



저작자표시-동일조건변경허락 2.0 대한민국

이용자는 아래의 조건을 따르는 경우에 한하여 자유롭게

- 이 저작물을 복제, 배포, 전송, 전시, 공연 및 방송할 수 있습니다.
- 이차적 저작물을 작성할 수 있습니다.
- 이 저작물을 영리 목적으로 이용할 수 있습니다.

다음과 같은 조건을 따라야 합니다:



저작자표시. 귀하는 원저작자를 표시하여야 합니다.



동일조건변경허락. 귀하가 이 저작물을 개작, 변형 또는 가공했을 경우에는, 이 저작물과 동일한 이용허락조건 하에서만 배포할 수 있습니다.

- 귀하는, 이 저작물의 재이용이나 배포의 경우, 이 저작물에 적용된 이용허락조건을 명확하게 나타내어야 합니다.
- 저작권자로부터 별도의 허가를 받으면 이러한 조건들은 적용되지 않습니다.

저작권법에 따른 이용자의 권리는 위의 내용에 의하여 영향을 받지 않습니다.

이것은 [이용허락규약\(Legal Code\)](#)을 이해하기 쉽게 요약한 것입니다.

[Disclaimer](#)



國際學碩士學位論文

**The impact of governance on natural disaster response:
2011 Southeast Asia hydro-meteorological disasters in
the Philippines and Thailand**

거버넌스가 자연재해 대응에 미치는 영향에 대한 연구:
2011년 동남아시아 풍수해- 필리핀과 태국 사례 중심으로

2013年 2月

서울大學校 國際大學院

國際學科 國際協力專攻

金 譽 眞

The impact of governance on natural disaster response:
2011 Southeast Asia hydro-meteorological disasters in
the Philippines and Thailand

A thesis presented
by

Kim, Yejin

to

Graduate Program in International Cooperation
in Partial Fulfillment of the Requirements
for the Degree of Master of International Studies

Graduate School of International Studies

Seoul National University

Seoul, Republic of Korea

February, 2013

**The impact of governance on natural disaster response:
2011 Southeast Asia hydro-meteorological disasters in
the Philippines and Thailand**

거버넌스가 자연재해 대응에 미치는 영향에 대한 연구:
2011년 동남아시아 풍수해- 필리핀과 태국 사례 중심으로

지도교수 이 근

이 논문을 국제학석사 학위논문으로 제출함

2013년 1월

서울대학교 국제대학원

국제학과 국제협력전공

김 예진

김예진의 국제학석사 학위논문을 인준함

2013년 1월

위 원장 신 성호



부위원장 김태근



위 원 이근

Graduate School of International Studies, Seoul National University

THESIS ACCEPTANCE CERTIFICATE

The undersigned, appointed by

The Graduate School of International Studies,
Seoul National University

Have examined the thesis entitled

**The impact of governance on natural disaster response:
2011 Southeast Asia hydro-meteorological disasters in
the Philippines and Thailand**

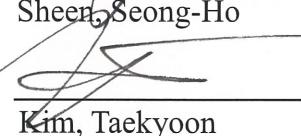
Presented by Yejin Kim,

Candidate for the degree of Master of International Studies and hereby,
certify that the examined thesis is worthy of acceptance:

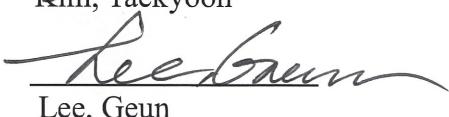
Signature
Committee Chair


Sheen, Seong-Ho

Signature
Committee Vice Chair


Kim, Taekyoon

Signature
Committee Member


Lee, Geun

Date: January 2013

Copyright © 2013 by Yejin Kim

All Rights Reserved

The impact of governance on natural disaster response: 2011 Southeast Asia hydro-meteorological disasters in the Philippines and Thailand

거버넌스가 자연재해 대응에 미치는 영향에 대한 연구:
2011년 동남아시아 풍수해- 필리핀과 태국 사례중심으로

Abstract

Yejin Kim
International Cooperation
The Graduate School of International Studies
Seoul National University

Southeast Asia has been frequently hit by severe natural disasters that impeded socio-economic development of many countries in this region. The 2011 Southeast Asia Floods have affected millions of people and caused massive economic damages in this region. By examining catastrophes in the Philippines and Thailand, this study focuses on analyzing the relationship between governance and disaster response measures. The research centers on finding out how disaster response measures differ among these two countries based on good disaster risk governance: institutional efficacy, civil society participation, and emergency aid adequacy.

The study reveals that regardless of political structure and economic capacity, countries with stronger stakeholder coordination involved in response measures cope better. Despite higher economic standards, the Thai government struggled to coordinate with its internal and external partners. This is partly due to its unstable political situation when the flooding occurred. Meanwhile, the Philippine government responded in a timely manner along with stronger coordination with its disaster management agencies, related ministries, civil society and international actors.

Keywords: hydro-meteorological disasters, disaster response, disaster risk governance, institutional efficacy, civil society participation, emergency aid adequacy, coordination

Student Number: 2009-23765

Table of Contents

Abstract	i
Table of Contents	iii
List of Figures and Tables	v
 Chapter 1. Introduction	
1.1 Research Background.....	1
 Chapter 2. Analytical Framework	
2.1 Literature Review	6
- <i>Natural Disaster and Governance</i>	6
- <i>Natural Disaster and Institutional Quality</i>	8
- <i>Natural Disaster and Civil Society</i>	11
- <i>Natural Disaster and Emergency Relief Aid</i>	12
- <i>Natural Disaster and Coordination</i>	13
2.2 Research Question and Hypothesis	13
2.3 Research Design.....	14
 Chapter 3. Natural Disasters and Climate Change in Southeast Asia	
3.1 : Natural Disasters in 2011	18
3.2 : Natural Disasters and Climate Change Trends	20
 Chapter 4. Country Background: the Philippines and Thailand	
4.1 Political Situation.....	24
4.2 Economic Situation	27
4.3 Civil Society Engagement.....	28

Chapter 5. Analysis - Case Study: 2011 Hydro-meteorological disasters in SEA

5.1 Case Study #1: The Philippines

- <i>Demographics</i>	32
- <i>Geography and Disasters</i>	33
- <i>Disaster Management Framework</i>	33
- <i>Overview of 2011 Typhoon Washi</i>	42
- <i>Response Action</i>	47

5.2 Case Study #2: Thailand

- <i>Demographics</i>	55
- <i>Geography and Disasters</i>	55
- <i>Disaster Management Framework</i>	57
- <i>Overview of 2011 Thailand Floods</i>	63
- <i>Response Action</i>	69

Chapter 6. Conclusion

6.1 Findings	79
6.2 Limitations	82
6.3 Implications	82
Bibliography	83
Appendices	88
Korean Abstract	96

List of Figures and Tables

List of Figures

- Figure 1: Reported number of natural disasters 1975-2011
- Figure 2: Reported number of people affected by natural disasters 1975-2011
- Figure 3: Reported number of economic loss by natural disasters 1975-2011
- Figure 4: Three indicators of disaster risk governance
- Figure 5: Factors leading to or enhancing flood disasters
- Figure 6: Climate Change Vulnerability in Southeast Asia
- Figure 7: Southeast Asia Disaster Situation in October 2011

Philippines

- Figure 8: Organization Network of National Disaster Coordinating Council
- Figure 9: Organizational Structure of National Disaster Coordinating Council
- Figure 10: Chart of a typical Barangay Disaster Coordinating Council
- Figure 11: Disaster Operation Flow in the Philippines
- Figure 12: Tropical Strom Washi in the Philippines as of 18 December, 2011
- Figure 13: Map of affected Barangays by districts in Iligan as of January 16, 2012
- Figure 14: Status of Evacuation Centre in the two most severely hit cities: Cagayan de Oro and Iligan

Thailand

- Figure 15: Organization Chart of National Disaster Prevention and Mitigation
- Figure 16: Disaster Management System of Thailand
- Figure 17: National Budget 2011– Thailand
- Figure 18: Structure of the National Water Resource Committee in Thailand
- Figure 19: Affected Provinces in Thailand (October- November)
- Figure 20: Time series analysis of Thai Floods in 2011
- Figure 21: Dams in Thailand at Breaking Point, October 2011
- Figure 22: Flood Recovery and Restoration Operating Committee and Mechanisms for Thailand Flood Relief, Rehabilitation and Prevention

List of Tables

- Table 1: Top Ten Natural Disasters by number of deaths in 2011
Table 2: Key Disasters in some Southeast Asian countries from 1980 to 2000
Table 3: Climate Change Impact in Southeast Asia
Table 4: Democracy in Southeast Asia
Table 5: Liberal democracy and effective governance in Southeast Asia- Rankings for 2010
Table 6: 2011 Economic Indicators for the Philippines and Thailand

Philippines

- Table 7: Key disaster management laws in the Philippines
Table 8: Member organizations of National Disaster Coordinating Council
Table 9: Number of affected population by province and city in the Philippines
Table 10: Economic Impacts of the Washi (Sendong) Storm in the Philippines
Table 11: Assets deployed for Relief in the Philippines
Table 12: Funds allocated for relief by districts in the Philippines
Table 13: Details of causalities in the Philippines
Table 14: List of organizations in *Balsa Mindanao*

Thailand

- Table 15: Watershed Areas and Annual Runoff of the Major River Basin in Thailand
Table 16: National Budget of National Disaster Prevention and Mitigation Committee
Table 17: Summary of damages and losses in Thailand (Thai baht, millions)

Chapter 1. Introduction

1.1 Research Background

With growing population and advanced technology, many economies have grown fast with higher living standards. Nevertheless, when a disaster hits a country, massive socio-economic damages are created and a lot of time and resources are needed for restoration, especially in the case of developing countries. Thus, resilience building and disaster risk reduction (DRR) have become emerging issues today.

Since the 2004 Indian Ocean tsunami and earthquake, there have been various initiatives at local, national and global levels prioritize disaster risk reduction into national development planning in order to prevent natural disasters and adapt to climate change. The Hyogo Framework for Action (HFA) 2005-2015 has been agreed by 168 member states of the United Nations in 2005 at the World Disaster Reduction Conference led by United Nations International Strategy for Disaster Reduction (UN ISDR).¹ National governments and regional partners have started to build disaster risk and climate change capacities and integrate this issue into their national development strategies.

Nevertheless, considered as ‘acts of God’, it is extremely challenging to avoid natural disasters that are becoming more atrocious and unpredictable due to deforestation, urbanization and climate change. Regardless of geographical, financial and political conditions, all countries experience disasters. Even developed countries with strong disaster management systems like Japan and the US struggled to cope with these disasters like the

¹United Nations International Strategy for Disaster Reduction (UN ISDR). “Hyogo Framework for Action”. Retrieved July 20, 2012, from <http://www.unisdr.org/we/coordinate/hfa>

2011 Great East Japan Earthquake and the 2005 Katrina Hurricane. Heavy criticisms were given to these governments and they were to review their roles and responsibilities for response activities as the key actor to secure its population. In the book, *Governing after Crisis: The politics of Investigation, Accountability and Learning*, authors highlight weak political and institutional environment of natural disasters that hinder effective recovery for societies.²

In addition, disasters are no longer limited to simple climate problems but have a significant impact both domestically and internationally on economic, political and social issues such as commerce, relief aid allocation, migration and epidemics. Recent heavy rain and typhoons in the Philippines and the 2011 Southeast Asian Flood in the Mekong region not only led to casualties and damages domestically, but also affected the global economy. Many factories producing automobile and electronic supplies were hit causing the prices of these supplies to inflate due to stock shortages. At the same time, governments were challenged to organize evacuation activities that satisfied all the victims.

Definition of disaster

It is important to understand about disaster and how it is defined. UN ISDR has defined disaster as “a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts that exceeds the ability of the affected community or society to cope using its own resources”.³

² Boin, A., McConnell, A. and 't Hart, P. (eds). (2008). *Governing after Crisis: The politics of Investigation, Accountability and Learning*. Cambridge University Press.

³ United Nations International Strategy for Disaster Reduction (UNISDR). "Terminology on DRR". Retrieved August 20, 2012, from <http://www.unisdr.org/we/informterminology>

At the same time, the Australian government has developed a detailed definition of ‘natural disaster,

A natural disaster is a serious disruption to a community or region caused by the impact of a naturally occurring rapid onset event that threatens or causes death, injury or damage to property or the environment and which requires significant and coordinated multi-agency and community response. Such serious disruption can be caused by any one, or a combination, of the following natural hazards: bushfire; earthquake; flood; storm; cyclone; storm surge; landslide; tsunami; meteorite strike; or tornado (Common Wealth of Australia 2004).⁴

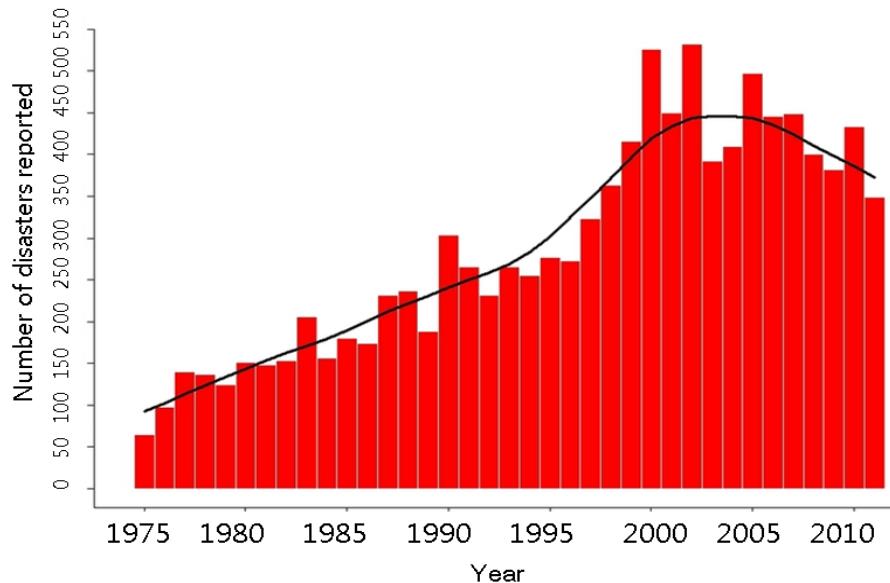
Based on these definitions, it is noted that the core element of disasters is the ‘consequences’ followed after each incident rather than the natural hazards of themselves – hurricanes, earthquakes, tsunamis. Therefore, it is critical to review the response measures taken by the related stakeholders.

Disaster trends

As mentioned earlier, exposure to disasters is inevitably increasing everyday due to climate change, environmental degradation and urbanization, followed by deforestation and increasing population at risk. As shown in Figure 1, there has been a tremendous increase in the number of reported natural disasters from 1975-2011 globally, which created massive causalities (Figure 2) and economic losses (Figure 3).

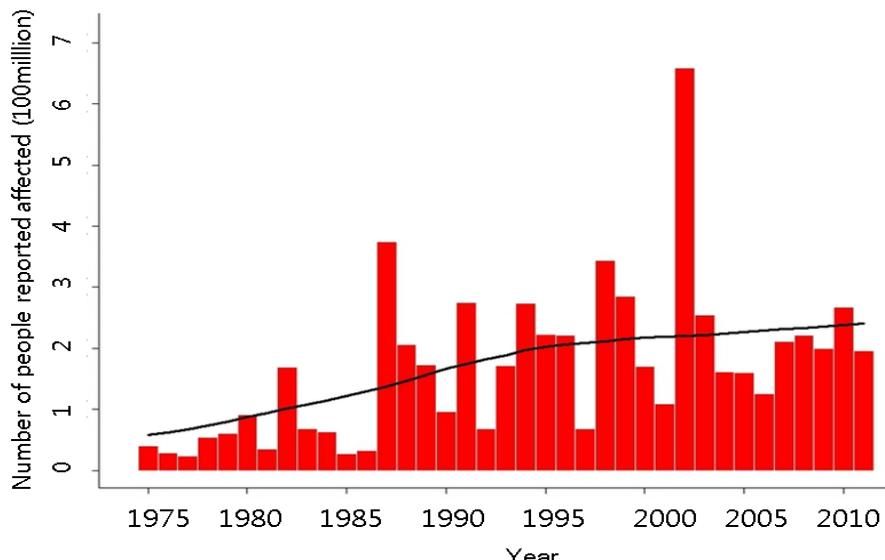
⁴ Australian Government Department of Transport and Regional Services on behalf of the Council of Australian Governments (COAG) High Level Group on the Review of Natural Disaster Relief and Mitigation Arrangements. *Natural Disasters in Australia: Reforming mitigation, relief and recovery arrangements*, Common Wealth of Australia 2004:19.

Figure 1: Reported number of Natural Disasters worldwide 1975-2011



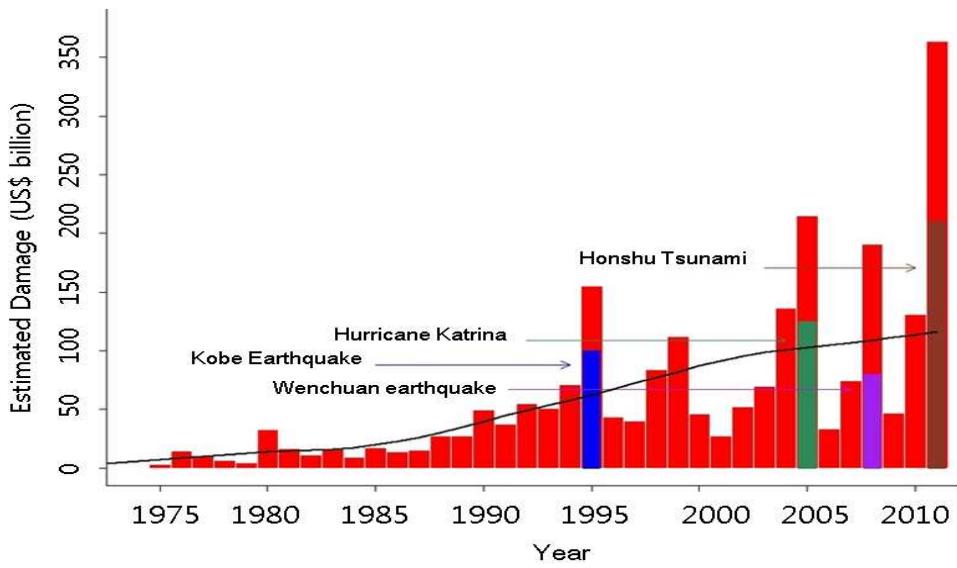
Source: EM-DAT database

Figure 2: Reported number of people affected by natural disasters 1975-2011



Source: EM-DAT database

Figure 3: Reported economic loss (US\$ billion) caused by natural disasters 1975-2011



Source: EM-DAT database

It is important to note that disaster management is a multi-disciplinary study and does not limit to biological and physical science research. Causes and impacts of disasters are also interrelated to socio-economic aspects especially for the wellbeing of people to attain sustainable development. Increasing disaster risks are hindering development especially for emerging economies and third world countries. According to Kuniyoshi Takeuchi, the Director of International Centre for Water Hazards and Risk Management (ICHARM), rapid increase of recent hydro-meteorological disasters is not solely due to climate change and sea level rise but as a result of increased societal vulnerability to any hazard that are affected by expansion of human population and activities in hazardous area, poverty and poor governance.⁵

⁵ Takeuchi, Kuniyoshi. (2008). "Hydro-meteorological disasters: Science and adaptation to climate change". The 33rd International Geological Congress Oslo August 6-14, 2008. Retrieved August 30, 2012, from <http://www.cprm.gov.br/33IGC/1322577.html>

Therefore, it is important to examine how governments and its related actors cope with disasters in each country to enhance the quality of life for its population indicated in the social contract theory. In fact, William Waugh strongly urges in his book, *Living with Hazards, Dealing with Disasters: An Introduction to Emergency Management* (2000) that emergency management is the quintessential government role.

Chapter 2. Analytical Framework

2.1 Literature Review

Natural Disasters and Governance

After experiencing frequent catastrophes, countries have been stimulated to institutionalize risk governance. There are many definitions of governance because it is increasing being used in development studies. The United Nations Development Programme defines governance as:

the exercise of political, economic and administrative authority in the management of a country's affairs at all levels that comprises mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences (UNDP Disaster Risk Reduction Governance & Mainstreaming 2010).⁶

Rahman and Robinson (2006) categorize four pillars of good governance:

⁶ United Nations Development Programme (UNDP): Bureau for Crisis Prevention and Recovery.(2010). Disaster Risk Reduction, Governance & Mainstreaming.

accountability, participation, predictability and transparency that are universally applicable regardless of economic orientation and strategic policy priorities of the government. Disaster management is composed of four stages: disaster prevention, preparedness, response and recovery. The first two stages are centered on pre-disaster activities and the latter two are focused on post-disaster issues. In fact, a state with good governance system will establish a disaster risk reduction environment to prevent disasters empirically. Ahrens and Rudolph (2006) illustrate that institutional failure and bad governance result in poor disaster management because a country's governance structure hinders effective policy implementation and enforcement. They also indicate that accountability, participation, predictability and transparency are as key elements of a governance structure that foster development and support risk reduction. In fact, governments and other involved organizations often face coordination problems among themselves during disasters delaying response measures. With weak governance system, they are rarely prepared to cope with natural disasters and other emergencies due to financial and technical resources.

Nevertheless, institutionalizing effective disaster management system is challenging in practice. It not only requires a lot of investment for technical capacity but also efficient coordination mechanism. Indeed, many international organizations working on disaster management continue to advocate the importance of disaster risk reduction. The UN ISDR highlights the importance of legislation and policy implementation as well as engagement with line ministries such as Ministry of Finance, Ministry of Education and Ministry of Environment for greater accountability and transparency through decentralized

disaster management especially focused on disaster risk reduction.⁷ Many developed countries have started to incorporate disaster risk policies in their national development plans to strengthen resilience against disasters.

Natural Disasters and Institutional Quality

There is a consensus on the importance of institutional quality in disaster management. In a statistical analysis of the investigating the relationship between death tolls from natural disasters, geography, income and institution, Kahn (2005) highlights that countries with high quality institutions, ethnic division, income disparity and good governance, suffer fewer deaths from natural disasters. Regarding collective action on policy implementation, Stromberg (2007) demonstrates that government effectiveness determined by quality of public service, infrastructure, and civil services as well as high level of democracy are related to lower levels of damages and casualties from disasters.

Nevertheless, institutional quality can be affected by political factors. Smith and Flores (2010) state that as political survival is dependent on disaster politics especially during disaster relief, actions taken by the country's leader can vary depending on political stability of a state. In fact, laws of political economy are applicable because states and non-state actors seek for self-interest and react to incentives (Werker, 2010). This is one of the reasons why there are conflicts between different actors regarding on response timing, and benefit allocation to affected population.

Based on a research focusing on Indian government's response to disaster

⁷ UN International Strategy for Disaster Reduction (UN ISDR). 2012. Update: Post-2015 Framework for Disaster Risk Reduction. Retrieved September 10, 2012, from <http://www.preventionweb.net/posthfa/documents/update7June2012.pdf>

management by Besley and Burgess (2002), the government was more responsive to disaster in areas where the press was active with higher electoral accountability for their elections. Mustafa (2003) notices that financial support had been given to political supports and their family members prior to other citizens in Bangladesh based on its flooding analysis. Cohen and Werker (2008) find that accountability between government and public is important and governments tend to make less investment in disaster prevention in areas with lower accountability. In fact, political leaders can use disaster management very strategically to satisfy their own interest. Literature also indicates corruption issues that emerge before and after disasters. Pelling (1999) urges that elites can appoint community leaders favoring them to pertain their control and further benefit from rehabilitation activities.

These findings are true when applying to actual events like the 2005 Hurricane Katrina that revealed ‘the underlying power structures, the injustices, the patterns of corruption and the unacknowledged inequalities’⁸ in the United States as the affected area has been one of the poorest regions, populated with minorities in the country. The water management systems in New Orleans were not advanced as those in other states, inferring a lack of disaster preparedness measures. After the crisis, the government did not respond to the affected population quickly for proper evacuation as it was challenged by confusion of roles and responsibilities of involved actors. On the other hand, the 2011 Christchurch earthquake in New Zealand is a great example that illustrates high level of disaster preparedness through efficient institutional quality with barely any casualties.

Even some authoritarian regimes respond to disasters well if they have strong

⁸ Strolovitch, Warrne and Frymer. (2006). “Katrina’s Political Roots and Divisions: Race, Class, and Federalism in American Politics,” *Understanding Katrina: Perspective from the Social Science*. Retrieved October 1,2012, from <http://understandingkatrina.ssrc.org/FrymerStrolovitchWarren/>

institutional mechanisms in place. Thus, there are gaps depending on the institutional quality regardless of political regime types. Cuba is recognized for structured early warning and evacuation system driven from its political structure that facilitates to control the population effectively to reduce causalities. Aguirre (2005) investigates that Cuba has established an integrated warning framework based on top-down structure of government institutions including meteorological agency, civil defense agency, along with controlled mass media that coordinate in disaster response efficiently. Even in the case of 2008 Sichuan Earthquake in China, the government was accredited for its well organized rescue efforts and effective national disaster relief mobilization. Meanwhile, Haiti was totally in turmoil after the 2010 earthquake with insufficient government leadership and capacity to cope with the disasters as one of the poorest countries in the world.

Therefore, economic capacity is also vital. Horwich (2000) finds that the level of wealth is a key underlying factor responding to natural disaster in his study on Japanese response to the 1995 Kobe earthquake. Likewise, Wildavsky (1988) describes the level of public safety in a country as a product of an emerging market economy. Thus, growing level of GDP will have a positive impact on natural disaster management. Furthermore, Van der Vink et. al. (2007) have discovered a link between democracy, development and impact of natural disasters as there are less number of deaths due to natural disasters in democratic countries with higher GDP and income level. There are a lot of literature that demonstrate the inverse relationship between number of deaths from natural disaster and income level (Tol and Leek, 1993 and Burton, et al, 1993). Furthermore, Hideki Toya and Mark Skidmore (2007) have investigated that “countries with higher income, higher educational attainment, greater openness, more complete financial systems and smaller sized government

experience fewer losses” in their study on *Economic Development and the Impacts of Natural Disasters*.

Natural Disasters and Civil Society

In countries with strong civil network, there are coordination mechanisms to strengthen disaster recovery and evacuation processes even at the community level. People no longer solely rely on their governments for security and protection. Affected societies have designed guidelines on disaster prevent in their community development plans. At the same time, they advocate the importance of ‘responsibility to protect’ by partnering with government entities.

Olson (1965) finds that high level of social capital assist recovery is achieved through information diffusion by the civil society. Cohen and Arato (1992) define civil society as agencies, institutions, and organizations with a mandate to advocate common objectives through ideas, actions, and demands on governments. This emphasizes the importance of coordination between government and the civil society. These days, private sector has also become increasingly important entity by supporting the public in emergencies with its organizational resources to fulfill its corporate social responsibilities. Consequently, civil society is important for mobilizing resources and information to the public as social ties serving as ‘informal insurance’ mechanisms and allowing victims to draw upon ready-made support networks for financial, physical, and logistic guidance (Beggs et al. 1996). Thus, investigating the role of civil society in disaster management is significant.

Natural Disasters and Emergency Relief Aid

Rieth (2009) asserts that the most common type of philanthropic engagement to disaster relief is providing financial support to international organizations, civil society organizations or directly to affected governments. There should be a clear distinction between emergency aid and humanitarian aid. The OECD's Development Assistance Committee (DAC)'s Statistical Directive has distinguished 'emergency and distress relief aid' from other development aid. According to DAC, emergency is focused on the 'urgent situation caused an abnormal event' such as sudden natural disasters.⁹

Regardless of the goodwill to provide assistance from overseas, often recipient countries do not prepare appropriate mechanism to facilitate aid flow and its usage. Emergency management and relief aid are further challenged by disturbances created by chaotic local conditions (Holguin-Veras et al., 2007). Skoufias (2003) urges that improper monitoring mechanisms of emergency aid challenge international organizations to adjust aid based on the amount of damage experienced. Most often, aid distribution undergoes a vicious cycle where the money and relief supplies do not reach to the affected population and just disappear or remain in the hands of the international organizations mainly because the recipient do not have legislative mechanisms to handle and distribute incoming aids.

⁹ Fearon, James D. (2006). The rise of emergency relief aid. Department of Political Science, Stanford University.

Natural Disaster and Coordination

It is important to note that all these factors of a good ‘disaster risk governance’ can be achieved when there is a strong collaboration between the government and its related stakeholders. Oliver (1990) identifies efficient resources allocation and legitimacy as key factors that foster partnerships. In the context of disaster management, Provan and Milward (2001) depict that effective disaster resiliency can measure the level of coordination network. Demiroz and Khosa (2011) address that emergency administrative bodies like national disaster management organizations manage network and involvement of the stakeholders based on their need assessment and the availability of stakeholders to build up a network, which is dependent on its institutional capacity.

2.2 Research Question and Hypothesis

The research question for this study is “What differentiated government disaster response measures in the Philippines and Thailand during the 2011 hydro-meteorological disasters?” This question will assist in examining the role played by the government in disaster management to secure its population. It is expected that countries with well-established *disaster risk governance* respond better to protect its citizens from natural disasters.

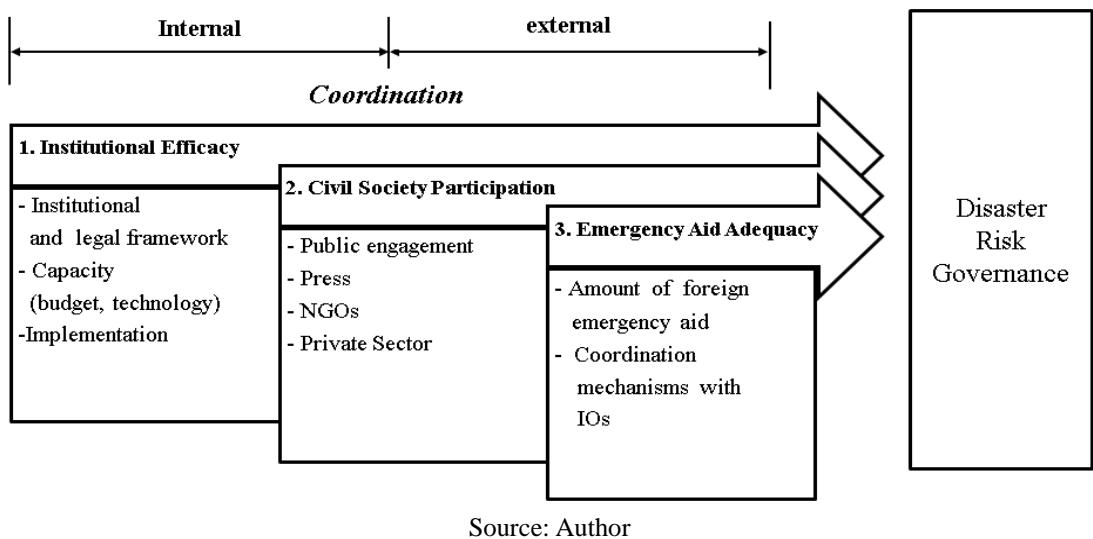
2.3 Research Design

This paper is a comparative study investigating on how *countries with similar political and economic characteristics* in Southeast Asia have carried out disaster management noting high level of disaster frequency. The Philippines and Thailand have been chosen as case studies because they have experienced hydro-meteorological disasters in a same time frame. Moreover, they have relatively similar past experiences of hydro-meteorological disasters under similar political and economic conditions. Details will be further provided in the later chapters.

In this context, *disaster risk governance* refers to the government's ability to cope with disaster effectively by building strong institutional and technical capacity for disaster prevention and implementing its disaster risk related policies cooperatively with other related stakeholders for efficient disaster response and recovery measures.

Based on the literature review, three key indicators affecting disaster risk governance of a country have been selected, which are institutional efficacy, civil society participation and emergency aid adequacy as shown on Figure 4. At the same time, these indicators help examine the level of coordination exercised by the government at internal and external levels with related stakeholders to produce the optimal outcome based on the stakeholder theory. Donaldson and Preston (1995) emphasize that stakeholder theory replaces traditional input-output perspectives in organizations with the belief that all stakeholders may be involved in organizational procedures to maximize benefits.

Figure 4: Three indicators of disaster risk governance



Source: Author

First, institutional efficacy is important because it depicts political stability and legislative structure. This will be measured through national disaster management structures and laws. Coordination among different government agencies such as the Ministry of Defense and local government; and implementation of existing laws and framework will be thoroughly analyzed. At the same time, time spent for recovery and capacity for evacuation will be examined to evaluate institutional quality for each government's disaster risk governance. Rubin et al. (1985) underline the importance of leadership and organizational capacity in minimizing the time and increasing efficiency for disaster recovery. Nevertheless, often the key obstacle for post-disaster operation is lack of government support (Rowlands et al. 2006).

Besides, country's economic level identified through its income level also has an impact on the institutional quality. Then national budget and resource allocation for disaster management will be reviewed to find out the percentage of national budget is assigned to

national disaster management organizations. Technical capability is also an underlying factor that can be differentiated by economic level. Phaup and Kirschner (2010) find that budgetary mechanisms are essential in promoting effective recognition and restrict corruption of elected officials in disaster risk management. In their study, they have examined that the “Government of Japan has assigned around JPY 4.5 trillion (USD 49.9 billion) each year for disaster management including prevention, preparedness, response and recovery activities from 1995 to 2004, which represents about 5% of the general fund in the national budget”. This explains why Japan is considered as one of the most advanced countries in disaster management.

Thirdly, public participation in response activities is also a crucial factor because it portrays communication between the government and public, and within the public themselves. It is also a democratic method of evaluating government performance. Therefore, actions taken by the press, non-government organizations (NGOs) and other players will be scrutinized. Bratton (1994) defines civil society as social interaction between the public and the state through community cooperation and public communication. When applying this concept to post disaster activities, it refers to how communities are coordinating to rescue people during crisis and how well the media provides relevant disaster information to both the public and the government. Moreover, Charnovitz (1997) identifies non-governmental organizations as prominent actors that set up to organize disaster relief programmes for the sake of the citizens to advocate common objectives to the government. As a result, government interaction with the civil society is critical in dealing with post disaster activities.

Lastly, emergency aid adequacy is another indicator that affects the level of risk

governance. This can be observed through the amount of emergency aid received from other countries and international organizations during response and recovery stages for humanitarian purposes. This helps to evaluate the level of cooperation between the recipient country with donor countries, and international organizations. Moreover, the availability of monitoring and cooperative mechanisms for incoming aids in recipient country for greater accountability and transparency indicates the quality of disaster risk governance. Sheu (2007) finds that swift response to emergency aid demands immediately after natural disasters is required through a combination of efficient emergency logistics distribution and coordination, so that critical disaster relief can be channeled to affected areas.

In the initial stages of post disaster operations, the government facing disaster often retain relief agencies to enter into affected areas especially when these zones are in conflict like the case in 2004 Asian Tsunami in Aceh, Indonesia and the 2008 Cyclone Nargis in Myanmar. Meanwhile, in the case of Haiti, Grunewald and Binder (2010) reveal that international humanitarian reliefs were welcomed from the beginning. But its sustainability was challenged because government agencies felt that their roles and responsibilities have been taken over by international relief actors being left out in the coordination and decision-making processes. In fact, insufficient measures to foster collaboration between aid workers and local correspondences challenged the management of relief supplies in response and recovery measures that may resulted in corruption.

After all, disaster risk governance is an emerging issue being emphasized continuously. The 2009 *Global Assessment Report of Disaster Risk Reduction* highlights institutional quality and governance as key elements for fostering sustainable development.

Chapter 3. Natural Disasters and Climate Change in Southeast Asia

3.1 Natural Disasters in 2011

Among many regions, Asia is one of the most vulnerable areas in the world. Based on the Asia Pacific Disaster Report 2010, people in this area are four times more likely to be affected by natural disasters than those in Africa and 25 times more vulnerable than Europeans or North Americans.¹⁰ Among the top 10 natural disasters in 2011, seven occurred in Asia and among them three in Southeast Asia. It is evident that the Philippines was most severely affected in this region with more than 1,000 causalities followed by Thailand with over 800 deaths (refer to Table 1).

Table 1: Top Ten Natural Disasters by number of deaths in 2011

	Country	Period	Disaster Type	# of deaths
1	Japan	March	Earthquake/Tsunami	19,846
2	Philippines	December	Tropical Storm	1,430
3	Brazil	January	Flood	900
4	Thailand	August-December	Earthquake	813
5	Turkey	October	Flood	604
6	Pakistan	August-November	Storm	509
7	United States	April	Flood	350
8	Cambodia	August-November	Flood	247
9	China	June	Flood	239
10	India	August-October	Flood	204

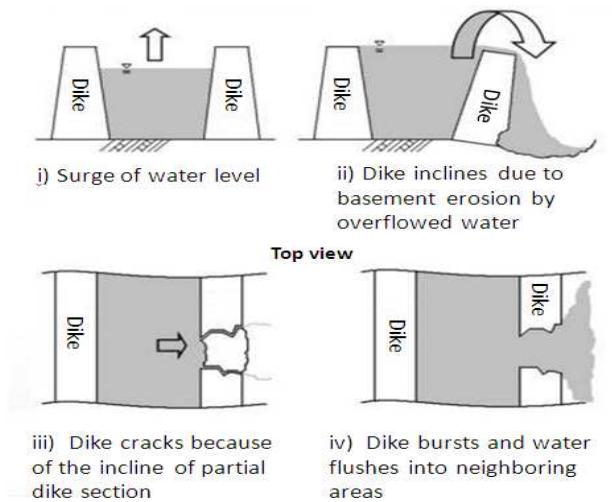
Source: Prevention Web

Asia is particularly very prone to *hydro-meteorological disasters* due to frequent typhoons and heavy rain that cause flooding. Hydro-meteorological hazards are caused by the process or phenomenon of atmospheric, hydrological or oceanographic nature including tropical cyclones, thunderstorms, tornados, coastal storm surges, floods that can cascade into

¹⁰ UN News Centre. “Asia-Pacific most prone to natural disasters but lack preparedness-UN Report”. Retrieved October,18,2012, from http://www.un.org/apps/news/story.asp?NewsID=36563&Cr=disaster+risk&Cr1#.UH7PIW_QeVF

catastrophes like landslides, epidemics and so on.¹¹ Key factors that accelerate flood related disasters are excessive rainfall surpassing protections, failure of hydraulic systems, river water overflow, inner water detention, outflow-release reservoirs, land subsidence, sediment deposition in rivers as shown in Figure 5.

Figure 5: Factors leading to or enhancing flood disasters



Source: National Science and Technology Center for Disaster Reduction (NCDR) Taiwan¹²

The Australian Government explains that flooding is caused by heavy rainfall when natural watercourses lack capacity to transport excess water. But there are other phenomena accelerating flood particularly in coastal areas where inundation can be caused by a storm surge associated with a tropical cyclone, a tsunami or a high tide coinciding with higher than normal river levels.¹³

¹¹ United Nations International Strategy for Disaster Reduction (UN ISDR). (2009) Terminology on Disaster Risk Reduction.

¹² Jiun-Huei Jang. (2012). "Hydro-meteorological Hazards and Disaster Risks: Flood Technology Evolution after Typhoon Morakot". National Science and Technology Center for Disaster Reduction, Taiwan.

¹³ Geoscience Australia. Australian Government. "What causes Floods." Retrieved October 20,2012, from <http://www.ga.gov.au/hazards/flood/flood-basics/causes.html>

3.2 Natural Disasters and Climate Change Trends

As evident in Table 2, Southeast Asia countries have experienced tremendous disasters particularly floods resulting in large amount of casualties. Apart from Indonesia, the Philippines and Thailand have highest frequency of flood along with largest scale of causalities and damages, which is one of the reasons why these two countries are appropriate for this study. Yeun and Kong (2009) find that this region is one of the least urbanized areas but it is struggling with urban population increasing 1.75 times faster than urban population of the world. This is partly due to climate change and rapid economic development activities that have not considered disaster risk such as deforestation and emission of toxic gases.

According to the *Synthesis Report on Ten ASEAN Countries Disaster Risks Assessment*¹⁴, this area is described as geographically diverse with high hills and rugged mountains, elevated plateaus, highlands, floodplains, coastal plains and deltas. There are large river systems like the Mekong and Ayeyarwady and also volcanic mountains in Indonesia and the Philippines. In fact, this region is divided into mainland and insular coastal zones. Thailand is a mainland composed of mountains and rivers where the population relies on agriculture. Insular states like Indonesia and Philippines are composed of many islands and very vulnerable to coastal disasters. During the monsoon season, usually between June to October, there are lots of heavy rain often resulting in flooding.

In the last decade, climate change and rise of sea level have increased frequency and uncertainty of disasters that worsened vulnerability in this region. As shown in Table 1, majority of dreadful disasters that occurred during tropical monsoon seasons in 2011 relate

¹⁴ Gupta, Sushil. (2010). Synthesis Report on Ten ASEAN Countries Disaster Risks Assessment: ASEAN Disaster Risk Management Initiative. UNISDR and World Bank.

to water such as the Great East Japan (Tōhoku) Earthquake and Tsunami, along with several Southeast Asian flooding. These resulted as costliest disasters in the disaster history adding up \$294 billion economic losses. In fact from 2001 to 2009, Southeast Asia has experienced 213 floods, 132 storms, 42 earthquakes, 42 landslides, 36 epidemic, 15 volcanic eruption, 12 droughts and 7 wildfires.¹⁵

Table 2: Key Disasters in some Southeast Asian countries from 1980 to 2000

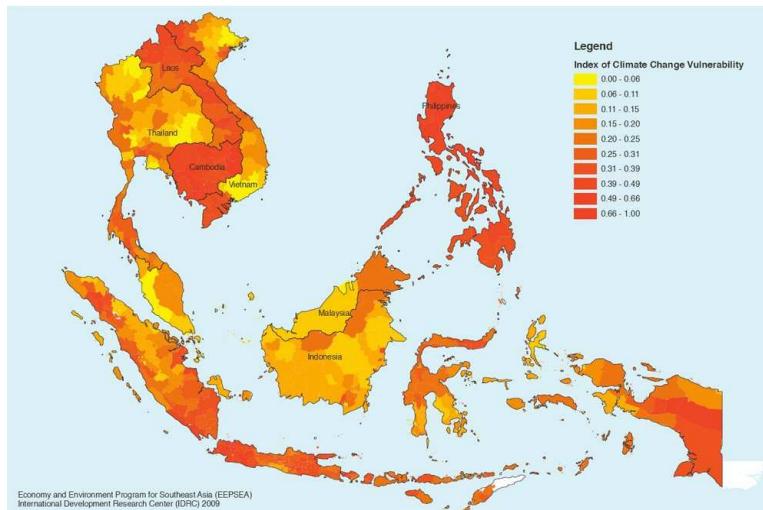
	Cyclones			Droughts			Floods		
	# of events	Loss of lives		# of events	Loss of lives		# of events	Loss of lives	
		Annual Av.	Ann. Average		Annual Av.	Ann. Average		Annual Av.	Ann. Average
Cambodia	-	-	-	-	-	-	0.29	48.52	4.08
Indonesia	-	-	-	0.29	60.29	-	2.48	120.29	0.67
Lao PDR	0.19	2.67	0.6	-	-	-	0.43	3.29	0.75
Malaysia	0.1	12.86	0.6	-	-	-	0.43	4.43	0.24
Myanmar	-	-	-	-	-	-	0.29	9.05	0.20
Philippines	5.57	863.19	14.35	0.24	0.38	0.01	1.76	75.71	1.22
Thailand	0.71	30.24	0.54	-	-	-	1.33	78.52	1.37
Vietnam	2.24	435.24	6.4	-	-	-	1.00	137.90	1.98

Source: UN Habitat (2007), p639.

Figure 6 depicts how much Southeast Asia, especially the Philippines is very vulnerable to climate change. This mainly due to increase in sea level and temperature as indicated in Table 3.

¹⁵ The International Disaster Database (EM-DAT). Retrieved October 25, 2012, from <http://www.emdat.be>

Figure 6: Climate Change Vulnerability in Southeast Asia



Source: Economy and Environment Programme for Southeast Asia (EEPSEA), International Development Research Center (IDRC), 2009¹⁶.

Table 3: Climate Change Impact in Southeast Asia

Climate Change Impact	Sea level rise	Temperature Rise
Brunei		
Cambodia		7
Indonesia	3	8,9
Lao PDR		7
Malaysia	5	
Myanmar		7
Philippines		10
Singapore		
Thailand		7,11
Timor-Leste		9
Vietnam	1,4,6	7

Caption

Sea Level Rise

■ Affected by a sea level rise <30am

■ Affected by a seal level rise> 30am

■ Not affected even for a seal level rise>50am

Temperature Rise

■ Affected by a temperature rise of 2°C

Source: Yuen and Kong. (2009). Climate Change and Urban Planning in Southeast Asia: p5.

¹⁶ PreventionWeb. (2009) Climate change vulnerability map of Southeast Asia. Retrieved September 18, 2012, from <http://www.preventionweb.net/english/professional/maps/v.php?id=7864>

After failing to cope with severe catastrophes, Southeast Asian countries have started to develop national disaster management framework and foster regional cooperation. Constituted in 1968, the Economic and Social Commission for Asia and the Pacific (ESCAP), and the World Meteorological Organization (WMO), the Typhoon Committee cooperates to reduce cyclone damage in the Asian and Pacific Region.¹⁷ The Association of Southeast Asian Nations (ASEAN) Committee on Disaster Management has been established in 2003 with the mandate of formulating and implementing programmes, projects and activities regional cooperation in all aspects of management, including prevention, mitigation, preparation, response and recovery through mutual assistance activities in order to minimize the adverse consequences of disasters on the economic and social development in member countries.¹⁸ There is also the Mekong River Commission that has been created as an inter-government agency to coordinate and manage water resources and disaster for sustainable development among Indochine countries: Cambodia, Lao PDR, Thailand and Vietnam.¹⁹ From these partnerships, it is once again evident that Southeast Asia is very prone to hydro-meteorological disasters.

Despite these efforts, countries still face with similar problems when disasters strike. Lai et al. (2009) state that natural disasters are atypical because regardless of the quality of national system preparedness systems, when they occur support is needed.

¹⁷ ESCAP/WMO Typhoon Committee. Retrieved October 30,2012 from <http://www.typhooncommittee.org/>

¹⁸ Association of Southeast Asian Nations. ASEAN Cooperation on Disaster Management. Retrieved October 31,2012, from <http://www.aseansec.org/18444.htm>

¹⁹ Mekong River Commission for sustainable development. Retrieved October 30,2012, from <http://www.mrcmekong.org/about-the-mrc/>

Chapter 4. Country Background: the Philippines and Thailand

4.1 Political Situation

Southeast Asian countries have diverse political systems. Countries tried to set up various political systems ranging from democratic to authoritarian regimes after gaining independence from their colonial powers. In fact, Hicken (2009) notes that countries in Southeast Asia have undergone several dramatic transitions to achieve democratic institutions. The Philippines and Thailand have highest level of democracy as shown in

Table 4.

Table 4: Democracy in Southeast Asia

Country	Polity Score 2003 (-10 to 10)	Freedom House 2005 (1-7)
Thailand	9	2 (Free)
Philippines	8	2 (Free)
Indonesia	7	3 (Partly Free)
East Timor	6	4 (Partly Free)
Malaysia	3	6 (Partly Free)
Cambodia	2	5 (Not Free)
Singapore	-2	6 (Partly Free)
Brunei	NA	6 (Not Free)
Laos	-7	7 (Not Free)
Vietnam	-7	7 (Not Free)
Myanmar	-7	7 (Not Free)

Source: Freedom House, Freedom in the World, 2005²⁰ and Jagers, Keith and Ted Robert Gurr, POLITY IV: Regime Change and Political Authority, 1800-2003, 2006²¹.

Adopted from Hicken, Allen. (2009)

Note: The polity scale runs from -10 to 10, with higher scores representing higher levels of democracy. The Freedom House score runs from 1 to 7 with lower scores representing a higher degree of political rights.

²⁰ Freedom House, Freedom in the World, 2005. Retrieved October 23,2012,
<http://www.freedomhouse.org/template.cfm?page=15&year=2006>

²¹ Jagers, Keith and Ted Robert Gurr, POLITY IV: Regime Change and Political Authority, 1800-2003, 2006. Retrieved October 23, 2012, from <http://www.cidcm.umd.edu/inscr/polity/>.

The Philippines is well known for the People Power Revolution also known as the EDSA revolution in 1986 that illustrate the active engagement of the public to raise their voice. After a long dictatorship under President Ferdinand Marcos, the country was able to restore democracy after this incident. Despite being the oldest democracies in Southeast Asia, the Philippines continuously struggled with rigged elections caused by high level of corruptions among political leaders and their cronies. Nevertheless, Diamond (2012) acknowledges that the country has improved its democratic quality with the 2010 election with Benigno Aquino III as the President because he has been attempting to bring greater transparency.

After overthrowing the absolute monarchy 1932, Thailand adopted constitutional monarchy and democracy. Yet, Thailand was considered as an authoritarian state under the military power. Riggs (1966) describes Thai politics until mid-60s as a bureaucratic polity which has been led by the bureaucrats. With the student uprising in 1973-1976, Thai politics gradually transitioned to a semi-democratic system. But there still were several coup d'états that have shaken up the country and only finally after the constitution reforms in 1997, Thailand was able to step into participatory democratic governance. But the country enjoyed democracy only for a short period during Thaksin Shinawatra's regime and again there was another military coup in 2006. Pongsudhirak (2012) depicts that Thailand is undergoing a 'democratic rollback' in the past few years as the conflict between the military and the supporters of Thaksin, which has been depicted by the 'Yellow Shirts' vs. the 'Red Shirts' during the 2010 insurgencies. Thus, Thai politics has been very insecure.

Table 5: Liberal democracy and effective governance in Southeast Asia- Rankings for 2010

Country	Liberal Democracy	Effective Governance	The Gap (LD-EG)
East Timor	3	10	-7.0
Indonesia	1	6	-5.0
Philippines	2	5	-3.0
Cambodia	7.5	8	-0.5
Myanmar	11	11	0.0
Laos	10	9	+1.0
Thailand	5.5	4	+1.5
Malaysia	4	2	+2.0
Vietnam	9	7	+2.0
Brunei	7.5	3	+4.5
Singapore	5.5	1	+4.5

Source: Emmerson, Donald. (2012) and adopted from Freedom House 2011²²

After all, Emmerson (2012) asserts that democracy level does not always correlate with the governance quality. As shown in Table 5, the Philippines has greater gap between level of democracy and governance than Thailand. Emmerson (2012) describes this pattern as ‘governance short’, which is caused by high level of corruption in the country despite the level of institutional framework and regime type. It is quite paradoxical because it has the longest democracy in this region but lacks institutional accountability. In the case of Thailand, the democratic environment has been degraded compared to the previous years since the military coup in 2006 that causing a persistent series of political demonstration in 2010. But still, compared to the Philippines, Thailand has stronger governance effectiveness in general. Nevertheless, it is noteworthy that disaster risk management has not been considered in this effective governance index.

²² Freedom House, “Table of Independent Countries,” Freedom in the World 2011, 12–16; and World Bank Group, “Worldwide Governance Indicators,” 2011. Retrieved October 25, 2012, from http://info.worldbank.org/governance/wgi/mc_countries.asp

4.2 Economic Situation

Economies of Southeast Asian countries have been developing rapidly in the last two decades. They are highly dependent on agriculture sector as well as manufacturing sector, particularly electronics and clothing due to cheap labor compared to China and other Asian countries. Consequently, there are increasing foreign investments into this region along with more multi-national companies. Many countries have experienced similar paths to development transitioning from import substitution industries based on agricultural production, to export driven economies that are open to trade and foreign capital investment. Although they have experienced the Asian financial crisis in the late 1990s, they were able to recover fast. Still, there are political and social factors that hinder growth in this region.

Table 6: 2011 Economic Indicators for the Philippines and Thailand

		Philippines	Thailand
GDP	\$bn	199.6	318.9
	World Ranking	47	30
	Annual average growth, % 2006-2010 per capita	4.9	3.6
	PPP	3,920	9,221
Investment	% GDP	20.5	25.9
Inflation (%)	Annual average, 2006-2010	4.7	2.7
Unemployment (%)		7.2	1.0
Current Account Balance	\$bn	8.5	14.8
	%GDP	4.2	4.6
Public Sector Balance	\$bn	-6.9	-8.6
	%GDP	-3.5	-2.7
Public Sector Debt	\$bn	89.2	140.5
	%GDP	44.7	44.1
Business Environment	World Bank Doing Business 2011 ranking, out of 183	136	17
Foreign Direct Investment	\$bn	24.9	127.3
	%GDP	12.5	39.9

Source: IMF World Economic Outlook database; UNCTADstat; World Bank World Development Indicators 2011 (adapted from Southeast Asia: A political and economic introduction²³)

²³ UK House of Commons. Southeast Asia: A political and economic introduction. Research Paper 11/78 14 December 2011.

As shown in Table 6, Thailand has a stronger economy compared to the Philippines. By scrutinizing the country cases of 2011 hydro-meteorological disasters, this study will inspect how economic level contributed in disaster response.

4.3 Civil Society Engagement

Civil society in Southeast Asia has become a stronger entity of nurturing democracy by advocating social and political values in many countries since late 90s. Number of non-governmental organizations is increasing and the role of media is becoming more significant. Chachavalpongwan (2012) urges that human rights conditions in this region has definitely enhanced with the introduction of ‘responsibility to protect’ in the early 2000s as non-traditional security risks like natural disasters ensured public cooperation. Nevertheless, the degree of civil society engagement varies by country. There are some distinctions when investigating the role of civil society in the Philippines and Thailand.

Demonstrated through the People Power Revolution in 1986, the Philippines is known for its strong civil society that has contributed in establishing democracy in the country. In fact, NGOs were given power to represent the interest of people in consultations on national governance and policy making with the 1987 Constitution.²⁴ Although these organizations lack institutional mechanisms, they play a vital role in creating the space between the government, market and public.

Among many groups, the *Citizen’s Disaster Response Center (CDRC)* stands out as it portrays how disaster management is a daily issue engaged by the public in the Philippines. CDRC is operated nationally with a network of regional NGOs to manage

²⁴ Section 23 of Article II of the 1987 Philippine Constitution.

disasters in the country since its establishment in 1984. It publishes the *Philippine Disaster Report* annually to raise awareness and share information on reoccurring natural disasters in its country.

On the other hand, civil society engagement tends to be relatively low in Thailand than in the Philippines. Similar to many other countries in this region, civil society movement has strengthened in during the authoritarian regimes. Student organizations and labor unions started to emerge in the 70s and 80s to fight against the military government. But in Thailand, business associations gained greater power and networking. Lowry (2008) finds that organization membership in Thai society is quite low and with short life span of these groups.

Case studies in the following chapter will explicate how civil society in each country responded to one of the worlds' deadliest disasters.

Chapter 5. Analysis - Case Study: 2011 Hydro-meteorological disasters in Southeast Asia

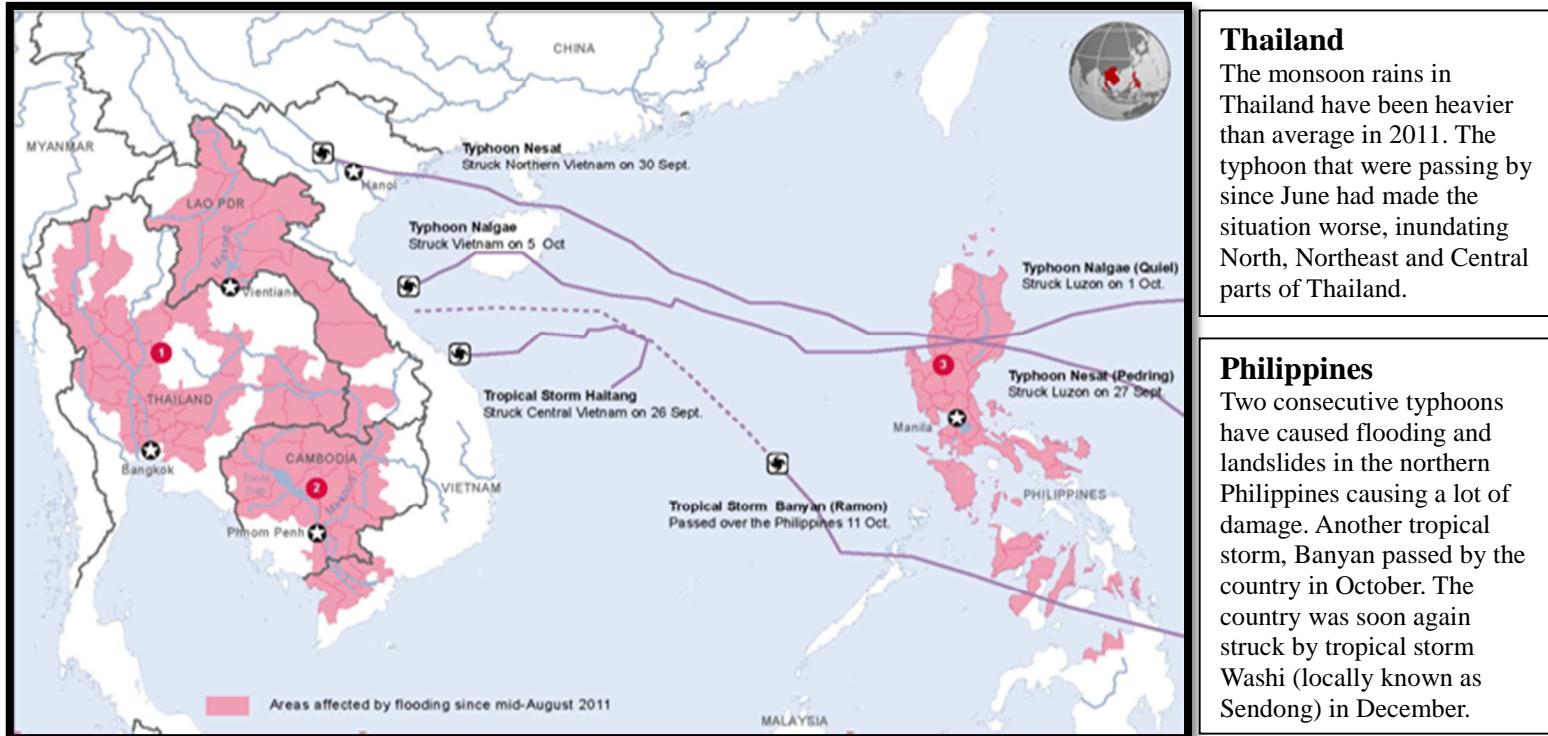
Southeast Asia was in a chaos during its monsoon season that lasted from mid-August to until around December in 2001 as shown in Figure7. USAID notes that “cumulative effects of tropical storms and heavy monsoon rains caused widespread flooding across Southeast Asia, resulting in approximately 1,100 deaths and affecting almost 10 million people in the region,”²⁵ indicating high level insecurity. Many countries in Mekong river areas: Cambodia, Lao PDR, Myanmar, Thailand and Vietnam were tremendously affected by robust flooding that lasted for several months. At the same time, the Philippines faced a series of storms in which one of them had become the worst typhoons of the year. In fact, situations in the Philippines and Thailand were most overwhelming, which is the reason why these countries have been selected as case studies for this research. In this section, each country case will be scrutinized based on the elements of *risk governance* by analyzing the following:

- 1) scale of disaster: type, size, duration and damages and causalities caused,
and
- 2) government response structure and measure: time frame (speed of
response), coordination among difference agencies, international relief
efforts.

²⁵ United States Agency International Development (US AID). (2011). Fact Sheet #3: Southeast Asia- Floods. November 08, 2011. Retrieved August 25, 2012, from http://transition.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/countries/thailand/template/fs_sr/fy2012/southeast_asia_f1_fs03_11-08-2011.pdf

Figure 7: Southeast Asia Disaster Situation in October 2011

A combination of typhoons and greater than average rainfall has affected more than 8million people in this region



Source: Office for the Coordination of Humanitarian Affairs (OCHA). (2011). Southeast Asia: Flooding²⁶

²⁶ OCHA. (2011).Southeast Asia: Flooding. Retrieved August 30, 2012, from <http://reliefweb.int/map/thailand/southeast-asia-flooding-13-october>

5.1 Case Study #1: The Philippines

Demographics

The Philippines is located in the western Pacific Ocean of Southeast Asia with a population of 92,337,852 people in 2010. It is the 7th most populated country in Asia. After a long period of colonial rule under the Spanish and the Americans, the country was finally independent in 1946. It established a democratic government with a unitary presidential constitution. It has the longest history of democracy in Southeast Asia. Nevertheless, there is a consensus among scholars that the country still struggles from inequality and poverty. Caolili (2005) depicts that the Philippines lacks good governance and economic development despite its consolidated liberal democracy with an active civil society. In fact, its income per capita income in PPP is USD it \$4,214 in 2012. It is fairly a newly industrialized state, transitioning from agriculture to more services and manufacturing based industry.

Therefore, there are greater income gaps with severe and widespread poverty in the rural areas. According to International Fund for Agricultural Development (IFAD), almost 80 percent of the country's poor population lives in the rural areas where agriculture is most often the key source of income these people.²⁷ Lasco et al. (2006) assume that the poorest will bear the cost of these disasters and climate change. It is important to know these traits as background information.

²⁷ International Fund for Agricultural Development (IFAD). (2010). Enabling poor rural people to overcome poverty in the Philippines.

Geography and Disasters

Due to its geographical location, the Philippines ranks third most disaster risk prone areas among 173 countries based on the 2011 UN World Risk Index.²⁸ With a land size of 300,000 sq. km, it is an archipelago of 7,107 islands. Among 220 volcanoes, 20 are recognized as active at present. There are also a lot of tempestuous typhoons passing by and around 20 storms move across this area. Consequently, the country is very vulnerable to storm surges and tsunamis causing rise in sea levels that often lead to floods especially during its monsoon season. It has experienced 50 years of storm from 1956 to 2006. Many researchers have found a lot of agricultural losses during the El Nino events in 1997 and 1998. Based on 2006 Report of the Population Reference Bureau (PRB)²⁹, human life vulnerability from natural disasters has been continuously increasing. From 1971 to 2000, natural catastrophes brought 364,000 causalities but in the last decade, it affected and killed more than 35 million people in the Philippines.³⁰

Disaster Management Framework (institution, legal, budget, capacity)

Being highly vulnerable to natural disasters, the Philippines has one of the longest disaster management institutional structure in Southeast Asia. Dating back to 1941, the President Manuel Quezon created an Executive Order No. 335 that allowed

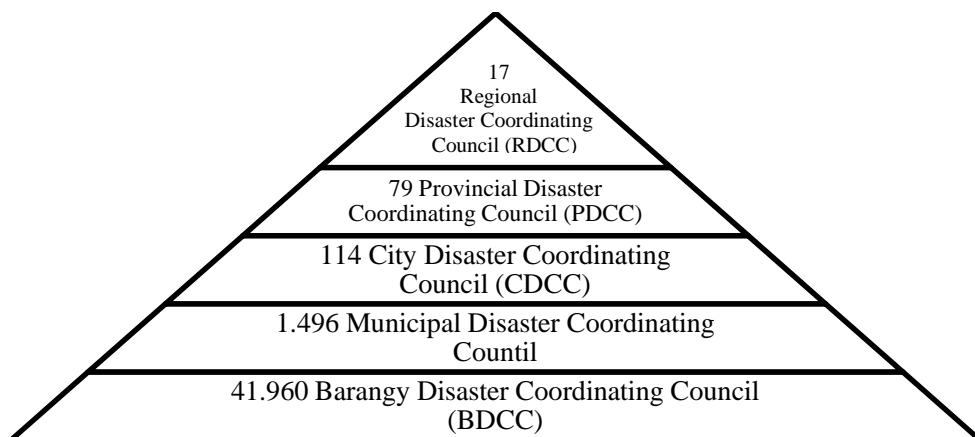
²⁸ United Nations University Institute for Environment and Human Security (UNU-EHS). (2011). World Risk Index 2011.

²⁹ Population Reference Bureau (PRB). (2006). Making the Link in the Philippines: Population, Health, and the Environment.

³⁰ Lasco, R. and Delfino R. (2010). Institutional and Policy Landscapes of Disaster Risk Reduction and Climate Change Adaptation in the Asia and the Pacific. A joint project of the World Agroforestry Centre (ICRAF) Philippines and United Nations Strategy for Disaster Reduction Secretariat (UNISDR) Asia and Pacific Regional Office.

the formation of Civilian Emergency Administration (CEA) with the mandate of being responsible to protect citizens during emergencies.³¹ Issued on June 11 1978, Presidential Decree No.1566 has been the cornerstone law fostering its disaster management capabilities both at national and local levels.

Figure 8: Organization network of National Disaster Coordinating Council in the Philippines



Source: Battista, Federica and Baas, Stephan (2004).³²

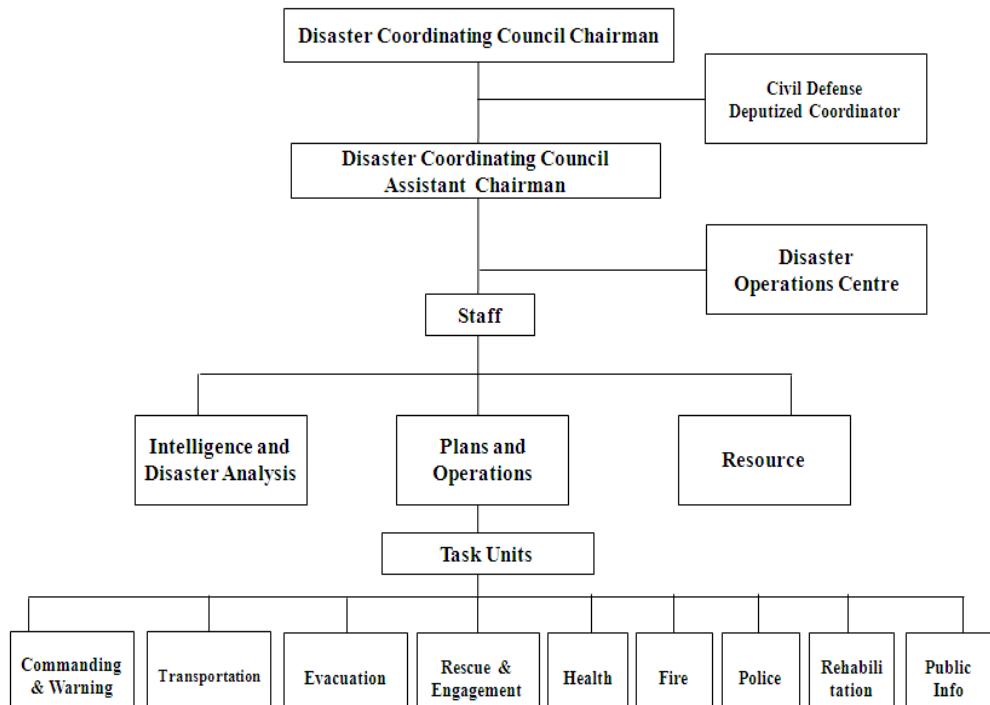
Based on PD No. 1566, the National Disaster Coordinating Council (NDCC) was established as part of the Department of National Defense. It is the key agency responsible for policy making and activating disaster risk reduction and response activities. As the focal point to the President and also to the local government, it supports creating disaster management plans and provides advices on when to declare

³¹ ASEAN Inter-Parliamentary Assembly Caucus Report..(2011). Philippines Country Report on Disaster Response Management.

³² Battista, Federica and Baas, Stephan (2004). ‘The role of local institutions in reducing vulnerability to recurrent natural disasters and in sustainable livelihoods development.’ Rural Institutions and Participation Service, FAO:44.

the state of calamity along with funding release. It also partners with Regional Disaster Coordinating Councils and Local Disaster Coordinating Council. As a collegial body, the Disaster Coordinating Council is composed of 17 national government agencies and one non-governmental organization, the Philippines National Red Cross. The country has organized Disaster Coordinating Council at every level as shown on Figure 8 and each council has task units particularly for evacuation, rescue & engagement and rehabilitation as indicated in Figure 9.

Figure 9: Organizational Structure of National Disaster Coordinating Council in the Philippines

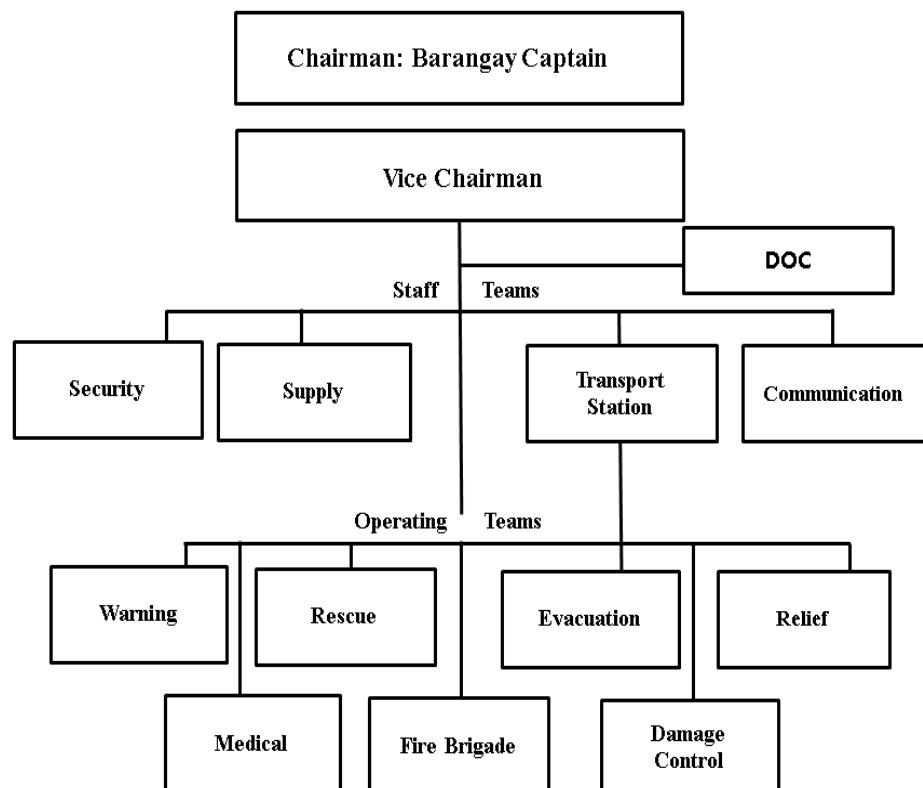


Source: Battista, Federica and Baas, Stephan (2004).³³

³³ Ibid., p.44.

Even the lowest level of district units known as Barangay has a well institutionalized Disaster Coordinating Council (Figure 10). There are operating teams that are in charge of early warning, rescue, revaluation, relief, medical, fire bridge and damage control. Nevertheless, Lasco and Delfino (2010) point out that not every local government has this council structure implemented to their governing systems. Figure 11 captures how disaster operations are carried out in the Philippines.

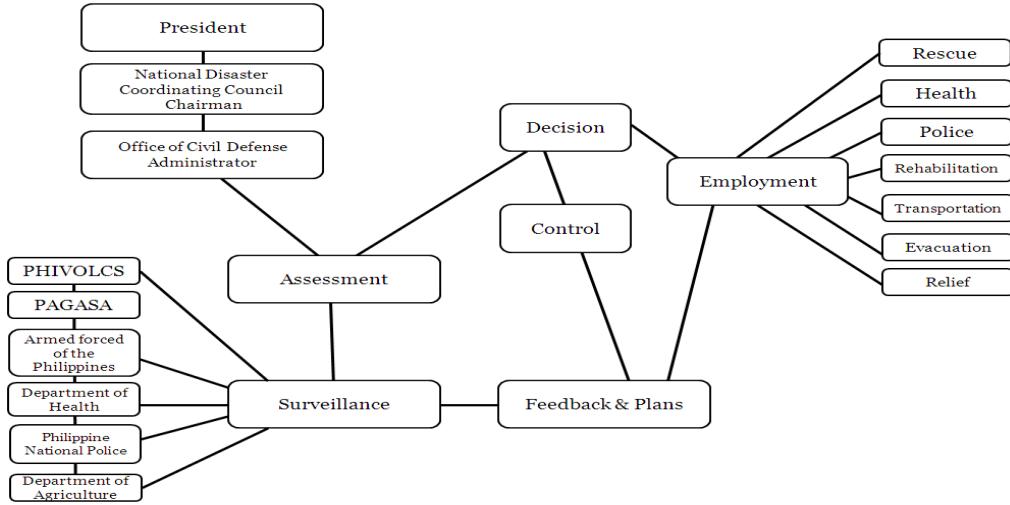
Figure 10: Chart of a typical Barangay Disaster Coordinating Council in the Philippines



Source: Battista, Federica and Baas, Stephan (2004).³⁴

³⁴ Ibid., p.45.

Figure 11: Disaster Operations Flow in the Philippines



Source: Office of Civil Defense-National Disaster Coordinating Council³⁵

Table 7: Member organization of National Disaster Coordinating Council

Department	Status
Secretary, Department of National Defense, Secretary	Chairman
Secretary, Department of Public Works and Transportation & Communications	Member
Department of Social Services and Development	Member
Secretary, Department of Agriculture	Member
Secretary, Department of Education and Culture	Member
Secretary, Department of Finance	Member
Secretary, Department of Labor	Member
Secretary, Department of Justice	Member
Secretary, Department of Trade	Member
Secretary, Department of Local Government and Community Development	Member
Secretary, Department of Health	Member
Secretary, Department of Natural Resources	Member
Secretary, Department of Public Information	Member
Commissioner, Budget Commission	Member
Presidential Executive Assistant	Member
Presidential Assistant on General Governments	Member
Chief of Staff, Armed Forces of the Philippines,	Member
Secretary-General, Philippine National Red Cross	Member
Administrator, Office of Civil Defense	Member & Executive Officer

Source: Presidential Decree No. 1566 of the Republic of the Philippines.³⁶

³⁵ Office of Civil Defense — National Disaster Coordinating Council, 1988. ‘Calamities and Disaster Preparedness Plan’.

³⁶ Presidential Decree No. 1566. Strengthening the Philippine Disaster Control, Capacity, and Establishing the National Program on Community Disaster Preparedness.

At the horizontal level, there are partnerships among different line ministries on disaster risk reduction and response activities (Table 7). Key stakeholders are the Office of Civil Dense (OCD) and sectoral government agencies. There are also research institutions, civil society along with private sector and international organizations that coordinate disaster management of the Philippines. The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) and the Philippine Institute of Volcanology and Seismology (PHIVOLCS) are responsible of providing early warnings by monitoring climate forecasts as part of the Department of Science and Technology. At the same time, the National Anti-Poverty Commission under the Office of the President concentrates on resource allocation for affected victims to alleviate poverty reduction in the country under its Social Reform and Alleviation Act (RA No. 8425). The Department of Public Works and Highways carries out evacuation activities by identifying evacuation sites, warning on disasters, and providing transportation. The social welfare and heath ministries are also in charge of responding to disasters. Moreover, the Department of Trade and Industry works on stabilizing the price and supply of goods that can be assessable to the victims. The Department of National Defense organizes task armed forces to work of disaster response and relief activities. After all, many of the national ministries have assigned tasks during disasters that are enforced by national disaster legislations. The Asian Disaster Reduction Center (ADRC) notes that the Philippine government has developed stronger communication and warning capabilities supported by its media organization and private sector.³⁷

³⁷ Asian Disaster Reduction Center. "The National Disaster Management Program: Philippines."

In regards to legal framework, there are various mechanisms advocating the importance of disaster management and ensuring effective responses to be taken during emergencies. Some of the key laws are listed in Table 8. Proper implementation of these laws has brought some level of security and support when disasters strike. Moreover, P.D. 1566, the National Disaster Coordinating Council Charter indicates the following agencies in Table 7 to be the member of National Disaster Coordinating Council.

Table 8: Some key disaster management laws in the Philippines

PD 957, The Subdivision Law	Regulates land developments for housing and commercial use
PD 1096, The Building Code	Prescribes all pertinent requirements and standards for building structures
PD 1151, The Environmental Policy Law	Protects natural endowments that serve as protection from erosion, strong winds and flood
PD 1185, The Fire Code	Provides fire prevention and protection measures
PD 1515, The Watersheds Law	Supports the preservation of natural watersheds and allowances for public easement in seas, rivers and lakes
Rule 1040 of the Occupational Safety and Health Standards	Provides for the organization of disaster control groups/health safety committee in every place of employment and the conduct of periodic drills and exercises in work places
R.A. 7160, the Local Government Code (LGC)	Contains provisions supportive of the goals and objectives of the disaster preparedness, prevention/mitigation programs that reinforce the pursuit of Disaster Management Program at the local government level.

Source: Capistrano, Melgabal. Philippines, Natural Disaster Reduction: National Response and International Cooperation.³⁸and Cabalza, Chester B. Basic Laws in Philippine Disaster Management and Multilateral Approaches for Effective Response to Natural Disasters in Asia³⁹.

One of the latest laws highlighting strong legal framework in the country is the

http://www.adrc.asia/management/PHL/Philippines_Disaster_Plans.html

³⁸ Capistrano, Melgabal. 'Philippines, Natural Disaster Reduction: National Response and International Cooperation. Asian Disaster Reduction Centre. Retrieved October 28,2012, from

<http://www.adrc.asia/countryreport/PHL/PHLeng98/index.html>

³⁹ Cabalza, Chester B. (2009). Basic Laws in Philippine Disaster Management and Multilateral Approaches for Effective Response to Natural Disasters in Asia.

2010 Philippines Disaster Risk Reduction and Management Act that is aimed to enhance disaster management environment and prioritize roles and responsibilities of all stakeholders involved. It has been recognized as a legal framework that ‘seeks to adopt and implement a coherent, comprehensive, integrated, efficient and responsive disaster risk reduction program of government adhering to the principles of good governance’.⁴⁰

There is no annual budget allocation for the National Disaster Coordinating Council (NDCC). Yet, Lasco and Delfino (2010) find that member agencies, regional and local disaster coordinating councils provide funding to NDCC. Indeed, one of the key funding sources for disaster management is the Philippine National Calamity Fund (NCF) that can be used under three priorities which are as follows:

Priority I—For urgent and emergency relief operations, health services, settlement and rehabilitation of affected populations as well as the emergency repair and rehabilitation of vital public infrastructures and lifelines.

Priority II—For repair, rehabilitation and reconstruction of other damaged public infrastructures/facilities that are not emergency in nature but are necessary for disaster mitigation.

*Priority III—For pre-disaster activities outside the regular budgets of line agencies and proposed capital expenditures for pre-disaster operations.*⁴¹

As a lump sum amount, five percent of the annual national budget is allocated for disaster response and relief activities like rehabilitation and reconstruction. In 2010, the National Calamity Fund added up to about US 42.5 million (PHP 2billion). Nevertheless, local governments face difficulty in accessing this fund. The Secretary of Department of

⁴⁰ Prevention Web. 2009. Philippines: Disaster Risk Reduction and Management Act of 2010. Retrieved October 25,2012, from <http://www.preventionweb.net/english/professional/policies/v.php?id=22035>

⁴¹ Asian Disaster Preparedness Center. (2001). The Philippine Disaster Management Story: Issues and Challenges.

the Interior and Local Government (DILG) has mentioned that the national calamity fund is inappropriate and limited for local government units to access.⁴² Consequently, calamity funds can be allocated to local governments from their annual budget under R.A 8185 since 1996. However, challenges are that local bodies do not have much expenditure to allocate funds for disasters and there are a lot of administrative processes to use these funds and can be only released when the state of calamity is declared.

Politically speaking, disaster risk reduction is considered as one of the key priorities for the Philippines as it has been hardly affected by devastating natural disasters. Many political leaders at national and local levels like parliamentarians and mayors use this as a mechanism to communicate with the public and try to raise awareness on disasters. In 2010, the Philippines has hosted a consultative meeting for Asia Parliamentarians on the discourse of resilience building in this region. In fact, Senator Loren Legard has been recognized as the regional champion of disaster risk reduction with her commitment and advocacy.

In partnership with international organizations and technical experts, the Philippines has developed early warning systems and technical capacity to cope better with natural disasters. In World Bank's research on climate change adaptation (2008), PAGASA has been purchasing new Doppler radars in five offices to gather more accurate metrological information to enhance its early warning.

⁴² Department of the Interior and Local Government. Republic of the Philippines. 'DILG Proposes Pooling of LGUs Calamity Fund for Disaster Response'. 21 October 2010.

Overview of 2011 Typhoon Washi

There were five strong typhoons and storms: Typhoon Muifa, Typhoon Nanmamdo, Typhoon Nesat, Typhoon Nalgae and Storm Washi that passed by the Philippines from July 2011. Among all, Tropical Storm Washi referred as ‘Sendong’ caused incredible damages to the country, killing more than 1,400 people. This storm was the 19th cyclone that passed the country in 2011, which intensified on December 15 as highest winds moved at the rate of 95km/h (60mph).

Storm Washi’s rapid movement caused landslides and flooding in the Northern Mindanao area affecting 13 provinces. Within several days, Cagayan de Oro and Iligan were inundated. PAGASA reported that ‘24 hours of rainfall in Cagayan de Oro recorded 180.4mm, adding up to about 32% of monthly average of 551.m’.⁴³ In some areas, flood water levels increased by 3.3m in less than hour.⁴⁴

It was the second most devastating natural disaster following the Japanese Earthquake that year. More than 698,882 people were affected by this storm along with economic losses adding up to USD \$48 million (PHP 2.068 billion).⁴⁵ Population in this region was greatly terrified because Mindanao rarely experienced tropical storms. According to the Mayor of Iligan, Storm Washi caused the worst flood in his city that happened so suddenly and rapidly overnight⁴⁶ shown in Figure 12 and the with large

⁴³ Citizens’ Disaster Response Centre. (2011). Philippine Disaster Report 2011.

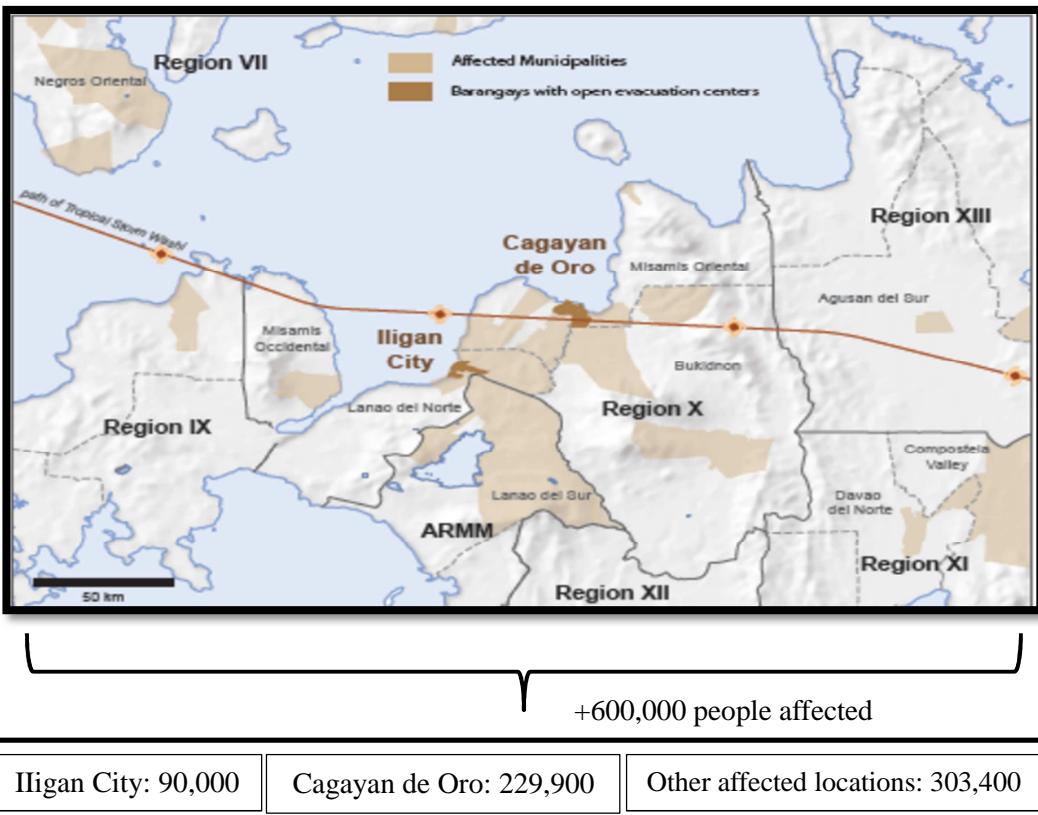
⁴⁴ “Storm-triggered floods ravage southern Philippines, kill at least 436”. Associated Press. The Washington Post. December 17, 2011. Retrieved December 17, 2011.

⁴⁵ Ramos, Benito T. (2012). Final Report on the Effects and Emergency Management re Tropical Storm “Sendong” (Washi). National Disaster Risk Reduction and Management Center.

⁴⁶ The Telegraph “Hundreds die as tropical storm Washi sweeps across Philippines”. Associated Press.

casualties indicated in Table 9.

Figure 12: Tropical Strom Washi in the Philippines as of 17 December, 2011



Source: Office for the Coordination of Humanitarian Affairs (OCHA). (2011). Philippines Tropical Storm Washi (Sendong)⁴⁷

December 17, 2011. <http://www.telegraph.co.uk/news/worldnews/asia/philippines/8963157/Hundreds-die-as-tropical-storm-Washi-sweeps-across-Philippines.html>

⁴⁷ Office for the Coordination of Humanitarian Affairs (OCHA). (2011). Philippines: Humanitarian Snapshot- Tropical Storm Washi (Sendong).

Table 9: Number of affected population by province and city in the Philippines

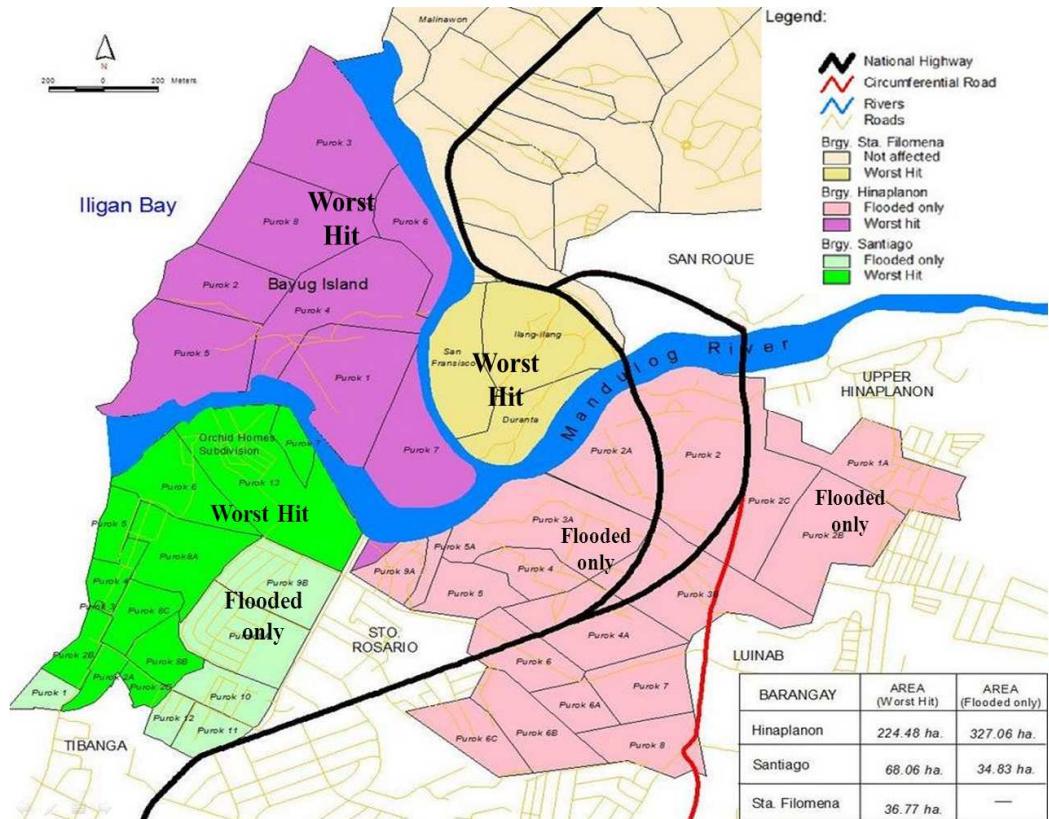
Province/City	Affected Population		
	Total	Male	Female
Region VII			
Negros Oriental	73,190	29,276	43,914
Region IX			
Zamboanga de Norte	4,947	1,979	2,968
Region X			
Bukidnon	12,406	4,692	7,444
<i>Lanao de Norte</i>			
Iligan City	91,922	36,769	55,153
Misamis Oriental	286,245	114,658	171,987
Cagayan de Oro City	233,081	93,232	139,849
Region XI			
Compostela Valley	2,510	1,004	1,506
Region XIII			
Agusan de Sur	2,825	1,130	1,695
Surigao de Sur	10,651	4,260	6,391
ARMM			
Lanao de Sur	139,879	55,952	83,927
Total	624,575	249,990	374,985

Source: DSWD DROMIC Portal as of 24 January 2012 adopted from United Nations 2012: Philippines. (Mindanao Response to Tropical Storm Washi), Adopted from United Nations: Response to tropical storm: Washi⁴⁸

The 2011 Philippine Disaster Report also highlights deaths of many women and children who were drowned when the river level increased in Cagayan de Oro and Iligan city. Furthermore, the government identified deforestation, illegal mining and climate change as key causes of this incident. The National Disaster Risk Reduction and Management Council has prepared a detailed map on areas affected by barangays as shown in Figure 13.

⁴⁸ United Nations. (2012). Second Emergency Report on Philippines (Mindanao) Response to Tropical Storm Washi.

Figure 13: Map of severely affected Barangays in Iligan as of January 16, 2012



Source: Denting Hopes of Storm ‘Sendong’ Victims⁴⁹

⁴⁹ ShelterCluster. Tropical Storm Sendong 2011. Iligan: Map of affected Barangays by districts.

A total of USD \$ 26,175,232.56 (PHP 1,082,531,415.00) economic damages were made in Mindanao and this figure is very high when considering that this is one of the poorest areas in the Philippines as indicated in Table 10.

Table 10: Economic Impacts of the Washi (Sendong) Storm in the Philippines
(cost of damages as of December 25, 2011)

Region/ Province/ City/ Municipality	Infrastructure				Agriculture		Total Cost (infrastructure and agriculture)
	Roads & Bridges/ Other Structures	Health Facilities	Schools		crops (rice and corn)		
# of schools damaged	Amount (schools)	Type of Crops/ livestock	Estimated Peso Value				
Grand Total	1,080,595,000.00				1,936,415.00		1,082,531,415.00
Total	946,950,000.00	27,700,000.00	33	105,945,000.00		1,936,415	1,082,531,415.00
Region V	-	-	-	-		385,015.00	385,015.00
Camarines Sur						384,715.00	384,715.00
Masbate						300	300
Region X	946,950,000.00	27,700,000.00	27	90,509,000.00			1,065,159,000.00
Bukidnon	21,950,000.00	1,000,000.00					22,950,000.00
Cagayan de Oro	775,000,000.00	9,900,000.00	14	61,874,900.00			846,774,900.00
Lanao del Norte	150,000,000.00						150,00,000.00
Iligan City		11,300,000.00	13	28,634,100.00			39,934,100.00
Misamis Occidental		-					-
Misamis Orient		5,500,000.00					5,500,000.00
Caraga	-	-	6	15,436,000.00		1,551,400.00	16,987,400.00
Surgao del Sur			6	15,436,000.00		1,551,400.00	16,987,400.00

Source: Ramos, Benito T. (2012). Final Report on the Effects and Emergency Management for Tropical Storm “Sendong” (Washi)

Response Action

The Government of the Philippines has coped Tropical Storm Washi in coordination with its government agencies, non governmental organizations and international partners. Implementation of evacuation activites was fairly rapid. In fact, there were continous warning alerts and situation reports prepared by national disaster mangement organizations.

Two days after the crisis on December 17, the National Disaster Risk Reduction and Management Council (NDRRMC) started to evacuate victims and provide necessary supplies under the leadership of the President Aquino Jr. III along with 20,000 soldiers who were mobilized to support relief activities. During December 18-19, NDRRMC began post-disaster risk assessments in most affected cities: Cagayan de Oro and Iligan.

On December 20, the President visited key sites: Cagayan de Oro and Iligan, and declared the State of National Calamity so that the government can command more funds in relief measures since there are a lot of administrative processes to get actions working in the country. The Government also accepted international humanitarian assistance since then. On 22 December, Emergency Revision was launched in Manila and requested \$28.6 million. On January 11, the government announced the Permanent Housing Plan at the Shelter Summit in Cagayan de Oro. In fact, the status of evacuation sites was continuously monitored and updated with detail information so that supply in need can be transported as indicated in Figure 14. The President organized ground breaking ceremonies for permanent shelter in Cagayan de Oro and Iligan, and expressed

his commitment for rehabilitation.

Table 11: Assets Deployed for Relief in the Philippines

Unit	Assets Deployed				
	personnel	vehicles	seacrafts	aircrafts	others
Total	2,854	150	34	10	37
Armed Forces of the Philippines (AFP)	1,337	45	11	10	5
Philippine National Police (PNP)	1,171	68	17	0	33
Philippines Coastal Guard(PCG)	36	5	5	0	0
Department of Health (DOH)	6	0	0	0	0
Bureau of Fire Protection (BFP)	304	32	1	0	29

Source: Ramos, Benito T. (2012). Final Report on the Effects and Emergency Management for Tropical Storm “Sendong” (Washi)

Table 12: Funds allocated for relief by districts in the Philippines (PHP)

Field Office	Stand by Funds	Relief Supplies	Total
CARAGA	1,317,438.00	3,997,759.47	5,315,197.47
IV-A	764,571.49	15,146,534.82	15,911,106.31
IV-B	1,384,546.04	2,755,001.45	4,139,547.49
V	479,987.35	25,457,323.45	25,937,310.80
VI	595,621.55	2,651,484.85	3,247,106.00
VII	944,982.27	3,816,484.85	4,761,466.30
VIII	1,091,465.35	40.,557.90	1,495,023.25
IX	506,963.99	1,472,822.90	1,979,786.49
X	36,301.00	1,186,382.00	1,222,683.00
XI	496,400.00	701,513.76	1,197,913.79
Total	7,438,250.04	57,588,953.33	65,027,114.27

Source: Ramos, Benito T. (2012). Final Report on the Effects and Emergency Management for Tropical Storm “Sendong” (Washi)

A total of USD \$158 million (PHP 65.027.114.27) had been allocated for relief purposes that had been officially announced as shown in Table 12. Apart from the national calamity fund, the President allocated another PHP 1.1 billion on December 24. Not only funds, but there is also number of people, transportation vehicles used for

relief purpose that had been reported by the government as in Table 11. The Philippine government tried its best to provide the most updated information on disaster relief status with detailed statistics that can bring more transparency and accountability to people. In fact, a week after the crisis, NDRRMC managed to collect the data of people who were killed and missing (Table 13) within a week after storm stroke. Moreover, Mindanao Declaration on Disaster Risk Reduction Priorities was prepared two months after the incident to increase awareness and capacity of disaster management of this area, which had been reluctant in the past.⁵⁰

Table13: Details of causalities in the Philippines (part of the list)

Region/Province/ Municipality/ Barangay	Name	Age	Address	Cause/Date/ Remarks
Grand Total	1,100	DEAD		
Region V	2			
Camannes Sur	1 Marabilio, Camilo	48	Brgy San Roque, Tinambac	
	1 Pacundo, Jose		Brgy San Roque, Tinambac	
Region VII	38			
	1 Aklan, Jovy	17	Brgy.West Balabag.Valencia	
	1 Aklan, Randy	10	Brgy.West Balabag.Valencia	
	1 Alooreza, Edwin Jesus	Legal Age	Brgy.Pujagan, Valerncia	
	1 Amorganda, Lelsa	60	Brgy.Tutubam, Sibulan	Previously reported missing
	1 Babon, Anavin	13	Brgy.Tutubam, Sibulan	Previously reported missing
	1 Babon,Lenley	10	Brgy.Tutubam, Sibulan	
	1 Babon, Mike John	8	Brgy.Tutubam, Sibulan	
	1 Barbon, Romeo	70	Brgy.Tutubam, Sibulan	
	1 xxx	xx	xxx	
	1 xxx	xx	xxx	

Source: Ramos, Benito T. (2012). Final Report on the Effects and Emergency Management for Tropical Storm “Sendong” (Washi)

⁵⁰ Mindanao Summit on DRR and Geo-Hazards Awareness. Mindanao Declaration on Disaster Risk Reduction Priorities. February 18-19, 2012, Cagayan de Oro City.

The civil society ranging from private sector, religious groups, academia and NGOs was actively responded to this incident. 250 member companies of the *Philippines Business for Social Progress* (PBSP) and its partners in the *Corporate Network for Disaster Response and the Philippine Disaster Recovery Foundation* donated financially and provided relief resources. The *Red Cross Philippines* coordinated site projects and organized a group called ‘Typhoon Sendong Disaster Operation Supporter’⁵¹ to raise funds from corporate and individuals. In addition, *Sendong Aid*⁵² was organized in support of the Philippines Department of Social Welfare and Development (DSWD)-Multi-Sectoral Relief Response Operation Center to coordinate with public and private sector by organizing cluster meetings and setting advisory groups for relief activities. A citizen led movement known as *Balsa Mindanao* (People’s Mobilization for Disaster Reponse and Climate Justice)⁵³ was also organized on January 14, 2012, composed of religious groups, social workers, psychiatrists and students responding to humanitarian crisis. Some of the member groups of *Balsa Minadano* are listed in Table14. *Balay Mindanaw Foundation* Inc. is another non-governmental organization that put a lot of effort on restoration activities in Minadanao.

⁵¹ Typhoon Sendong Disaster Operation Supporters. *Philippine Red Cross*. Retrieved October 25,2012, from <http://www.redcross.org.ph/sendong>

⁵² Sendong + Aid. Retrieved October 23, 2012, from. <http://www.sendong-aid.com.ph/>

⁵³ “Balsa Mindanao launches stress debriefing for Sendong survivors; calls for climate and economic justice,” *Davao Today*, January 16, 2012. Retrieved October 20,2012, from <http://davaotoday.com/main/2012/01/16/balsa-mindanao-launches-stress-debriefing-for-sendong-survivors-calls-for-climate-and-economic-justice/>

Table 14: List of organizations in *Balsa Mindanao*

Type	Organizations
Religious	United Methodist Church Committee on Relief (UMCOR)
	Religious of the Virgin Mary (RVM)
	Mindanao Social Apostolate, United Church of Christ in the Philippines
	Religious Good Shepherd - Women for Justice, Peace and Integrity of Creation (RGS-WJPIC)
	Society of Divine Vocations (SDV)
	Missionary Sisters of the Society of Mary (SMSM)
	Rural Missionaries of the Philippines Northern Mindanao
	Sacred Heart Brothers, Charles Borromeo Sisters
	Missionary Sisters of Mary
	Missionaries of the Assumption
	Promotion of Church People's Response
Academia	Educators' Forum for Development Mindanao
	Holy Cross Davao College
	University of Mindanao Social Work Department
Local govt.	Office of Vice Governor Norris Babiera of Misamis Oriental
Political party	Bayan Muna
NGOS	Panday Bulig, Citizens Disaster Response Center
	Gabriela, women's advocacy group
	Kalumaran, Mindanao-wide indigenous alliance
	Panalipdan Mindanao – environment
	Community Based Health Services Association
	Philippine Veterinary Medical Association - Northern Mindanao Chapter
	Humane Society International.

Source: *Davao Today*

Moreover, the Mindanao Summit on Disaster Risk Reduction was convened in February 2012. Scientists, academic experts, civil society organizations, lawmakers and environmental officials tried identify priority programs on climate change strategies that would be applicable for Mindanao to become more resilient. This implies strong network and will of the civil society to support disaster mangment operations in the country.

The government responded immediately to international assistance and prepared systematic mechanisms to facilitate and monitor the incoming aids. On

December 22, NDRRMC implemented ‘Tropical Storm Sendong One Stop Shop (OSS) Facility for the Acceptance and Processing of Foreign Donations’ as a transitionary guidance in responding to large amounts of emergency relief aid. This facilitated acceptance and inspection of these funds in rehabilitation process. This mechanism was organized and proceeded in collaboration of the Bureau of Customs and the Department of Social Welfare. There were clear guidelines on responsibilities of assigned agencies. The Department of Foreign Affairs was in charge of delivering relief materials to relevant international organizations that were identified which were the Office of Civil Defense, the Department of Health, the Department of Education, and the Department of Public Works and Highways. NDRRMC along with its Chief of Operation Center coordinated all transactions between donors and recipients.

In fact, the Philippines received a lot of humanitarian funding immediately after its catastrophe as shown in Appendix 1 adding up to USD 75,654,061. The usage of funding was monitored by UN agencies in coordination with National Disaster Risk Reduction and Management Council and the government prepared a final report on how the emergency aid was used and managed. In addition, the government organized several inter-agency cluster meetings for consultation on follow up activities.

Nevertheless, the government had been criticized for poor quality of evacuation centers lacking adequate bathrooms and water.⁵⁴ At the same time, national authorities were blamed for its unprepared disaster predictability and slow delivery of relief goods

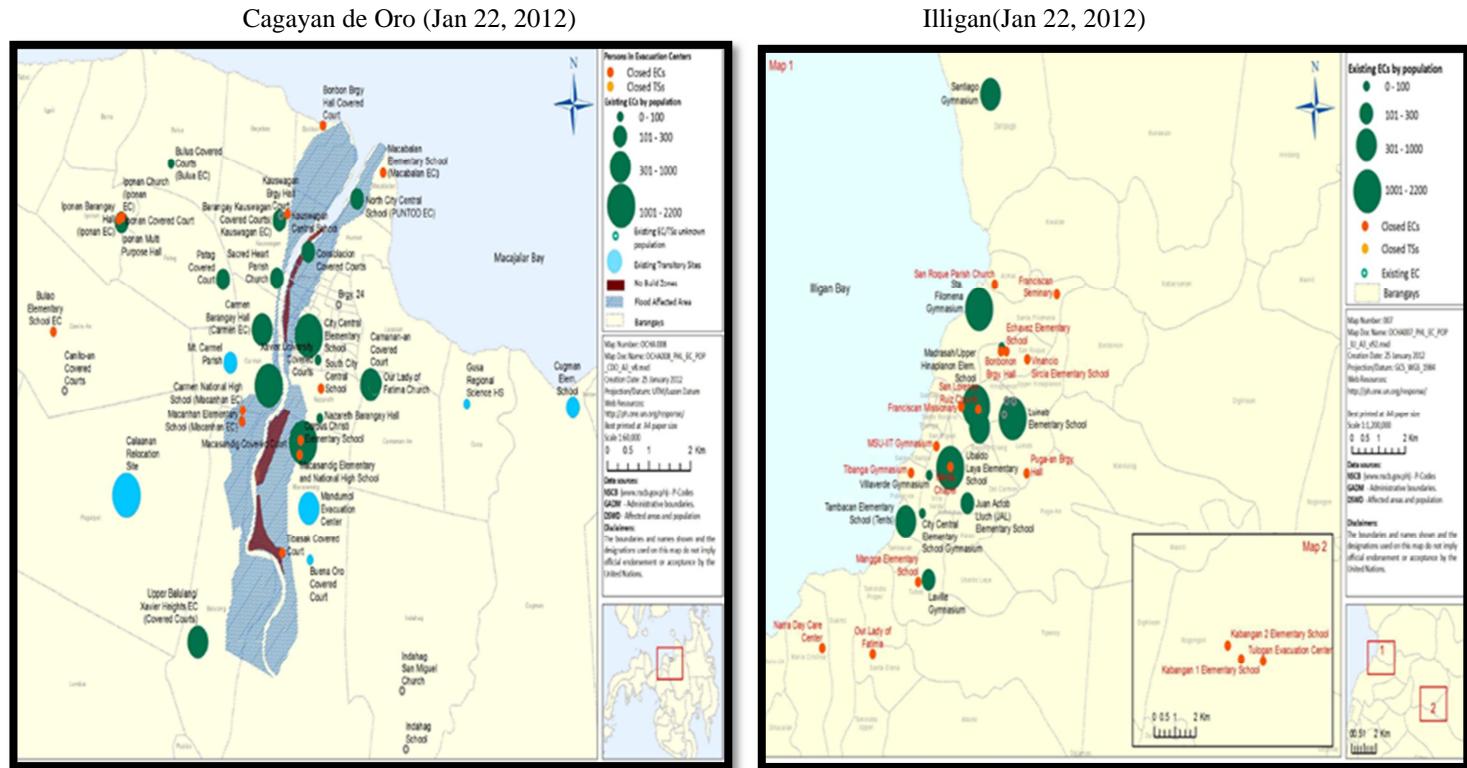
⁵⁴ Maboloc, Gleean. (2011). ‘Sendong’: a disaster that was waiting to happen. Oxfam in the Philippines.

that were hindered by damaged roads and infrastructure.⁵⁵

Overall, the government responded to this crisis in a timely manner taking account of weak disaster management framework in affected areas compared to other areas in the country where its vulnerability to hazards had been comparatively low. Furthermore there was clearly a strong coordination between related stakeholders. It is also important to note that Mindanao had been in conflict with the national government due to Islamic insurgencies. But the government organized Islamic Cooperation Humanitarian Mission to devastating areas in Northern Mindanao and continued to cope with the disaster regardless of political differences.

⁵⁵ BBC News. “Philippine Floods: President declares national calamity”. December 20 2011.

Figure 14: Status of Evacuation Centre in the two most severely hit cities: Cagayan de Oro and Iligan
Tropical Storm (Sendong)- Evacuation Center and Transitory Site Population



Source: United Nations. (2012). Second Emergency Report on Philippines (Mindanao) Response to Tropical Storm Washi

5.2 Case Study #2: Thailand

Demographics

Thailand is located in mainland of Southeast Asia neighboring Cambodia, Laos, Malaysia and Myanmar with a population of 69,518,555 people as of 2011. It is the only Southeast Asian country that has never been under a colonial rule. The country has a unitary parliament and constitutional monarchy. Different government types like military regime and electoral democracy have existed. In fact, until 2010, the country was politically unstable due to political protests to support the former Prime Minister Thaksin Shinawatra and strike against the incumbent regime of Prime Minister Abhisit Vejjajiva at the time. Its 2001 income per capita income in PPP has been USD \$9,396.

Geography and Disasters

With a land size of 513 sq. km, Thailand extends 1,500 km from north to south and 800 km from east to west. The golden axe shapes both the South China Sea and the Indian Ocean. Thailand can be divided into four main geographical regions: North, Central Plains, Northeast, and South. The North is mainly mountainous, which serves as the origin of four major rivers: Ping, Wang, Yom, and Nan that converge to become the Chao Phraya River, the lifeline of the Central Plain. The whole region lies above 200 m elevations. The Northeast occupies one-third of the country's total land area and is the most populous and lowest income region. The Northeast is a dry plateau at 100 to 200 m elevations. Large parts of this region regularly experience floods and droughts. Saline soils are also the major problem of this region causing low land productivity.

Table 15: Watershed Areas and Annual Runoff of the Major River Basin in Thailand

Basin No	River Basin Name	No. Watershed Area (sq.km)	Annual run-off (million m ³)
1	Part of Salawin	17,920	8,156
2	Part of Mekong	57,422.07	15,800
3	Kok	7,895.38	5,119
4	Chi	49,476.58	8,035
5	Mun	69,700.44	21,767
6	Ping	33,891.71	6,686
7	Wang	10,790.74	1,429
8	Yom	23,615.59	1,430
9	Nan	34,330.16	9,518
10	Lower Chao Phraya	20,125.25	4,925
11	Sakae Krang	5,191.43	519
12	Pasak	16,292.24	2,708
13	Tha Chin	13,681.24	2,815
14	Mae Klong	30,863.76	12,943
15	Prachinburi	10,481.32	4,502
16	Bang Pakong	7,978.32	4,900
17	Part of Tonle Sap	4,149.97	1,193
18	East Coast Gulf	13,829.72	25,960
19	Phetchaburi	5,602.91	1,140
20	West Coast Gulf	6,745.33	1,013
21	Pennisular-East Coast	26,352.78	35,624
22	Tapi	12,224.53	17,380
23	Thale Sap Songkhla	8,494.97	7,301
24	Pattani	3,857.82	3,024
25	Pennisular-West Coast	21,172.25	9,918
Total		512,065.81	214,128

Source: Office of the National Water Resources Committee (2000)⁵⁶

Thailand is divided into 25 river basins based on its geographical traits. The average of annual rainfall for the country is about 1,700 mm. Total annual rainfall of all river basins is about 800,000 million m³. 75 percent of the total is lost through evaporation

⁵⁶ Office of National Water Resources Committee. 2000. National Water Vision: A Case Study of Thailand.

and evapotranspiration and remaining 25 percent (200,000 million m³) go into streams, rivers, and reservoirs (Table 15).

Flash floods have been threatening Thailand. In fact, in the past, there have been severe floods in 1942, 1983 and 1995 where the Chao Praya River had been always stuck with disasters. As a result, it has been recognized as the seventh most flood prone country in the world.⁵⁷ Nevertheless, recent flood caused the greatest physical and economic disasters. World Bank has found that the damages from 2011 disasters were more than 100 times greater than the impact from 1983⁵⁸.

Disaster Management Framework (institution, legal, budget, capacity)

Disaster management in Thailand originates from national defense measures taken during World War I. Khunwishit and McEntire denote that modernized comprehensive disaster and emergency management system has only been developed in Thailand after the 2004 Southeast Asian Tsunami. There are some disaster management legislations like the Civil Threat Prevention Act 1797, the National Accident Prevention 1983 and the Fire Prevention and Control Act that have become cornerstone of modern day disaster management.

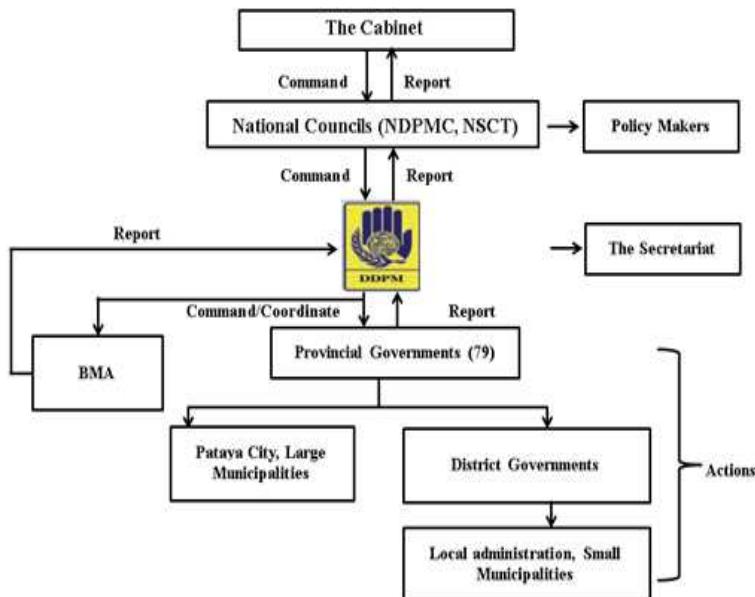
Since President Thaksin's regime, there were institutional reforms to strengthen disaster management in national agenda. The Department of Disaster Preparedness and

⁵⁷ Preventionweb. <http://www.preventionweb.net/english/countries/statistics/index.php?cid=170>

⁵⁸ World Bank. Global Facility for Disaster Reduction and Recovery. (2012). Rapid Assessment for Resilient Recovery and Reconstruction Planning.

Mitigation (DDPM) was established in 2002 under the Ministry of Interior by restructuring five government institutions. Its organizational structure is as portrayed in Figure 15.

Figure15: Organization Chart of National Disaster Prevention and Mitigation – Thailand

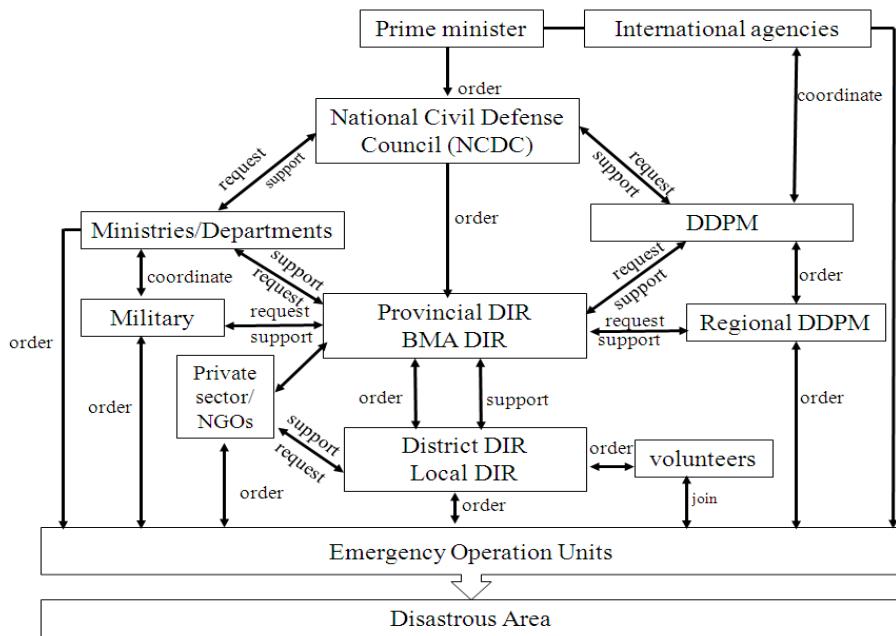


Source: Paksuchon, Amornthip (2011). Department of Disaster Prevention and Mitigation⁵⁹

Disaster management structure in Thailand involves various stakeholders both at national and local levels as shown in Figure 16. The National Disaster Prevention and Mitigation Committee (NDPMC) is a national multi-sectoral body responsible for policy formulation and planning for disaster preparedness, mitigation, and response. The NDPMC is chaired by the Prime Minister or the Deputy Prime Minister. NDPMC includes representatives of line government organizations and qualified persons appointed by the Cabinet.

⁵⁹ Paksuchon, Amornthip. Thailand on disaster risk management 2011 Department of Disaster Prevention and Mitigation.

Figure16: Disaster Management System of Thailand



Source: Cheong, TS. (2012). National Disaster Management Institute, Korea⁶⁰

The National Disaster Prevention and Mitigation Plan (NDPMP) (2010–2014)

provides a basis for national-level DRM activities like: 1) conceptual framework of disaster management; 2) classification of disaster scale; 3) roles and responsibility of government ministries, agencies, state enterprises; and 4) standard operating procedures. Apart from above, there are numerous ministries and actors for various aspects of disaster risk reduction (DRR) like (1) the Thai Meteorological Department (TMD) providing weather forecasts and disaster warnings, (2) the Royal Irrigation Department (RID) managing most of the hydraulic facilities such as drainage canals, sluices and dams (3) the Department of Water Resources (DWR) providing information on flood and river basin and etc.

⁶⁰ Cheong, TS. (2012). National Disaster Management Institute, Korea. Field Research on the cause and effects of the 2012 Thailand Flood.

In 2007, the National Disaster Prevention and Mitigation Act (NDPMA) was passed with the mandate of authorizing DDPM be the focal organization. It operates in all 76 provinces and has 18 regional centers. Some of NDPMA features are as follows:

- (1) Extending the scope of disaster management activities to encompass all types of disasters,
- (2) Designating National Disaster Prevention and Mitigation Committee as the coordinating body for policy formulation through the National Disaster Prevention and Mitigation Plan (NDPMP),
- (3) Designating DPPM as national focal point for disaster management activities,
- (4) Formulating three disaster prevention and mitigation plans (for National, Provincial and Bangkok Metropolitan Administration), and
- (5) Clearly identifying of responsible authorities and persons for disaster management tasks at all levels.

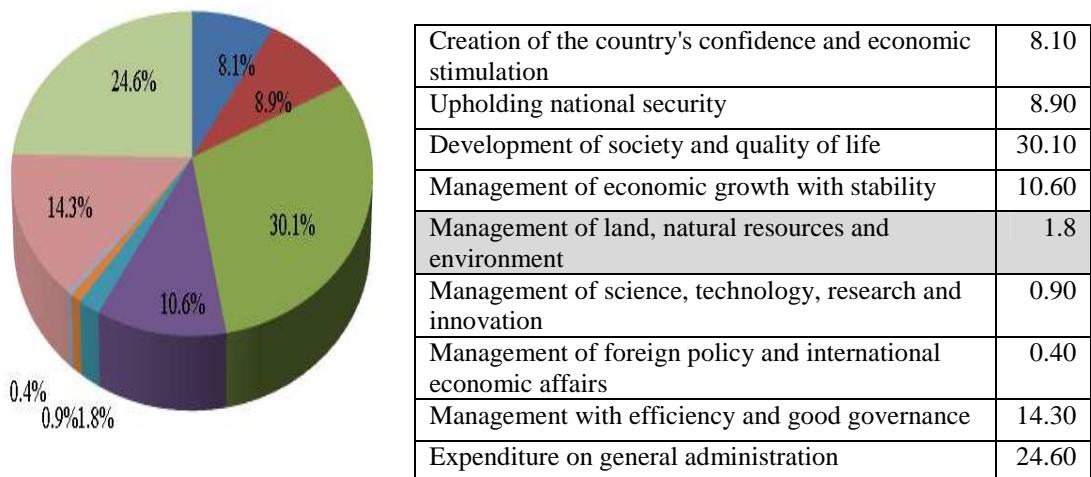
As shown in Table 16, the budget size for NDPM has been augmenting. Moreover, in 2011, the Bureau of the Budget has officially announced that a total 36,987.7 million baht, equivalent to 1.8 percent of the total budget to be allocated for the management of natural resources and environment to cope with the world's climate change as indicated in Figure 17.

Table 16: Budget of National Disaster Prevention & Mitigation Committee (2003-2011)

Year	Thai Bhat	USD
2003	1,066,412,900	34,690,186.82
2004	1,312,578,500	42,697,901.89
2005	1,658,362,700	53,946,189.02
2006	2,437,850,700	7,930,276.93
2007	1,948,805,800	63,394,241.84
2008	2,184,972,800	71,076,704.56
2009	2,315,783,900	75,331,962.06
2010	2,541,163,300	82,663,506.43
2011	2,919,100,000	94,957,707.61

Source: Paksuchon, Amornthip (2011). Department of Disaster Prevention and Mitigation and Bureau of the Budget, Thailand

Figure 17: National Budget 2011– Thailand (%)



Source: Bureau of the Budget, Thailand. (2011)⁶¹

The Strategic National Action Plan (SNAP) on Disaster Risk Reduction 2010–2019 was produced by DDPM to ensure disaster risk management is mainstreamed in the national plans of all government institutions, and remains a national priority, as agreed to in the Hyogo Framework of Action (HFA).⁶² However, as a fairly new strategy, it has not been made familiar within government institutions.

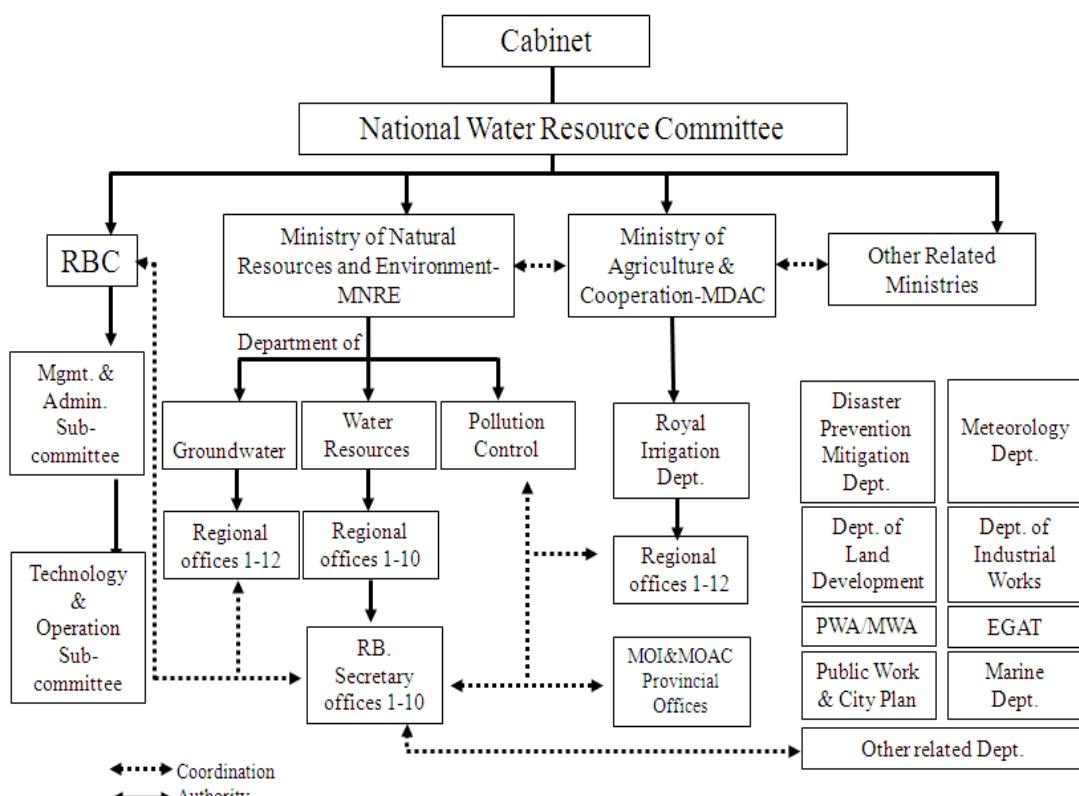
As the country is very prone to hydro-meteorological disasters, the government has institutionalized committees and organizations particularly for water related disasters as shown in Figure 18. The Department of Water Resource is in charge of monitoring, coordinating and implementing water resource conservation and rehabilitation. It is responsible for managing 25 river basins in the country. At the same time, the Royal

⁶¹ Bureau of the Budget, Thailand. (2011) Thailand's Budget in Brief Fiscal Year 2011.

⁶² National Disaster Prevention and Mitigation Plan B.E.2553-2557 (2010–2014), Department of Disaster Prevention and Mitigation, Ministry of Interior, RTG.

Irrigation Department is in charge of water provision, maintenance, and allocation. Along with these two agencies, other related offices like the Meteorological Department and the Disaster Prevention Mitigation Department are responsible for coordinating water management in Thailand by organizing the National Water Resource Committee.

Figure18: Structure of the National Water Resource Committee in Thailand



Manuta et al. (2006) identify four problems of Thailand's water management

system which are poor coordination, incomplete implementation, weak monitoring and

⁶³ Cheong, TS. (2012). National Disaster Management Institute, Korea. Field Research on the cause and effects of 2012 Thailand Flood.

evaluation, and narrow deliberation capacity. Consequently, Unger and Siroros (2011) perceive that poor water management as a crucial problem because despite regulatory framework for different agencies they do not cooperate due to collective action problems. Despite, existing national disaster management framework and legislative measures, Marks (2011) describes that fragmented political situation due to crony capitalism has affected government agencies in Thailand to compete for climate change and disaster management issues. He criticizes low institutional quality and insufficient coordination among different line ministries due to different jurisdiction, plans and budgets of each organization and sometimes competition for information sharing with other departments. At the same time, there are often government plan changes that result in confusion and impediment of policy implementation.

Overview of 2011 Thailand floods

The 2011 flooding in Thailand started very gradually as shown in Figure 21. A lot rain poured since May. In late June, the amount of rainfall was adding up to more than 128 percent of the average rainfall with the storm Haima in the northern regions of Thailand. From July to August, the rainfall increased with more than 150 percent of average rainfall for each month with tropical storm Nock-Ten passing by the country. Apart from Haima and Nock-ten, there were three other tropical systems: Haitang, Nesat and Nalgae that affected the hydro-meteorological conditions in the country. The flood waters reached up to around 50cm in some areas. According to the local media, almost all lower central provinces were

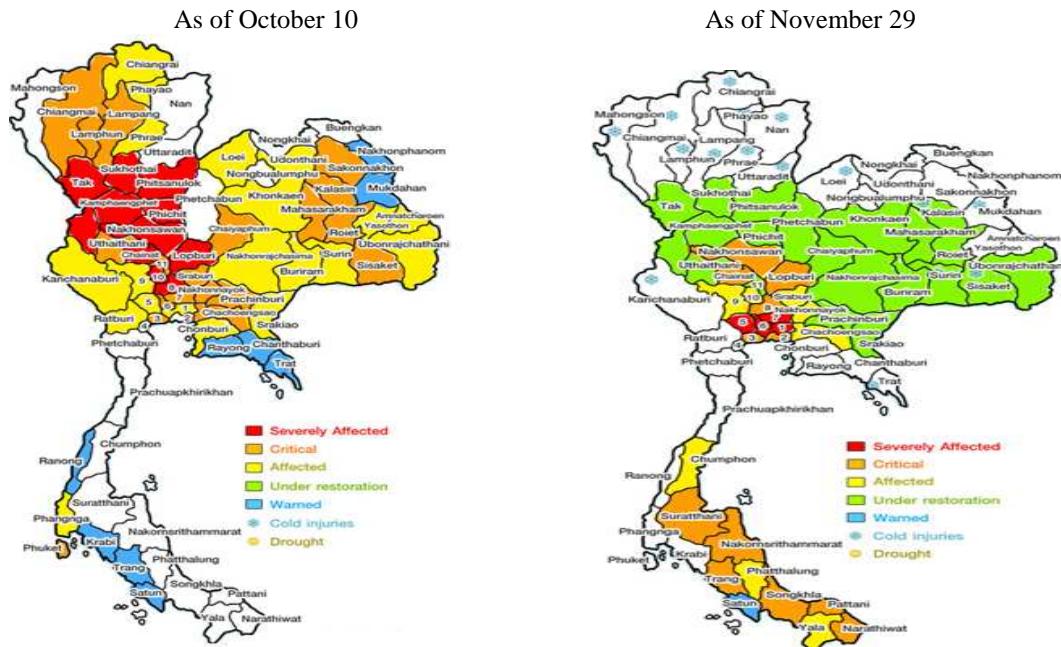
affected by Flood by early September.⁶⁴ Bangkok was also threatened from this flooding as floodwaters drained from Ayutthaya since October. Many industrial zones and suburban areas were affected by this flooding as the flood barrier in Pathum Thani failed, causing the water levels to increase at least as high as 80cm. Until October, the country experienced massive rainfall that moved to eastern regions. In fact, the accumulated water from months of storms and above average precipitation caused the flooding in central regions. In the end of November and early December, the situation started to settle down as the water was drained to the Chao Praya River and into the Gulf of Thailand.

Overall, floods affected 66 provinces of 77 (Figure 19) and more than 13 million people and resulted in 815 deaths. Flooding inundated around 2.04 million hectares of agricultural land and about 9,859. A total of USD \$ 46.5 billion (THB 1.43 trillion) damages were made from which 90% were losses from the private sector (refer to Table 17). Among many other industries, was hardly hit as 70% of the total damage and losses were caused from flooding in the six industrial zones in Ayutthaya and Pathum Thani.

Several factors worsened this flood in Thailand. The first element is unpredictably large of amount of rainfall that exceeded 150 percent of the annual average along with five consecutive storms moving by due to climate change. Second factor is its geographical characteristics where lands are very plain with low height above sea level that lack water permeability.

⁶⁴ MCOT. "Thailand's flood death toll rises to 112". MCOT. 19 September 2011.

Figure 19: Affected Provinces in Thailand (October- November)

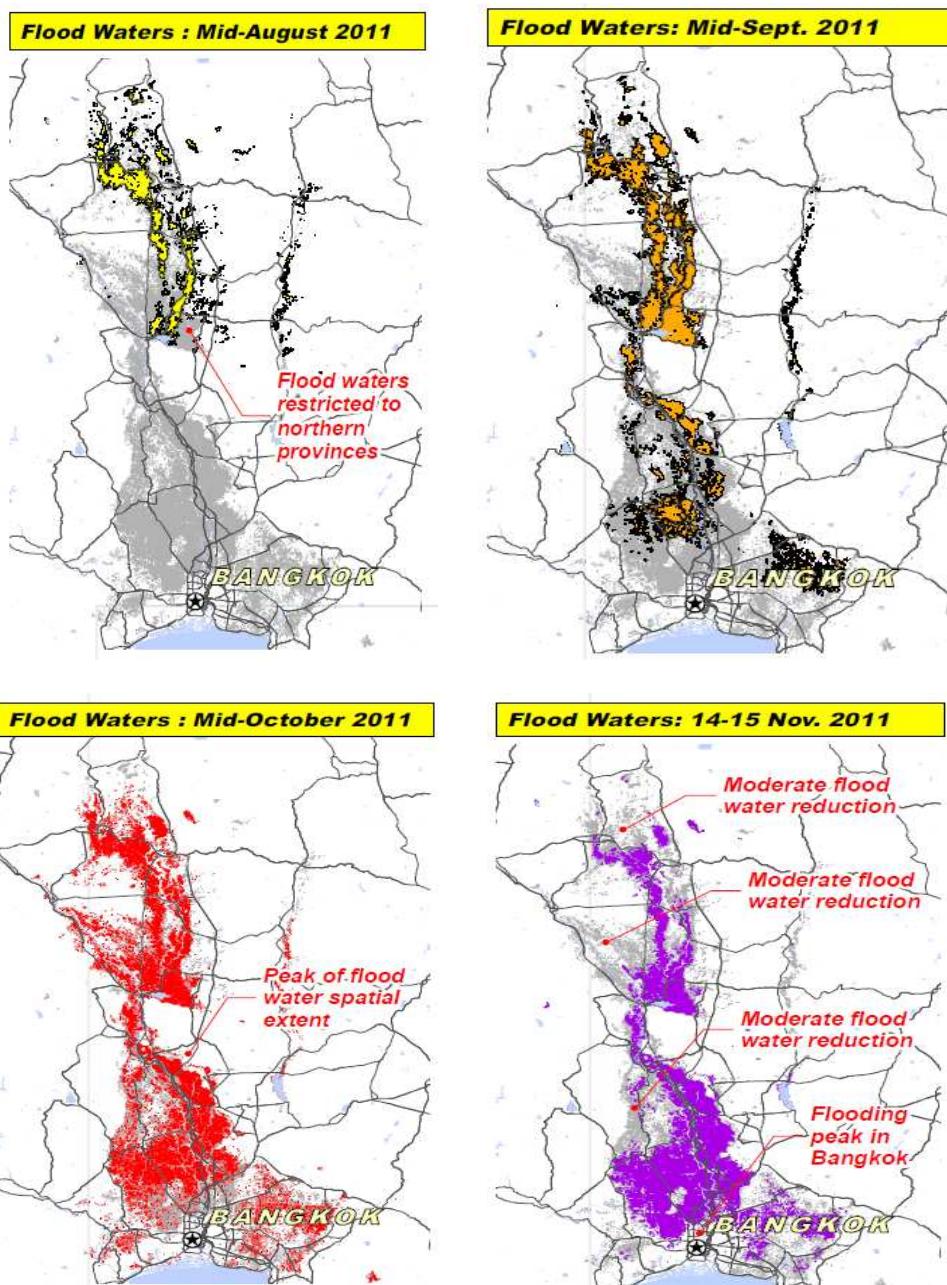


Source:Thaiflood⁶⁵

1	Amnat Charoen	18	Lampang	35	Phang Nga	52	Si Saket
2	Ang Thong	19	Lamphun	36	Phattalung	53	Singburi
3	Ayutthaya	20	Loei	37	Phrayao	54	Songkhla
4	Bangkok	21	Lopburi	38	Petchaburi	55	Sukhothai
5	Buriram	22	Maha Sarakham	39	Phichit	56	Suphanburi
6	Chachoengsao	23	Mukdahan	40	Phitsanulok	57	Surat Thani
7	Chainat	24	Nakhon Nayok	41	Phrae	58	Surin
8	Chaiyaphum	25	Nakhon Pathom	42	Phuket	59	Tak
9	Chiang Mai	26	Nakhon Phanom	43	Ratchaburi	60	Trang
10	Chiang Rai	27	Nakhon Ratchasima	44	Rayong	61	Ubon Ratchathani
11	Chonburi	28	Nakhon Sawan	45	Roi Et	62	Udon Thani
12	Chumphon	29	Nakhon Si Thammarat	46	Sa Kaeo	63	Uthai Thani
13	Kalasin	30	Narathiwat	47	Sakhon Nakhon	64	Uttaradit
14	Kamphaeng Phet	31	Nong Bua Lamphu	48	Samut Prakan	65	Yala
15	Kanchanaburi	32	Nonthaburi	49	Samut Sakhon	66	Yasothon
16	Khon Kaen	33	Pathum Thani	50	Samut Songkram		
17	Krabi	34	Pattani	51	Saraburi		

⁶⁵ Thailand Flood Map. Thaiflood. Retrieved September 12, 2012 from <http://www.thaiflood.com/en/>

Figure 20: Time series analysis of Thai Floods in 2011



Source: Relief web (produced by UN Institute for Training and Research & UNOSAT).⁶⁶

⁶⁶ UNITAR & UNOSAT. (2011). Thailand: Time Series Analysis of Thailand Flooding. Retrieved July 30,2012, from <http://reliefweb.int/map/thailand/thailand-time-series-analysis-thailand-flooding-2011-22-november-2011>

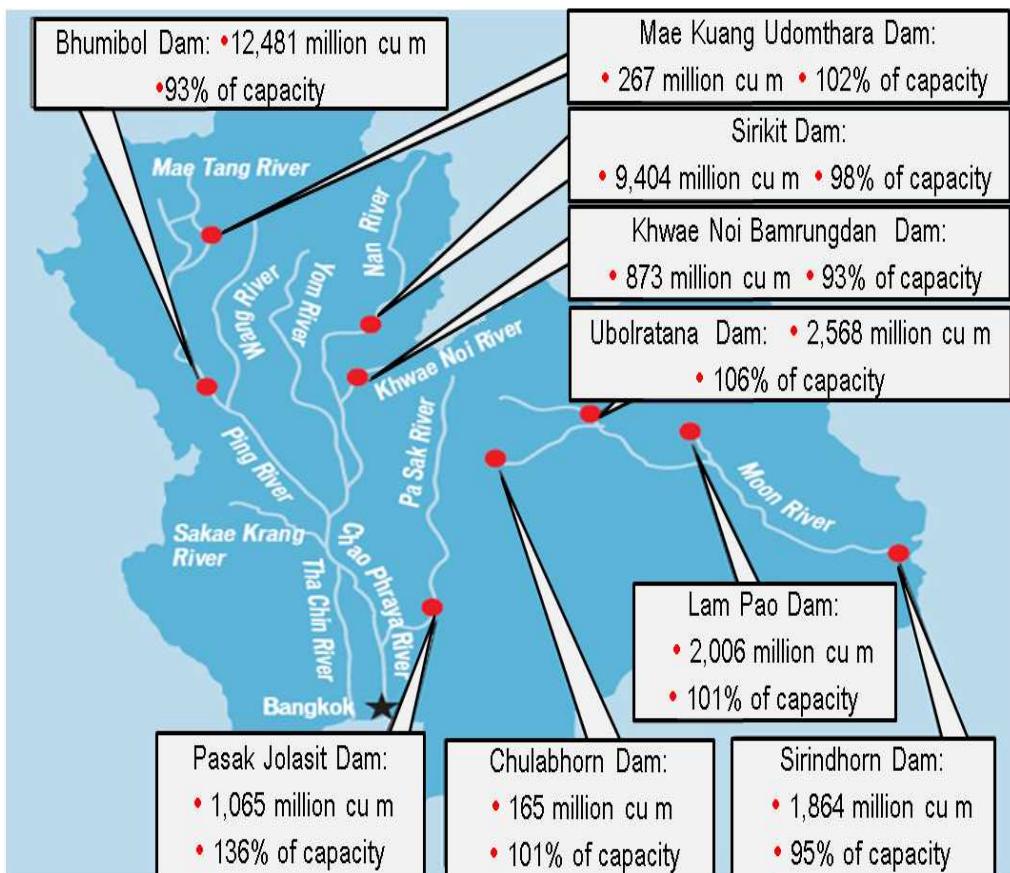
Table 17: Summary of damages and losses in Thailand (Thai baht, millions)

Sub Sector	Disaster Effects		
	Damage	Losses	Total
Infrastructure			
Water Resource Management	8,715	-	8,715
Transport	23,538	6,938	30,476
Telecommunication	1,290	2,558	3,848
Electricity	3,786	5,716	8,901
Water Supply and Sanitation	3,497	1,984	5,481
Productive			
Agriculture, Livestock and Fishery	5,666	34,715	40,381
Manufacturing	513,881	493,258	1,007,139
Tourism	5,134	89,673	94,808
Finance and Banking	-	115,276	115,276
Social			
Health	1,684	2,133	3,817
Education	13,051	1,798	17,849
Housing	45,908	37,889	83,797
Cultural Heritage	4,429	3,076	7,505
Cross Cutting			
Environment	375	176	551
Total	630,354	795,191	1,425,544

Source: DDPM

Moreover, upper region did not have sufficient flood control capacity impeding Thailand's water system to function well since the heavy rain. Floodgates were broken causing water to flow through irrigation canals and inundating many areas. At the same time, many dams operating under its full capacity (as shown in Figure 21) had to increase their discharge rate. From September 14 to October 3, ten major flood control systems were overflowed or ruptured, deteriorating the situation. After all, the government has been criticized for its poor coordination and management during the crisis.

Figure 21: Dam's in Thailand at Breaking Point, October 2011



Source: Chiang Rai Times⁶⁷ (Map prepared by Royal Irrigation Department)

⁶⁷ Chiang Rai Times. "Dam's in Thailand at Breaking Point." October 1st, 2011. <http://www.chiangraitimes.com/news/2778.html>

Response Action

The government was well aware of water conditions of the country due to heavy rain since May. But with election campaigns and other priorities, it was reluctant to take rapid response measures. Only on August 12, newly elected Prime Minister Yingluck Shinawatra assigned members of the cabinet and parliamentarians to visit and monitor areas affected by flood and also sought out to foster disaster management cooperation with local governments. By then 28 provinces have been declared as emergency areas by the Department of Disaster Preparedness and Mitigation (DDPM). In order to coordinate warning and relief activities, the 24/7 Emergency Operation Center for Flood, Storm and Landslide was established as a body under DDPM on August 20.⁶⁸

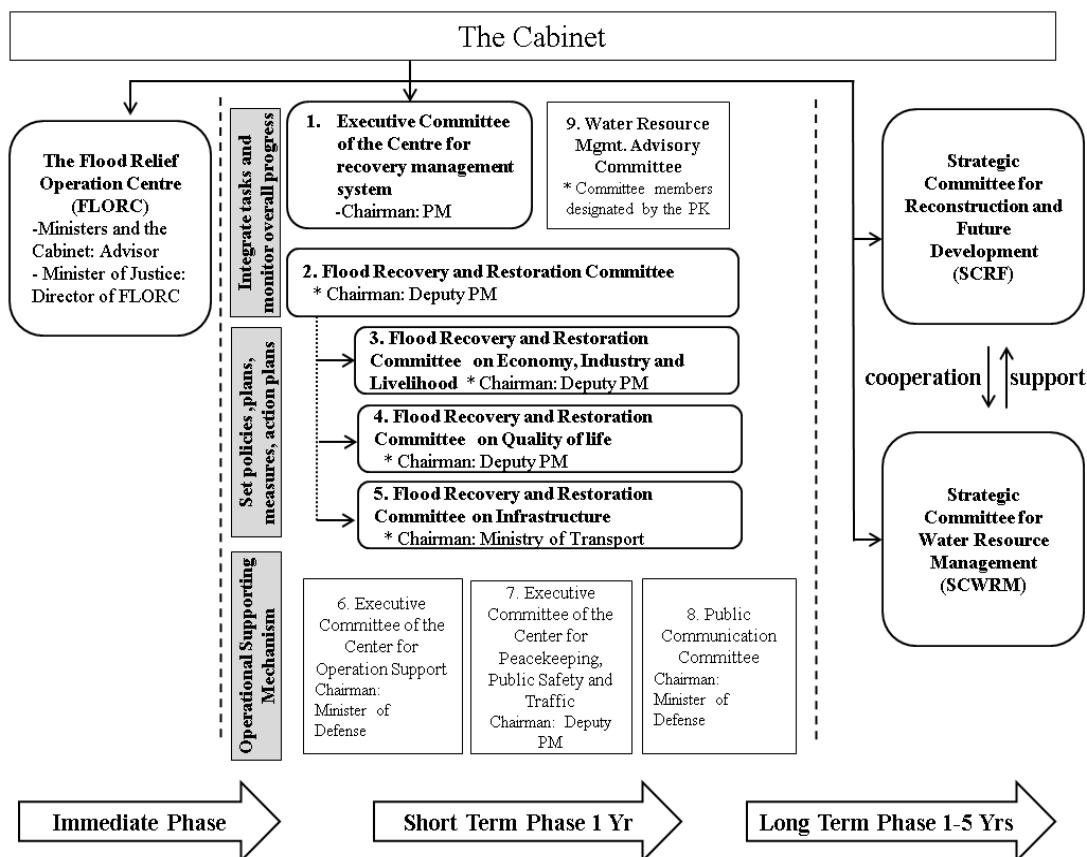
Figure 22 depicts how the Thai government established institutional mechanism to handle the 2011 flooding. As the catastrophe spread across the country, the government established the Flood Relief Operations Center (FROC) in October 8 with Justice Minister as the Chair. The key responsibility of this center is to monitor, set guidelines and measures to divert water and minimize the impact of the floods. By mid-October, the Prime Minister had declared the use of Section 31 of the Disaster Prevention and Mitigation Act to speed up the relief process as well as to control and monitor all the actions taken by government agencies. This section allows full authority to command and direct all government agencies and local administration agencies to implement measures for disaster relief and protection, as well as provide assistance to affected people in designated areas.

On 25 October, the Cabinet approved a four-phase relief and recovery plan and

⁶⁸ Bangkok Post. “Interior sets up flood war room”. 18 August 2011. 3 October 2012. <http://www.bangkokpost.com/breakingnews/252396/interior-sets-up-flood-war-room>

package for immediate response, flood assistance, post-crisis rehabilitation and long-term phase. Relevant ministers also carried out their respective responsibilities on social protection, sanitation and hygiene, transportation, education and water management, etc. On November 8, the government created two strategic committees: Strategic Committee for Reconstruction and Future Development, and Strategic Committee for Water Resources Management to strengthen resilience building in the country with a comprehensive strategy.

Figure 22: Flood Recovery and Restoration Operating Committee and Mechanisms for Thailand Flood Relief, Rehabilitation and Prevention



Source: Office of the National Economic and Social Development Board, Thailand.⁶⁹

⁶⁹ Office of the National Economic and Social Development Board, Thailand. <http://www.nesdb.go.th/Portals/0/home/interest/kvo/data1-2.pdf>

Line ministries also coordinated to provide necessary support to the national disaster management organizations and rescue people. The Ministry of Social Development and Human Security was in charge of building more than 2,400 evacuation centers nationwide along with the Bangkok Metropolitan Administration responsible of setting up another 175 in the capital. Medical support was provided by the Ministry of Public Health as it prepared emergency clinics throughout affected areas for victims. The Royal Irrigation Department, the Thai Meteorological Department, and the Department of Mineral Resources examined, forecasted and analyzed weather and water situations in major basins and throughout the country and sent out early warnings alerts.

The Royal Thai Government tried to give immediate financial support to as many victims as possible. Cash grant of USD \$163 (THB 5,000) were set aside to be given to each affected family and for poor households another USD \$65 (THB 2,000) were allowed.⁷⁰ The government also tried to set up low interest loans and insurance to affected businesses. It is noted that the government has spent about USD \$ 259,573 (79,750 million THB) for restoration and compensation to flood victims from October 2011 to May 2012.⁷¹

The military was actively engaged in the response and recovery activities especially in mobilizing diverse resources to flood affected areas. The Royal Thai Army sent 56,000 army, naval and air force personnel to concentrate on water management, evacuation of civilians. They managed relief supplies and supported other agencies and sectors. The Royal Thai Navy and the Royal Thai Air Force also contributed to protect the public with

⁷⁰ GFDRR. Thai Flood 2011. Rapid Assessment for Resilient Recovery and Reconstruction Planning. The World Bank.

⁷¹ Poapongsakorn, Nipon.(2012). The Thai 2011 Flood and Impact on Household Expenditures and Income. Thailand Development Research Institute presented at the 13th International Convention of the East Asian Economic Association.

their own specialties.

Along with government response initiatives, civil society played an important role in preparing packing nourishment kits and aids to victims. The support from Thai Red Cross was significant by providing major rescue and relief goods. One of the articles from the Bangkok Post titled “Volunteers stream in to help flood victims across country” vividly describes how active volunteers were out in the relief areas to provide assistance to victims.⁷²

One cannot deny the relief efforts of Thai government agencies to reduce disaster impacts for 2011 Flooding. Nevertheless, it experienced poor technical assessment management and faced coordination problems among related agencies that led to confusion in roles and responsibilities that were influenced by the political game especially between the central government and the Bangkok Metropolitan Administration. Instead of responding effectively, opposing powers were blaming each other for cause of the flooding.

Although there were proper disaster management institutions and law enforcement in place, there was insufficient information sharing among different departments. Sauwakon Ratanawijtrasin notes bureaucratic structure of the Flood Relief Operations Command (FROC), which did not even want to share hydro-meteorological information with citizens without appropriate flood mitigation plans. This was revealed through the Don Muang International Airport incident where FROC officials had to escape from water flow into their office.⁷³ Furthermore, FROC announced that industrial zones will be safe from flood but

⁷² Bangkok Post. “Volunteers stream in to help flood victims across country”. December 10, 2011. Retrieved October 12, 2012 from <http://www.bangkokpost.com/news/local/260868/volunteers-stream-in-to-help-flood-victims-across-country>

⁷³ Sauwakon Ratanawijtrasin. (2012). Thailand’s Great Water Waltz of 2011: Implications for Education Design,

within few hours these areas were inundated. But warning alerts were given too late that people in these industrial zones had no time to prepare for disaster since people strongly believed in government's assurance. Sasiwan Chingchit insists that FROC finally lost its credibility.⁷⁴ Besides, corruption within the government was presented as the value of relief goods distributed was lower than official records for some cases.

In order to have a better understanding of the political situation in Thailand, it is necessary to consider the political turmoil in 2010 that was exacerbated with the anti-government demonstration by the supporters of former Prime Minister Thaksin. Since Prime Minister Abhisit Vejjajiva's regime, the military had gained more control and banned the People's Power Party (PPP) to participate in the politics. With a series of riots in 2010, there was a distinct division between the People's Alliance for Democracy (PAD) referred as the 'Yellow-shirts' and the 'Red-shirts', formally known as the United Front for Democracy Against Dictatorship (UDD) who have been fighting to restore democracy back in the country. In the midst of this crisis, the 2011 General Election was held in July few months before the flooding. Finally, the victory was for the 'Red-shits' as Thakin's younger sister, Yingluck Shinawatra had been appointed as the Prime Minister on August 8, 2011.

Yingluck had to act immediately to disaster response as the flooding conditions worsened with increasing number of affected people. In addition, the impact on her capability and leadership of managing the worst flooding was like two-sides of a same coin. Pongsudhirak (2012) describes that her government was heavily criticized for insufficient policy coordination among cabinet member while it was a political chance for Yingluck to

at the CRICED-SEAMEO-APEC International Symposium.

⁷⁴ Chingchit , Sasiwan. (2011). "Thailand Floods: Not enough to destroy the government". IPRIS Viewpoints.

gain more public support by greater commitment to disaster management affairs and visits to affected areas. Nevertheless, Thitinan Pongsudhirak, director of the Institute of Security and International Studies at Chulalongkorn University criticized the situation and depicted the confusion and anger of the public,

The government's response was initially inept....Information was not centralised and reliable. The saturation and sensationalism of television images on a constant news cycle made the public edgier. Yingluck has shifted gear and appears more in charge, having invoked additional laws to give her government more authority short of declaring a state of emergency, which would give the army more powers. (“The politics behind Thailand's floods,” *The Guardian*)⁷⁵

Taking note of this, the opposition party did not remain calm. There were a lot of public criticisms from the Democratic Party, which is one of the reasons why there was a lack of coordination between disaster relief stakeholders when the catastrophes reached at Bangkok. Even among government agencies there was a clear distinction between supporters and opponents of Yingluck. Smith Dharmasaroja, the former Director General of the Thai Meteorological Department, well known for his weather forecasting skill referred Yingluck’s government response measures as ‘waste of time activities’ and expressed his disappointment for poor water management and insisted that he had informed and warned this government on aggravating flooding but they failed to consider it.⁷⁶

Moreover, the priorities of Bangkok Governor Sukhumbhand Paribatra, a member

⁷⁵ Pongsudhirak, Thitinan. “The politics behind Thailand's floods,” *The Guardian*. 21 October 2011. Retrieved September 29, 2012, from <http://www.guardian.co.uk/commentisfree/2011/oct/21/thailand-floods-bangkok>

⁷⁶ Mydans, Seth. “As Thailand Floods Spread, Experts Blame Officials, Not Rains,” *The New York Times*. Retrieved October 14, 2011 from http://www.nytimes.com/2011/10/14/world/asia/a-natural-disaster-in-thailand-guided-by-human-hand.html?_r=0

of the opposition party, often conflicted with the incumbent government. In fact, there were frequent release of conflicting information between Yingluck and Sukhumbhand regarding the size and severity of inundation bearing down on the city that confused and shocked the city residents.⁷⁷ He literally told the residents of Bangkok to “listen to me and me alone”⁷⁸ and doubted the quality of relief packages given out by the government trying to weaken public confidence to the government.

Although the military was out to support, the coordination with Yingluck’s government was not as tight as the times of Prime Minister Abhisit Vejjajica. Although Yingluck might have known that the military can become a key actor for relief and recovery activities, she was reluctant to declare state of emergency taking note of the tensions between her administration and the army.⁷⁹ This does not mean that the military did not take any actions during the crisis. As mentioned earlier, they did allocate troops and resources to help the victims but they were not as prepared and uncomfortable of the commands led by Yingluck.

Besides, the private sector, including multi-national companies (MNC) were very frustrated about disaster coordination actions taken by the government. MNCs complained that there was not enough information on early warning alerts especially in English that hindered them to take preparedness actions. Japanese electronics company Toshiba mentioned that “it is critical for the government to provide more accurate flood information

⁷⁷ Hookway, J. and Phromchanya Phisanu. “Fresh Floods in Northern Thailand Renew Fears,” *The Wall Street Journal*. Retrieved September 11, 2012 from <http://online.wsj.com/article/SB1000087239639044384104577644873746801852.html>

⁷⁸ Mydans, Seth. “As Thailand Floods Spread, Experts Blame Officials, Not Rains,” *The New York Times*. October 14, 2011.

⁷⁹ Setboongsarang, Chayut. “Thailand: Politics of a flood”. *East Asia Forum*. December 2, 2011.

and implement long-term prevention measures.”⁸⁰ The other foreign investors also shared this anxiety.

In regards to the civil society, there were some efforts to coordinate relief and recovery activities by the NGOs and religious groups such as the *Thai Red Cross, Siamarsa Volunteers, Soka Gakkai International (SGI) Thailand* (Buddhist association), *Buddhist Maha Vihara Evening Puja Group* and *Chumchon Thai Foundation*. Nevertheless, the disaster affected areas in the country was too broad and often they were challenged to deliver necessary relief materials on time.

Moreover, it is striking to observe how they were clashes between the government and the civil society. Thaiflood.com, which is an organization that provides hydro-meteorological information to the public was restricted by the Flood Relief Operations Centre (FROC) to assess vital weather information and the status of evacuation.⁸¹ In fact, the government tried to limit the role of the civil society as they were trying to share important data to the public to prevent worsening of flooding.

Besides, there were endless lawsuits against government agencies, especially Prime Minister Yingluck Shinawatra, the Cabinet, the Flood Relief Operations Centre (FROC), the Royal Irrigation Department, the Meteorological Department, the Metropolitan Waterworks Authority, the Electricity Generating Authority of Thailand (Egat), and the Hydro and Agro Informatics Institute. Many NGOs were supporting the people to prepare lawsuits against the government for its poor response and recovery measures. The *Stop Global Warming*

⁸⁰ Bangkok Post. “Japan investor post-flood wish list”. October 14, 2011. Retrieved August 30, 2012 from <http://www.bangkokpost.com/learning/learning-from-news/261352/japan-investor-post-flood-wish-list>

⁸¹ Bangkok Post. “Website staff, Froc clash”. October 23, 2011. Retrieved September 05, 2012 from <http://www.bangkokpost.com/news/local/262706/website-staff-froc-clash>

Thailand Association (SGWT) and the farmers' association have been key groups that expressed their rage to the government.

Compared to the 2004 Tsunami, there was a lack of coordination of international assistance. Previously, there was a sub-committee for coordination of international assistance jointly with Thai International Cooperation Agency, led by Department of Disaster Prevention and Mitigation along with its line ministries.⁸² Nevertheless, in this flooding, the Ministry of Foreign Affairs set up a facility called Foreign Assistance Coordination Centre (FACC) to coordinate foreign assistance under Flood Relief Operations Centre (FLRO) at the major airport. But the custom was not coordinating properly as it was an unfriendly environment for foreign aid workers. Thailand received over USD 23,984,552 (Appendix 2) as emergency aid from donor countries and international organizations to cope with its floods, which is around three times smaller than the aid received in the Philippines. In addition, the United States and many other countries supported by providing necessary supplies and funding.

On October 21, several US Navy Ships along with the USS George Washington aircraft carrier were prepared to work on relief work in Thailand. The Malaysian government gave US\$973,000 (TBH 30 million), and Singapore sent two aircrafts from the Republic of Singapore Air Force (RSAF) to transport relief supplies adding up to US\$115,000.⁸³ There were many other donor countries that funded relief efforts in Thailand that is shown in Appendix 3.

⁸² International Federation of Red Cross and Red Crescent Societies. "Legal Issues from the international response to the tsunami in Thailand," An International Disaster Response Laws, Rules and Principles (IDRL) Programme Case Study. July 2006.

⁸³ Fernandez, Celine. "Foreign Aid Starts to Flow Into Thailand". The *Wall Street Journal* October 27, 2011. Retrieved August 25, 2012 from <http://blogs.wsj.com/searealtime/2011/10/27/foreign-aid-starts-to-flow-into-thailand/>

But at the same time, it is quite interesting to observe that Thai government did not actively seek for foreign assistance that often made international organizations and other stakeholders anxious due to communication issues. In the case of the US navy, John Kirby, the captain of the USS Mustin mentioned that the warships could not enter into the country immediately as the Thai government had prolonged its stay at the port several days and stated that they did not request any aid from the US.⁸⁴ Relief correspondences were irritated by the Thai government response to their willingness to support as they did not even receive their calls causing communication problems. One of the aid staff stated that international aid had been critical in Thailand, yet the government was ignorant and added if it was their “pride or politics”.⁸⁵

After all, it is disappointing that the public had to struggle from the political party disputes.

⁸⁴ BBC News. “US military helicopters to survey deadly Thai flooding”. October 29, 2011. Retrieved August 29, 2012 from <http://www.bbc.co.uk/news/world-asia-pacific-15503346>

⁸⁵ Bland, Ben. “Thai anger at government flood response”. *The Financial Times*. October 28, 2011. Retrieved August 30, 2012 from <http://www.ft.com/intl/cms/s/0/b27a40ae-016e-11e1-b177-00144feabdc0.html#axzz2CeToHs30>

Chapter 6. Conclusion

6.1 Findings

Both the Philippines and Thailand are equipped with key elements of disaster risk governance. But the degree of coordination among key stakeholders affected the quality of policy implementation and resulted in different response measures.

This study has examined that the Philippines has a strong legal system in place that has been developed over the past 50 years based on its tragic disaster experiences. Most of all, the level of civil society engagement in the Philippines is very high including at the local level. The Philippine government's activeness in organizing emergency cluster meetings with various interest groups to cope with the crisis indicates its willingness to support the affected population. It actively cooperated with NGOs and international relief actors. This government was more accountable and transparent to the public by responding to the disaster and delivering relief supplies and accommodation in a timely manner. NDMMRC continuously updated the minutes of cluster and advisory meeting notes with details on how the funds and relief goods were mobilized and officially announced these details. It was evident that the country has institutional and coordination mechanisms for disaster response activities.

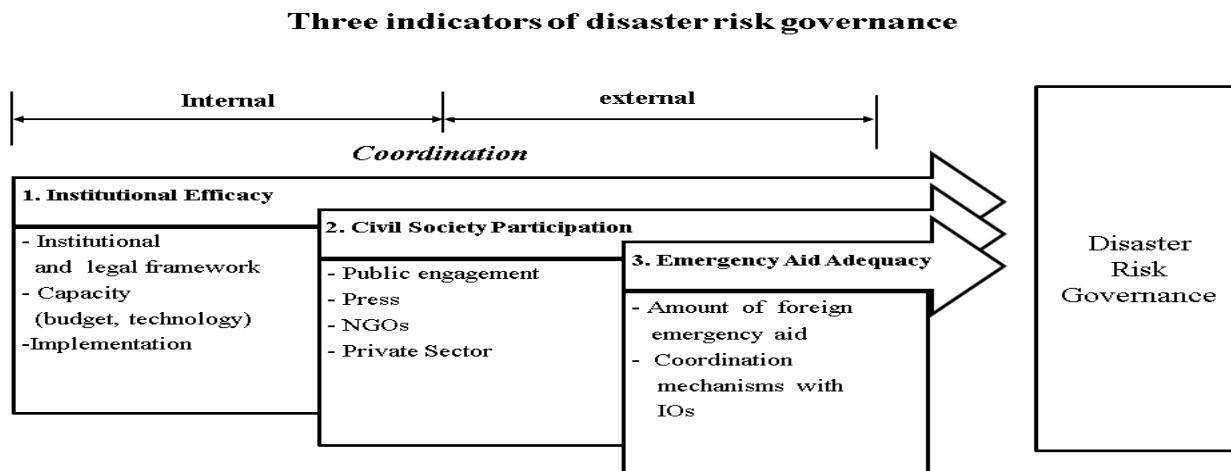
In the case of Thailand, there have been a lot of politics happening behind the scene, especially considering the scale of this disaster. Compared to the Philippines, Thailand has a higher level of governance in general with a stronger economy. At the same time, disaster management institutions, laws and budget have also been in place. However, the timing of this crisis has coincided with the beginning of a new regime under the first

female Prime Minister Yingluck Shinawatra and used as a political instrument to test the capacity of the new government. The political oppositions were constantly criticizing the new regime on disaster response and relief activities to weaken public accountability. This political conflict challenged effective communication among related government bodies and other actors, and hindered proper decision making and policy implementation. As a result of delayed response measures, the disaster exacerbated inundating the whole country with poor water management instead of preventing it.

Summary of each disaster

Country	Disaster type	average rainfall	Duration	# Districts	Affected Pop			Econ. damage
					Deaths	Affected	Displaced	
Philippines	+5 other storms before *Storm Washi	180.4mm	Dec 16-18	(storm: 13 provinces of northern Mindanao)	1,268	400,000	23,000	USD 48.4 million
Thailand	Heavy rain (gradual)	Over 200.00mm (varies by location)	End of May~January	66/77 →86%	815	13.57 million	1,500,000	USD 45.7 billion

Impact of three indicators of disaster risk in 2011 Southeast Asian Hydro-meteorological disasters



	Indicators	Philippines	Thailand
Institutional Efficacy	Structure	Decentralized	Centralized
	Legislation	High	Medium
	Recovery capacity	High	Low
	Budget & Resource	Medium	High
	Technical capacity	Medium	Medium
Civil Society Participation	Public engagement	High	Medium
	Press	High	High
Emergency Aid Adequacy	Foreign aid	High	Low
	Coordination mechanism	High	Low

6.2 Limitations

It has been difficult to get access to first hand data prepared by governments especially for Thailand as its official language is Thai. In addition, most of the translated data are secondary literature from international organizations. Otherwise, a field research in each country would be necessary to carry out detailed analysis. Most of all, it was difficult to analyze the level of funding allocation transparency just based on literature analysis.

6.3 Implications

This study highlights the importance of policy implementation and cooperation among supporting agencies for good risk governance to be achieved. Many of the countries may have disaster management institutions and legal frameworks in place but when disaster strikes they are often challenged to practice the policies that they have established and try to deliver their responsibilities to other stakeholders.

In fact, there has been collective action problems portrayed in this study, which is a social dilemma faced by each government departments and other related stakeholders in charge of disaster monitoring and response instead of sharing information and cooperation in order to enhance the situation as they have been only considering their immediate interest or power game, which is a key challenge faced by common pool resource management. Therefore, more studies must be done to further examine the role of disaster risk governance and other factors that impact on the effectiveness on disaster risk governance as consequences from unprepared natural disasters are one of the key areas that impede attaining sustainable development in countries.

Bibliography

- Ahlerup, P. (2011). *Natural Disasters and Democratic elections*. University of Gothenburg, mimeo.
- Ahmed, Atiq. (2010). Mapping of Climate Change Adaptation and Disaster Risk Management related Governance: Cambodia, Indonesia, and the Philippines. Strengthening Climate Resilience. Plan International.
- Ahrens, J. and Rudolph, P. (2006). The importance of governance in risk reduction and disaster management. *Journal of Contingencies and Crisis Management*, 14(4), 207-220.
- B. E. Aguirre. (2005). Cuba's Disaster Management Model: Should it be Emulated? *International Journal of Mass Emergencies and Disasters*, 23(3), 55-71.
- Beggs, John, Valerie Haines, and Jeanne S Hurlbert. (1996). Situational contingencies surrounding the receipt of informal support. *Social Forces*, 75(1), 201-22.
- Besley, T., and Burgess, R. (2002). The Political Economy of Government Responsiveness: Theory and Evidence from India. *The Quarterly Journal of Economics*, 117(4), 1415-1451.
- Boin, A., McConnell, A. and 't Hart, P. (eds). (2008). *Governing after Crisis: The politics of Investigation, Accountability and Learning*. Cambridge University Press.
- Bratton, M. (1994). Michael. 1994. Civil Society and Political Transition in Africa. Boston, MA: *Institute for Development Research*, 11(6), 1-20.
- Burton, K., R. Kates, and G. White. (1993). *The Environment as Hazard*. 2nd edition, New York: Guilford Press.
- Caolili, R. (2005). Reflections on democracy and development in Southeast Asia: Why do the Philippines and Singapore differ? *Culture Mandala: The Bulletin of the Centre for East-West Cultural and Economic Studies*: 6(2), Article 1.
- Chachavalpongpun, Pavin. (2012). *Responsibility to Protect in Southeast Asia: Enlarging Space for Civil Society*. NTS Working Paper No. 7, Singapore: RSIS Centre for Non-Traditional Security (NTS) Studies.
- Charnovitz, Steve. (1997). Two Centuries of Participation: NGOs and International Governance. *Michigan Journal of International Law*, 18(2), 183-286.

- Cohen, G. and Werker, Eric. (2008). *The Political Economy of “Natural” Disasters* Working Paper 08-040. Harvard Business School.
- Cohen, Jean L., and Andrew Arato. (1992). *Civil Society and Political Theory*. Cambridge: MIT Press.
- Demiroz, F., and Khosa, S. (2011). *Designing Policy and Management Tools for Building Resilient Communities*. Paper Presented at Public Management Research Association (PMRC) 11th Biannual Conference, Syracuse, NY, June 2-4, 2011.
- Diamond. Larry. (2012). The Coming Wave. *Journal of Democracy*, 23(1), 5-13.
- Donaldson, T. and Preston, L.E. (1995). The Stakeholder Theory of the Corporation: Concepts, Evidence and Implications,” *Academy of Management Review*, 20(1), 65-91.
- Emmerson. Donald. (2012). Minding the Gap between Democracy and Governance. *Journal of Democracy*, 23(2), 62-73.
- Grunewald, F. and Binder, A. (2010). *Inter-agency real-time evaluation in Haiti: 3 months after the earthquake*. Urgence Rehabilitation Développement (URD) and Global Public Policy Institute (GPPI).
- Hicken, Allen. (2009). “Political Engineering and Party Regulation in Southeast Asia,” in Benjamin Reilly and Per Nordlund, eds. *Political Parties in Conflict-Prone Societies: Regulation, Engineering and Democratic Development*. New York: United Nations University Press.
- Holguin-Veras, J., Perez, N., Ukkusuri, S., Wachtendorf, T., and Brown, B. (2007). Emergency logistics issues affecting the response to Katrina - a synthesis and preliminary suggestions for improvement. *Transportation Research Record* 2022, 76-82.
- Horwich, G. (2000). Economic Lessons from the Kobe Earthquake. *Economic Development and Cultural Change*, 48(3), 521-542.
- Lai. A., He, J., Tan, T., and Phua K. (2009). *A Proposed ASEAN Disaster Response, Training and Logistic Centre Enhancing Regional Governance in Disaster Management*. Springer-Verlag.
- Lowry, Cameron. (2008). *Civil Society Engagement in Asia: Six Country Profiles-Japan, South Korea, the Philippines, Indonesia, India and Thailand*. Asia Pacific Governance and Democracy Initiative.

- Manuta, J., Khrutmuang, S. et al. (2006). Institutionalized incapacities and practice in flood disaster management in Thailand. *Science and Culture*, 72(1-2), 10-22.
- Marks, Danny. (2011). Climate Change and Thailand: Impact and Response. *Contemporary Southeast Asia: A Journal of International and Strategic Affairs*, 33(2), 229-258.
- Mustafa, M. (2003). Reinforcing vulnerability? Disaster relief, recovery and responses to the 2001 Flood in Rawalpindi, Pakistan. *Environmental Hazards*, 4(1), 71-82.
- Noy, Ilan. (2009). The Macroeconomic consequences of disasters. *Journal of Development Economics*, 88(2), 221-231.
- Kahn, M.E. (2005). The death toll from natural disasters: the role of income, geography, and institutions. *Review of Economics and Statistics*, 87(2), 272-284.
- Khunwishit, Sompron and McEntire, David. (2009). “Emergency Management in Thailand: On the Way to Creating a More Systematic Approach to Disasters”, from *Comparative Emergency Management: Understanding Disaster Policies, Organizations, and Initiatives from Around the World*. The Federal Emergency Management Agency.
- Oliver, C. (1990). Determinants of inter-organizational relationships: Integration and future directions. *Academy of Management Review*, 15(2), 241-265.
- Olson, Mancur. (1965). *The logic of collective action; public goods and the theory of groups*. Cambridge, MA: Harvard University Press.
- Pelling, M. (1999). The Political Ecology of Flood Hazard in Urban Guyana. *Geoforum*, 30(3), 249-261.
- Phaup, M., and Kirschner, C. (2010). Budgeting for Disasters: Focusing on the Good Times. *OECD Journal on Budgeting*, 2010(1).
- Platt, R.H. (1999). *Disasters and Democracy: The Politics of Extreme Events*. Island Press, Washington, D.C., 320.
- Lasco, R.D. and R., Boer. (2006). “An Integrated Assessment of Climate Change Impacts, Adaptation and Vulnerability in Watershed Areas and Communities in Southeast Asia” a final report, Assessment of Impacts and Adaptation to Climate Change Project No. AS21, International START Secretariat, Washington, DC.

- Pongsudhirak, Thitinan. (2012). Thailand's Uneasy Passage. *Journal of Democracy*, 23(2), 47-61.
- Provan, Keith G., and H. Brinton Milward. (2001). Do Networks Really Work? A Framework for Evaluating Public-Sector Organizational Networks. *Public Administrative Review*, 61(4), 414-23.
- Rahman, H. Z. and Robinson, M. (2006). Governance and State Effectiveness in Asia. *IDS Bulletin*, 37(3), 130-149.
- Rieth, Lothar (2009). "Humanitarian Assistance and Corporate Social Responsibility," an article in Steets, Julia and Daniel S. Hamilton, eds., *Humanitarian Assistance: Improving U.S.-European Cooperation*. Center for Transatlantic Relations, The Johns Hopkins University/Global Public Policy Institute.
- Riggs, Fred W. (1966). *Thailand: The Modernization of a Bureaucratic Polity*. Honolulu: East-West Center Press.
- Rowlands A., Ngoh, T.and Yuen, K. (2006). Preface: "Contribution of Social Work to Recovery and rehabilitation after the Asian Tsunami Disaster" from *Asian Tsunami and Social Work Practice: Recovery and Rebuilding*. New York: Routledge, xix-xxv.
- Rubin, C., Saperstein, M. and Barbee, G. (1985). Community Recovery from Major Natural Disaster. *Monograph*, 41. Boulder: University of Colorado, Institute of Behavioral Science.
- Sheu, J. B. (2007). An emergency logistics distribution approach for quick response to urgent relief demand in disasters. *Transportation Research Part E-Logistics and Transportation Review*, 43(6), 687-709.
- Skoufias, E. (2003). "Economic Crises and Natural Disasters: Coping Strategies and Policy Implications," *World Development*, 31(7), 1087-1102.
- Stromberg, D. (2007). Natural Disasters, Economic Development and Humanitarian Aid. *Journal of Economic Perspective*, 21(3), 199-222.
- Tol, R. and F Leek. (1999). Economic Analysis of Natural Disasters, in T. Downing, A. Olsthoorn, and R.Tol, eds, *Climate Change and Risk*, London: Routledge.
- Toya, H., and Skidmore, M. (2007). Economic Development and the Impacts of Natural Disasters. *Economics Letters*, 94(1), 20-25.

- Unger, D., and Siroros, Patcharee. (2011). Participation in Natural Resource Policy Making in Thailand: Sound and Fury? *Journal of Contemporary Asia*, 2, 206-228.
- UN-HABITAT (2007). Enhancing Urban Safety and Security — Global Report on Human Settlements. London: UN-HABITAT.
- Van der Vink G. et. al. (2007). Democracy, GDP and natural disasters: Government rule plays a major role in the number of deaths that result from natural disasters. *Geotimes*.
- Waugh, William.(2000). *Living with Hazards, Dealing with Disasters: An Introduction to Emergency Management*. M E Sharpe Inc.
- Wildavsky, A. (1988). *Searching for Safety*. New Brunswick, N. J.: Transaction Books.

Appendices

Appendix 1: Amount of Aid received by the Philippines OCHA Financial Tracking Service: Philippines

Donor	Channel	Funding (USD)	Pledges (USD)
Allocation of unearmarked funds by UNFPA	UNFPA	225,000	
Allocation of unearmarked funds by UNFPA	UNFPA	225,000	
Allocation of unearmarked funds by UNFPA	WFP	2,083,742	
Andorra	OCHA	15,727	
Australia	BMFI	105,485	
Australia	CFSI	250,501	
Australia	HI	210,970	
Australia	ICRC	601,611	
Australia	ILO	704,433	
Australia	ILO	614,132	
Australia	OCHA	263,713	
Australia	PBSP	1,582,278	
Australia	Philippines RC	751,503	
Australia	Philippines RC	300,601	
Australia	UNDP	1,582,278	
Australia	UNFPA	717,624	
Australia	UNFPA	220,276	
Australia	UNFPA	295,341	
Australia	UNHCR	375,940	
Australia	WFP	1,318,565	
Australia	WFP	1,049,318	
Australia	WHO	105,360	
Austria	Various Recipients	10,667	
Belgium	FAO	300,000	
Canada	ICRC	501,505	
Canada	IFRC	49,801	
Canada	IFRC	49,801	
Canada	IFRC	194,175	
Canada	IFRC	143,539	

Canada	IOM	170,898	
Canada	OXFAM Canada	244,141	
Canada	OXFAM GB	244,141	
Canada	UNHCR	200,602	
Canada	WFP	1,003,009	
Canada	WFP	420,398	
Carry-over (donors not specified)	OCHA	473,607	
Carry-over (donors not specified)	UNFPA	31,213	
Carry-over (donors not specified)	UNFPA	125,617	
Central Emergency Response Fund	FAO	297,548	
Central Emergency Response Fund	IOM	1,000,025	
Central Emergency Response Fund	IOM	400,030	
Central Emergency Response Fund	IOM	100,009	
Central Emergency Response Fund	UNFPA	192,306	
Central Emergency Response Fund	UNHCR	100,500	
Central Emergency Response Fund	UNHCR	657,390	
Central Emergency Response Fund	UNICEF	242,584	
Central Emergency Response Fund	UNICEF	980,655	
Central Emergency Response Fund	WFP	800,253	
Central Emergency Response Fund	WFP	893,373	
Central Emergency Response Fund	WFP	200,002	
Central Emergency Response Fund	WHO	271,439	
China	Bilateral to the affected government		1,000,000
China	SC	128,206	
Czech Republic	SC	92,520	
Denmark	DanChurchAid/DCA	82,424	
Denmark	Denmark RC	82,424	
Denmark	Denmark RC	37,715	
Denmark	Danish Refugee Council	50,403	
Denmark	SC	38,008	
European Commission	WFP	7,593,307	
European Commission Humanitarian Aid Office	ACF-Spain	1,616,915	
European Commission Humanitarian Aid Office	ACF-Spain	2,251,656	

European Commission Humanitarian Aid Office	ACF-Spain	193,423	
European Commission Humanitarian Aid Office	ACF-Spain	2,000,000	
European Commission Humanitarian Aid Office	Germany RC	1,059,603	
European Commission Humanitarian Aid Office	GIZ	993,789	
European Commission Humanitarian Aid Office	IFRC	367,647	
European Commission Humanitarian Aid Office	IFRC	1,066,667	
European Commission Humanitarian Aid Office	IOM	473,510	
European Commission Humanitarian Aid Office	IOM	254,967	
European Commission Humanitarian Aid Office	IOM	933,333	
European Commission Humanitarian Aid Office	OCHA	158,940	
European Commission Humanitarian Aid Office	OCHA	40,214	
European Commission Humanitarian Aid Office	SC	490,196	
European Commission Humanitarian Aid Office	SC	333,964	
European Commission Humanitarian Aid Office	SC	241,268	
European Commission Humanitarian Aid Office	SC	60,144	
European Commission Humanitarian Aid Office	SC	142,531	
European Commission Humanitarian Aid Office	UNHCR	435,323	
Finland	IFRC	655,308	
Finland	UNICEF	524,246	
France	UNHCR	65,531	
France	Various Recipients	66,667	
Germany	Germany RC	439,920	
Germany	HELP	299,279	
Germany	IFRC	200,000	
IFRC Disaster Relief Emergency Fund	IFRC	217,155	
Ireland	Various Recipients	526,809	
Italy	Various Recipients	622,933	

Japan	Bilateral to the affected government	320,924	
Japan	IFRC	500,000	
Japan	UNICEF	500,000	
Japan	WFP	1,000,000	
Luxemburg	CARITAS	47,759	
Luxemburg	ICRC	323,834	
Luxemburg	IFRC	122,549	
Netherlands	IFRC	598,292	
New Zealand	FAO	238,235	
New Zealand	IFRC	381,388	
New Zealand	WFP	1,244,137	
Philippines	WFP	1,244,137	
Philippines	WFP	1,305,251	
Philippines	WFP	3,474,000	
Philippines	WFP	670,761	
Private (individuals & organizations)	CRS	95,248	
Private (individuals & organizations)	CRS	2,180,506	
Private (individuals & organizations)	OXFAM	89,192	
Private (individuals & organizations)	SC	38,341	
Private (individuals & organizations)	SC	26,034	
Private (individuals & organizations)	SC	40,000	
Private (individuals & organizations)	SC	72,674	
Private (individuals & organizations)	SC	15,000	
Private (individuals & organizations)	SC	10,000	
Private (individuals & organizations)	SC	12,000	
Private (individuals & organizations)	SC	48,256	
Private (individuals & organizations)	SC	100,000	
Private (individuals & organizations)	SC	517,444	
Private (individuals & organizations)	SC	71,121	

Private (individuals & organizations)	SC	45,000	
Private (individuals & organizations)	UN-HABITAT	15,864	
Private (individuals & organizations)	UNHCR	26,163	
Private (individuals & organizations)	Various Recipients	46,296	
Private (individuals & organizations)	WFP	64,091	
Private (individuals & organizations)	WFP	18,487	
Private (individuals & organizations)	WFP	200,475	
Saudi Arabia (Kingdom of)	WFP	197,405	
Spain	ACF	66,667	
Spain	ACF-Spain	66,667	
Spain	OCHA	367,647	
Spain	SC	176,476	
Spain	SC	176,479	
Spain	Spain RC	186,667	
Spain	UNHCR	480,000	
Spain	UNICEF	645,995	
Spain	Various Recipients	266,667	
Spain	Various Recipients	266,667	
Spain	WFP	621,891	
Sweden	ICRC	1,190,619	
Sweden	MSB	64,315	
Sweden	MSB	39,919	
Sweden	MSB	102,875	
Sweden	MSB	60,619	
Sweden	SC	192,204	
Sweden	SC	456,622	
Sweden	SC	188,954	
Sweden	Sweden RC	137,702	
Sweden	Sweden RC	147,849	
Switzerland	SCD/SHA	330,000	
Switzerland	SCD/SHA	3,257,333	
United Arab Emirates	UAE RC	20,038	
United States of America	CRS	209,041	

United States of America	CRS	100,000	
United States of America	CRS	589,867	
United States of America	CRS	400,000	
United States of America	IOM	600,000	
United States of America	OCHA	100,000	
United States of America	Plan	299,694	
United States of America	Various Recipients	450,000	
United States of America	Various Recipients	319,000	
United States of America	Various Recipients	100,000	
United States of America	WFP	100,000	
United States of America	WFP	200,000	
United States of America	WFP	3,750,000	
Various Donors (details not provided)	CDRC	95,694	
Various Donors (details not provided)	CDRC	59,809	
Various Donors (details not provided)	CDRC	148,325	
Various Donors (details not provided)	CDRC	69,378	
Various Donors (details not provided)	UNFPA	25,000	
Various Donors (details not provided)	UNFPA	25,000	
Total		75,654,061	1,000,000

Source: Adapted from the Philippines Emergencies for 2011,
Financial Tracking Service, UNOCHA

Appendix 2: Amount of Aid received by Thailand

OCHA Financial Tracking Service: Thailand

Donor	Channel	Funding (USD)	Pledges (USD)
Australia	SC	533,618	
Australia	Thailand Red Cross	493,583	
Australia	WFP	44,423	
Austria	Bilateral to the affected government	56577	
Canada	IFRC	972,763	
China	Bilateral to the affected government	1,572,327	
China	Bilateral to the affected government	1,000,000	
Czech Republic	Thailand Red Cross	141,532	
Denmark	Various Recipients	54,995	
European Commission	IFRC	2,121,082	
European Commission	SC	707,214	
Germany	Bilateral to the affected government	248,939	
Germany	IOM	2,82,885	
Germany	MDM France	15,143	
Germany	Thailand Red Cross	54,570	
Hungary	Bilateral to the affected government	5001	
Japan	Bilateral to the affected government	394,736	
Japan	Bilateral to the affected government	13,000,000	
Japan	Bilateral to the affected government	328,947	
Korea, Republic of	Bilateral to the affected government	48,000	
Korea, Republic of	Bilateral to the affected government	190,000	
Korea, Republic of	Bilateral to the affected government	66,540	
Korea, Republic of	Bilateral to the affected government	22,000	
Korea, Republic of	Bilateral to the affected government	68,000	
Korea, Republic of	Bilateral to the affected government	200,000	
Korea, Republic of	Thailand Red Cross		200,000
Luxemburg	Thailand Red Cross	68,213	
New Zealand	Thailand Red Cross	156,617	
Romania	Thailand Red Cross	31,847	
United States of America	IOM	1,000,000	
United States of America	Various Recipients	100,000	

United States of America	Various Recipients	5,000	
Total		23,701,552	200,000

Source: Adapted from Thailand Emergencies for 2011,
Financial Tracking Service, UNOCHA

국문초록

거버넌스가 자연재해 대응에 미치는 영향에 대한 연구: 2011년 동남아시아 풍수해- 필리핀과 태국 사례중심으로

김예진
국제협력 전공
서울대학교 국제대학원

동남아시아는 종종 빈도가 높은 자연 재해를 경험하였고 이로 인해 이 지역의 많은 국가들이 사회 경제적 피해를 입었다. 특히 2011년 동남아시아 홍수는 많은 인명피해 및 경제손실을 가져왔다. 이 논문은 거버넌스와 재해 대응체제의 연관 관계를 2011년 필리핀과 태국의 풍수해 사례들을 통해 분석하고 있다. 이 연구는 두 국가의 기관 효율성, 시민사회 참여와 구호원조의 적정성을 포함한 재해 거버넌스의 차이점을 모색하는데 중점을 두고자 한다.

두 국가의 대응체제를 살펴 본 결과, 이해관계자들간의 조정이 더 잘 된 국가가 재난대응을 더 효율적으로 하는 것으로 나타났다. 즉 이해관계자들간의 조정과 협력이 국가 정치체계와 경제수준보다 더 많은 영향을 미치는 것으로 나타났다. 필리핀보다 더 높은 경제력을 가졌음에도 불구하고, 태국정부는 내부 및 외부 관계자들과 효율적인 협력을 이루는데 많은 어려움을 겪었다. 특히 홍수 발생

당시의 불안정한 정치 상황으로 인해 이해관계자들간의 조정이 어려웠고, 이는 효과적인 재난대응 실패로 이어졌다. 반면, 필리핀은 중앙정부가 재난관리 조직, 정부관련 기구, 시민단체 및 국제기구들과 협력하여 적절하게 대응하였다. 이 연구를 통해, 관련된 이해관계자들의 체계적인 협력을 통한 재해 거버넌스의 중요성이 확인되었다.

주요어: 풍수해, 재해대응, 재해 거버넌스, 기관 효율성, 시민사회 참여, 구호원조 적정성, 조정

학번: 2009-23765