

Implications for Disaster Response Systems of Korean Local Governments

– With a Focus on the Case of Hebei Spirit Oil Spill –

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우리나라는 각종 크고 작은 재난사고와 위험을 겪으면서도 그것에 대한 철저한 문제의식과 성찰이 부족한 관 계로 위험과 재난이 줄어들지 않고 있다. 현대 사회는 위험사회이다. 우리나라에서 최근에 발생한 대형재난 사고 들을 살펴보면, 정부의 초기대응과 조정의 실패가 끊임없이 지적되고 있다. 실제로 2011년 새해, 안동에서 시작 하여 전국으로 퍼져나간 구제역사고도 초동대응(방역)이 제대로 되지 않아 엄청난 경제적 손실을 가져왔고, 송례 문 화재사건도 관할 소방서와 문화재청간의 의사소통 부재로 국보 1호인 송례문이 전소되는 상황까지 발생했다. 이와 같이 재난관리의 부실은 행정서비스의 수혜 대상인 국민들의 생명과 재산피해 뿐만 아니라 국가 시스템 및 지방자치단체에도 상당한 악영향을 미쳐 총체적인 위기상황을 초래할 수 있다. 재난관리는 특히 지방자치단체의 역할이 중요하다. 그 이유는 지방자치단체가 재난발생시 재난현장의 최일선에 위치해 있고, 지역주민의 생명과 재산을 보호해야 할 책무를 수행하고 있기 때문이다. 아울러 재난과 같은 위기상황이 발생하면, 복구비 등 지방 자치단체가 부담해야 할 비용이 급격하게 증대하게 된다. 이러한 맥락에서, 본 연구에서는 재난현장에 가장 인접 한 곳에 있는 지방자치단체가 각종 재난에 초동대응을 효율적으로 대응했는지를 허베이 스피리트호 기름유출사고 를 통해 분석하였다. 본 연구에서 제시한 지방자치단체의 재난초동 대응강화 방안은 지방자치단체의 조정역할 강 화 및 재난관리 전담부서의 확대, 재난담당 공무원에 대한 적실성 있는 교육훈련과 모의훈련 강화, 재난담당 공 무원의 사기제고 및 자원봉사자 연계성 구축, 재난관리의 로컬 거버넌스의 구축 및 통합적인 재난정보 시스템의 구축 등을 제시할 수 있다.

주제어: 재난관리, 지방자치단체, 허베이 스피리트호, 기름유출사고, 초기대응

I. Introduction

Human history is a history of disasters: countries around the world have suffered from various disasters depending on their geographical and topographical conditions. Even the scientific and

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technological advancements, which have greatly contributed to civilization, could not save the humanity from continuing threats of natural disasters. In fact, they even turned into causes of new, anthropogenic disasters, threatening further progress of human development.

Recently the Korean society has been facing serious national crises, such as North Korea's provocation against Yeonpyeong Island and the epidemic of foot-and-mouth disease, which originated from North Gyeongsang Province. Crises like these have negative influence on the national economy and everyday lives of people. Insufficient management of crises and disasters plunge people into anxiety and generate systemic crisis accompanied by loss of lives and properties.

Local governments' role in disaster management is very important, since they are at the frontline of this task and have responsibility to protect the lives and properties of its residents. In addition, local governments must cover the cost that exponentially increases with the outbreak of crises like disaster. Against this backdrop, this study will examine whether Korean local governments responded to different disasters effectively.

In the past, multiple disasters ended up becoming large-scale because the government failed to respond and coordinate adequately in the initial stages of those accidents. In fact, Daegu subway fire resulted in many deaths due to poor communication between the train operator and subway officials. In the case of Sungnyemun fire, the top national treasure was burnt down because of lack of communication between the fire station and the Cultural Heritage Administration (Hyeon Seung Hyeon et al., 2009: 274). Foot-and-mouth disease epidemic of January 2011, which caused a grave economic damage, was also a result of insufficient initial response.

The case of Hebei Spirit oil spill, which will be analyzed in this paper, is another example of damage generated by poor initial response. The study will examine problems in local governments' initial disaster responses based on examples of Hebei Spirit oil spill, and propose policy implications in this regard.

This study is builds on different references including previous studies, reports, dissertations, and online research along with interviews with hands-on staff of disaster management departments.

II. Theoretical Background

1. Importance of local governments' disaster management

Disaster management is more important if it is handled by local governments. It is so for the following reasons (Choi Yong Ho, 2005: 678-679).

First, local governments, as the frontline of administration, must protect the lives and properties of residents. Local governments are the first-line organizations that administer actual disaster management.

Second, disasters produce significant expenses that must be funded by local governments. Disasters come as a serious shock to economy of affected areas. Finance of local governments will deplete with a vertiginous growth of legal debt and insurance claims, ultimately leading to an unforeseen economic disaster.

Right and responsibility of disaster management are features of local governments that are concomitant with right to autonomy. Heads of local governments, who are chosen through direct election, are invested with both rights and responsibilities from the central government. Therefore, they must handle the responsibility of managing crises, which is a part of the general local administration (Kwon Geon Ju, 2006: 82).

2. Role of local governments in disaster management

Article four of the Basic Law on Disaster and Safety Management states that central and local governments have the responsibility to protect the lives and bodies of the people from disasters, must endeavor to prevent disasters and reduce damage, and prepare and enforce plans for swift response to disaster and recovery.

Local governments play different roles from that of the central government and other related organizations in order to meet the expectations of local residents and effectively control disasters (Kwon Geon Joo, 2005: 82).

First, local governments exercise leadership in the whole process of disaster management. Since the central government owns a large amount of resource needed for disaster response and recovery, it plays a role of a supporter rather than an actor in disaster management administration. On the other hand, local governments play the main role in disaster management operations, including: disaster prevention and control; preparation for disaster situation, such as designing regional safety plan or building and managing disaster information system; response to disaster through mobilization of all material and human resources to minimize damage; and recovery to allow affected regions to return to pre-disaster conditions.

Second, local governments coordinate disaster management. Different functions of disaster

management - prevention, preparation, response and recovery - involve multiple bodies and societies including disaster management organizations, emergency rescue organizations, emergency rescue support organizations and volunteers. Local governments play a role of coordinator in choosing and enforcing the best methods of disaster management proposed by these organizations.

3. Concept and function of initial response to disaster

Initial response to disaster is the process of enforcing different tasks and functions that disaster management organizations must realize at the onset of disaster. Petak (1985: 3) defines initial response as “reducing the probability of secondary damage, and minimizing problems for recovery operations.” In addition, according to Jeong Yun Su (1994: 70), “initial response consists of enforcement of previously prepared emergency plans, mobilization of emergency medical system, and operation of emergency bodies such as disaster response centers. In detail, emergency response actions are: search and rescue at the scene of disaster, ensuring of safety, evacuation of residents if needed, provision of emergency medical services and relief, and installation of shelters (Ryu Sang Il, 2007: 19). Such process of initial response, along with mitigation and preparedness phases, reduces the probability of secondary damage and minimizes problems for recovery processes (Drabek, 1985: 85).

Lee Jae Eun (2005: 232-236) defines initial response as combination of six functions, including warning, evacuation, emergency medical service, search and rescue, maintenance of order, and damage recovery.

First, warning is a function that enables communication with endangered residents.

Second, evacuation is a function of moving residents away from danger to safe regions; thus an appropriate evacuation reduces human casualties during the initial phase. In particular, evacuation will be more effective and residents will comply with it better if its process and venues are defined under the leadership of police and other law enforcement agencies.

Third, emergency medical service includes filing a record of injured persons, deciding hospitals and transporting patients, verifying the identity of the dead and deciding charnel houses, organizing and managing volunteer groups, sharing responsibility, checking identities, and mobilizing shelters and amenities for the bereaved.

Fourth, search and rescue, or SAR, is a function of building communication system for disaster management organizations, preparing response devices, and designing response programs like radio communication network needed for rescue (Ryu Sang Il, 2007: 27).

Fifth, as for maintenance of order, Perry (1985: 54) explains it as a function carried out by disaster management agencies during the initial phases of disaster, the purpose of which are gaining control of affected areas and building a control system. According to the reference, in the areas affected with manmade disasters, there are many cases of criminals misrepresenting themselves as rescue workers or volunteers to trespass and steal stores or households.

Sixth, damage recovery refers to carrying out urgent operations to recover infrastructures, which will enable response functions such as emergency transportation, search and rescue.

III. Case Analysis: Hebei Spirit Oil Spill

Waters of Taean County, South Chungcheong Province - the geographical background of this study - is the seaway where large vessels pass to enter and depart from the Port of Incheon. It is a region with a high probability of marine accidents and illegal disposal of pollutants due to density and complexity of its marine traffic. Rapid development of domestic industry since 1980s sharply increased imports of crude oil, while a weak system of marine accident prevention allowed more than 300 leakages a year in average. Thirteen large accidents, including the Hebei Spirit oil spill, spewed more than one thousand kiloliters of oil and pollutants, and all of these accidents were caused by oil tankers (Kim Sang Jin, 2008: 146).

At 14:50 on December 6, 2007, a day before the accident, an 11800-ton Samsung Heavy Industries crane barge being towed by three tugboats departed from construction site of Incheon Bridge toward Geoje, South Gyeongsang Province. At the time, weather at sea expected to deteriorate, and captains of Samsung tugs knew that the weather conditions would not be amicable while they are out at sea.

At 3:00 on December 7, a high seas watch was in effect for the west coast, with wind speeds exceeding 10 meters per second and waves reaching three meters in height. And at five in the morning, the Samsung crane barge got pushed away by the strong wind (Roh Jin Cheol et al., 2010).

At 5:23, the control room at Daesan Regional Maritime Affairs Office noticed that two tugs towing a large crane barge approached an oil tanker anchored off close by and urgently called the tugs with VHS radio. However, no answer was returned to the call. No response was given even to the second call, made one minute later.

Around 5:50, the radar installed on the tug blew an alarming siren, having predicted collision

with the oil tanker, but could not change the course of the fleets. At 6:20, the control room recognized possibility of a dangerous accident, and warned the captain of the tug (Samsung T-5) through a cellular phone call, instead of radio contact so that the tug would “sail away from the large oil tanker ahead.” However, even this time, the tug did not change the course. At 7:06, forty six minutes later, Samsung crane collided with Hebei Spirit, which was carrying oil of Hyundai Oil Bank. Until that moment, the Samsung tugs did nothing more than making a radio contact with Hebei Spirit at 6:56 asking to move away, which was ten minutes before the collision (Yeom Hyeong Cheol, 2008).

At 19:18 on December 6, Hong Kong registered 146,800-ton oil tanker Hebei Spirit anchored off a point eight kilometers away from Manlipo Beach, Taean County of South Chungcheong Province. It is a fishing area where anchorage is not allowed, producing many complaints among fishers about illegal anchorage. However, Hebei Spirit cast anchor with the permission from Daesan Regional Maritime Affairs Office, and was waiting for an engineer who would pilot the tanker to the oil tank of Hyundai Oil Bank (Roh Jin Cheol et al., 2010).

At 6:09, about an hour before the clash, Hebei Spirit recognized tugs through its radars. In addition, the closest point approach was expected to be 0.3 nautical mile, a dangerous distance. At 7:27, it received an order from Daesan Regional Maritime Affairs Office “to immediately devise safety measures to avoid potential collision,” and answered that it would get ready to move. However, Hebei Spirit wasted time without taking any adequate action for safety, and did not follow the order, having answered that “it is impossible to move the tanker. It will move after the barge passes by.” Even until the moment of the collision the tanker did not raise its anchor and all it did was to drift dozens meters away by slacking back on the anchor cable (Eom Hyeong Cheol, 2008).

Another fundamental problem of Hebei Spirit oil spill is a structural factor: the tanker was a single hull ship. Single hull oil tankers are very likely to cause marine pollution after collision. To prevent such accidents, USA, EU and China started to phase out sails of single hull oil tankers of 5,000 tons deadweight or more within their territorial waters since 2005, which is before the International Maritime Organization took actions, and banned them starting in 2011. These measures dropped prices of single hull oil tankers, and Korean oil companies took the opportunity to use them even more than before. Korean oil industry’s increased reliance on single hull oil tankers means Korea faces bigger possibilities of oil spills within its coastal waters (Roh Jin Cheol, 2008: 83).

Collision of Hebei Spirit with Samsung barge produced only two holes sized 30 centimeters and

one 1-meter hole. Considering that the space between outer and inner walls of double hull oil tankers is one to two meters, a collision with a dull crane would not usually puncture inner walls and let oil escape. Insensitivity towards safety and irresponsibility of Hyundai Oil Bank resulted as the oil pollution on the coastline of Taean County (Roh Jin Cheol, 2008).

In terms of disaster management, Hebei Spirit oil spill has the following characteristics (Yang Gi Geun, 2008: 1-16).

First, the accident presented a complicated process of investigating responsibility. While a foreign-registered oil tanker (Hebei Spirit) and a Korean vessel (Samsung 1) were identified as the parties to accident, it was unclear which parties caused and suffered from the accident, stirring controversy over sharing of responsibility and compensation for the damage (Shin Seung Yong, 2008).

Second, environmental pollution caused by the accident will leave dangerous aftermath, which will remain for a long time.

Third, media coverage on the Hebei Spirit oil spill was not adequate. In particular, media has not provided in-depth report on the measures to minimize pain and damage of Taean residents (Park Dong Gyun, 2008: 25-50).

IV. Problems of Initial Response to Hebei Spirit Oil Spill and Measures of Improvement

At 7:15, December 7, 2007, the worst oil spill took place as a result of the collision between a Samsung crane and Hebei Spirit oil tanker. While 390 small and large oil spills have occurred yearly since 1996, failing to draw public attention, the worst oil spill in the history of Korea came to pass in Taean County, leaking 12,547 kiloliters of oil (Kim Sang Jin, 2008: 146). Many point out that a long period of time without large accidents diminished people's awareness about sail safety (Park Dong Gyun, 2008: 25). Therefore, Hebei Spirit oil spill should serve for production of preparation measures against pollution accidents of large oil tankers.

Against this backdrop, this section of paper will address problems in initial response of local governments to disasters and propose measures for improvement.

1. Enhancement of local governments' role as coordinator and expansion of disaster control department

It was discovered that eight out of ten residents of Taean who have suffered from Hebei Spirit oil spill have distrust toward the government (Lee Si Jae, 2008: 96-111). In addition, only 15.4% were found to trust marine police, which investigated the accident and cleanup operation, and only 24.3% answered that they trust the Taean County administration, demonstrating that the residents of the affected area have severely low confidence about the government, which took follow-up measures after the accident.

Institutionalized regional political bodies, such as local governments and regional congress, have to be capable of independently resolving diverse conflicts through cooperation and coordination (Kang Myeong Gu, 2003: 17). In the case of Hebei Spirit oil spill, the local government did not adequately unite and mediate between local residents.

After the accident, local residents expressed different kinds of conflicts. Since the residents were aware of that the amount of subsidy was fixed to three hundred billion won, disagreements arose around regions and industries. This is why response committees were organized separately by different regions and industries. It was on the seventh of April, four months after the accident, that the Taean County Oil Spill Victims' Countermeasure Alliance, a comprehensive representation of the residents of the affected Taean, was set up. The process of organization was accompanied with many difficulties, as the Taean Oil Spill Victims' Struggle Committee and the Taean Ship Owners' Union did not take part in this group. There was also discord around subsistence allowance. Residents who did not understand standards of different levels of subsidy refused to accept the money, while some even cut their fingers to demonstrate their anger (Park Jae Muk, 2008: 69).

It was role and responsibility of local governments to bring together and coordinate residents in the face of the oil spill. However, the Taean County did not have the capacity of uniting the conflicted residents and coordinating the crisis response (Roh Jin Cheol, *et al.*, 2010).

A bigger problem was that the residents of Taean, the main victims of the oil spill, had a serious distrust about provincial or county governments who represent the region. Such mistrust derives from actions of local governments who delayed distribution of subsidies even after receiving the budget from the central government, giving process and standard as excuses. In an interview with media, a resident complained: "residents are worried to the extent that they cannot even sleep calmly, being worried about delayed responses of South Chungcheong Province, local and central governments. What good can too-late supports do?" (Park Jae Muk, 2008: 69).

In the process of responding and recovering the accident, professional and related agencies

lacked an organic cooperation. After the onset of disasters, it is important to cooperate with private organizations as well as military bases or police stations, which have enough equipment. However, Korean local governments were short of institutional tools that swiftly mobilize related organizations and could not mobilize private support either (Hyeon Seung Hyeon, *et al.*, 2009: 301). Right after the oil spill, disaster prevention center and central accident response headquarter were installed in Korea Coast Guard and Ministry of Maritime Affairs respectively, but due to obscurity of role and responsibility sharing in law, public officials, Maritime Pollution Prevention Union and private prevention organizations, and volunteers who were arrived at the scene of the accident during the initial phase did not know whose order to follow (Ministry of National Land And Maritime Affairs, 2009: 56, Hyeon Seung Hyeon, *et al.*, 2009: 291).

Ultimately, local governments must play a role of coordinator in disaster management (Kwon Gun Joo, 2005: 82). Therefore, it is necessary to unify diverse members of the community, build a cooperation-enabling disaster management system, and most of all, strengthen institutional rights of local governments. In particular, it is imperative to enhance functions of local organizations during initial phases of disaster response, such as operating on-scene command system and securing and mobilizing cleanup equipments, so that local governments will take actual parts in all aspects.

However, local governments have relatively weak disaster management teams compared to the central government, thus they are involved only to the extent of enacting guidelines provided by the central government (Yang Gi Geun, *et al.*, 2006: 11). In addition, whenever disasters occur, local governments tend to provide temporary solutions by offering one-time recovery support or penalizing responsible persons, instead of systematic response to disasters to prevent them from happening again through long-term recovery operation.

Such poor response is criticized by many, given that local governments bare the primary responsibility of protecting lives and safety of residents (Choi Yong Ho, 2005: 676).

In fact, disaster management organizations do not usually have routinized and fixed tasks. In other words, it is difficult to know whether the organization is doing its work or not unless disasters break out. However, having indifferent attitude towards disaster prevention or not being alerted may turn accidents into greater disasters. Therefore, disaster management organizations must operate differently from other administrative organizations in all aspects including operation, assessment of achievements, and human resource management. The best manpower and cutting edge equipments must be always ready to respond to any situation (Park Dong Gyun, 1996: 43).

In addition, public servants of local governments working in the field of disaster management

are carrying out general tasks in parallel with disaster management tasks. Moreover, frequent reshuffles brought about lack of professional workers with expertise in disaster management. In addition, management of diverse disasters is possible if the organization has enough administrative power to handle the whole organization, while it is not so in reality. Therefore, an effective initial response system in local governments will be realized through installation of disaster management office under immediate control of the head of the organization. In other words, disaster management organizations must be upgraded from its current status of department. Safety checks on disaster infrastructure also must be carried out on regular basis, and it is desirable to create a task force, which will take full charge of disaster management at the scene of disaster (Kwon Geon Ju, 2007: 88).

2. Adequate education and training of public officials responsible for disaster management

Disasters may happen regardless of thorough prevention. Therefore, an adequate initial response is very important at the time of breakout.

An hour after the accident, the Hebei Spirit Marine Pollution Countermeasures Headquarter was installed in the auditorium of Taean Coast Guard Division, where 45 personnel dispatched from the Korea Coast Guard, South Chungcheong Province, Taean County, Seosan City, Boryeong City, Daesan Regional Maritime Affairs Office, Korean Army's 32nd Infantry Division, Korean Navy's Second Fleet headquarters, Korea Marine Pollution Response Corporation took response measures under the leadership of the commissioner general of the KCG. Ten command posts were installed throughout the polluted shore to maintain order in the scene, and provided information on cleanup measures, disposal of wastes, plans of manpower and equipment mobilization and worker's safety control(Korea Coast Guard White Paper, 2008:25). South Chungcheong Province, a local government, focused on support operations such as compensation and recovery support, and its comprehensive support headquarter operated based on the personnel dispatched from the six special disaster areas(Seosan City, Boryeong City, Dangjin County, Taean County, Hongseong County, Seochon County)(Hyeon Seung Hyeon, *et al.*, 2009:290).

The response vessel arrived at ten after ten, which is three hours and thirty five minutes after the time of the accident. The 300-ton response vessel was less than enough to provide initial response to the accident amidst three-meter-high waves and strong wind at ten meters per second.

Article 44 of South Korea's Government Organization Law states that "the Korea Coast Guard shall be established under the Minister of Maritime Affairs and Fisheries to take charge of policing at sea and the control of marine pollution," making the Korea Coast Guard be in charge of marine pollution related matters. However, while the role of the Coast Guard is very important, it had only 300-ton response vessels at the time of the accident, which were insufficient in dealing with large disasters and could not function well in inclement weathers. Right after the oil spill, several layers of oil fences were installed around the troubled tanker, but could not shield the rough tides. The oil slicks, which were supposed to be gathered close by, ran into the deep sea at high speed, while all cleanup operations were halted due to deteriorating weather conditions (Park Dong Gyun, 2008: 30).

At the time, the Ministry of Maritime Affairs and Fisheries expected that it would take 24 to 36 hours for the escaped oil to reach the shore. However, Hakampo and Cheonlipo beaches were filled with oil in 13 hours after the accident. Wrong predictions stripped down people's faith in disaster prevention system. The control authorities were flustered, while local residents who did not have any cleanup tools were enervated. The government's crisis response manual was discrepant from real situation. Response vessels and oil absorbers did not do any good either. Scores of kilometers of oil fences were installed belatedly to protect fish farms in the west sea, but they were useless because the skirts underneath the fences were too short (Yeom Hyeong Cheol, 2008).

It was most disappointing that the holes on the tanker were neglected for forty eight hours, allowing oil to leak even more. Trying to fix the tanker with smacks, without consideration of the size of the tanker, caused a bigger problem.

In four days after the onset, people ran out of cleanup products. Volunteers used banners and old clothes as rags to remove oil, because they were out of absorbents. There were confusions because large groups of volunteers gathered from all over the country were not managed effectively. Against this backdrop, it is more than important to have well trained experts during the first phases of disaster response. Therefore, adequate education and training are very significant.

Education and training of disaster related public officials must be professional: have sufficient contents and amount, and should be diversified for different target groups. At the same time, the more professional education is, the more motivation and time should be acquired for its implementation.

As for methods of education, they should be systematic and in-depth, rather than focused solely

on disaster control tasks. In addition, education should encompass theory and practice. It is also necessary to continue developing new programs that introduce new methods and motivate learners more. At the same time, for the purpose of securing uniformity and time of education, online or correspondence education can also be provided, if their assessment will be possible (Shin Yang Gyun, 2007: 309).

Currently, most local governments hire only one worker of a grade lower than seven in their situation rooms, overloading their employees with work. Most personnel are demoralized, since they work nine hours for day shift and fifteen for night. It is urgent to hire more workers who will deal with disaster situations to improve current circumstances. Adopting a three-shift system or giving special treatment to those with excellent working attitude can help to improve working conditions and morale of disaster related public officers.

It is also important to conduct drills that are designed to be similar to real situations. Formal drills are useless in real crises. In particular, public defense drills, which are performed in Korea, can be very effective in crises like disasters, if they are done right. However, it is necessary to modify people's uncooperative attitude and easygoing way of thinking before taking other actions. Drills targeting residents who will be responding to disasters first must be designed to achieve effective initial response. It is also desirable to include safety and disaster prevention instruction in formal education of Korean schools. Disaster related education can be provided in diverse forms. Private companies can carry out sessions for their employees on disaster or crises, schools and regional communities can organize training for parents, considering importance of family and early education, and media can publicize or provide education on disaster management.

3. Building network of volunteers and creating a comprehensive system of disaster information

Currently, almost no training is provided to heads of regions who are responsible for initial response, recovery and relief operations at the forefront of disaster management. Neither are private organizations and volunteers offered with education or regular meeting. Therefore, in order to build an effective administrative system of initial disaster response, ongoing education and training must be provided to regional representatives, private monitoring agents, agents monitoring damage from storm and flood, regional autonomous disaster prevention groups, and volunteer organizations.

Initial response to disaster is the phase with high probability of human casualties and material

loss along with grave shock. Not only local residents, but working level agents of public organizations face chaos due to disaster. Even if a prepared disaster management system is put in place, a larger manpower will have to be mobilized urgently. Therefore, volunteers can operate in close relationship with relevant departments of public organization and provide needed operation according to chain of command (Choi Nam Hee, 2007: 460).

Currently, the many volunteers who arrive at the site of diverse disasters in Korea are not those who have received systematic education and training. Their good will - to come to the disaster site with humanitarian conviction and do something good - do not always lead to positive results. They lack understanding of the local environment or disaster, and many of them do not comprehend actions of local residents. In addition, without a system through which it is possible to draw a full picture of the disaster and make decisions, volunteers end up judging disaster situations based on their knowledge or solve problems from a very narrow point of view. For reference, in the USA, most volunteers who work at disaster scenes are well trained professionals. In other words, people who are trained and educated are mobilized for volunteer work.

Against this backdrop, voluntary works at disaster sites must be cautiously planned, organized and controlled within a comprehensive disaster management system. Along with this, it is necessary to foresee voluntary work in all aspects of comprehensive disaster management and build a systematic organization(Choi Nam Hee, 2007: 458).

Another urgent task is organization of town hall meetings for volunteers and operation of a comprehensive headquarter of all volunteer organizations that work at disaster sites (Park Dong Gyun, *et al.*, 2009).

In addition, since many administrative agencies and related bodies, organizations and NGOs participate in disaster management, it is necessary to realize amicable sharing of information and swift communication, mobilization and request of resources based on needs and analysis (Park Dong Gyun, *et al.*, 2009).

It is imperative to share information through computer network about organizations or agencies that possess special technologies or equipments that are necessary at disaster sites, ability of those resources, capacity of medical agencies to handle many injuries. Management of such information can be more effective if done in association with leading disaster management agencies or organizations, and used more efficiently for smooth communication between participants, decision making, danger assessment, situation assessment and analysis and evaluation of resources (Jang Seok Hwa, 2002: 181). In particular, it is necessary to build local governance

with related organizations for swift handling of disaster related operations, such as prevention of dangers of disaster, building of early alarm system for minimization of damage (Jeong Seon Yeong, 2005: 79; Hyeon Seung Hyeon, *et al.*, 2009: 302).

In addition, Korea does not have a satisfactory mobile system that supports communication between departments and related organizations about disaster sites because of disproportional focus on statistics and reports centered accident management system in local governments. In addition, although volunteers, regional autonomous prevention teams, volunteer fire departments and other civilians arrive faster than disaster experts at the scenes of accidents, there is no system of collecting disaster information from them. A disaster management information system needs to be created to allow solution of these problems, swift response and effective management of disaster sites; and information sharing and mobile functions among disaster related organizations must be strengthened.

V. Conclusion

Without proper initial response, even ten fire trucks will not put out fire that an extinguisher would do. Initial response is important more than anything in managing and controlling disasters.

A poor disaster management might cause a systemic crisis by damaging lives and properties of people - recipients of administrative services - as well as national system and local governments. Local governments play an imperative role in disaster management because they are at the frontline of disasters and have the responsibility to protect lives and properties of local residents. In Korea, the government has been criticized for its slow initial response and coordination failure in the face of large disasters and accidents. In fact, the foot-and-mouth disease epidemic, which started out in Andong region in the beginning of the year and spread throughout the whole country, brought enormous economic loss due to inadequate initial response and prevention, while the Sungnyemun, the national treasure No. 1, was burnt down due to the lack of communication between the firehouse and the Cultural Heritage Administration. Against this backdrop, this study examined whether local governments, which are closest to the scene of disasters, have effectively responded to diverse disasters, based on the analysis of the case of Hebei Spirit oil spill.

The measures proposed by this study to enhance local governments' capacity in disaster responses include: strengthening local governments' role as coordinator and expanding departments

in charge of disaster management, providing adequate training and education to related public officials, boosting their morale, building a network of volunteers, structuring local governance, and organizing a comprehensive disaster information system, which will enable swift response.

It is of utmost importance to create an environment and infrastructure for local governments to bare primary responsibility. The central government must actively support disaster management of local governments, and take responsibility of responding to disasters, scales of which are beyond the capacity of local governments. Disaster management is not handled by a sole agency of a country, but through ongoing mutual understanding and cooperation; therefore, central and local governments must continue studying and exploring this subject.

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朴炯均: 동국대학교에서 “지방정부의 위기관리행정에 관한 연구 - 서울시 인적 재난의 사전대비를 중심으로”로 행정학박사 학위를 취득하였으며(1996. 2), 현재는 대구한의대학교 경찰행정학과 교수로 재직 중이다. 주요 연구 분야는 경찰행정, 위기관리, 민간경비 분야이며, 현재 한국치안행정학회 회장, 국가위기관리학회 부회장, 한국경찰연구학회 부회장 등으로 활동 중이다. 최근에 발표한 논문으로는 “미국 경찰의 모집 및 선발제도의 실태 및 함의(2011)”, “길거리 응원 혼잡경비 제도의 사례분석과 함의(2011)” 등이 있고, 저서로는 경찰학개론(2011 공저, 우공출판사) 등이 있다(police@dhu.ac.kr).

趙成濟: 경북대학교에서 “수사절차에 있어서 적법절차원리의 구체화” 논문으로 법학박사학위를 취득하였으며, 현재 대구한의대학교 경찰행정학과 조교수로 재직 중이다. 주요 연구 및 관심분야로는 인권법, 테러방지법, 위기관리법제, 형사피해자의 법적지위 등이며, 현재 한국치안행정학회 총무위원장, 한국경찰학회 이사, 국가위기관리학회 연구이사 등으로 활동 중이다 최근에 발표한 논문으로는 “수사기관의 피의자신문서 변호인 참여권(2008)”, “국민의 기본권보장과 국가안보를 위한 방안으로써 테러방지법 제정에 관한 연구(2009)”, “영국·프랑스·독일의 테러방지법제정과정과 그 시사점(2010)” 등이 있다(csj127@hanmail.net).

昇宰賢: 한국의외국어대학교에서 2009년 8월에 “양형의 규범적 판단근거와 합리적인 양형기준방안에 관한 연구”로 박사학위를 받았으며, 현재 성균관대학교 법학전문대학원 BK21 글로벌 과학기술법 전문가 양성단 박사후 연구원 및 한국의외국어대학교 법학전문대학원에서 강의하고 있으며, 대표적 논문으로는 2011년 형사법 연구에 “중범의 성립근거와 처벌범위”, 2010년 법조에 “합리적인 양형을 위한 양형조사방안 - 양형조사 주체 및 소속기관을 중심으로”, 2009년 한국경찰학회보에 “경찰과 검찰간의 합리적 수사권 조정에 관한 쟁점과 논의”가 있으며, 2009년 대구한의대 경찰행정학과 조성제 교수님과 같이 “제3세계 국가의 테러방지법제정과 우리나라에 있어서 시사점” 및 백산출판사에서 “형사소송법 강의”를 공저로 저술한 바 있다(june3651@hufs.ac.kr).

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Implications for Disaster Response Systems of Korean Local Governments

– With a Focus on the Case of Hebei Spirit Oil Spill –

Dong Kyun Park, Sung Je Cho, Jae Hyen Soung

When a hazard strikes, it does so in one or more local jurisdictions. Local government has the first line of official public responsibility. Local government, therefore, has to develop and maintain a program of disaster management to meet their responsibilities to provide the protection and safety of the public. On 7 December 2007, the Hong Kong registered tanker Hebei Spirit, laden with 209 000 tons of crude oil, was struck by the crane barge Samsung No. 1, whilst at anchor about five miles off Taejeon on the West Coast in Korea. About 10,500 tons of crude oil escaped into the sea from the Hebei Spirit. Initially, contamination was confined largely to Taejeon County, South Chungcheong Province; however, over a period of several weeks, mainland shorelines and islands further south became contaminated with the result that much of the Republic of Korea's western coast has been affected to varying degrees. Analysts say that the spill is considered as one of the world's devastating sea pollution cases involving oil. In our contemporary society where people are exposed to potential dangers in every aspect, no one can be free from such dangers. With an increase in human casualties due to disaster, disaster reporting plays a vital role in preventing and minimizing damages. Despite such enormous significance, however, Korean local politics has not performed effectively. In this context, this study analyzed the response problems of local politics in Korea, with the case of Hebei Spirit oil spill in Taejeon County. And, this study suggests establishing ways and means needed to improve the local government in Korea with the case of Hebei Spirit case.

Key words: emergency management, Hebei Spirit, local government