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CURRENT ISSUES REGARDING THE INCIDENT COMMAND SYSTEM IN THE PHILIPPINES

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ABSTRACT:

In 2003, the first Association of South-East Asian Nations (ASEAN) Committee on Disaster Management Meeting established a framework for ASEAN-US cooperation on the Disaster Management Program, with a focus on capability building for the Incident Command System (ICS). The ICS was subsequently adapted to be part of the on-scene disaster response system in the Republic of the Philippines with the enactment of the Philippine Disaster Risk Reduction and Management Act in 2010. This study aims to investigate the process of adapting the ICS, its current status, and future issues through interview surveys of national and local governments in the Philippines. First, the process of adapting and implementing the ICS as the national disaster response system is investigated. Second, the current status of the ICS at the local government level is surveyed in a flood-prone area of the Pampanga River basin in central Luzon. The results show that the ICS has been adapted to all levels of government: national, regional, provincial, municipal, and barangay (the country's smallest administrative division). Each level of local government has incorporated the ICS into its contingency plan. Finally, several issues related to future disaster management planning and capacity building are pointed out.

KEYWORDS:
Incident Command System (ICS), Republic of the Philippines, crisis management, disaster response

1. INTRODUCTION

During the first ASEAN Committee on Disaster Management Meeting (ACDM) held in Brunei Darussalam on December 9-13, 2003, the ACDM formally established a framework for ASEAN-US cooperation on the Disaster Management Program, with a focus on capacity building for the Incident Command System (ICS), originally established in the US, in the ten ASEAN member states. The US Agency for International Development, which is the principal funding agency of the program, named the US Department of Agriculture Forest Service as the implementing agency. Under ASEAN-US cooperation, the ICS was adapted to be part of the on-scene disaster response system in the Republic of the Philippines with the enactment of the Philippine Disaster Risk Reduction and Management Act in 2010. The aim of this study is to investigate the process of adapting the ICS, its current status, and future issues as a first step in supporting improvement of flood disaster management plans for flood-prone areas in the Philippines.

For this purpose, interview surveys are conducted in both national and local government offices in charge of disaster response. First, the process of adapting and implementing the ICS as the national disaster response system is investigated. Next, the current status of the ICS at the local government level is assessed through interview surveys at provincial, municipal, and barangay offices in charge of disaster response (a barangay is the smallest administrative division in the Philippines). The ICS can be used as a disaster response system for all types of hazards. However, this study presents an example of utilizing the ICS in flood-prone areas as a part of the study for supporting improvement of flood disaster management plans. Finally, several issues are discussed in which changes are needed to improve disaster response in the Philippines.

The municipality of Calumpit in Bulacan province in the Pampanga river basin, northwest of Metro Manila in central Luzon (RegionⅢ) is selected as a target area (Figure 1). The municipality is located at the junction of several rivers including the Pampanga River, Angat River, and Labangan River, making it one of the most flood-prone municipalities in the river basin (Figure 2). Table 1 lists recent flood damage as reported by the National Disaster Risk Reduction and Management Council (NDRRMC) in the Philippines. As shown in Table 1, the municipality of Calumpit suffers flood damage every year; the flooding caused by Typhoons Quiel and Pedring was the most severe and resulted in the suspension of government functions due to the inundation of the Calumpit Municipal Hall.

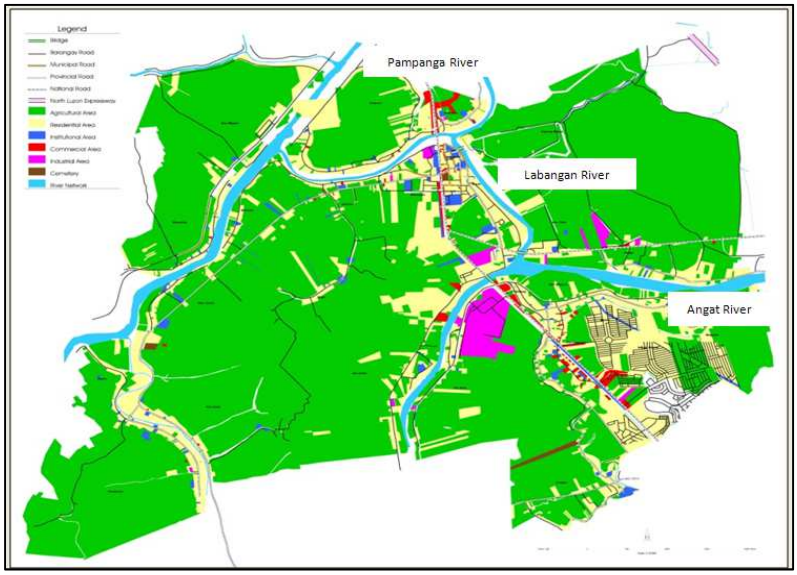

Figure 1 Location of Calumpit Figure 2 Map of the river system in Calumpit
(Data Source: Calumpit Municipal Disaster Risk Reduction and Management Contingency Plan, 2014.)

Table 1 Recent flood damage in the Philippines

Disaster Information		Affected Area	Total Damage			Damage in Calumpit	
Date	Event		Dead	Injured	Evacuees	Evacuation Centers	Evacuees
Sep. 27, 2011	Typhoons Quiel (Nalgae) and Pedring	Regions Ⅰ, Ⅱ, Ⅲ, CAR	18	12	143,702 (33,680 families)	11	5106 (1021 families)
July 30, 2012	Typhoon Gener (Saola) enhanced by southwest monsoon	Region Ⅰ, Ⅱ, Ⅲ, Ⅳ, Ⅴ, Ⅵ, Ⅶ, Ⅸ, Ⅹ, Ⅺ, Ⅻ, CAR, NCR	51	35		0	
Aug. 7, 2012	Southwest monsoon enhanced by Typhoon Haikui	Region Ⅰ, Ⅲ, Ⅳ, Ⅵ, NCR	109	14	988,766 (215,511 families)	8	4,236 (929 families)
Aug. 12, 2013	Typhoon Labuyo (Utor)	Region Ⅰ, Ⅱ, Ⅲ, Ⅴ, CAR	11	7		0	
Aug. 18, 2013	Southwest monsoon (Habagat) enhanced by tropycal storm Maring	Region Ⅰ, Ⅲ, Ⅳ, CAR, NCR	27	30	50,271 (10,953 families)	10	2,066 (608 families)
Oct. 12, 2013	Typhoon Santi (Nari)	Region Ⅰ, Ⅱ, Ⅲ, Ⅳ, Ⅴ	15	32		3	
* CAR: Cordillera Administrative Region, NCR: National Capital Region							

(Data Source: Situation reports by NDRRMC in 2011, 2012 and 2013)

2. ADAPTING THE ICS TO THE PHILIPPINES

2.1. Legal system for disaster management

The Philippine Disaster Risk Reduction and Management Act (Republic Act No. 10121) was enacted in 2010. This act provides for the development of policies and plans and the implementation of actions and measures pertaining to all aspects of disaster risk reduction and management. It defines a structure of disaster risk reduction and management at national, regional, and local levels (including provincial, city, municipal, and barangay). The act is accompanied by a document on the implementation of rules and regulations which defines details related to the act.

Through this act, the NDRRMC was established at the national level to coordinate, integrate, supervise, monitor and evaluate policy making. The Office of Civil Defense (OCD) was also established to administer a comprehensive national civil defense and disaster risk reduction and management program. The administrator of the OCD serves as Executive Director of the NDRRMC. The OCD is responsible for formulating and implementing the National Disaster Risk Reduction and Management Plan (NDRRMP), identifying hazards and risks in consultation with key stakeholders, reviewing and evaluating the Local Disaster Risk Reduction and Management Plan, formulating national standards and standard operation procedures (SOP) for carrying out disaster risk reduction programs, establishing Disaster Risk Reduction and Management Training Institutes to train public officials, individuals, and others. Under the Philippine Disaster Risk Reduction and Management Act, the OCD formulated the NDRRMP for 2011-2028, which addresses four thematic areas: (1) disaster prevention and mitigation, (2) disaster preparedness, (3) disaster response, and (4) disaster rehabilitation and recovery. The NDRRMP includes 14 objectives, 24 outcomes, 56 outputs, and 93 activities to be achieved by 2028.

Similarly to the NDRRMC, regional and local governments also have a hierarchical structure consisting of councils, such as the Regional Disaster Risk Reduction Management Council (RDRRMC), the Provincial Disaster Risk Reduction Management Council (PDRRMC), the Local Disaster Risk Reduction Management Council (LDRRMC), and the Barangay Disaster Risk Reduction Management Council (BDRRMC). The missions for each of these councils are also defined in the act.

2.2. Adapting the ICS to the national legal system

After the first ACDM in 2003, the NDRRMC, through the OCD, took the lead in the implementation of ASEAN-US cooperation on the Disaster Management Program. Cooperation related to the ICS is divided into two phases: Phase 1 (2003-2005) and Phase 2 (2009-July 2012). In Phase 1, ICS was introduced to the NDRRMC (known as the National Disaster Coordinating Council at that time). Trainers were trained on the ICS and pilot testing of some course materials was conducted. In Phase 2, ICS Inception Workshops were held six times in 2010-2011 for new ICS instructors. Thirty-two participants from relevant agencies were certified as ICS National Cadre of instructors by the NDRRMC-OCD and the US Department of Agriculture Forest Service.

In addition, the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) was ratified by the ten ASEAN member states to prepare standard operating procedures for regional cooperation and national action, such as region-wide standby arrangements and coordination of disaster relief and emergency response.

In line with the objectives of AADMER and the Philippine Disaster Risk Reduction and Management Act, ICS was adapted to the country's on-scene disaster response system for all hazards through implementation of the rules and regulations of the act. The establishment of the ICS is included as a mission of the OCD. In March 2012, the NDRRMC issued implementing guidelines on the use of the ICS as an on-scene disaster response and management mechanism to the councils at regional and local governmental levels. In the guidelines, five major organizational sections are defined: Command, Operations, Planning, Logistics, and Administration and Finance. The Command staff typically includes a Public Information Officer, a Safety Officer, and a Liaison Officer who report directly to the Incident Commander/Unified Commander. These guidelines follow the *NFPA 1600: Standard on Disaster/Emergency Management and Business Continuity Programs (2013*) of the US National Fire Protection Association (NFPA).

3. SURVEY OF THE CURRENT STATUS OF THE ICS AT THE LOCAL GOVERNMENT LEVEL

Interview surveys were conducted at provincial, municipal, and barangay offices in charge of disaster response to understand the current status of the ICS at the local government level. Calumpit, Bulacan Province, in the

Pampanga river basin suffers flood damage every year and was selected as a typical flood-prone municipality. Located 54 km north of Manila, it has a total land area of 5,625 ha, which is 2.03% of the total land of the province of Bulacan. Among recent flood events, Typhoons Quiel and Pedring brought the most severe flood damage: out of 29 barangays, 17 were fully inundated and 12 were moderately inundated; 6 residents died and 3 were injured. The flooding continued for 18 days and inundated Calumpit's municipal hall (see Figure 3) with 1.2 to 1.5 m of water, which caused the suspension of government functions and impeded the emergency response. Interview surveys were conducted in July 2014 at the Bulacan Provincial Office, Calumpit Municipal Hall, and six barangay council offices (see Figure 4).

Figure 3 Calumpit Municipal Hall

Figure 4 An interview at a barangay council office

The interview surveys found that ICS has been adapted to all government levels in the Philippines, and that each provincial, municipal and barangay council interviewed had written its own contingency plan as part of their preparedness activities.

These plans include assumptions about the worst-case scenario, general policies related to disaster response, and sectoral planning describing actions to be taken by each sector. Table 2 shows as an example of the table of contents from the Bulacan province contingency plan, which is very similar to that of Calumpit. In the worst-case scenarios, casualties, structural damage, and effects on livelihood, infrastructure, and facilities affected due to a disaster are assumed based on past disaster experiences, although flood risk assessment is not conducted on a technical basis. The worst-case scenario in the contingency plan is sometimes revised after experiencing a severe disaster, such as Typhoons Quiel and Pedring.

The ICS is described in a chapter of the sectoral plan (Chapter four in Table 2) in the contingency plan. Figure 5 shows the organizational structures included in Calumpit's contingency plan. The organization in Bulacan Province also has the same structure. In the contingency plan, the objective, lead and support agencies, tasks and flows of standard operation procedures (SOP), existing resources including equipment, gaps between existing and needed resources, and the timeframe for the tasks for each sector are described.

Table 2 Table of contents of Bulacan province contingency plan

Chapter		Contents
1		Background
	1.1	Geography Location
	1.2	Natural Environment and Physical Resources
	1.3	Demography
	1.4	Economic Structure
2		Key Considerations
	2.1	Hazard and Vulnerability
	2.2	Risk Estimates
3		General Policy and Objectives
	3.1	International Policy Frameworks
	3.2	National Policies Frameworks
	3.3	Locall Policies Frameworks
4		Sectoral Planning
	4.1	Command and Control
	4.2	Communication and Warning
	4.3	Security and Safety
	4.4	Fire Brigade
	4.5	Transportation
	4.6	Evacuation
	4.7	Medical/Health
	4.8	Search and Rescue
	4.9	Relief and Rehabilitation
	4.10	Engineering, Reconstruction, and Recovery

As shown in Figure 5, Emergency Operation Center (EOC) is established within the Municipal Disaster Risk Reduction and Management Office (MDRRMO). An Incident Command Post is established near the affected area and a designated Incident Commander orchestrates the systematic deployment of responders for the timely delivery of supplies and services to meet the basic needs of disaster victims. As a basis for decision making in prioritizing the deployment of responders, an Emergency Rapid Assessment Team (ERAT), made up of members of the agencies concerned, is immediately deployed to the affected area to conduct a Damage Assessment and Needs Analysis (DANA). Periodic team reports are

utilized for the execution of immediate restoration, recovery, and reconstruction operations to ensure rapid return to normal community functions. After reviewing all post-disaster reports from each sector, a Post-Disaster Needs Assessment (PDNA) is conducted to support current and future requests for financial assistance for rehabilitation and reconstruction projects conducted by National Disaster Risk Reduction and Management Office (NDRRMO).

The ICS of the MDRRMO is connected with its counterparts at the barangay level through their common structure (see Figure 6 for the organizational structure of the ICS of Barangay Bulusan in Calumpit). The MDRRMO reviews and archives the contingency plans of all the barangays within the municipality. During a disaster, the barangay Incident Commander communicates with the municipal EOC.

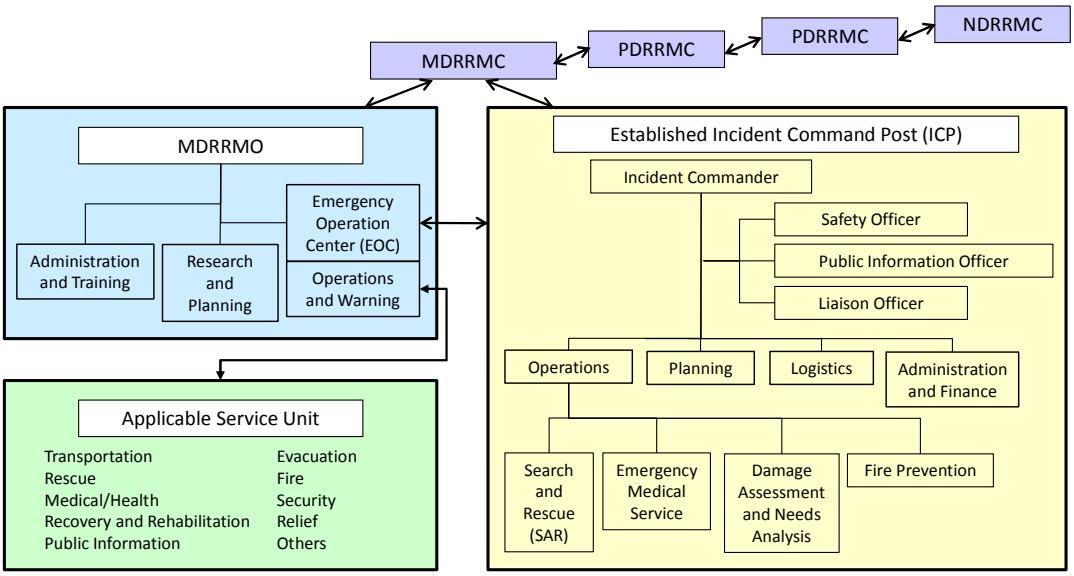

Figure 5 Organization of the Calumpit ICS

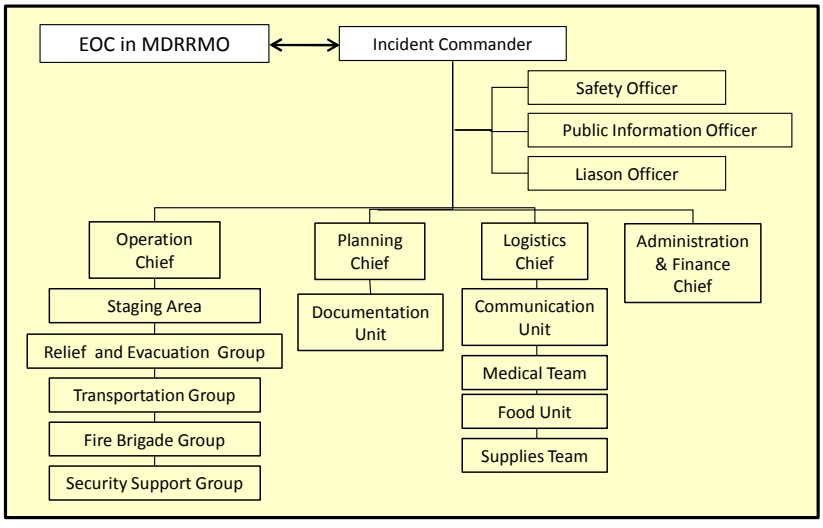

Figure 6 ICS of Barangay Bulusan in Culumpit

4. FUTURE ISSUES FOR THE ICS IN THE PHILIPPINES

Finally, based on the interview survey results, three issues for improving the ICS in the Philippines were identified.

The first issue is the establishment of an overall disaster management plan. Although ICS has been adapted to all the levels of government, from the national to the barangay level, there is no national disaster response plan that describes the tasks of relevant organizations during a disaster. As mentioned above, the NDRRMP for 2011-2028, formulated by the OCD, covers four thematic areas: (1) disaster prevention and mitigation, (2) disaster preparedness, (3) disaster response, and (4) disaster rehabilitation and recovery. However, this is a strategic plan not an operational plan. Since March 2012, the NDRRMO, OCD, Department of Social Welfare and Development, and Japan International Cooperation Agency (JICA) have been formulating a National Disaster Response Plan under the Disaster Risk Reduction and Management Capacity Enhancement Project (DRRM-CEP). During the formulation, lessons learned from Typhoon Haiyan (Yolanda), which struck Leyte Island on November 8, 2013, have been reflected in the draft plan. The final plan will be published in the near future.

The second issue is the need to improve the understanding of the ICS among local government officers. OCD provides ICS capacity-building training courses for government officers (Table 3 shows the modules for a three-day basic ICS training course by OCD). Provincial offices also provide training courses to Local Disaster Risk Reduction and Management Office officers and other partner agencies. Municipal offices also provide training courses to MDRRMO officers. These courses are provided irregularly, according to the conditions of governmental budget and international aid projects. Regular training and license system is necessary for continuous improvement of the capacity of governmental officers to respond to disasters.

These training courses focus on explaining the ICS, which might result in a lack of capacity building on overall skills for total disaster management such as mitigation, preparedness, response, and rehabilitation. To address this, the DRRM-CEP is now developing a national education and training program for disaster risk reduction and management. The intent is to train stakeholders, including national and local government officers and community and private sector representatives.

In addition, even if the training effort is continued, there are social problems that must be addressed. There is high turnover among trained personnel. In the Philippines, almost all the chief officers might be replaced when mayors or barangay leaders change. Although this problem can occur in any country, it is a strong social custom in the Philippines. Even if the trainings are provided, the results of the training cannot be sustained. The continuity of capacity development for government officers is an issue that should be addressed in the future.

Table 3 Modules in a basic ICS training course run by the OCD

Day	Training Module
Day1	Module 1: Introductiono to the ICS
	Module 2: ICS Organization and Staffing
	Module 3: ICS Incident Facilities
	Module 4: Organizing and Managing Incidents and Events
Day2	Module 5: Indcident/Event Assessment and Management by Objectives
	Module 6: Incident Resources and Resource Management
	Module 7: Incident and Event Planning
Day3	Module 8: transfer of Comamnd, Demobilization and Closeout

The third issue is strengthening of disaster response managed by objectives and timeframes, which are major characteristics of ICS. In the contingency plan, the objective, tasks and flows of standard operation procedures (SOP), and the timeframes for the tasks for each sector are described. However, since hazard simulation, such as flood inundation simulation, is not done on a technical basis to define the worst-case scenario, it is hard to create a detailed timeframe for disaster response scenario. With a hazard simulation taking into account the timeframe for response, a more practical response plan could be prepared.

5. CONCLUSIONS

In 2003, the first ACDM established a framework for ASEAN-US cooperation on the Disaster Management Program, with a focus on capability building for the ICS. Through this cooperation, the ICS was adapted to be part of the on-scene disaster response system in the Philippines with the enactment of the Philippine Disaster

Risk Reduction and Management Act in 2010. This study conducted interview surveys of national and local governments to investigate the process of adapting the ICS, its current status, and future issues.

First, the process of adapting and implementing the ICS as part of the national disaster response system was investigated. In line with the objectives of AADMER and the Philippine Disaster Risk Reduction and Management Act, ICS was adapted to the country's on-scene disaster response system for all hazards through implementation of the rules and regulations of the act. In addition, implementing guidelines were issued by NDRRMC in March 2012, promoting the use of the ICS as an on-scene disaster response and management mechanism by the councils at regional and local governmental levels. Next, the current status of the ICS at the local government level was surveyed in a flood-prone area in the Pampanga river basin in central Luzon. The results found that the ICS has been adapted to all levels of government: national, regional, provincial, municipal, and barangay. Each level of local government has incorporated the ICS into its contingency plan. Finally, three future issues were highlighted: the need for an overall disaster management plan; the need to improve understanding of the ICS among local government officers; and more consideration of the timeframe of disaster response.

This study was done as the first step in supporting improvement of flood disaster management plans for flood-prone areas in the Philippines. As a future study, flood disaster response plan considering detailed timeframes for response of relevant sectors will be discussed based on the flood inundation simulation.

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