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Research on the development process, existing problems and countermeasures of organization system, management mechanism and law system of emergency management of mega city in China

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ABSTRACT

Shanghai is one of the largest cities in China even in the world. With the acceleration of the globalization and urbanization, the public safety problem that the city faces keeps on increasing, which will make the city become the center of crisis. This paper analyzes Shanghai's experiences and development progress of the emergency management system, including the organization system, management mechanism and law system, presents the problems existed in the system operated now, then gives the countermeasures and suggestions for the future.

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KEYWORDS

Mega-city;
Organization system;
Management mechanism;
Law system;
Existing problems;
Countermeasures.

INTRODUCTION

Sudden public events refer to those emergency accidents that happen suddenly and may cause huge lost in human beings' lives, properties, and will bring immeasurable harm to the natural environment and society. With the increasing development of the city, the higher probability the sudden public events occurs, the more fragile the city will be. The big cities usually become the center of crisis. Shanghai is one of the biggest cities in China even in the world, the social risk and public safety problems it faces are very complex and severe. To forecast, prevent and control the sudden public events, a good emergency system must be established in accordance with the serious reality.

On one hand, Shanghai has accumulated rich expe-

riences in coping with sudden public events and has made extraordinary progress in the construction of emergency management (simplified as EM) system in the past years. For example, Shanghai started early in establishing the city public safety system, originally explored the disaster prevention system in China and has set up the management organizations like Shanghai city EM committee, etc. On the other hand, there still exists great challenge for Shanghai in facing the increasing risks. Shanghai should explore new ways to improve the EM system.

CHALLENGES SHANGHAI IS FACING IN SAFETY AND EM

Risks increase during the process of globalization and urbanization

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Urbanization brings great changes to the world, but it also brings series of negative effect to the city public safety. In the time being, the degree of Shanghai's urbanization has surpassed 90%. In 2008, per capita GDP of Shanghai has surpassed 10 thousand U.S. dollars. In this stage, the city will step into "unsteady state period" according to the international experiences. The factors of climate, financial, economic, employment and corruption all can become the source of social accidents. Modern industry, new technology and high development of information industry bring hidden danger for the city. Besides the economic field, the trend of globalization and urbanization also seep into the field of politics, culture and thoughts, which will also threaten the city public safety from different ways.

Huge population quantity in the city development

The resident population in Shanghai is more than 23 million and the immigrant population is nearly ten million now, shown in TABLE 1. The huge population quantity brings great pressure for the city operating system like traffic, housing, infrastructure, crime management, etc..

The mobile population is huge in its quantity and

vention of the disaster is set up in April, 2002 and the total contingency disposal plan of Shanghai is then put into practice, which shows Shanghai basically established the framework to dispose the emergency accidents.

(2) Shanghai city emergency response linkage center

Shanghai City Emergency Response linkage Center began to operate in September, 2004. The three systems of 110 Public Security Bureau Command Center, 119 fire command center, 122 traffic police command and control center are synthesized into one system. The unity of command mechanism forms means shanghai steps forward in the emergency disposal system.

(3) Shanghai city EM committee

Shanghai city EM committee is established in September, 2005. It is the leading organization for all the emergency disposal work in Shanghai now. It has an office and some municipal coordination organizations and the subordinate EM organizations of the nineteen districts of Shanghai. The office is responsible for the

TABLE : 1 the population of Shanghai in the previous five years

Index	2007	2008	2009	2010	2011
Resident population	2 063.58	2140.65	2210.28	2302.66	2347.46
In which, Household population	1 378.86	1 391.04	1 400.70	1 412.32	1 419.36
Immigrant population (have lived longer than half year)	684.72	749.61	809.58	890.34	928.1

complex in its structure. The problem of the migrant workers becomes the focus of the society.

The aging problem in Shanghai now is very serious. The people elder than 60 is more than 20 percent to the whole population. The incomplete social security system and the insufficient facilities and resources for the aged will bring contradiction for the family and the society, then it will endanger the city public safety.

EXPERIENCES OF SHANGHAI IN CONSTRUCTION OF EM SYSTEM

Construction of the organization system

Change process of the EM organization

(1) Shanghai Municipal Leading Group for prevention of the disaster

The Shanghai Municipal Leading Group for pre-

information gathering, comprehensive coordination etc.. for the whole city. The municipal coordination organizations include the related departments like Shanghai construction and traffic committee, the Shanghai Public Security Bureau, Production Safety Supervision Bureau etc.. They are responsible for emergency disposal in different industries or fields. And the subordinate EM organizations mainly are responsible for the work in their districts.

Experiences in EM organization system establishment

(1) The EM system with the characteristics of clear classification and territorial management is constructed preliminarily.

According to the state's demand, Shanghai has set up an EM organization system composed of the following four parts. The city EM committee acts as the

leader, the related functional departments or organizations are the component members, the city EM office acts as an operating hub (performing the function of emergency information collection, comprehensive coordination, etc), and the city emergency linkage center acts as the disposal functional organization and command platform. The responsibilities of the various organizations are strengthened in this system, and Shanghai has formed an EM organization system with full coverage of the whole city.

Longitudinally, corresponding to responsibility division in the national level, the four departments of Shanghai civil affairs bureau, Shanghai safety production supervision bureau, Shanghai municipal health bureau and public security bureau were respectively responsible for the four categories of management of natural disasters, accidents disasters, public health and social security.

Horizontally, according to the principle of territorial management, Shanghai has strengthened the territorial governments' abilities construction of the subordinate 17 districts.

(2)The EM system with municipal units at the grass-roots level is built innovatively

In order to do the EM work well in huge enterprises, independent space area or some special departments that play great role in the social safety, Shanghai innovatively establishes municipal EM units at the grass-roots level, selecting nine municipal units including Hongqiao and Pudong international airport, Yangshan deep water port, Shanghai chemical industrial zone, Shanghai railway and Baosteel company to be included in the framework of city EM system. Special EM system is established in these organizations. The construction of the municipal units at the grass-roots level breaks the administrative and sector boundaries in the traditional concept. By strengthening responsibilities management of each unit, good management effect has been obtained.

Shanghai's EM experiences in mechanism construction

(1) Formation of the public security cooperation mechanism around large metropolitan area of Yangtze River Delta. Local governments in Yangtze River delta spread have already established close cooperation mechanism on food safety. In cooperation mechanism

responding to natural disasters, the defense league program and disaster information reporting system have been established across various functional departments.

(2) Effective resource integration of different units.

In flood season in summer, for example, to face sudden public events that may occur because of the strong convection and high temperature weather, the emergency linkage center joins with the municipal meteorological bureau, the city flood control headquarters to release early warning information for preparation through the mobile phone short message platform, forming long-term meteorological early warning information release mechanism.

(3) Formation of the cohesiveness emergency handling abilities. Since the emergency linkage center is put into operation till now, each unit can feed back information timely once the disaster occur and can closely cooperate with each other to dispose all kinds of emergencies quickly and efficiently.

Shanghai's experiences in construction of the EM plan

In early 2001, Shanghai municipal government launched the compile of disasters emergency plan. In January 2006, Shanghai issued 'Shanghai's Overall Sudden Public Events Emergency Plan', including a city overall plan, 17 subordinate district plans, 51 specialized or departments plans, municipal EM units at the grass-roots level plans and some major activities emergency plan.

Especially for Shanghai World Expo 2010, the Overall Sudden Public Events Emergency Plan and related procedures were compiled, included not only working plan for different architectures in the zone, but also working plan for different types of sudden events like criminal cases, people trample, natural disasters.

MAIN PROBLEMS EXISTING IN SHANGHAI'S ORGANIZATION SYSTEM, MANAGEMENT MECHANISM AND LAW SYSTEM OF EM

Main problems existing in Shanghai's organization system

Although Shanghai and the subordinate 17 districts have set up the EM organization system, and they re-

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ally have played great role in practical work, but standardized EM system has not yet formed completely. For example, as part of the districts' emergency office, some functional departments are still not in place, some personnel are not in place, which influence the comprehensive coordination and operation of EM organization system.

Problems existing in Shanghai's EM mechanism

(1) Capacities in planning and implementation, organization and coordination in EM are not enough.

Due to reasons existed in personnel and system, the roles and responsibility that Shanghai's established committee and office play in the EM are still not clear, such as organization and coordination, planning and construction, public emergency prevention education and exercises, unified command and scheduling etc.. Some detailed work like prevention and planning are left out, for they can't be implemented by the EM office nor can't be implemented by other departments.

(2) Emergency rescuing abilities needs to be improved.

Restricted to the existing system, the rescuing team scattered in various functional departments, mostly in the single form of disaster. The equipments and facilities are insufficiency. The existing emergency rescuing system emergency rescuing ability are relatively weak in facing some major hazards, such as "11.15" fire accident, especially cannot play good role in terms of trans-regional emergency events.

In addition, the existing medical and disaster relief system is difficult to meet the requirements of dealing with large-scale terrorist attacks for lack of necessary professional technical support and personnel reserve against terrorism.

(3) Practical effectiveness of the drill needed to be improved

Although the emergency plan has been basically formed, exercises and drills in accordance with the plans have not been conducted effectively yet. There are few high-tech comprehensive practice and emergency drills with low probability. The effectiveness, pertinence and operability still need to be enhanced.

(4) Social participation is not enough

The citizens' participation is not enough. Most citi-

zens react passively in emergency accidents. Most social groups, volunteer organizations are involved in the EM after the disasters and they take less participation in incident prevention, public security education, etc.

Problems existing in Shanghai's legal system in EM

China has issued a series of laws like the "emergency response law", "overall national contingency plans for sudden public events", "Opinions of strengthenment of the comprehensive EM from the state council" and other related laws and regulations, establishing the legal system of public safety and EM, leading the EM gradually into a legalized track.

But acting as a national solution, the emergency response law only generally solves the problem of "what should be done", but does not make specific provisions in the implementation approaches. Shanghai should formulate measures detailed-ly and specifically for the law implementation.

COUNTERMEASURES FOR CONSTRUCTION OF SHANGHAI'S ORGANIZATION SYSTEM, MANAGEMENT MECHANISM AND LEGAL SYSTEM IN EM

Countermeasures in organization system construction

(1) Organization system of "committee, office, experts and bureau" should be established

Based on the existing EM system, the organization system of "committees, offices, experts and bureau" should be established to take full responsibility for Shanghai's urban EM. That is, Shanghai EM (simplified as EM) committee should be the unified leadership of the system, and the subordinate organizations consists of EM office, experts committee and EM bureau will be responsible for the detailed EM work. The EM committee is in the highest authority, the office will perform the function of "information aggregation and comprehensive coordination" and daily operation of the committee. The experts committee is the consulting organization, while the EM bureau is responsible for specific transactions. The target organization mode is shown as

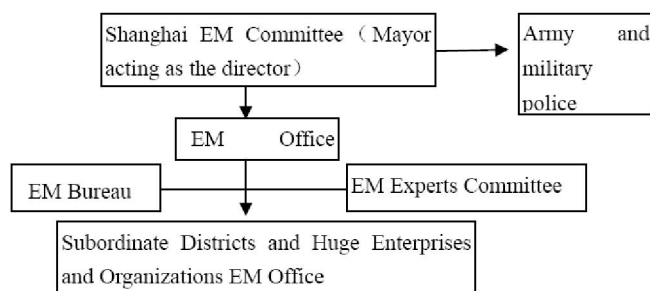


Figure 1 : the target EM organization structure of Shanghai
Figure 1.

(2) Functional departments of EM bureau should be set up

The purpose of setting up EM bureau is to make the responsibility and duties of the functional departments accordance with the whole process. Specifically, EM bureau should set up departments of policy formulation and planning, forecasting and early warning, prevention, emergency rescuing, recovery and reconstruction, respectively corresponding to the EM process of prevention and preparation, monitoring and early warning, emergency disposal and rescue, recovery and reconstruction, etc.

(3) Social participation should be improved by propagation and education

The whole public security education network system is composed of schools, communities, enterprises and institutions should be set up as soon as possible. Multiple forms of public safety knowledge education should be carried out to improve citizens' conscious, skills and knowledge in emergency coping.

(4) Trans-regional network of emergency rescuing system should be constructed

Good emergency response abilities are vital to those disasters that are difficult to be forecasted. The existing urban rescuing power in China now is relatively dispersed and weak, so an integrated network of emergency rescuing system needs to be built to concentrate on the force to best play the role in emergency coping. For example, the fire forces can be constructed as the leading components in the network in China with its specialized equipment and technology to play flexible role in emergency rescuing.

(5) Experts decision support system should be established

The experts decision support system should be established. Firstly, it should make research on related fields to keep scientific and forward-looking; secondly, it is responsible for providing evaluation and guidance for the emergency plan of different organizations; thirdly, it will assist to urban EM assessment and supervision; lastly, it should provide decision-making consultation once emergency happens.

Countermeasures in management mechanism construction

Good management mechanism should be further constructed based on the organization system innovation. The predominantly existing mode of post disposal should be converted to forecasting and prevention gradually.

(1) Risk identification and evaluation of the city's EM capacity should be strengthened.

Emergency risk identification and management ability investigation should be carried out on the basis of urban disasters analyzing. The disaster risk and database system should be built up to comprehensively forecast and analysis types and properties of urban disasters and accidents that might occur, furthermore, to predict and assess the influence scope, the affected degree once the disaster events occur. On the basis of comprehensive EM ability investigation, the city's disasters relief capability assessment should be developed.

(2) Emergency information management should be promoted and the information network system should be established

The system of information collection, transmission, analysis and evaluation in Shanghai now is quite weak. The communication and network technology should be put into use comprehensively to improve the ability of emergency communication and information security. The dynamic and comprehensive network system of collection, analysis and evaluation of city emergency information should be established and perfected. The existing information resources should be integrated in the platform and the ability of information obtaining, interactive, summarizing, analyzing, services, distribution and sharing should be improved.

(3) Emergency monitoring, forecasting and early warning capacities should be improved

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Uniform natural disasters network system of monitoring, forecasting and early warning, information launching should be established. Various warning level of natural disasters should be standardized to improve the forecasting effectiveness. Various communication approaches and media such as radio and newspapers should be made full use of to release the information correctly and timely to eliminate the loss.

(4) Practical training, drills and theoretical research should be widely promoted

The technology research and personnel training should be strengthened to provide science and technology support for government. Firstly, the EM professionals are quite scanty in Shanghai now. Shanghai should provide ways to establish training and education base of EM to cultivate plenty of professionals. Secondly, the research and development base of EM should be established. In building new research and development base, the existing scientific research platform from institutions and colleges should be made full use of.

Countermeasures in legal policies' construction

Shanghai should speed up the construction of local rules and regulations under the guidance of national laws, improving the existed regulations to perfect the whole EM legal policies system to maintain public safety. The responsibilities, rights and benefits of the government, functional department, public organization and personal should be further defined and set clearly and strictly in the legal system, which is the guarantee and basis of the innovation of the management system.

On the other side, the requirement of management, disposal and supervision according to the law should be abided by strictly.

CONCLUSION

The city public accidents possess the characteristics of abruptness, destructive and diffusivity. On one hand, natural disasters, production accidents and environmental pollution occur frequently; on the other hand, the problems such as population explosion caused by globalization and urbanization increase the urban risk. Facing this, urban public safety is confronted with new challenge. As a metropolis, shanghai has made great progress in the construction of the organization system,

management mechanism and law system of EM, but will face greater challenge in future. Shanghai should summarize the performance already made and provide countermeasures to face more complex and rigorous social risks in future.

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