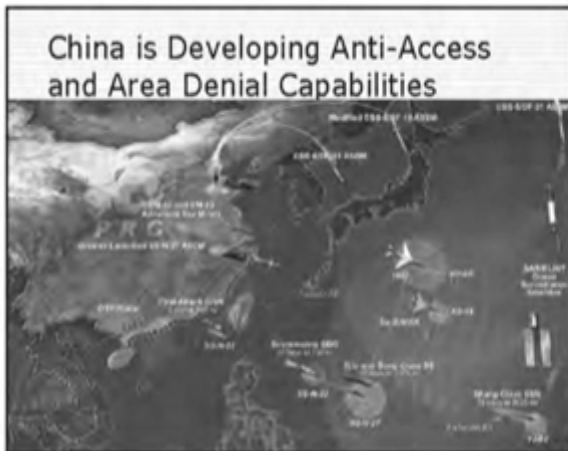
Ma Ying-jeou and Okinawa

* Ma Ying-jeou once cited an example that the sea navigating time from Keelung to Shanghai has been saved from eight to four days without stopping by Okinawa. This has made Taiwanese agricultural products more competitive in the Chinese markets.

Ma Ying-jeou and Okinawa

President Ma has publicly supported the strengthening of the US-Japan security alliance through the settlement of the *Futenma* marine base relocation between the Obama administration and the Japanese government.





Yonaguni and Taiwan



- Tokyo is also planning to station about 100 SDF personnel and coast surveillance radar on *Yonakuni* Island. This demonstrates that Japan is very concerned about Chinese naval activities in waters near the Okinawa Islands.
- In 2010, Taiwan’s Ministry of Foreign Affairs turned down Japan’s extension of Air Defense Identification Zone (ADIZ) because of no prior-consultation between the two countries.

President Ma and Diaoyutai

- * President Ma has constantly tried to assure the Japanese that Taiwan will not seek cooperation with the PRC in settling the Diaoyutai dispute.
- * President Ma has a high remark of Japan-China Principled Consensus on the East China Sea Issue of June 2008 designating a block of 2,600 square km of joint development.

Ma’s East China Sea Peace Initiative, August 2012

- * “Safeguarding sovereignty, shelving disputes, pursuing peace and reciprocity, and promoting joint exploration and development”
- * Drafting a East China Sea Code of Conduct; Establishing a cooperation mechanism for exploring resources in the East China Sea

Implementation Guidelines, 9/2012



- * Two stages: peaceful dialogue and mutually reciprocal negotiation; sharing resources and cooperative development
- * Key issues: fishing industry; mining industry; marine science research and maritime environmental protection; maritime security and unconventional security; East China Sea Code of Conduct

Anti-Japanese Riots in Qingdao, 9/2012



Japanese and Taiwanese Ships in Water Cannon Battle over the Diaoyutai/Senkaku Islands Dispute 9/2012



China and Japan Exercised Parallel Jurisdiction over Diaoyutai/Senkaku 9/2012

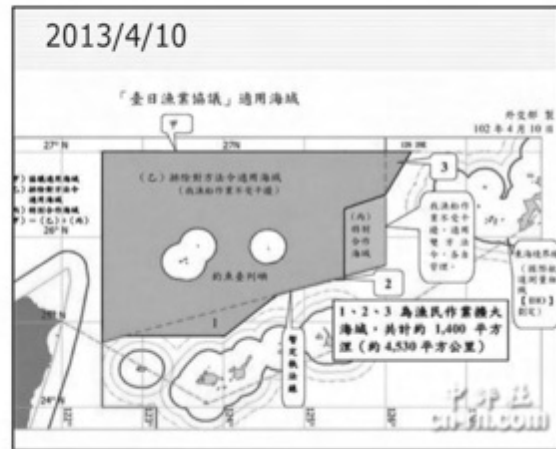
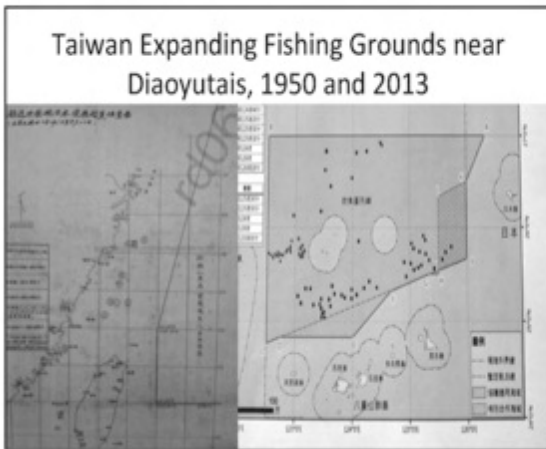


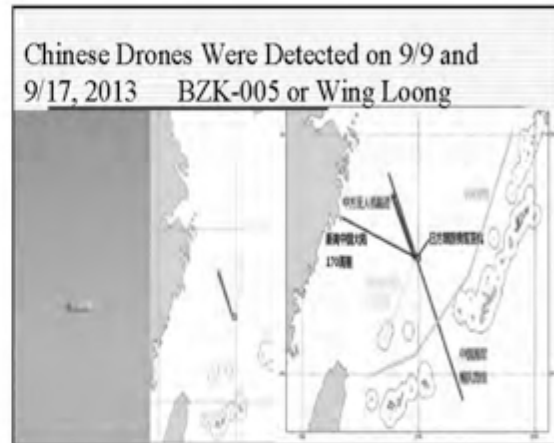
Taiwan-Japan Fisheries Agreement, April 2013

- *In April 2013, Taipei and Tokyo signed a fisheries agreement surrounding the Diaoyutai waters at the 17-round of fisheries talks after 17 years of negotiations (1996-2013).
- * Prime Minister Shinzo Abe apparently wanted to use the fisheries agreement to prevent Taiwan and China from forming a joint front against Japan in the disputed waters.

Taiwan-Japan Fisheries Agreement, April 2013

- *The agreement provides for the addition of three operating blocks south of 27 degrees north latitude and north of the Sakishima Islands, covering a total of 4,530 square kilometers. More than 800 Taiwanese fishing boats operate there every year, harvesting over 40,000 tons of fishery products.
- * Setting up a Taiwan-Japan Fisheries Committee





Will Japan Shoot Down PLA Drones if Necessary?

- * The Japanese defense ministry announced it plans to follow new rules of engagement under which drones will be shot down if they are deemed a threat to Japan’s national security.



Daniel Russel

- *In September 2013, U.S. Assistant Secretary of State Daniel Russel said that the international community is concerned about the world’s second and third largest economies remaining at odds at a time when “the global economy is too fragile.”
- *The U.S. opposes unilateral efforts to change the status quo through coercion, or the use of force to resolve disputes over the Senkakus.

Words and Deeds

- Xi’s Chinese Dream: a “moderately well-off society” by about 2020, a fully developed nation by about 2049. Strong China (economically, politically, diplomatically, scientifically, militarily); Civilized China (equity and fairness, rich culture, high morals); Harmonious China (amity among social classes); Beautiful China (healthy environment, low pollution).
- Hu Jintao: Peaceful Rise, Harmonious World.

Words and Deeds

- *Lessons learned from nationalization of the Senkaku Islands under the changing status quo and power equation in the East China Sea.
- *The importance of four noes. No permanent structure; No stationing officials or officers on the island; No unilateral oil and gas exploration activities near the disputed islands; No naval and air force activities surrounding the Diaoyutais/Senkakus.

Future of the Okinawa Asia-Pacific Partnership Forum (Materials for Press Release)

1. Discussions regarding “History and Current Realities of Security in East Asia” were conducted during Session 1 of the Okinawa Asia-Pacific Partnership Forum held today. In Session 2, a status report from Okinawa concerning the “History, Current Realities and Future Surrounding Okinawa's Various Exchanges” was presented. Discussions concerning “Okinawa’s Role for Peace in East Asia” were held during Session 3. During the panel discussion in Session 4, all presenters gathered for the discussion and answered questions from the floor.
2. Based upon the opinions and proposals gathered across the forum, the Okinawa Prefectural Government has confirmed the following points to be achieved in future.
 - a. In order for Okinawa to achieve the vision it has laid out for itself, the prefecture needs to rationally redefine its own set of thinking and refrain from settling with its current set of experiences and values acquired to date.
 - b. As part of such an undertaking, Okinawa must strive towards appropriate judgment, decision-making and action based upon the accurate information gathering regarding security surrounding Okinawa and an understanding of diverse perspectives and points of contention. To that end, Okinawa would like to learn from the wisdom and opinions of prominent specialists and researchers both within and outside of Japan.
 - c. The prefecture will continue to provide opportunities for dialogue and mutual understanding between countries and regions in the Asia-Pacific while Okinawa Prefectural Government shall adopt the recommendations of the forum as a point of reference to formulate policies for the prefecture itself, in the future.

October 11, 2013

• Experts’ Presentation Documents: Dr. Chung-Young Chang

Critical Infrastructure Protection and
Disaster Management

by

Dr. Chung-young Chang

Professor & Chair
Department of Public Affairs
Director

Center for International and Public Affairs Study (CIPAS)
Fo Guang University
Taiwan, ROC

Present at

萬國津梁研討會 (Ban-Koku Shin-Ryo Forum) 2013:
「Crisis Management and Regional Cooperation
in Island Territories」

Okinawa, Japan
August 29, 2013

**Critical Infrastructure Protection and
Disaster Management**

I. Background

As the Cold War came to an end in early 1990, the world was just beginning to witness a more complex and dynamic security environment. In addition to increasing man-made disasters such as terrorist attacks that have caused huge economic losses and human lives, natural disasters, often in the forms of earthquakes, typhoons, floods, tsunamis, draughts and others, have also taken their toll across the world.¹ As a result and policy response, how to effectively and efficiently manage the disaster of both kinds and successfully perform the task of crisis management, with the relief assistance of neighboring countries, regional intergovernmental organizations (IGOs) or non-governmental organizations (NGOs) if necessary, has become priority issue not only for international community as a whole, but also for governments of all nations at all levels as well.²

While a number of new, or renewed, concepts and strategies have been introduced and put into use to deal with the real threats and potential consequences of both man-made and natural disasters, critical infrastructure protection (CIP), or critical national infrastructure (CNI) widely used in UK, seemed to have been commonly adopted and incorporated into the process of public policy of disaster management both at central and local governments. In fact, as a policy tool and institutional arrangement for crisis management, CIP has often been regarded as a coordinated, holistic and systemic policy response and capacity-building initiatives that are designed to enhance resiliency, and to prevent, prepare and manage various potential disasters.³

This paper intends, firstly, to introduce the concept of CIP focusing on its role and implication in disaster management and how it has been put into place in major countries. Secondly, it will be followed by a brief but selected analysis of the principles and elements of disaster management strategy that incorporates the concept and strategy of CIP. Finally, this paper will conclude by discussing the difficulties and challenges that CIP and disaster management face.

II. The Concept and Practice of Critical Infrastructure Protection

CIP, as a national program, was first officially proclaimed by the US Presidential Directive PDD-63 in 1998, and was legally defined by the Patriot Act of 2001 and broadened by the US Presidential Directive HSPD-7 in 2003 as “*the Identification, prioritization, and protection of the physical and virtual systems that are so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety.*”⁴ Since then, CIP continued to be further developed to manage the protection of 18 critical infrastructure sectors and their sub-sectors and critical elements, mainly including energy, water, transportation, information and communication, emergency responders, agriculture, finance, government, and others. In essence, the significance of these critical infrastructure (CI) such as networks, services, systems or assets, can be understood as the lifeblood and backbone of the country that are very much vital to societal sustainability, economic development, public safety and national security.⁵

Like US, all major EU countries and Canada and Australia have also designated a specific government unit or task force at central level to take charge of the CIP policy issues and allocated resources to develop a CIP strategy or action plan to integrate or coordinate national efforts especially with local governments, community, and the private sectors. While it takes inter-agency coordination and whole-of-government approach to mobilize government machinery to engage in CIP, it also requires a mechanism of public-private-partnership to make CIP better work. In fact, community participation and enterprise support, among others, are essential to the success of CIP.

¹ US National Intelligence Council, *Global Trends 2030: Alternative Worlds*. December 2012.

² Bruce R. Lindsay, *Federal Emergency Management: A Brief Introduction*. CRS Report R42845. November 30, 2012.

³ Elgin M. Brunner and Manuel Suter, *International CIIP Handbook 2008/2009- an inventory of 25 national and 7 international critical information infrastructure protection policies*. Center for Security Studies, ETH Zurich, 2009.

⁴ John D. Moteff, *Critical Infrastructures: Background, Policy, and Implementation*. CRS Report RL30153. March 13, 2007.

⁵ John D. Moteff, *Critical Infrastructures: Background, Policy, and Implementation*. CRS report, 2008.

IV. Appendix: Okinawa Asia-Pacific Partnership Forum “Crisis Management and Regional Cooperation in Island Territories”

The process of CIP is carried out in accordance with the principle of risk management as follows:⁶

Setting the goals and objectives

The essence of CIP rests with the concept of risk management, that is, identification, prioritization, and protection of critical infrastructure has to be based on risk assessment and followed by the principle of risk management. The process of CIP starts with setting the goals and objectives of protecting CI that are both imperative and irreplaceable, which can be reasonably and realistically achieved under the threats of security & safety environment.

Identifying assets, systems and networks

The process then follows by identifying what assets, systems and networks need to be protected so as to outline a national infrastructure inventory and a list of partners of the owners and operators, both public and private, serving as a basis of CI information assessment, protection and sharing. As to methods of CI identification, expert meeting and political judgment have often been employed for field operations.

Assessing risks

Assessing risks from any scenario as a function of consequence, vulnerability, and threat is the core part of CIP process, which can be generically summarized as $R = f(C, V, T)$, that is, risk is considered as a function of consequence, vulnerability, and threat. Consequences can be defined as the effect of an event, incident, or occurrence; reflects the level, duration, and nature of the loss resulting from the incident, which can be divided into four main categories: public health and safety (i.e., loss of life and illness); economic (direct and indirect); psychological; and governance/mission impacts. Vulnerability is viewed as physical feature or operational attribute that renders an entity open to exploitation or susceptible to a given hazard. Vulnerability is often manageable and can be controlled. Threats are regarded as natural or manmade occurrence, individual, entity, or action that has or indicates the potential to harm life, information, operations, the environment, and/or property. Threats are often beyond control or management. While there is no definite relations or weighted factor among consequence, vulnerability, and threat, however, there are some analytical principles to ensure that risk management are documented, reproducible, defensible, and complete.

Prioritizing

Since it is impossible to protect all CI sectors, assets, systems and networks with limited resources, so prioritizing efforts are required to better focus protection planning, inform resource allocation decisions, and support effective incident management, including where risk management programs should be instituted and which measures offer the greatest return on investment. It also provides the basis for understanding potential risk-mitigation benefits that are used to inform planning and resource decisions. The process of prioritization first determines which regions, sectors, assets, systems, or networks are facing the highest risk of disasters. It also will determine what or which actions or measures are expected to provide the greatest mitigation of disaster risk.

Implementing protective programs and resiliency strategies

Due to differences among regions, sectors, assets, networks, and partners, protective programs and resiliency strategies may vary to meet specific needs and demands. A variety of risk management actions designed to reduce vulnerability to disasters, prevent the threat, and minimize consequences may apply to strengthen protection and enhance resiliency. An effective protective program and resiliency strategy needs to be: comprehensive in content and function of protection measures, coordinated across owners and operators of CI sectors and various levels of governments, cost-effective in resources allocation, and risk-informed to address each element of risk and combine their effects to achieve overall risk mitigation.

Measuring effectiveness

The use of performance metrics to track progress toward a strategic goal or objective by measuring beneficial results or outcomes of those protective programs and resiliency strategies will provide a basis for CIP partners to establish accountability, document performance, facilitate diagnoses, promote management, and provide a feedback

⁶ US Department of Homeland Security, *National Infrastructure Protection Plan – partnering to enhance protection and resiliency*. 2009

IV. Appendix: Okinawa Asia-Pacific Partnership Forum
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mechanism to CIP decision-makers. In addition to the use of outcome metric, information from output data and descriptive data will also be collected for measurement and evaluation. (for the process of CIP risk management framework, see Figure 1.)

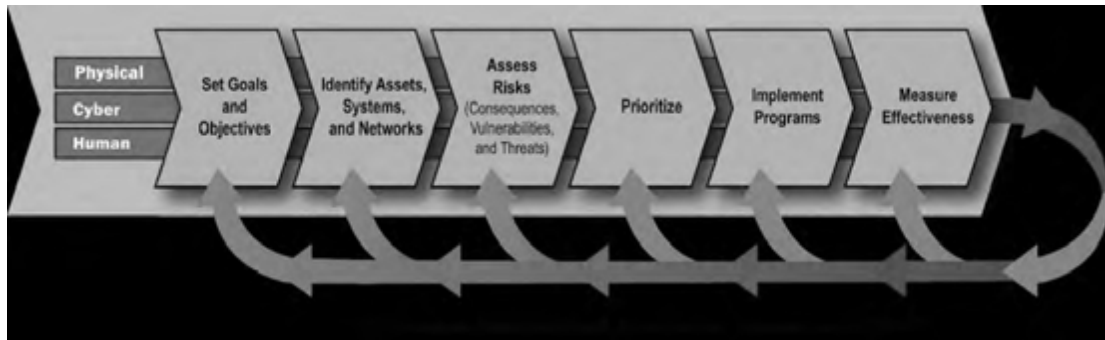


Figure 1: Risk Management Framework

III. CIP, Risk Management, and Disaster Management
 Risk management as the core

The main purpose as well as the efforts of CIP are to enhance preparedness and response capacity in order to better protect national, designated or selected, CI from the threats of disasters of all kinds and manage to maintain a normal, or at least minimum, function of the these CI assets, systems, networks, and services, and recover from the impact of the consequences to the normalcy should disasters occurs. Disaster management shares the same goals and objectives of enhancing resiliency with CIP, and both work to achieve their missions on the basis of risk management.

Just as CIP deals with the process of mitigation, preparation, and response of protecting CI and how to prevent the threats, to reduce vulnerabilities and to manage consequences, disaster management is also designed to manage the pre-disaster, occurrence of disaster, and post-disaster stages with an aim to mitigating the causes of disasters, preparing to enhance disaster-coping capacity, responding to emergency situations, minimizing the impact of the consequence, and recovering to the normalcy.⁷ Both CIP and disaster management deem disaster as a continuum that the process of disaster management will include a serials of stages of mitigation, prevention, preparedness, prediction & warning, emergency responses, rehabilitation, reconstruction, development and recovery. (See Figure 2: Disaster Continuum)

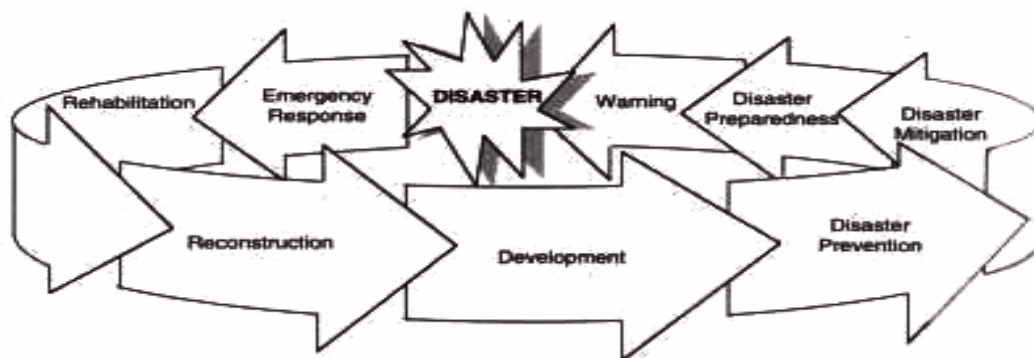


Figure 2: Disaster continuum

The process of disaster management

In a more detailed analysis of major stages of disaster management, it is important to note that there are several critical elements are required or imperative to the success of disaster management. As the Figure 3 shows, a number of aspects or functions of natural disaster

⁷ Tony Moore, ed., *Tolley’s Handbook of Disaster and Emergency Management*. New York: Elsevier, 2006, 3rd edition, pp.107-144.

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management are critical and essential to the implementation of their tasks. During the first stage of disaster management, mitigation and preparation, main issues like land use regulations, building standards, housing planning, organizational build-up & capacity-building, and others, needs to be put in place. When it comes to the stage of preparedness, major tasks such as disaster relief operation procedures, resource inventory and stockpiling, disaster awareness, logistics planning, crisis communication systems and community support planning, also need to be developed prior to disaster. Should a disaster occur, disaster response capacities, including search & rescue, evacuation, sheltering, communication, medical & health cares, maintaining or restoring water and electricity supply, and other basis emergency operations, serve as the key to the success of disaster management. Finally, it would demand more efforts, resources, and time to accomplish the tasks in the stage of post-disaster recovery and rehabilitation, with a focus on infrastructure reconstruction and public service delivery capacity.

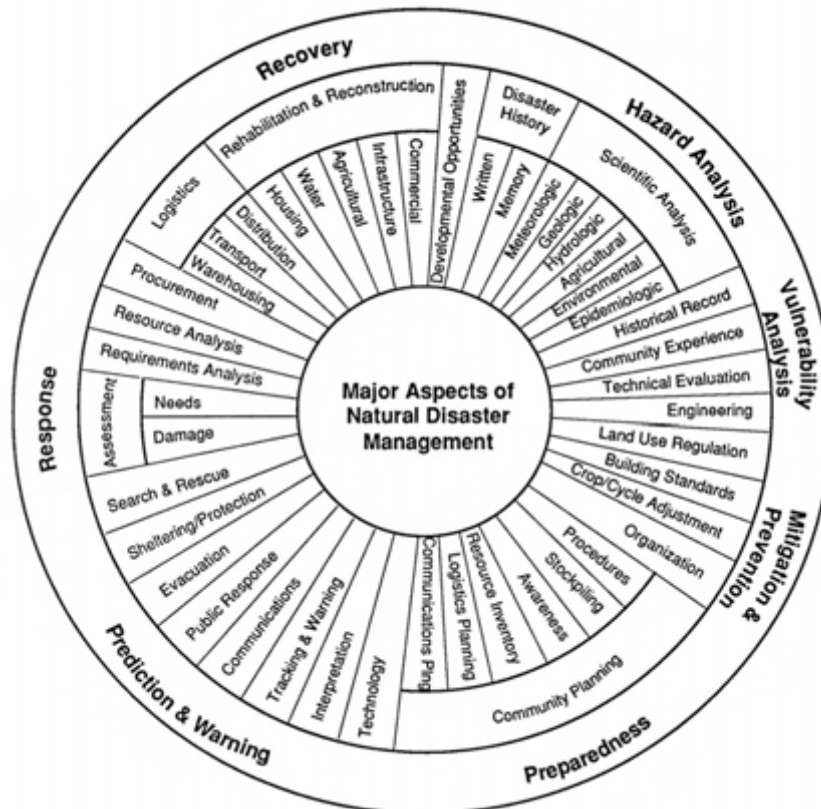


Figure 3: Major Aspects of Natural Disaster Management

It is imperative to know that disaster management, same as CIP, requires active involvement and support of civil society, non-government organizations (NGOs) or non-profit organizations (NPOs), private sectors and all members of the community in order to, among other things, better coordinate and integrate relief operations and resources allocation and distribution. In fact, the essence of disaster management should be based on the principle of the public-private-partnership, that is, community members have to learn to self-protect or self-help themselves first in the event of disaster and wait for or form the collective-help assistance of the community, as national or public-help relief assistance will take time and efforts to come, or the assistance may turn out to be too late, or too little or unexpected.

Major elements of disaster management

Therefore, it can be concluded that a successful disaster management requires the following efforts. First, the roles and responsibilities of all levels of governments, their nongovernmental partners, enterprises and community involved in disaster management activities need to be clearly defined, coordinated, and put into practice, in order to ensure well-understood division of labor, chains of command & coordination, line of communication and network cooperation. A clearly defined and coordinated roles and responsibilities of disaster management activities may also facilitate and enhance the

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performance of CIP. A handbook or action plan of disaster management work may be required and updated on a regular basis.

Second, it is important to develop, enhance and assess the disaster management capabilities and capacity as part of overall national or holistic efforts to define and integrate what needs to be planned and implemented, and how to coordinate division of labor among all partners, governments or non-government entities, involved in disaster management. Moreover, training and exercises are even more important to identify problems, assess capabilities and capacity, and build up strength for disaster management. A workable mechanism based on inter-agency coordination and public-private-partnership will be essential to develop a more coordinative, cost-effective, and networked disaster management force.

Third, while disaster response often receives urgent and priority attention, it is the stage of post-disaster that demand sustained focus and effective coordination and collaboration among relevant stakeholders, including departments & agencies in charge of disaster recovery and rehabilitation task and private sectors that are required to take part in the reconstruction projects. A periodical evaluation and reporting on the progress of recovery and rehabilitation projects would enhance coordination and collaboration among relevant partners. In addition, it is also important to note that an authorized and appropriate control and accountability mechanism for disaster management would be necessary to ensure that disaster management resources be allocated and used for legitimate and valid purposes.

Fourth, as to effective tools for disaster response operations, modern information and communication technology, overhead or satellite photography, and relevant technical equipment are widely regarded as requisite and indispensable for disaster response in remote areas or mountainous terrain. In addition, the military has often been called upon to assist in disaster response operations with their transportation capacity and manpower capability. In case of the major disaster beyond national response capability, international assistance may also be considered and asked to provide relief aid.

Finally, it is apparent to note that there is much congruence or overlapping between CIP efforts and disaster management activities. Both all address the importance and necessity of prevention for the threats of disaster and preparedness for the response to disaster should it occur. Both also employ the principle of risk management to better allocate resources to the sectors that face greater risk of disaster. In essence, the principle purpose and policy goal of CIP and disaster management have much in common, and their operations and function are often complementary to each other and may be deemed as two sides of the same coin.

IV. Challenges to CIP and Disaster Management

There is no free lunch in this world, as nothing can be taken for granted without paying the price of overcoming the difficulties and challenges in the course of enhancing CIP and disaster management.

Building the trust

One of the most difficult tasks of promoting CIP is often identified as how to build up trust as a bridge or bondage between the government and the people in order to work together to protect CI sectors. While sharing information is an important element of protecting CI, but why and how could the business community trust the government with their confidential information without a legitimate concern of exposure or leaks of these business secrets? Perhaps just because of the lack of trust on the government and the urgency of real time emergency response, community members can only rely on themselves and mutual help at the local level since disaster assistance from the central government may be too late and too little.

Political will and policy actions

Another major challenge to the promotion of CIP and disaster management is often indicated as the lack of consistent political will and policy attention of the government and a lukewarm support or indifferent attitude of the community. While the importance of CIP and disaster management can not be overemphasized, governments at all levels are always occupied and busy with daily problems or short-term issues and fail to endorse CIP and disaster management that require long-term input and support with consistent political determination. On the part of the community and private sectors, CIP and disaster management are not popular subjects and are often sidetracked or ignored because it takes

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time and efforts to build up an institutional arrangement, like CIP and disaster management, that turn out to be unnecessary and may not be needed in disaster-free time. Hence, how to promote a clear awareness of necessity of CIP and disaster management and inspire an active involvement of the community and private sectors requires public-private communication planning and actions.

A search for integrating CIP and disaster management

A search for an integration of CIP and disaster management would be necessary not only to avoid duplication of efforts and competition for resources, but also to better focus on their primary purpose of enhancing resiliency against disasters, protecting the lives and properties of the people and secure economic development, public safety and national security. The quest for institutional integration would start with preparing a new strategy or action plan and reinventing government agency. Considering that the mandates and missions of CIP and disaster management are incorporated into the US National Strategy for Homeland Security and integrated under the portfolio of the newly created the Department of Homeland Security, Taiwan may like to formulate a new strategy that will deal with CIP and disaster management and other missions and further integrate the Office for Homeland Security and the Office for Disaster Management into an organizational unit that can cost less and have greater output.

Finally, it is true that future challenges to CIP and disaster management will be greater in number and more diverse in kind, as the global security environment will only continue to worsen before it gets better. This trend will make the previous three challenges even more urgent and critical as we need to be better equipped and strengthened in order to overcome the challenges from a world of a changing security environment due to the consequence of global climate change and impact of social-political movement.

V. The Significance of Regional Cooperation in CIP and Disaster Management

As the nature and functions of CI dictates, a successful CIP requires indispensable collaboration & cooperation not only with local partners, but also with other CI sectors of common function in the region. The characteristics of interdependency and interconnection among CI sectors that operates beyond territorial or national boundary makes regional or international cooperation even more important, imperative and inevitable. However, as all partners involved will be able to enjoy common goods provided by cooperation among regional CI, as a whole, they also need to be prepared to share the cost and bear the risk as well.

For example, while the energy and transportation sectors that network or bind EU member countries as one contribute to growing collective benefits and regional prosperity, the risk to disaster of all kinds that an interconnected CI system will face is also getting higher as a failure of one CI asset may affect another or all others. This is especially salient and true in the area of critical information and communication infrastructure sectors, which seems to have inspired a number of cooperative initiatives on critical information infrastructure protection (CIIP) among governments to deal with those real or potential emergencies or crises in the cyber world.

In addition to an on-going bilateral cooperation on CIIP between Japan and Taiwan that requires more input and support, both sides can also further develop cooperative relations in other CI sectors or regional issues, including marine transportation, public health, and emergency response services, judging from the development of recent tense situation at sea near Tiaoyutai/Senkaku Islands, health implication of regional spread of infectious diseases of avian flu such as H7N9, and historical experiences of disaster management in the Fukushima tsunami disaster & nuclear incident. In fact, it will benefit greater for all if relevant partners of the regional are all invited and involved in the process of risk management to these matters.

Unlike regional cooperation on CIP that is often based on mutual benefits or common risk, disaster management cooperation across borders is mainly motivated by humanitarian, lesson-learning, and sense of common security purposes. Cooperative activities on disaster prevention, emergency response and disaster recovery, in the forms of knowledge-sharing and fund-raising projects, search & rescue operations and victim counseling, and post-disaster recovery & rehabilitation, are also conducive to the promotion of public diplomacy and regional development. However, disaster management cooperation is also one of the few ways and means that Taiwan is able to reach out and fostering its relations with its neighboring countries in the face of China’s diplomatic blockade against Taiwan.

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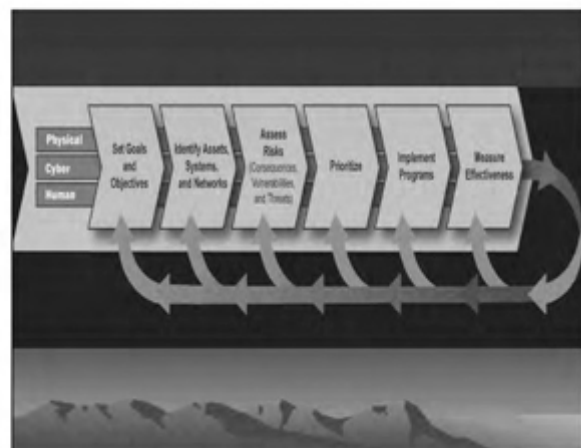
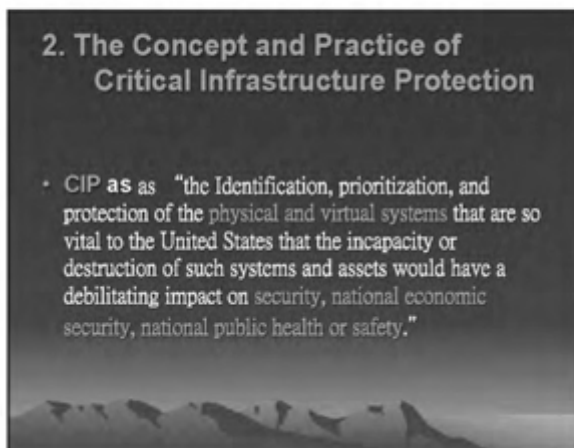
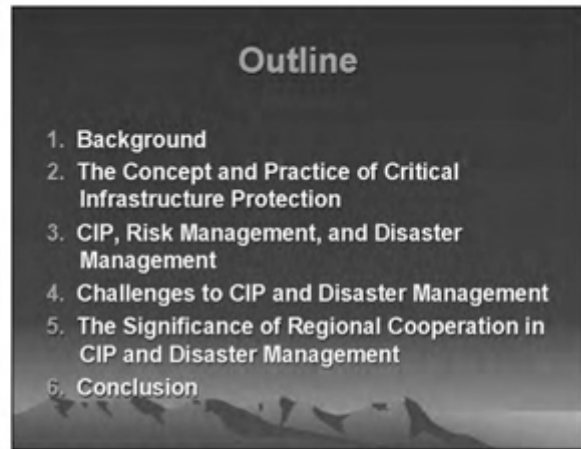
In sum, developing regional cooperation in CIP and crisis & disaster management may start from the forms of mutual visits and field survey, dialogues and forums, seminars and conferences, joint research on program feasibility study, that are instrumental in building up network friendship and mutual trust, sharing information & knowledge and experiences of best practice, and establishing an institutional mechanism to secure cooperative relations and activities among partners. In fact, the previous efforts will also be helpful or useful in reaching consensus and facilitating agreements on cooperation issues. The nature and content of regional cooperation then can move into higher level as necessary and agreed among partners. Signing a memo of understanding or a binding agreement among partners, establishing a formal mechanism or task force within governments, and forming a regional organization are some options that can be considered and adopted as well.

VI. Conclusion

Both the establishment of CIP and disaster management require, among others, guidance of the policy, authorization by law and planning with a strategy or action plan, carried out by organization, equipped by technical tools and means, and supported and involved by the community and the private sectors. It will take great efforts and determination to have these elements of requirements in place and put into practice, let alone to further integrate CIP and disaster management into a new institutional arrangement.

However, international experiences regarding the development of CIP and crisis & disaster management systems and cooperation among regional partners may provide some valuable lessons for us. Perhaps this is one of the reasons why we gather here today, sharing our knowledge with each other and looking for a window of opportunity on cooperation issues. It should be our common expectation that gathering of regional partners like this Forum should continue and broaden in scope of participation as well as subject of discussion.

- Presentation Documents: Dr. Chung-Young Chang



2. The Concept and Practice of Critical Infrastructure Protection

The process of CIP is carried out in accordance with the general principles of risk management as follows:

- Setting the goals and objectives
- Identifying assets, systems and networks
- Assessing risks
- Prioritizing
- Implementing protective programs and resiliency strategies
- Measuring effectiveness

3. CIP, Risk Management, and Disaster Management

- Risk management as the core

3. CIP, Risk Management, and Disaster Management

- The process of disaster management

3. CIP, Risk Management, and Disaster Management

- Major elements of disaster management
 - the roles and responsibilities of all partners be clearly defined, coordinated, and put into practice
 - disaster management capabilities and capacity as part of overall national or holistic efforts
 - training and exercises
 - mechanism based on Inter-agency coordination and public-private-partnership
 - sustained focus and effective coordination and collaboration among relevant stakeholders
 - periodical evaluation and reporting on the progress of recovery
 - The use of modern technology

4. Challenges to CIP and Disaster Management

- Building the trust
- Political will and policy actions
- A search for integrating CIP and disaster management

5. The Significance of Regional Cooperation in CIP and Disaster Management

- The characteristics of interdependency and interconnection among CI sectors makes regional cooperation even more important, imperative and inevitable.
- Searching for further cooperative relations in other CI sectors or regional issues, including marine transportation, public health, and emergency response services between Japan and Taiwan, and among other partners.

5. The Significance of Regional Cooperation in CIP and Disaster Management

- Developing regional cooperation in CIP and crisis & disaster management may start from mutual visits and field survey, dialogues and forums, seminars and conferences, joint research on program feasibility study.
- Cooperation can move into higher level as necessary, including signing a memo of understanding or a binding agreement among partners, establishing an formal mechanism or task force within governments, and forming a regional organization and others.

6. Conclusion

- International experiences in the development of CIP and crisis & disaster management systems and bi- or multilateral cooperation among regional partners may provide some valuable lessons for us.
- It should be our common expectation and efforts that gathering of regional partners like this Forum should continue and broaden in scope of participation as well as subject of discussion.

Thank you

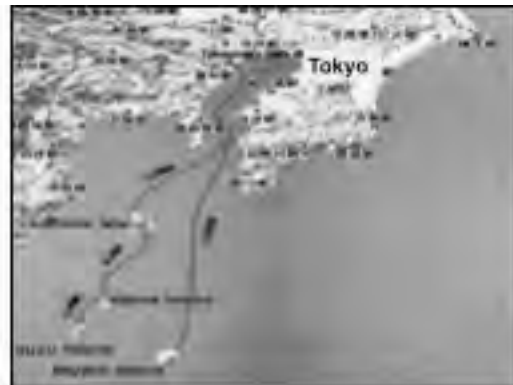
For your attention and patience

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• Presentation Documents: Dr. Yasushi Aoyama

Crisis Management of the Island

Aoyama, Yasushi
Professor of Meiji University, Tokyo Japan
Former vice-governor and chief of Miyakejima on-site disaster management headquarters,
Tokyo Metropolitan Government
at the time of 2000 eruption of Miyakejima volcano



Lesson1
If there is no communication, nothing will get going.

A small boat is shown on the water, possibly a rescue or supply boat. The boat is viewed from a distance, and the water is calm.

Lesson2
Remarks are frequently made as to the importance of the initial response

A group of people are gathered in a meeting or discussion, similar to the previous image. They appear to be in a field or outdoor setting.

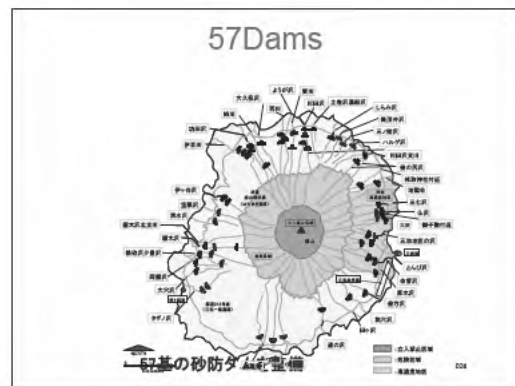
Lesson3: All the required persons concerned had better be put into on-site headquarters.

A coastal area is shown, possibly a headquarters or a site of interest. The area includes buildings and a body of water.

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