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Emergency management in China: towards a comprehensive model?

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Abstract

In the United States, the institutional structures and processes of emergency management have been infused with ideas of Comprehensive Emergency Management (CEM) and the so-called all hazards approach since the mid-1980s. China's new emergency management system has moved to the direction of a more CEM-like system, though some scholars and professionals advocate an even more comprehensive system. This paper examines the applicability of three popular US characteristic CEM principles in China: all-hazard, all-phase and all-stakeholder involvement. We argue that [1] the FEMA like all-hazard coordinating ministry is not an indispensable option for China; [2] integrating all-phase management [especially mitigation phase] should not only be applied in post-catastrophes reconstructions, but also in prior disaster mitigation phases; [3] too much stake has been imposed on individual leaders in vertical governmental relations which hinders opportunities on trial and error learning after an emergency. Finally, we try to contribute to the extensions of the CEM concept after comparing applications in different political and administrative contexts, and provide tentative directions for China's CEM model.

Keywords

Comprehensive Emergency Management [CEM], All hazards approach, China emergency management, comparison, applicability

Introduction

In the United States, the institutional structures and processes of emergency management have been infused with ideas of Comprehensive Emergency Management (CEM) and the so-called all-hazard approach since the mid-1980s (Wilson and Oyola-Yemaiel 2001; Roberts 2006)¹. Originating in the basic idea that “different hazards agents make similar demands on the emergency response organization”, the Federal Emergency Management Agency [FEMA] was set up to coordinate the federal emergency management in 1979 (Lindell, Perry et al. 2007: 117). FEMA adopted the principle of CEM in its 30 years development: all-hazard, all-phase, and all-stakeholder management, which will be elaborated in the next section. Moreover, the principles on CEM have been written into the national emergency plan, the Federal Response Plan, as the dominant doctrines of American emergency management since 1992 (Roberts 2004; Haddow, Bullock et al. 2010)².

Some emergency professionals and researchers in China began to advocate the implementation of CEM [whether learning from the US literature or inspired by their practices] since 2003. After the 2003 SARS crisis, Zhang (2003) called for learning from the international experience and building up a Comprehensive Integrated Emergency Management System. Zhang’s proposal included those three key principles in the US CEM model [all-phase, all-hazard, and all-stakeholder involvement]. Zhang emphasized the commitment of senior leadership and sufficient resources to guarantee effective response in times of crisis. In an interview after the 2008 Snow Storm catastrophe, Mo Jihong, a professor from the Chinese Academy of Social Science who contributed to the draft of the Emergency Response Law [ERL], the Law on Preventions against Earthquakes and Relief of Disasters [LPERD], and the National Defense Mobilization Law, advocated to set up a ministry level emergency management organization for all-hazard response in order to overcome deficiencies of the fragmented single disaster based emergency management system that was exposed by the response to the catastrophe (Su 2008). In Xue and Zhong (2009: 190)’s book chapter on the development of China’s emergency management system, they argued that China aimed to build “a risk-based, all-hazard, and integrated national system for emergency management”. In a recent interview, Gao Xiaoping, a member from the Experts Group of Emergency Management for the State Council, advised a broader civil participation of individuals and organizations from the public, private and non-governmental sectors in emergency management (Jia 2011).

In practice, the Chinese government has upgraded the single disaster agent based emergency management system with new contingency plans, an upgraded institutional structure and response mechanism, and a new legal institution [P+IML] since 2003, which will be elaborated in the third section of this paper (Gao and Liu 2008; Xue and Zhong 2009; Shan and Huang 2010). In 2006, a national level emergency management office was built up under the state council to collect intelligence and enhance coordination during an emergency. After that, local governments followed the central government to

¹According to Roberts (2006), the term “all hazards” currently refers to both the all-phase management and all-hazard management in the United States. In this paper, all-hazard dimension only defines integrating the management of all types of hazards.

² The idea on CEM was also reflected in the two revised plan following the Federal Response Plan, the Nation Response Plan and the National Response Framework.

set up their comprehensive emergency management offices. Following the master national contingency plan, national disaster agent based plans and local comprehensive emergency plans have been created. Command headquarters and daily preparedness offices, and supporting agencies have been indentified for both the single agent disaster and complicated transboundary crises³ (Ansell, Boin et al. 2010). In preparing for, responding to and recovering from an emergency, the operational mechanism has been reclaimed with more horizontal cooperation and clear upscaling principles. The newly established Emergency Response Law of People's Republic of China has been in use since November 1st, 2007, which serves as the legal framework of emergency management in China.

The rapid development towards a more comprehensive model in China has not been accompanied by examining the applicability of CEM principles in China. This paper aims to fill in this gap and examine to what extent the ideas and structures of CEM fit the current contexts of the Chinese government. The paper firstly presents the concept and origins of CEM. It explains how the key concept and principles have evolved and became popular in the US. Secondly, we will examine the functional and structural fragmentation of emergency management in China and map the recent development towards CEM. Thirdly, we will carefully consider whether the comprehensive model of emergency management fits China's governmental structures and policy contexts. Finally, We will extend the concept of CEM with an integration of its applications in China, and provide tentative directions for China's emergency management system.

The paper builds on [1] recent interviews with emergency management researchers and professionals and [2] the field research in 2008 and 2009 in Wenzhou city and its subordinated counties, Cangnan County and its subordinated townships, and Duqiao town in Linhai County. The data collected from the field research includes original documents, as well as face-to-face interviews with NGO members and local officials.

CEM: the concept and its origins

In order to examine whether the idea on CEM fits the Chinese context, it is necessary to trace the origins of this approach and the particular policy contexts that determine the selection of this approach in the United States. The section will also be elaborated with the indentified key principles of CEM: the single unified all-hazard coordinating organization, all-phase management and all-stakeholder management.

FEMA was born with the idea of integrating different emergency management programs under one umbrella⁴. Before the birth of FEMA, the tasks of federal disaster management scattered in over 100 different federal agencies⁵, which increased the complexity of assisting local communities. When a disaster overwhelms state capacities, governors have to communicate with different federal agencies for disaster aid (Bosner 2011). The fragmentation of federal emergency management programs was

³ Here we adopted the definition from Ansell, Boin and Keller (2010), which means the functioning of multiple life sustaining systems were acutely threatened, and the crisis would potentially cross the geographic and functional boundary.

⁴ Although using a different term at that time, the basic idea is similar, which emphasizes the common features in managing different types of disaster. The term Comprehensive Emergency Management was firstly referred by the National Governors' Association in 1978.

⁵ See the history section on FEMA's website (accessed on August 27, 2011): <http://www.fema.gov/about/history.shtm>

criticized by the National Governor's Association, and the association proposed to unify these emergency management functions (Rubin 2007). In 1979, FEMA was set up as an independent federal agency under the Carter Administration [1977-1980] with an integration of many disparate agencies and programs in civil defence/national security and natural and environmental disaster preparedness and response. These agencies include the National Fire Prevention and Control Administration, the National Weather Service Community Preparedness Program, the Federal Insurance Administration, the Federal Preparedness Agency of the General Services Administration, the Defence Civil Preparedness Agency, and the Federal Disaster Assistance Administration⁶ (Sylves 2008).

The ideas of CEM have been embedded in FEMA's history. Since the first FEMA's director John Macy, similarities of natural hazards and civil defense have been stressed. Under Macy, the idea of an Integrated Emergency Management System was proposed, which intended to build the "direction, control and warning systems which are common to the full range of emergencies from small isolated events to the ultimate emergency-war"⁷. A formal definition of the all hazard approach can be traced back to 1973 in the Defense Civil Preparedness Agency. This approach emphasized using resources not just in wartime emergencies but also in peacetime, given the extreme focus on preparing for a nuclear war in that period. CEM was repromoted and institutionalized by FEMA's director Witt under the Clinton Administration in the 1990s after accepting advice from NAPA (1993) and GAO (1993) (Schneider 1998; Roberts 2004; Cooper and Block 2007). After the September 11 attacks, coping with terrorism threats has also been covered under the CEM approach in DHS /FEMA⁸, although this had been prohibited in Witt's era. Three key principles of CEM are expressed in the definition of the National Incident Management System (NIMS)⁹, a structure framework that guides US emergency management framework, released in 2004:

"The National Incident Management System provides a systematic, proactive approach to guide departments and agencies at all levels of government, nongovernmental organizations, and the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property and harm to the environment."

After learning lessons from the response to the 2005 Hurricane Katrina and Rita, the National Response Framework released in 2008 [revised from the 2004 National Response Plan] and the recent 2011 National Disaster Recovery Framework reflects the principles of CEM in response and recovery phase respectively:

⁶ According to history section on FEMA's website, Federal Disaster Assistance Administration in the Department of Housing and Urban Development (established in 1949) managed most of the major federal disaster response and recovery operations before FEMA was created.

⁷ See the history section on FEMA's website (accessed on August 27, 2011): <http://www.fema.gov/about/history.shtm>

⁸ Although the focus of DHS shifted towards counter-terrorism mostly before the Hurricane Katrina, the original idea of designing DHS was to build up an expansive FEMA to cover all hazards, especially terrorism response.

⁹ According the description on the relationships between NIMS and NRP in NIMS (2008: 12), "(NRF) is an all hazards framework that builds upon NIMS and describes additional specific Federal roles and structures for incidents in which Federal resources are involved".

In the recent National Disaster Recovery Framework (2011: 7), "These documents (NRP and NDRF) incorporate and adopt the central tenets of the National Incident Management System and support the primacy of local, State and Tribal governments in preparing for and managing the response and recovery from natural and human-caused disasters". NDRF also replace the Emergency Support Function #14 on long term disaster recovery in the NRF.

“The Frame work provides structures for implementing nationwide response policy and operational coordination for all types of domestic incidents..... Response doctrine defines basic roles, responsibilities, and operational concepts for response across all levels of government and with NGOs and the private sector.” (NRF: p7-8)

“It [NDRF] links local, State, Tribal and Federal governments, the private sector and nongovernmental and community organizations that play vital roles in recovery..... the NDRF is intended to address disasters of all kinds and sources, whether it is a major Presidentially-declared disaster or a non-Presidentially declared incident.” (NDRF: p3)

Under the coordination of the unified federal agency DHS/FEMA, the institutionalized CEM adopted three managerial principles: managing *all types of disasters* in *all four phases of the disaster activity*, including mitigation, preparedness, response and recovery, and integrating *all stakeholders*.

- The all-hazard principle emphasizes common skills and preparedness required to manage different types of disasters, so that there is no need to prepare separately for different types of natural disasters regarding these common elements (Franklin 1995; Wilson and Oyola-Yemaiel 2001; Roberts 2004; Lewis 2008). These common elements are identified as emergency support functions in the National Response Framework, such as transportation, communication; public works and engineering, firefighting, information and planning, mass care, resource support, health and medical services, urban search and rescue, hazardous materials, food, and energy. In the recent research conducted in Florida, county officials¹⁰ identified the following basic needs in vulnerability assessments [one of the critical elements in the mitigation phase of the all-hazard approach] in natural disasters and man-made disasters: water, power, transportation, emergency health care, communication, and financial assets (Caruson and MacManus 2011). The recent NDRP specifies recovery support functions in the long-term recovery phase as well, which includes community planning and capacity building, economic, health and social service, housing, infrastructure service, and natural and culture resources.
- The all-phase principle connects the ignored mitigation phase with the other three phases. The short term preparedness, response and recovery have been converged by administrators, policy makers, media and the public, while mitigation has been ignored (Fritz and Mathewson 1957; Birkland 1997). In the CEM approach, the long-term mitigation phase was paid more attention. In activating the mitigation phase, the task of FEMA was not constrained to the short-term preparedness, response and recovery [FEMA as a “fire-fighter”]. Instead, FEMA could play a proactive role in normal times through mobilizing state and local governments and communities in preventing potential disasters and mitigating impacts caused by disasters and thus reducing the costs of disasters response and recovery. For instance, the well-known program Project Impact was designed to improve community resilience¹¹. Through this program, customer relationships with local governments’ leaders, volunteer groups, private business and individual citizens in the community were built and strengthened. FEMA helped individuals, business and community leaders to identify potential disaster hazards in their community and organizations, set priorities

¹⁰ Please be aware that county level means different governmental level between China and the United States. In China, county level is under the provincial and prefecture level, while in the United States county level is between the state and city township level [that varies in the US context depending on the state].

¹¹ This program was cancelled by the Bush Administration.

and allocate resources to prevent or mitigate and prepare identified disasters in a cost-effective way (Bosner 2011). Various activities were organized to promote mitigation efforts, for instance, public awareness campaigns, and the selection of pilot communities. By 1999, there had been nearly 200 communities and over 1,000 business partners participating in Project Impact program¹². Mitigation programs helped break the vicious circle of disaster aid, “damage-repair, damage-repair” again, and reduce damages in future disasters, which proved to save money for emergency response (Beatley 1989). According to the study by the Multi-hazard Mitigation Council of the National Institute of Building Sciences (2005: iii), “on average, a dollar spent by FEMA on hazard mitigation [actions to reduce disaster losses] provides the nation about \$4 in future benefits”. In the new NDRF, recovery covers both the prior-disaster phase and post-disaster phase, which tries to integrate both the prior-disaster phase [mitigation phase in the previous category] and the long term post-disaster recovery into community capacity building and local economic development.

- The all-stakeholder dimension encourages a broader participation of individuals, organizations and local governments and communities. In the mitigation program, various stakeholders were mobilized to get involved in disaster mitigations and risk reductions through economic incentives provided by FEMA (Sylves and Cumming 2004; Waugh 2006; Sylves 2008). For instance, in the Hazard Mitigation Grant Program, local governments were encouraged to apply for this funding under a presidential declared disaster, which specifies that up to 15% of the costs of disasters can be used for mitigation purposes. The percentage of funding from the federal government was raised to 75% from 50% under the Volkmer Amendment in 1993. Under this program, local communities and governments were motivated to put their migration efforts in the post-disaster recovery phase. Some other programs, such as the National Flooding Insurance Program and the buyout projects, also provided economics incentives to reduce flood risks for vulnerable communities. In the buyout project, FEMA provides funding to buy housing properties in the floodplains from owners. In the emergency preparedness phase, FEMA built close collaborative relationships with local emergency managers and authorities, which facilitated cooperation during the response as well. FEMA changed their previous approach of providing guidelines and standards for state program managers to working with states shoulder by shoulder to establish state-based planning (Schroeder, Wamsley et al. 2001). In the implementation process, FEMA negotiated with local partners to build a comprehensive agreement and met regularly to improve strategic plans (Schroeder, Wamsley et al. 2001). Moreover, FEMA also promised state governors to answer all their letters within ten days (Wilson and Oyola-Yemaiel 2001).

China’s experiments along the path of CEM

Since the SARS crisis in 2003, China has begun to upgrade its National System of Emergency Management [NSEM] (Xue and Zhong 2009; Shan and Huang 2010). The core components of the upgrading, named “Yi An San Zhi” in Chinese, include [1] creating contingency plans; [2] rearranging the institutional structure in emergency management; [3] clarifying mechanisms in the emergency management process; and [4] drafting emergency management related laws and regulations. In this section, we will describe these developments along the path of CEM.

¹² FEMA press release number 1293-71 “Project Impact, building a disaster resistant community”.

Contingency plans and legal regulations as the fundamental framework of emergency management

Contingency plans and emergency response law and regulations have been established as the guiding principles of emergency management. Immediately after the SARS crisis, the State Council began to draft a national master contingency plan [December 2003], which was put in use from January 2006 after a two-year revision. Based on the master plan, specific disaster agent based emergency plans and specific governmental agency based plans were drafted in the national level. Correspondingly, local governments created their own master plans, disaster agent based plans and sector based plans. According to the master plan, the emergency plan system in China also includes plans in the private and non-governmental sectors, and plans specially created for holding large scale exhibitions, and cultural and sports activities¹³. Law revisions and legislations came after these contingency plans. For example, in the constitutional amendment, “martial law” was replaced with the “state of emergency”. The previous term applies only to situations of social unrest, but not to natural disasters or a public health crisis¹⁴. After the amendment, the constitution provides a legal basis for all-hazard emergency situations. In 2007, the Emergency Response Law of the People’s Republic of China was released, which formalized the emergency management system and principles identified in the national master plan¹⁵.

An updating institutional structure of coordination

Before 2003, China’s emergency management system was dominated by the single disaster agent based response. The system was managed solely by the vertical line of command without much horizontal coordination (Shi, Liu et al. 2007; Xue and Zhong 2009; Jia 2011). In this era, there had been separated command centers to cope with single type of disaster events. Some of the command headquarters were directly led by a vice premier or even jointly cooperated with the military forces. For instance, the Headquarter of Flood Control and Drought Relief [HFCDR]¹⁶, the command center responsible for flooding response, was based in the Ministry of Water Resource and led by a vice premier since the 1950s. HFCDR could lead and coordinate headquarters in the provincial level during a disaster response.

The traditional system, however, was constrained strictly by the vertical administrative sector lines, which was reluctant in responding to emergencies cross the sectors or regional boundaries, or so called transboundary crises (Ansell, Boin et al. 2010). The weakness of this traditional system was exposed in the response to the 2003 SARS crisis. In the impending phase, the seriousness of the SARS was not taken much attention. The Ministry of Public Health and local governments, such as Beijing and Guangdong, even covered up the number of the infectious cases in their jurisdictions in order not to impact their local attractiveness of tourism and investments. In coping with the SARS crisis, other governmental

¹³ For more on the emergency plan system of China and plans available in the national level and provincial level [only master plans in the provincial level], please see http://www.gov.cn/yjgl/2005-08/31/content_27872.htm (accessed on September 22, 2011) and Xue and Zhong 2009.

¹⁴ <http://www.people.com.cn/GB/shizheng/1026/2379415.html> (accessed on September 22, 2011)

¹⁵ According to interview #2011-3, #2011-5, #2011-6 and #2011-7, similarities existed widely between the master plan and the emergency response law. The master plan was created earlier than the emergency response law, which tried to integrate as many principles as possible and serves as the foundation for the national emergency management. After the Emergency Response Law was released, the master plan is still in the process of revision in compliance with the law.

¹⁶ For an introduction on the short history of HFCDR, please see <http://fxkh.mwr.gov.cn/zzjg/>

departments didn't provide sufficient supports in cutting off transmission channels of virus until a temporary unified command was set up.

The new emergency management system identifies the responsibility of managing [1] the single trigger agent emergency and [2] the transboundary crisis. For single trigger agent disasters, coordinating headquarters consisting of leaders from different supporting ministries lead the response. Usually, the coordinating headquarter is based in one specific ministry which has already dealt with this type of emergency in history. For instance, the Headquarter for Flood Control has been set in the Ministry of Water Resource¹⁷, and the coordinating Headquarter for industrial accident [named as the State Council Committee on Working Safety] has been set in the State Administration of Work Safety. For the transboundary crisis, the State Council plays a leading role directly. A newly created National Emergency Management Office [NEMO] under the State Council is responsible for collecting and monitoring information, and helps with coordination.

However, NEMO cannot serve in role of FEMA to manage a transboundary crisis due to its limited capacity. During transboundary crises, temporary national level commands have been set up under the State Council to coordinate the large-scale response and recovery efforts. For instance, in the 2008 Snow Storm catastrophe, a temporary Emergency Command Center for Disaster Relief and Coal, Power, Oil, and Transportation Assurance based in the National Development and Reform Commission led to manage the response to the unexpected ice storm and the breakdown of electronic grids and transportation infrastructure in the southern areas of China¹⁸.

Disaster agent based coordinating headquarters vary regarding power structures. Some coordinating headquarters are ranked as national level commands, while some others are still ministry level headquarters. For instance, the National Committee for Disaster Relief based in the Ministry of Civil Affairs [MCA] is on the national level mainly responsible for mitigating impacts of disasters to communities, preparing and providing disaster aids to disaster stricken communities¹⁹. This committee is led by a vice premier and assisted by a standing working office affiliated to MCA. When it comes to railway accidents, the Ministry of Railways has to set up temporary national incident commands after authorizations of the State Council [upon request]²⁰. Some temporary coordinating headquarters evolved into regular standing coordinating committees as some crises become more salient. For instance, the food safety emergency plan specifies the coordinating headquarter will be activated when a food crisis unfolds. Facing more food safety problems, the State Council's Commission on Food Safety was founded in 2010 consisting of the executing vice premier and two vice premiers, and leaders from other supporting agencies. For an illustration of different kinds of national coordinating commands, please see Table 1.

¹⁷ For more on the decision structure of flood and typhoon response in China, please read Lu, 2009.

¹⁸ http://news.xinhuanet.com/english/2008-02/01/content_7544691.htm (accessed on September 23, 2011).

¹⁹ Although some scholars claimed that National Committee for Disaster Relief is responsible for managing all types of natural disasters, in practice disaster agent based coordinating headquarters still take leading roles in managing that type of disasters (according to #2011-1).

²⁰ One of the tentative reasons received in an interview for the difference is due to the frequency of this type of incident (interview #2011-2).

Table 1 a classification of the national coordinating commands

Types of coordination commands	Responsibility	Examples
The State Council	Transboundary crises, catastrophes	
Temporary State Council's command	Single/multiple type of emergency; activated under the State Council to coordinate transboundary crises and catastrophes response based in one specific ministry and supported by other ministries	Emergency Command Center for Disaster Relief and Coal, Power, Oil, and Transportation Assurance;
Standing National Coordinating Commission	Single/multiple type of emergency	The Headquarter of State Flood Control and Drought Relief; National Committee for Disaster Relief
Standing State Council's Commission	Single type of emergency	State Council's Commission on Working Safety; State Council's Commission on Food Safety;
Standing Ministry Coordinating Commission	Single type of emergency	Leading Group of National Communication Assurance; National Headquarter of Forest Fire Prevention.

Mitigation efforts in the post-disaster phase

The current national emergency plan mostly focuses on disaster preparedness and risk identification prior to an emergency. In the Chinese emergency management system, there is no clear division between the mitigation phase and preparedness phase. Most mitigation efforts are mentioned in the current national emergency plan as improving people's awareness of hazards through social education campaigns, risk identification and analysis, and early warning. Ministry of Civil Affairs began a campaign for setting up 1000 Pilot Communities on Integrated Disaster Reduction from 2007 until the end of the 11th Five Year Guideline²¹. In 2010, the National Committee for Disaster Relief released a national standard for becoming such a pilot disaster reduction community²². In 2009, the Information Office of the State Council published a white paper on China's Actions for Disaster Prevention and Reduction²³. The white paper covers the preparedness and risk identification in terms of mitigation and prevention efforts.

Most of mitigation efforts in China are placed in the post-catastrophe reconstruction phase. In the reconstruction of the 2006 Typhoon Saomai, the hardest stricken Heweyang Village was resettled in a new site under substantial supports by local and national governments²⁴. The new community was built

²¹ Interview #2011-2.

http://www.gov.cn/gzdt/2009-11/09/content_1460093.htm (accessed on September 24, 2011).

The Five Year Plan is a national level strategic plan for the key development initiatives. The Eleventh Five-year Guideline starts from 2006 until 2010.

²² <http://www.mca.gov.cn/article/zwgk/fvfg/jzjj/201005/20100500074887.shtml> (accessed on September 24, 2011).

²³ <http://english.peopledaily.com.cn/90001/90776/90785/6655019.html> (accessed on September 24, 2011).

²⁴ Interview #2008-5.

to tolerate impacts of super typhoons. The 2008 Wenchuan Earthquake drove more institutional changes in the national level regarding measures on earthquake mitigations. LPERD was revised after learning lessons from the Wenchuan Earthquake. In the newly released version, the long-term plan on earthquake prevention and mitigation is formalized; public buildings such as schools and hospitals will implement quake-proof standards; schools are required to give instructions on mandatory emergency rescue training; and rural communities are going to build under stronger building codes in earthquake prone areas²⁵. In the reconstruction plan of the Wenchuan Earthquake, new resettlements were carefully examined to prevent hazards for communities²⁶. Funding was subsidized to reconstructions of new quake-proof buildings.

Prior disaster mitigation programs, like FEMA's buyout program in the 1990s²⁷, are still rare in China. At the beginning of this year, a tentative program, the Geo-Hazard Migrant program, has been initiated in Shaanxi province. Under this program, Shaanxi province planned to relocate 2.8 million residents from communities vulnerable to flash floods, landslides and mudslides in the next decade²⁸. Recently, Shandong Province announced its relocation plan for geo-hazard vulnerable communities as well²⁹. Shandong proposed to relocate communities in forty-six identified areas with a highly potentiality for geology disasters in the next two years³⁰. Different from the buyout program in the United States, these programs are integrated with other policy agendas, such as industrial development, urbanization, and poverty alleviation.

The Partnering Provinces Assistance [PPA] model: horizontal coordination after a catastrophe

In the reconstruction process after a catastrophe, PPA has been institutionalized as a reconstruction assistance model among different provinces in China. The programs on partnering assistance have been widely used to help lowly developed minority areas since 1979 (Shan 2010). The Partnering Assistance model is specified to apply in disaster reconstructions in the Emergency Response Law and the National Emergency Plan on Disaster Relief. The former specifies the principle of providing resources by provinces out of the disaster zones in the phase of disaster reconstructions:

Article 60 Where the rehabilitation and reconstruction to be carried out by the people's government in an area affected by an emergency incident require the support by the people's government at the next higher level, a request may be submitted to the people's government at the next higher level. According to the losses suffered by the affected area and its actual conditions, the people's government at the next higher level shall provide fund and material

²⁵ <http://politics.people.com.cn/GB/1026/8246723.html> (accessed on September 24, 2011).

²⁶ http://www.gov.cn/zwqk/2008-06/09/content_1010710.htm (accessed on September 24, 2011).

²⁷ Mitigation programs, such as the Project Impact, were cancelled and reduced by the Bush Administration, which is not so visible as that in the 1990s. The current NDRF sets all Recovery Support Functions in both the prior-disaster phase and post-disaster phase. In the prior-disaster phase, community capacity building and improving community resilience are emphasized.

²⁸ <http://politics.people.com.cn/GB/14562/13970855.html> (accessed on September 24, 2011).

http://www.sn.xinhuanet.com/2010-08/26/content_20711313_2.htm (accessed on September 24, 2011).

<http://www.infzm.com/content/53854> (accessed on September 24, 2011).

²⁹ <http://news.sohu.com/20111006/n321354054.shtml> (accessed on October 6, 2011)

³⁰ Again, this program is still in an early age, and the effects of the program still needs to be examined.

support and technical guidance and ***organize other areas to provide fund, material and human resource support***. [Emphasis added by authors]

The latter assigns economically developed areas to assist less developed areas, and clearly indicates partnering provinces. For instance, Beijing as an economically developed area is assigned to partner with the less developed province Inner Mongolia for the post-disaster assistance. In the Post Wenchuan Earthquake reconstruction, PPA was put into practice with more detailed plans under the Regulations on Post-Wenchuan Earthquake Rehabilitation and Reconstruction³¹. Each economically developed province has been assigned to help one specific earthquake stricken county instead of one province as planned given the catastrophic damages caused by the earthquake. For instance, Shandong Province is responsible for assisting reconstructions in Beichuan County of Sichuan Province.

The Chinese style differs with American bottom-up model Emergency Management Assistance Compact [EMAC] on state mutual assistance in two ways (Waugh 2006; Waugh 2007; Kapucu, Augustin et al. 2009). Firstly, China tends to facilitate assistance through a top down coordination instead of bottom up self organizing. One of the assumptions of the Chinese model is that economically developed areas are resilient to disasters, which can recover from disasters fast. In contrast, lowly developed areas rely on external assistance to return to normality. Under the PPA model, central government mobilizes one-way assistance instead of mutual assistance according to the reality of uneven economic development in different regions of China. Secondly, China's model tends to focus on the post disaster reconstruction while EMAC focuses on the response phase.

Upscaling response principles

Similar with most countries, Chinese emergency response is also moving toward a graduated scheme that ties the scale of emergency to the appropriate level of jurisdiction. In the plans, the emergency is classified as four scales. Each scale requires a different response hierarchy. Although Tiao/Kuai authority system³² still exists, local administrators [instead of vertical sector leaders] have leading roles in responding to emergencies in their jurisdictions³³ (Zhou 2009).

Different from the American model based on a decentralized administration, high-level intervention into response in lower level doesn't require requests by local administrators in China. In those more predictable routine emergencies, such as typhoons, once HFCDR activates their response, HFCDR set up tele-conference with potential province and cities to learn their preparedness and response. Sometimes, HFCDR activates their response even earlier than local governments³⁴. When it comes to those transboundary crises or conflict-type crises, central government still feels reluctant in determining the

³¹ http://news.xinhuanet.com/politics/2008-06/18/content_8391394.htm (accessed on September 23, 2011)

³² For the audience not familiar with the administrative system of China, Tiao means the vertical sector system such as water resource department in different level of governments, while Kuai means the regional administration, such as the county government. Here we take the water resource department as an example, the city level water resource department is directed by both the Mayor and the provincial level water resource department. This joint direction persists in every governmental level in China. Currently, directions from vertical sector are weakened but still widely exist. For more on the historical development of horizontal and vertical authority division, please see Zhou 2009.

³³ For a complete version of Emergency Response Law of PRC, please see http://www.gov.cn/flfg/2007-08/30/content_732593.htm (accessed on September 20, 2011).

³⁴ Personal observation in 2008 in Wenzhou. Interview #2008-3, #2008-7, and #2008-9.

right occasion to intervene because situation awareness mostly relies on bottom-up reporting mechanism. Sometimes the reporting mechanism doesn't work due to intentional cover-ups of local administrators. For instance, in the 2008 baby milk powder scandal and coal mine disasters in Shanxi province, central government and regulatory ministries didn't find any cues until crises unfolded.

Examining the goodness of fit of US CEM principles in China

After describing the origins and concept of CEM and discussing recent developments in China, we return to the key question of this paper: is CEM relevant for China?

Towards an all-hazard unified agency?

China didn't create a unified agency for all-hazard management, but has relied on disaster agent based coordinating committees [whether temporary or standing committee] under the leadership of the state council. We examine if an all-hazard unified agency fits Chinese context in this part from two aspects: different policy contexts of the origins of all-hazard unified agency in the United States; and the different relations between a coordinating agency and supporting agencies;

The problem that motivated the US to set up an all-hazard unified agency does not exist in the Chinese context. The purpose of founding FEMA as an all-hazard coordinating agency was to reduce the complexity of Governor's requests towards different federal agencies in an emergency. This problem does not exist in China due to a different administrative system in vertical and horizontal coordination. We illustrate the difference regarding disaster assistance in Figure 1 and Figure 2. As can be seen from Figure 1, the current formal authority in the US disaster requests relies on connections between the governor and FEMA. Before FEMA was created, Governors had to contact different federal agencies regarding federal assistance. State agencies under the governor had limited connections with federal agencies and limited authority to request disaster assistance from federal government. In contrast, Chinese governmental sector agencies at the local level are not only accountable to their mayors or governors but also to functional departments in the upper level under the Tiao/Kuai division authority system [see Figure 2] (Zhou 2009). Connections widely exist between functional departments among different hierarchies in the same vertical sector in both normal and emergency situations³⁵. Therefore, the reasons for creating one centered all-hazard organization for the coordination of disaster response in the US carry less weight in the Chinese context.

There is not a substantial difference regarding emergency support functions in these two models. Those emergency support functions are provided by various governmental agencies both in China and the United States. In the US, FEMA was described as a "broker within the federal government" for emergency management in a federal disaster (Brown and Schwarz 2011: 6). FEMA doesn't possess vast resources, but relies on the coordination with other federal and private sectors. In China, supporting agencies are identified to provide common resources in different types of disasters although under different coordinating commissions. The difference is that supporting agencies are coordinated by one

³⁵ Although the current trends on putting these agencies under the leadership of local administrator, vertical instruction from higher sector agencies still influenced these local agencies.

unified coordinating agency in the US while China has multiple coordinating commissions. However, under coordinating commissions, key functions still lie in the agency where the daily preparedness working offices is. These offices can connect better with constituencies and better understand the nature of an emergency with required professional skills and expertise (Quarantelli 2000).

In summary, the problems that motivate the establishment of an all-hazard unified agency in the US don't exist in the Chinese context because of the difference on administrative structure of disaster assistance requests.

Towards all-phase management?

Integrating long-term mitigation efforts with the other three phases is one of the highly praised accomplishments in the United States by emergency management professionals, but the programs were abolished in 2001 for wasting taxpayers' money with limited effects. As a coordinating agency without sufficient regulatory power (Sylves and Cumming 2004), FEMA did its best to use economical incentives to promote mitigation programs among local authorities. In the recent NDRF, mitigation phase is integrated in the long term recovery framework as prior-disaster preparedness mentioned in every recovery support functions. What is even important, we cannot deny that the idea on integrating mitigation with the other three phases in emergency management is of great value for other countries.

In theory, China's disaster agent based coordinating system to some extent should provide a better opportunity to integrate mitigation with the daily operation of each sector. Disaster agent based coordination puts response and mitigation under the same roof, which should be easier in motivating mitigation efforts.

However, Chinese government seems to focus more on the short term preparedness, response, and recovery, instead of promoting prior-disaster mitigation (Zhong 2009; Lu and Ma 2011). We will take the management of a routine disaster typhoon as an example to illustrate less attention paid to mitigation phase in China, and it is not surprise that the mitigation efforts for some rare emergencies are even worse. When a typhoon approaches Chinese coastal cities, mayors in these cities tend to respond pre-cautious and activate emergency plans accordingly. After the response, the attention of those leaders quickly shifted to other affairs instead of the long term mitigation. The daily preparedness offices affiliated to the Department of Water Resources can hardly mobilize mitigation efforts, given a lack of sufficient budgets or regulation authority³⁶.

As demonstrated in the previous section, mitigation efforts have been implemented more sufficiently in post-catastrophe reconstructions. After a catastrophe, disaster stricken areas usually draw much attention from leaders in the upper-level governments, and special budgets from different levels of governments are allocated for catastrophe reconstructions. Better mitigation efforts are guaranteed with the focus of leaders from upper level and relatively sufficient funding in the reconstruction after a catastrophe.

³⁶Interview #2008-2, #2008-7, and #2011-1

Therefore, all-phase efforts have only been limited applied in the Chinese context. To be specific, integrating mitigation with the other three-phase mostly happens in a post-catastrophe reconstruction, but rarely can be seen in a prior-disaster phase.

Towards all-stakeholder management?

The US emergency management policy domain appears the feature of “no natural constituency until an emergency or disaster occurs” due to the low probability and high consequence character of an emergency (NAPA 1993; Wamsley and Aaron 1996: 242; Schroeder, Wamsley et al. 2001; Sylves and Cumming 2004; Perrow 2007). When a disaster strikes, it usually draws heavy attention from media, non-governmental organizations, and private organizations. When a disaster fades from people’s memory, social and governmental attention diminishes. All these appear to be live for China as well³⁷ (Lu 2009).

When it comes to the vertical central-local governmental relations during an emergency response, although Chinese system can mobilize governmental response quickly once an emergency is confirmed, the system appears to be slow in detecting an impending emergency through the top-down authority system, especially for those conflict-type emergencies and transboundary crises. For those conflict-type emergencies, local governments may cover up information on a crisis on purpose because the crisis might be related to their problems of governance. For instance, in the 2008 Sanlu milk powder scandal, Shijiazhuang municipal failed to report to their upper level government until one month after confirming the contamination, which violated the National Contingency Plan on Food Safety³⁸. For those transboundary crises, detection and reporting usually go beyond jurisdictions of single departments or regional governments. For instance, in the 2005 Songhua River spill, the Environmental Protection Department of Jilin Province failed to provide timely information on the Songhua River pollution to the public. Timely information was not diffused to Heilongjiang Province in the downstream of the river, either.

In order to speed up early detection of a transboundary crisis or conflict-type emergency, central and local governments tend to impose regulations and accountability upon individual administrators which mandate them to report timely information. In 2009, the Central Committee of the Chinese Communist Party and the State Council issued the Interim Provisions on the Implementation of the Accountability System for the Leaders of the Party and Government to specify occasions of individual leadership accountability³⁹. Before the release of this national provision, local governments had already created their own individual leadership accountability systems. These accountability systems impose too many responsibilities to individual leaders, but fail to help leaders organize relevant stakeholders to improve hazards detection institutionally. The accountability system has caused resignations of many individual leaders, but ignores careful investigations of causes of disasters (an interview of Xue Lan by Gao and Gao 2011). Continuous mining disasters are cases in point, although many administrators have been changed according to the accountability system.

³⁷ Interview #2008-2, ##2008-3, and #2008-4.

³⁸ <http://www.caijing.com.cn/2008-09-17/110013192.html> (accessed on October 3, 2011).

³⁹ http://www.gov.cn/gongbao/content/2009/content_1371343.htm (accessed on September 25, 2011).

Conclusion and Future directions

In this paper, we describe the origins and concept of CEM in the US context [actually CEM is used and applied broadly in different countries]. Then, we map the key development along the CEM path in China since 2003. Finally, we match the CEM of US characteristics with China's recent development, and examine which principles of CEM are shared in these different political and administrative contexts and which are not. We find that [1] not all the principles of US CEM fit for the Chinese context. In examining the historical origins of all-hazard unified emergency management agency in the US, we find that the problems faced by the US don't match the status quo of China. An all-hazard unified coordinating model is not indispensable for China's emergency management system. [2] Although some principles fit for China, similar and new problems still challenge the implementation process. In the all-phase dimension, efforts in integrating mitigation with the other three phases are still reactive which mostly happen after a catastrophe. In the all-stakeholder dimension, similar with the US, stakeholders are convergent to short term disaster preparedness, response and recovery, and ignore the long term mitigation phase. In the vertical governmental relations, Chinese government puts too much stake on accountability system of individual leaders but ignores opportunities of investigating causes of disasters and trial-and error-learning after disasters (Sagan 1994)⁴⁰. [3] The application of CEM in China extends some principles of CEM at least in two ways:

- a) In the all-phase dimension, besides economical incentive method in the US, mitigation efforts could be implemented in integrating with other local policy agenda, such as poverty alleviation. The integration could better solve the problem of lacking of natural constituencies for the policy domain of emergency management.
- b) In the all-stakeholder dimension, coordinated horizontal partnering assistance could speed up the reconstruction process of disaster stricken areas. Even under the decentralized US system, EMAC could be further extended to the long term reconstruction phase as well.

In the following section, we will provide some tentative directions for China's emergency management along the path of CEM.

Building the emergent organizing capacities for coordinating commands

Using coordinating commissions as leading organizations has been formalized and institutionalized in the legal system and emergency plans in China, but members of these commissions, mostly leaders from different ministries, don't meet regularly. Sometimes, temporary coordinating headquarters need to be set up to cope with those transboundary crises. As shown in the 2008 Snow Storm and Wenchuan Earthquake, some temporary coordinating commissions were built to cope with those unexpected emergencies or specific unfamiliar tasks in a routine emergency. The temporary character of these coordinating commissions requires a quick capacity building and rule generating to respond effectively during an emergency.

⁴⁰ For more on trial and error learning, please read Sagan 1994.

Integrating the strength of the civil defense organizations in mitigation/prevention and preparedness with emergency management

The Civil Air Defense [CAD] is currently an organization under the leadership of the State Council and the Central Military Commission with extensive branches in almost every level of Chinese government. Although CAD's visibility has been on a low level given the decreasing external threats, CAD's structure and procedures on prevention and mitigation in civil defense, such as emergency communication, vulnerability assessment, and capacity building, are still in use all over the country⁴¹. Putting disaster mitigation functions under CAD could activate such a current invisible organization, and make dual use of existing civil defense procedures and structures. For instance, CAD could mandate the building codes for civil defense purpose, such as basement, in new large construction projects according to the Civil Air Defense Law. In some local governments, CAD branches have begun to involve in disaster reduction and even been renamed as civil protection agencies to integrate disaster reduction functions. For example, in Beijing and Cangnan county, CAD departments have already begun to provide disaster reduction information for social education⁴².

Sensemaking capacity building for upward intelligence collections and downward instructions

The intervention into the local response in China often relies on upward information from local governments. Sector-based coordinating headquarters rely heavily on their own staff for intelligence collections and instructions diffusions. All staff in this sector, even though they are not responsible for emergency management in their routine work, are mobilized to work and support coordinating headquarters during an emergency⁴³. In the information interpretation process, distortion is inevitable given limited understanding on local contexts and jurisdictions of other supporting sectors⁴⁴. Similar problems exist when instructions and orders flow downward to local governments and other supporting agencies⁴⁵. Inspired by the FEMA intelligence model and suggestions made by an over 20 years local disaster relief veteran, it will be better to put those officials from upper governments and officials from supporting agencies in the local emergency operation center during a response. In this way, the information could flow to their own organizations through those assigned officials, which can reduce information distortion and increase capacities in situation awareness of those organizations in the upper level and supporting positions.

Increase special budgets to support mitigation initiatives

Shaanxi's model on geo-hazard migration has already initiatively integrated hazard mitigation with the policy domain of poverty alleviation and regional development. However, significant financial gaps still

⁴¹ Interview #2011-4 and # 2009-12.

⁴² *ibid.*

<http://www.bjmf.gov.cn/indexzwgk.htm> (accessed on September 25, 2011)

in the 2009 field research, CAD's social education brochure in Cangnan county has more contents on disaster reduction

⁴³ Personal observation in the 2008 Typhoon Sinlaku response and the Wenzhou emergency planning on flood control and typhoon response.

⁴⁴ Interview #2008-6 and #2008-12.

⁴⁵ interview #2008-4.

exist between the funding available and expected⁴⁶. When comparing the mitigation cost with response and recovery cost, life loss in the 2010 Zhouqu mudslide has demonstrated the cost of similar tragedies and NIBS' report has already used their data in the US to show the efficiency of investing in mitigation efforts (NIBS 2005). The current bottom-up initiatives in Shaanxi and Shandong province needs to be supported by the national mitigation budgets.

Look more into organizational causes of disasters

Current accountability system imposes responsibilities to individual leaders, which symbolically makes administrators resign from their positions. However, less effort has been made to investigate organizational causes of disasters. Without carefully investigation of these disasters, lessons can hardly be learnt. Governments are vulnerable to fall into a vicious circle "disaster-leader resignation-new leader appointment-disaster again".

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⁴⁶ <http://www.chinanews.com/df/2011/09-23/3350323.shtml> (accessed on September 25, 2011)

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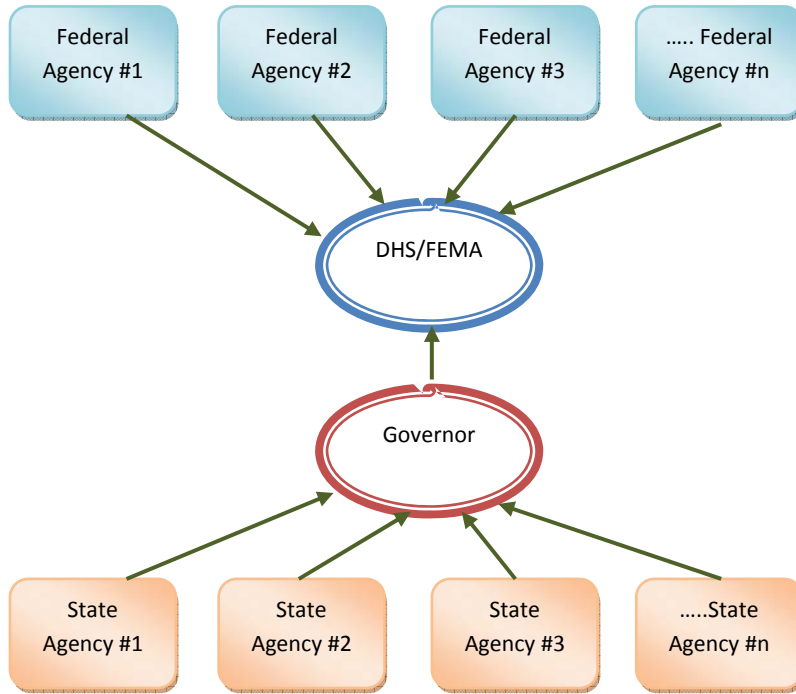


Figure 1 a simplified model of US emergency management structure

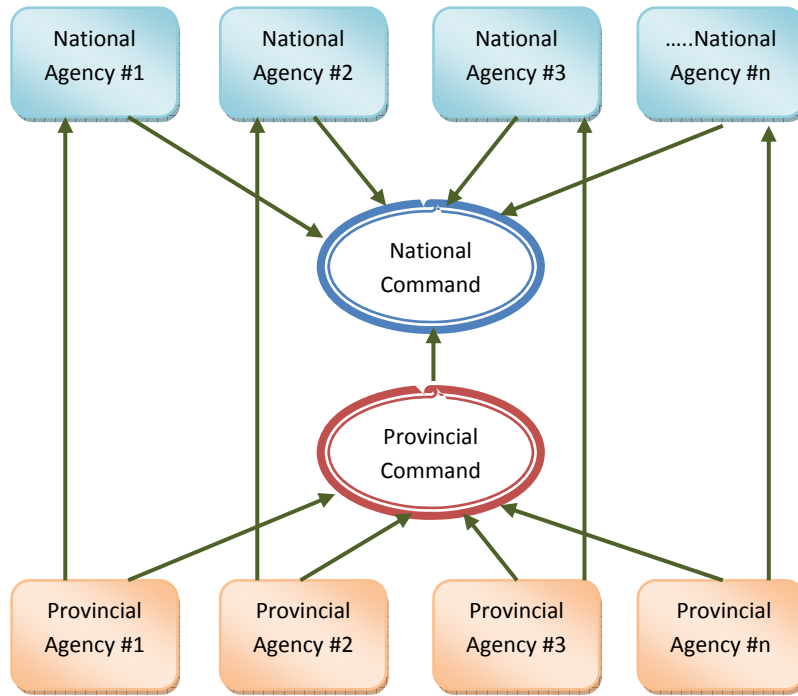


Figure 2 a simplified model of Chinese emergency management structure