



The Analysis and Countermeasures of Geologic Disaster Risk Socialized Management Issues

FU Yuanzhai^{[a],*}; LI Hongyu^[b]

^[a] School of Finance and Economics, Jinan campus of Shandong University of Science and Technology, Jinan, Shandong, China. Associate professor engages in Resource Economics and Management.

^[b] School of Finance and Economics, Jinan campus of Shandong University of Science and Technology, Jinan, Shandong, China. Lecturer, mainly engages in Finance and Business Economics.

* Corresponding author.

Address: Shandong University of Science and Technology, No. 17, Shenglizhuang Road, Tianqiao District, Jinan, Shandong, 250031, China.

Supported by National Science and Technology Support Plan Project: Seismic Disturbance Area of Landslide Debris Flow Disaster Prevention Technology Research and Integration (2011BAK12B09).

Received 14 August 2014; accepted 17 October 2014

Published online 30 November 2014

Abstract

As one of the countries which suffer the most serious geological disaster, China has built up a disaster management mechanism (the government is unified leadership; responsibilities are divided among different departments; disasters are administrated level to level and apanage management is given priority to) during the process of disaster management, which played an important role in the process of disaster emergency rescue, but this disaster management mechanism which is too much rely on the government could not adapt to the economic and social sustainable development requirements. Therefore this paper analyzed the existing problems of current geological disaster risk management mechanism, drawing lessons from the advanced experience of other countries in disaster management, and put forward the geologic disaster risk management countermeasures and suggestions.

Key words: Geological disaster risk; Socialized management; Countermeasure

Fu, Y. Z. & Li, H. Y. (2014). The Analysis and Countermeasures of Geologic Disaster Risk Socialized Management Issues. *International Business and Management*, 9(2), 57-61. Available from: <http://www.cscanada.net/index.php/ibm/article/view/5743> DOI: <http://dx.doi.org/10.3968/5743>

INTRODUCTION

Serious geological disasters such as earthquakes, landslide and debris flow happened in China frequently, which are affected by special geological features, climatic anomaly, eco frail and unreasonable human activities (OuYang, 2010), and it brings severe harm to people's lives and properties, the national economic construction and social development. Additionally, affected by global climate change and the rule of the crustal movement, the geological disaster risk has increasing trend.

Currently, China is implementing the disaster reduction and relief mechanism (The government is unified leadership; responsibilities are divided among different departments; disasters are administrated level to level and apanage management is given priority to), which greatly improves disaster emergency rescue capabilities. But the geological disaster risk management is a systematic project, which involves many aspects, such as government, market and society. China's disaster risk management mechanism which relies on the government has significant effect in emergency, but there is still a big gap compared with developed countries in the legal system construction, the change of government function, the establishment of market mechanism and social participation, which leads to insufficient routine administration of disaster and unsuitable to the economic and social sustainable development's requirement. So it is very necessary to analyze the current problems in disaster management mechanism, and to realize the change from management to governance.

1. PROBLEMS OF CHINA'S GEOLOGICAL DISASTER MANAGEMENT

1.1 Problems of Legal System

Firstly, the legal system of disaster countermeasures is incomplete. Up to now, China has promulgated more than

30 laws and regulations related to disaster prevention and mitigation, but lacks fundamental and comprehensive law in the field of disaster prevention and mitigation, and legislative level is generally low. Only “People’s Republic of China Earthquake Disaster Mitigation Act” which is related to geological disasters is promulgated by the National People’s Congress. Secondly, the link legislation is missing during the process of disaster management, because individual legislation mainly focuses on disaster prevention and anti-disaster process, but it lacks a comprehensive system arrangement in disaster relief process especially in rescue and post-disaster reconstruction aspects. Distributed disaster response legal system still appears weak in dealing with the complex disasters. Thirdly, the legal content is general and abstract. The law of disaster rescue emphasizes its operability, but a number of current clauses only refer to principles without system implementation. Fourthly, the law enforcement does not reach the designated position. China’s disaster management to a large extent relies on the government’s authority and the administrative management rather than relying on the law, so the awareness of management by law is weak in the field of disaster management, and the politicalized problem is serious. Fifthly, disaster preparedness and mitigation step to amend the law lags behind, which did not play the role of legal prevention in advance.

1.2 The Problems of Government Functions in Disaster Management

The government must become the core of risk management subject, which is decided by public hazards of disasters, but China has been the lack of an independent and permanent disaster management department. China’s national disaster reduction committee is not an entity, but it is just a cooperating agency which is made up by nearly 30 ministries and commissions. Geological disaster management involves at least over 20 departments such as the ministry of civil affairs, China seismological bureau, China meteorological administration emergency and disaster mitigation and public services department, but these departments are independent of each other, which separates the logical connection of disaster management’s various links. The lack of effective mechanism of resource sharing, pre-disaster prevention and disaster recovery management power in the process of dispersion and difficult to rapid effective integration of resources when the disaster emergency weakened the government’s ability to cope with all kinds of emergencies, which due to low efficiency of management. Secondly, disaster management functions of government exists look-ahead, lag behind and insufficiency. “Look-ahead” means the government is offside in disaster management. “Almighty” government authority extends to the social dimension and conducts intervention, which leads to the disaster management relying too much on the government and weakens the social role, so the government is caught in a vicious circle

(disaster—government rescue—reestablishment—the same disaster—government rescue again) and bears a huge financial burden, and it is difficult to achieve the goal of taking disaster reduction as the important guarantee for economic and social sustainable development. “Lag behind” refers to the absence of government responsibility, and it is characterized by the lack of disaster prevention and mitigation planning. Such as the construction of China’s urban disaster fortification only considers earthquake and flood two risk factors, but other geological disasters such as landslides and debris flows are not considered. Additionally, the utilitarian view of local government leads to insufficient investment in disaster preparedness. “Insufficiency” indicates public service consciousness of the government is insufficient and the social management function does not reach the designated level. Such as aid projects and standards are not clear, and there is no normalized education and training of safety culture consciousness, and the management coordination for disaster related professional organizations and Non-Governmental Organization (NEO) resource is poor.

1.3 Lack of Disaster Risk Socialization Management Mechanisms

Firstly, it lacks Clear definition of rights and obligations of social unit in the law, and it is also short of explicitly stipulations about status, responsibilities and obligations of disaster relief professional organizations, NGO, community and volunteer, and the function and role of social organizations in disaster prevention and relief are ignored by the government. Secondly, it lacks effective mechanism to give play to the role of social organizations, so social organizations are hard to effectively participate in disaster relief work. Thirdly, it is absent of social consciousness of sharing the disaster management responsibility. It is out of social cultural adaptation mechanism of coordinating to respond to disasters (Wang, 2011), so social citizenship believe it is the responsibility of the government based on the absence of knowledge of disaster risk management, psychological fluke or the responsibility transfer of the subjective consciousness, which shows the shortage of disaster risk awareness, insurance awareness and consciousness of social mutual aid. Fourthly, it lacks risk of social loss commitment mechanism. At present China’s disaster compensation mechanism to response to geological disaster losses is mainly relied on the state financial relief and auxiliary dependent on regional counterpart support and social contributions, which means it is almost entirely dependent on government budgets (Zhu, 2013), but the effect of risk diversification and compensation through capital market channels is limited. For example, the direct economic losses caused by “5.12” Wenchuan earthquake amounted to 845.1 billion yuan, but the total payment of insurance indemnity is 1.66 billion yuan, accounting for only about 0.2% of the direct economic losses; the insurance

payments of Ya'an earthquake only accounted for 0.03%; this proportion is 36% on average in developed countries. In China's geological disasters loss compensation mechanism, the geological disaster catastrophe insurance mechanism is just to start a pilot, and the economic compensation effect of insurance market is lag, and the role of the capital market is far from played out, so the role of the market mechanism of disaster management is very small, which means it is not a mature economic market performance.

2. ABROAD EXPERIENCE OF GEOLOGIC DISASTER RISK SOCIALIZED MANAGEMENT

2.1 American Experience in Disaster Management (Yang, 2012)

Firstly, In the aspect of disaster prevention and mitigation, the United States mainly taken "Stafford disaster reduction and emergency aid bill" (Anonymous, 2006) and "The National Emergencies Act" as foundations to set up different disaster emergency laws, such as "National Earthquake Disaster Mitigation Act", and the contents of laws and regulations are comprehensive, and the United States guides the government departments at all levels and organizations to respond to disaster prevention and mitigation work according to law, planning, and pre-arranged planning. Secondly, from the national security council in the United States department of homeland security (DHS) federal emergency management agency (FEMA) to all levels of government have an independent standing body, which are responsible for the daily management of disaster prevention and mitigation work and comprehensive coordination, with institutionalized organization, scientific operation mechanism, professional rescue team, and standard and procedural disposal process. Thirdly, the disaster prevention and relief is socialized. American social forces are highly developed, which is the third largest social organizational elements except for government and market; the management participation of social disaster is very high, and all kinds of NGO such as community disaster response teams, the Red Cross, industry associations, church organizations and individual volunteers are active in relief work line, which offers a variety of services to the affected people, and government agencies and many kinds of NGO are highly coordinated to provide services (Zhang, 2012) and to participate in emergency procedure of various types of disasters and to implement reconstruction program which is leading by community (Yang, 2012). Fourthly, catastrophe insurance plan launched by the government should be carried out, and compulsory insurance of geological disasters such as earthquake should be promoted, whether to participate in any form of insurance should be taken as a condition to acquire federal relief funds or loans. In addition to

traditional insurance mechanisms, limited insurance, reinsurance and capital markets through the transfer means such as catastrophe bonds, catastrophe options, swap contracts and other insurance catastrophe derivatives market are developed.

2.2 Japan

Firstly, the government attaches great importance to the disaster countermeasures of legislation, and laws related to the geological disasters accounted for 28 units. The government formulates or modify the law along with almost every major disaster occurs, and all kinds of disasters and major issues at all stages of disasters are clearly defined, so it is gradually formed a disaster management legal system by the Basic Law, disaster prevention and disaster planning related law, disaster emergency laws, post-disaster reconstruction and recovery laws and disaster management organic law (Yang, 2008), which provides effective legal protection and basis for the good management of disaster prevention and mitigation mechanisms in accordance with law. Secondly, it implements disaster socialized management based on community and establishes the rescue mode of government aid limited liability where self-rescue and government assistance is given priority to and social assistance is complementary. Normal social mobilization mechanism and community disaster prevention system where into the community, family and individual are established, and more professional rescue organizations and teams are trained, which forms a national disaster medical network system (Kang & Xiang, 2011). Developed NGO, high popularizing rate of community disaster organizations and highly specialized emergency relief formed an overall linkage system of individuals, groups, civil society organizations and government forces. The government emphasizes on disaster prevention education and attaches importance to enhancing the national disaster prevention and relief mass awareness activities, so a sound national disaster prevention and education mechanism is established. Thirdly, Geological disaster insurance started earlier in Japan, so the market is more mature. Since 1966 on the establishment of earthquake insurance system, earthquake insurance operation mode is unique, which use insurance, reinsurance, social assistance and government aid to build up four lines of defense to fight natural calamities. Public awareness of earthquake insurance is higher, and earthquake insurance average enrollment rate is about 20%. Government, reinsurance market and insurance companies participate in the operation of earthquake insurance mechanism.

2.3 Other Countries

Firstly, Australia, Germany, Britain and South Korea have formulated the Basic Law of disaster management and the specific laws for different disasters, and these countries makes specific provision about disaster relief, disaster

recovery and disaster countermeasures agency operations, disaster investigation, disaster impact assessment and alerts issued (Dai & Deng, 2010).

Secondly, British volunteer's organization and management worth learning, usually volunteer organization are established and local volunteer resources are mastered by the local government "emergency planning officer" (Zhao, 2006), who maintains contact with all kinds of volunteer associations and conduct emergency training and practice. Germany also sets up a crisis management training college to strengthen the ability of disaster-related social organizations as well as commanding leader, manage staff, professional and technical staff and volunteers. France leads the world in natural disaster insurance system. On one side, legislation takes insurance as a financial means of natural disaster risk management to ensure the insurance company's position in law. On the other side, the combination of government's guarantees and compulsory and awareness of universal insurance makes insurance broad-based, so the risk of catastrophe is turned from uninsurable risk into the risks can be guaranteed, which not only makes insurance coverage have no upper limit, but the underlying retention is also very low, and give full play the role of insurance.

3. COUNTERMEASURE AND SUGGESTION

3.1 Establish Effective Prevention and Mitigation Legal System of Geological Disasters

First of all, Speed up the legislative work of the Basic Law of disaster, and the duty and obligation of all levels of government, enterprises, social organizations and citizens in disaster management should be explicitly stipulated from disaster prevention organization, disaster planning, disaster prevention, disaster clearly defined emergency response, disaster recovery and reconstruction, fiscal and financial measures and emergency. Secondly, guides all levels of government to formulate or revise disaster prevention and mitigation planning and laws and regulations on this basis and improves the existing legal framework according to the disaster management process of disaster prevention and mitigation-relief-reconstruction, and then develops detailed workable laws and regulations about government, military and society's responsibility for disaster prevention and mitigation, emergency handling, disaster relief, disaster compensation, disaster recovery and reconstruction, disaster donations and disaster relief organizations and management. Thirdly, revises or establish new laws according to experiences and problems of disaster management. A sound legal system in favor of diversifying the system risk of disasters, distributing disaster prevention and relief to the usual routine of work, timely and efficient disaster relief and orderly recovery and reconstruction after disasters,

so it is the most important task of constructing disaster prevention and relief legal system in China to establish a clear division, coordinated and orderly and sustainable development disaster prevention legal system, which is conformed to China's political, economic, social, natural environment and management status, and relies on the relationship of central government and local governments, professional organizations and non-governmental forces, the government, society and the market.

3.2 Strengthen Social Governance of Disaster Risk

It is recommended to establish an independent agency to be occupied in integrated disaster risk management to break the current distributed disaster management system, to solve the problem of function dispersion, cross and omission, and to build a whole process of comprehensive emergency system which is in favor of unified command and scheduling and includes mitigation, preparedness, disaster response, reconstruction and rehabilitation (Wang, 2011). Additionally, strengthen the transformation of government functions, improve the government's public service function and enhance the government's organizing and coordinating functions in establishing disaster laws and regulations, guiding disaster prevention and mitigation, setting up disaster monitoring system, social resource allocation, market supervision, bailout funds, disaster management capacity training and disaster awareness education and disaster areas of sociology, law and administrative studies, which changes the situation of over-reliance on and too much emphasis on government in the past.

3.3 The Whole Society to Participate in Disaster Risk Management

The whole society to participate in community-based disaster management is the foundation of geologic disaster management. For one thing, China implements the emergency mobilization disaster management model which is based on the Government, and the effect of NGO, community and individuals in disaster prevention and mitigation routine pre-disaster preparation and disaster relief normal management is insufficient, but the current enthusiasm of the whole society to participate in disaster management is adequate, and many enterprises and NGO's rescue capabilities are more professional, so it can effectively improve disaster prevention and relief of grassroots resistance and professionalism to strengthen the training, guidance and deployment for NGO, community and the public, and to establish a diversified, multi-level, multi-channel and social participation mechanisms. For another thing, China should implement the community-based disaster management system and establish the mechanism of social organizations to participate in disaster management to further develop the role of monitoring and prevention system, to increase the law popularize intensity of disaster prevention and mitigation

of geological disasters, to strengthen public education and disaster prevention and relief of daily exercise, to train disaster prevention and rescue skills and to enhance national capacity to deal with unexpected disasters as a whole.

3.4 Stimulate the Market's Vitality

The government should be completed drawing land planning geological map and the land planning of disaster areas as soon as possible, conduct assessment of the role of financial institutions and the private insurance industry which are related to geological disaster insurance programs, improve financial markets and related laws and regulations for the support of government policies and funding and study in-depth and further attempt to establish catastrophe compulsory insurance, reinsurance, catastrophe bonds, options and other catastrophe "insurance derivative products" to promote the development of the insurance market of geological disasters. Additionally, the government should strengthen and guide disaster risk management awareness of society to improve the active hedging ability. The risks protective barrier of mature market should be individuals and enterprises themselves, insurance, social assistance and government bailouts. Effectively take advantage of market mechanisms and mobilize social resources in coordination with the government to jointly cope with the risks of geological disasters could avoid the impact of the economic and social development of geological catastrophe generated a greater degree.

CONCLUSIONS

The socialized management of geological disaster risk is a set of comprehensive and multi-level system which includes disaster prevention, disaster relief and compensation for reconstruction, and it is also a multi-industry participation and multi-level linkage of the whole social science disaster prevention and mitigation system (Zhu, 2013). This paper summarized domestic effective practices and advanced foreign experiences to improve the existing disaster management system and provide effective protection for China's sustainable economic and social development.

REFERENCE

- Anonymous (2006, Feb 16). Committee on transportation and infrastructure hearing on disasters and the department to of homeland security: Where do we go from here. Retrieved from <http://www.House.gov/transportation/fullhearing/02-16-06/emo.htm>.
- Dai, S. L., & Deng, M. R. (2010). Disaster management system comparison research between China and developed countries. *Academic*, (2), 47-52.
- Kang, P. Z., & Xiang, J. F. (2011). Comparison between China and Japan earthquake relief social mobilization system. *The Frontier*, 65-68.
- OuYang, X. Y. (2010). *City disasters comprehensive risk assessment* (Doctoral Dissertation). Retrieved from China National Knowledge Infrastructure.
- Wang, G. L. (2011). *Australia's natural disaster management and assistance system research and enlightenment* (Doctoral Dissertation). Retrieved from China National Knowledge Infrastructure.
- Yang, D. (2008). Japan's disaster countermeasures system and its enlightenment to China. *Academic Journal of Zhongzhou*, (5), 37-42.
- Yang, X. H. (2012). The relief of emergency linkage mechanism and social research. *Production Safety Science and Technology of China*, (1), 118-122.
- Zhang, Q. Y. (2012, August 20). Australian meteorological disaster prevention and control of four ideas. Retrieved from <http://www.weather.com.cn/climate/qhbhyw/08/1696730.shtml>.
- Zhao, J. (2006). The British government emergency management system and its enlightenment. *Military Economic Research*, (10), 136-138.
- Zhu, J. Y. (2013, September 18). Establishment conforms to the situation of catastrophe insurance system. *The People's Daily (Beijing)*.