

Integrated Risk Governance Strategies and Modes for the Large-scale enterprises of China

Peijun Shi

Beijing Normal University

SPJ@bnu.edu.cn

Weihua Fang, Jing Liu,

Qinghai Yao, Di Tang

China Insurance Regulatory Commission

Global risk has increased due to global change (including global environmental change and globalization), which is mainly represented by the increased frequency of weather and climate extreme events: influencing the normal operation of some infrastructures in the world, increasing the production accident risks, and decreasing the service capacity of the global ecological system. Meanwhile, the world-wide dissemination of kinds of risks due to globalization is being strengthened by WTO or Regional cooperation organizations such as: “ASEAN Ten Countries”, “ASEAN Ten Countries +1” and “ASEAN Ten Countries + 3”, APEC, EU, Alliance of America, Canada and Mexico, etc. Hence, for the world’s sustainable development, it is required to accelerate the development of IRG science and technology. This paper puts forward the framework of integrated risk governance under global changes, that is integrated risk science system, integrated risk governance technology system and integrated risk management system. Based on this, the integrated risk governance science plan is suggested to setup under IHDP, and its main objects are: 1) How to measure the integrated risk problems on the premise of global environmental change: i.e., the improvement of theories and methodologies for integrated risk measurement; 2) How to probe the system design problem for IRG under the background of globalization: building of the legal system and administrative system for IRG; 3) Formation mechanism (dynamics) for integrated risks under the background of global change and the theory and technology for its model and analog: i.e., risk dynamics and its model and analog; 4) IRG model and its promotion and application for the high-risk regions under the background of globalization: i.e., selection, promotion and application of typical successful cases of IRG; 5) Construction of information-sharing platform for global, regional and local-dimension integrated risks under the multi-lingual and cultural environment and building of the integrated risk information and effective technical service system: i.e., integration of risk information and capacity building for public and commercialized services; 6) Global-dimension promotion of sustainable development and building of IRG model: i.e., build the demo regions integrated with sustainable development and IRG adapting the global environmental change.

Keywords: Integrated Risk Governance, Global Environmental Change, Globalization, IHDP-Science Plan

1. Introduction

1.1 Increasing Global Risks due to Global Environmental Change

The global warming due to the natural and human activities has become a fact beyond dispute. No matter how much the natural or human dimensions contribute or if the trend of future change will continue or change in direction, this basic fact of global environmental change attracts the governmental decision makers at all levels, manufacturers and scientists to start their high concern

over the relation between global environmental change and disaster risks, especially the contribution of global warming to the increase of disaster risks. In recent years, the increasing extreme weather events due to global warming has intensified disaster risks, as has been gradually demonstrated in the meteorological observation data from all over the world (Emanuel, 2005). The IPCC 4th Assessment Report has also demonstrated further the increased frequency of exceptional weather and climate due to the climate warming, including the expansion of drought frequency and scope, increase of heavy rainfalls and increase for frequency of strong tropical cyclone in some of the regions (WMO, 2007). Global warming not only leads to the frequent extreme weather events, but also affects the normal operation of infrastructures in the world and increases production accident risks.

1.2 Diffusing Risks due to Globalization

In recent years, in the process of global change, globalization is accelerated. The number of countries joining WTO increases continually. Especially since China with one fifth of the world's population joined WTO, globalization has obviously speeded up. As per guest and estimate, the market-based extent of China has reached over 73.8%, while her GDP has shown an annual average growth of over 8% over the last five years. China has become a country with the most prominent influence scale over the global economy and trade (Li, et al, 2006). With globalization in progress, regionalization is also accelerated. The world-wide inter-country and inter-region economic, trading and governmental cooperation organizations have been continually enhanced, including "ASEAN Ten Countries", "ASEAN Ten Countries +1" and "ASEAN Ten Countries + 3", APEC, EU, Alliance of America, Canada and Mexico, etc. Accelerated development and strengthened contact between these regionalized organizations has also enhanced the special diffusion and diffusion of different risk factors. Due to different disaster insurances and re-insurance services established by some countries, the regions of influenced caused by disaster risks have been obviously expanded. For instance, such international re-insurance companies as Swiss Re-insurance Company and Munich Re-insurance Company have recently permitted successively to undertake re-insurance businesses in China, while some international insurance companies are also allowed to undertake insurance businesses in China. All these have transferred different risks of China to other countries of world through international insurance and re-insurance businesses. In the rapid development of China's market economy, these international insurance and re-insurance companies have obtained shares in China's insurance and re-insurance market as well as undertaken the liabilities of different risks from China. The rapid development of Internet has not only accelerated economic and social globalization, but also initiated huge risks. For some governmental work systems and corporate and commercial systems depending on Internet, once Internet breaks down, it will cause serious impacts and even huge losses. For instance, at the end of 2006, the strong earthquake in the South Pacific caused a serious impact on the sea-bed optical cable through the South Pacific and suspended the internet of Mainland China and Taiwan with USA and other American countries for a period of three weeks. It has seriously impacted the exchange between governments the online businesses of enterprises and different academic and cultural activities, causing an estimated loss of billions of US dollars. Besides, the accelerated development of globalization has also influenced to some extent the process of urbanization in countries and regions all over the world. In China, due to joining WTO, the industry-intensive regions with high dependence on the international market have speeded up the urbanization. Formation of the world's high-risk regions is not only related to the

frequent natural disaster factors in these regions, but also associated with the internationalization standard of these regions in their economic and social development ([Dilley, M.,2006](#)).

1.3 Development of IRG Science and Technology for the Global Sustainable Development.

In the process of promoting the international disaster reduction, UN has convened two world disaster reduction conferences respectively in Japanese Yokohama (1994) and Kobe (2005) and issued the Yokohama Declaration and Hyogo Declaration. The former declaration has a target to build a 21st century keeping the world safer, stress on mobilizing all modifiable forces and promote the realization of UN-IDNDR. Based on the former strategy and action assessment, the latter declaration has further elaborated the relation between promotion of the world's sustainable development and reduction of disaster risks and called on all UN member countries to show high concern over the frequent occurrence and increase of different disaster risks possibly due to the global environmental change and tremendous obstacles for realizing the target of global sustainable development. It is hereby observed that the development of IRG science and technology plays an important part in realizing the world's sustainable development. In the Millennium Development Goals, the UN has also taken it as an important measure to reduce the impact of different disasters and raise the capacity of responding to different disaster risks.

The Sixth IHDP Open Science Conference held at Bonn, Germany in 2005 has taken up the subject of global safety as its theme to discuss, in different dimensions, the policy, economic, social and technical approaches for the sustainable development and reduction of disaster risks. The International Disaster Reduction Conference held at Davos, Switzerland in 2006 has also taken it as its major subject to promote the regional sustainable development and reduction of disaster risks and has especially stressed on the recovery and rebuilding of the ecological system as the national and regional important infrastructures for construction so as to relax, in a macro scale, the aggravation of different disaster risks and reduce the frequency of disaster risks. To realize the strategy of disaster reduction and sustainable development, UN-ISDR (International Strategy for Disaster Reduction) states clearly that it is necessary to establish the social system with coexistence of risks and emphasizes to start with raising the capacity of communities for risk resistance and to promote the regional sustainable development ([UN—ISDR, 2004](#), [UN—ISDR, 2005](#)).

According to some research workers, the financial and insurance approaches can be taken to reduce different risks, especially disaster risks in the regions of the kind ([Linnerooth-Bayer. NET al, 2005](#)). Additionally, by strengthening the integrated risk management, it is of an important guiding role for the regions to establish the development model adapting different risks. The “three-base fish pond” for land utilization developed in the Zhujiang River Delta of China has played an important role in relaxing the flood and drought disasters in the region. The land utilization model of terrace and silted land dyke in China's loess plateau has also played an important role in reducing the soil erosion and drought risks in the region ([Shi et al, 2003](#)).

2. Strategies and Modes

As an important component of the industrial system, a large-scale enterprise has a complicated current system of materials and products, flux and information, prices and funds, capital and risks. The risks of large-scale enterprises usually consist of decision-making risk, financial risk, investment risk, producing and selling risk, technical risk and human resource risk, and also include

the environmental risk and disaster risk where the large-scale enterprise locates (Figure 1). Large-scale enterprise comprehensive risks management is a risk management system which is designed according to various risks that large-scale enterprises are facing with, and includes risk identification and diagnosis, risk estimation, risk simulation, risk response and risk adaptation. The large-scale enterprise risk response sub-system is generally comprised of risk control and risk finance. The former involves avoiding and alleviating risks, while the latter involves retaining and transferring risks.

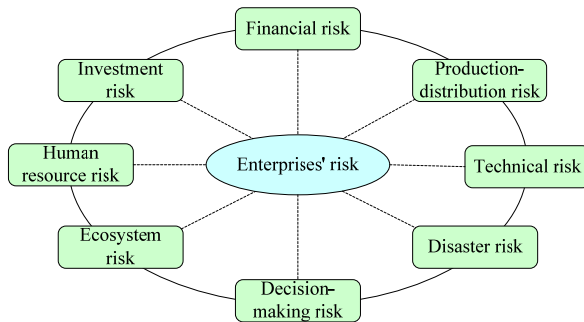


Fig. 1 Main risk types in large-scale enterprise

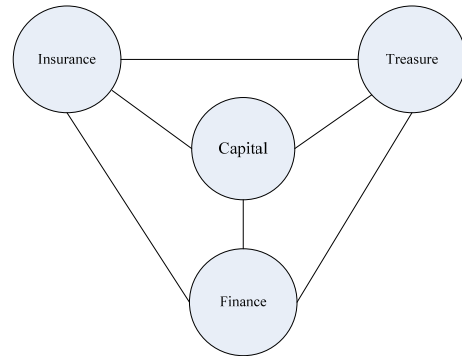


Fig. 2 Concept model of management strategy for large-scale enterprise

2.1 Management strategies

A management strategy for large-scale enterprises is shown in figure 2. From the figure, we see that the fundamental risk the large enterprises are facing is the capital risk. Therefore, we need build integrated risk management strategies for large enterprises from the enterprise insurance, investment and financial activities, from the financial input system of the communities where the enterprise is located. There are three aspects including in this management strategy systems: 1) construction of community safety sub-system; 2) construction of financial safety sub-system for enterprises and 3) construction of safety sub-system for productions and sales (Figure 3).

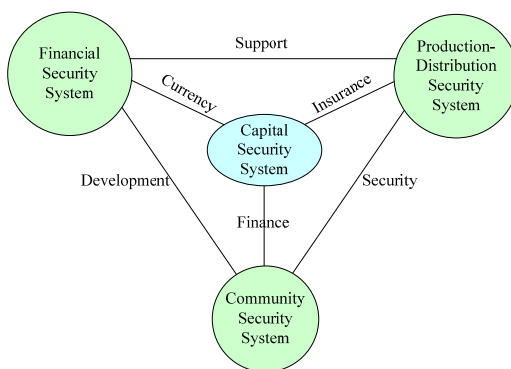


Fig. 3-a Strategy systems for enterprises

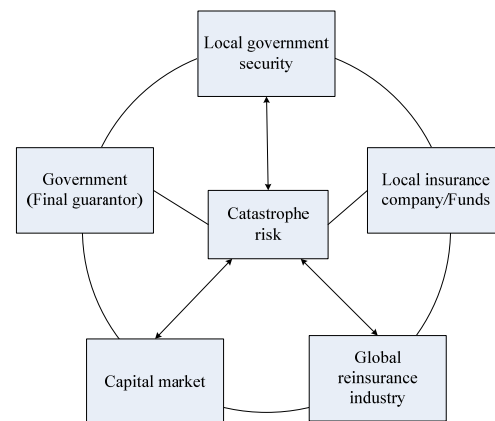


Fig. 3-b Strategy systems for catastrophes

(OECD.2007)

2.2 大型企业综合风险管理模式

Risk manager in Large-scale enterprises plays a vital role in integrated risk management. As the various risks the enterprises facing increased, enterprises greatly enhanced risk management and bring a dedicated job, Enterprise Risk Officer. In recent years, in order to strengthen the management of the various risk the enterprises are facing, in international and transnational enterprises, chief officer of enterprise risk is raised as vice president of enterprise, who integrates the enterprise risk management capabilities and resources, forming the so-called integrated enterprise risk management model (Figure 4).

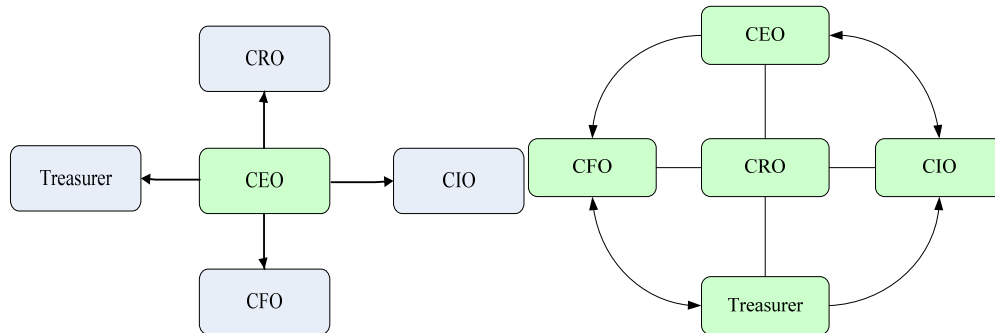


Fig. 4-a Role of Risk Officer (Old Mode) Fig. 4-b Role of Risk Officer (New Mode)

Three facets are involved in the mode of integrated risk governance for large-scale enterprises: 1) improvement of financial risk management system; 2) improvement of risk management of the investment and financing system; 3) Improvement of enterprise calamity risk management system (Figure 5).

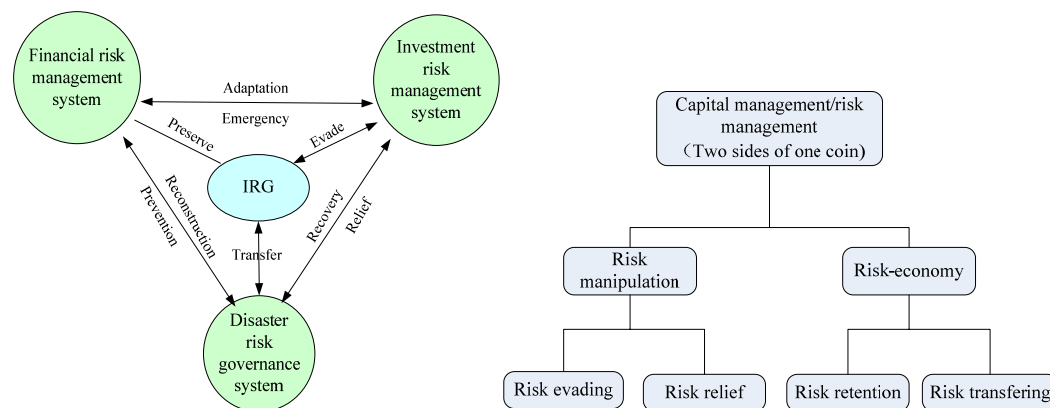


Figure 5-a Macro mode for IRG Figure 5-b Micro mode for IRG

(Shimpi et al.1999)

2.3 Main Measurements

In order to achieve the integrated risk management strategies and build a integrated risk management model as mentioned above, large enterprises need to follow three measures to achieve the desired goals (Figure 6): 1) setting up integrated security plan, 2) compiling integrated emergent plans, 3) formulating a integrated plan to response the risks.

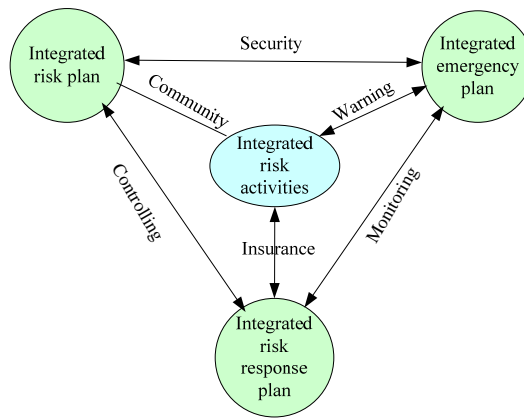


Fig. 6 Main measurements for integrated risk management in large-scale enterprises

3. Brief Summary and acknowledgement

In this paper, we generate discuss the risk under global change and summarize the progress in the research of integrated risk governance. We focus on the integrated risk governance strategies and modes for large-scale enterprises and bring some solutions to the management. This work is reviewed by Large-scale risk management summit forum hold on 30, March, Beijing, and supported by National Science & Technology Support Program of China (2006BAD20B00).

Reference

WMO, Climate Change 2007:The Physical Science Basis, Summary for Policymakers, IPCC WGI Fourth Assessment Report, Paris, February, 2007

World Bank, 2006, Hazards of Nature, Risk to Development: An IEG Evaluation of World Bank Assistance for Natural Disaster, World Bank, Washington DC.

Emanuel, K., 2005 Increasing Destructiveness of Tropical Cyclones over the Past 30 Years, Nature 436,686-688

World Bank,2006, Natural Disaster; Reducing Risk, Recovering Faster, World Bank, Washington DC

UNISDR, 2004, Living with Risk, Geneva, Switzerland

UNISDR, 2005, Know Risk, Geneva, Switzerland

First Conference Organized under the Auspices of the OECD International Network on the Financial Management of Large-Scale Catastrophes, February 26-27, 2007, Hyderabad, India.in: <http://www.oecd.org>,