

# Chapter 8

## Disaster Risk Management



This chapter illustrates disaster and risk management. The disaster management includes hazard management and disaster issue management. Disaster risk management relies on the institution, policy, and scientific and technological progress for disaster reduction. Improving disaster risk management capacity is the key point to improving the utilization efficiency and effectiveness of disaster reduction resources, which is also an important guarantee for disaster risk reduction.

### 8.1 The Basis for Disaster Risk Management

As there are different stages of social development, Ulrich Beck, who is a German sociologist, presented that the world is marching into the “risk society” era as the representative of a group of scholars. The basis of disaster risk management is the maturity of institution and policy. Different countries have different disaster risk management institutions and policies, whose assessment standards are the utilization efficiency and effectiveness of disaster reduction resources. The core of disaster risk management is according to law and regulation administration, and the key to disaster risk management is the implementation of policies. Disaster risk identification, monitoring, assessment, simulation, early warning, etc., are all important scientific and technical securities to improve the disaster risk management. Disaster risk management is the foundation of disaster risk prevention.

### ***8.1.1 Risk Society and Disaster Risk Management***

#### **(1) Risk society**

Risk society refers to a specific type of society, economics, politics, and cultural situation, whose characteristic is the widespread logic of increasing artificially created uncertainty. It requires that the current social structures, systems, and links transfer into a new form including more complexity, contingency, and fracture (Beck 1999).

Ulrich Beck believed that with the development of modern societies, conflict between the internal society and external resource environment is growing that globalization of economics, technology, culture, and environment are accelerating and that many uncertainties were brought by the development of science and technology, and the nature of modern society risk is changing. Risk events which appear to be local or accidental had action system in fact. Induced by certain factors, it is likely to lead to a major social disaster; more importantly, because the modern information technology is highly developed, fear or distrust caused by risks and disasters pass through modern information techniques rapidly to the whole society, leading to social unrest.

Risk society is a holistic summary of contemporary social risks and a holistic and systematic overview of the emerging social risk in modern society status, role, and possible influence. "Risk society" contains multiple meanings. First, Beck proposed the concept of "risk society" with the purpose of characterizing the social form shifting from traditional industrial society to a post-industrial society, i.e., the risk society form. Compared with the traditional social risk phenomenon, the risk society has changed fundamentally: "Shift from natural risk to artificial risk, from local risk to global risk, from simple risk coping to the composite risk coping." Second, Beck thought the risk society is the awareness and assessment of social risk in a specific cultural background; therefore, it represents the awareness of the social problems which may arise in the future. Third, the risk society is a disaster society, of which human-made disasters change from emergency to routine; that is, in today's era of globalization under conditions of rapid high technology development, i.e. the new era of globalization, those appear as local or unexpected events or problems might tend to raise and lead to overall social disasters. Those appear to be less important such as political interference and action field, argument, minor changes of which have led to fundamental and long-term changes in the power game of risk politics. Finally, the main problem of risk society is man-made risk uncertainty. Thus, if we have to give a brief definition of the risk society, it should refer to a new stage of development in the context of globalization, i.e., a social formation with global social risk as a predominant issue due to the human behavior and decision making, and various global risks have serious threat to the development and survival of the human kind. In other words, Beck's risk society theory is a reflection and criticism of the normal society theory, as well as a unique view for the reflection and criticism of modernization and modernity. Though this theory was developed later and less mature than the other social theories, it has soon

become the focus of social problem researches. In the developed modern societies, social wealth production is accompanied by the risk society occurrence systematically. Accordingly, problems and conflicts which are related to the distribution and the shortage of society overlapped with the risks arising from the development of science and technology production, as well as the problems and conflicts caused by definition and allocation (Beck 1999).

It is argued that risk society is a social formation based on risk and risk responses, including industrialized society, modern society, technological society, high-risk society, and unstable society.

Modern risk has greater impact, stronger systematicness, higher uncertainty and unpredictability. It's no longer a "one-time incident", but a new form of society. Humankind has entered a "global risk society", and have to co-exist with "risks". (Beck 1999). UNISDR also advocated to live with risks (UNISDR 2004).

For modern risk society, once the risk is translated into real disaster, its coverage and impact will be considerably higher than traditional disaster, which is fully confirmed by a series of catastrophes occurred in recent years, such as the destructive storms and floods in Europe, storms in Canada, new infectious diseases (AIDS, SARS, Ebola virus, bird flu, and mad cow disease), terrorist attacks ("911" event, Matsumoto sarin incident), computer viruses, high-tech risk, energy crisis, and financial unrest. These modern risks are generally multi-dimensional social phenomenon, involving natural, social, economic, psychological, and administrative levels. Interaction between the various risks is more closely linked, often forming risk chain which is induced by each other, with a larger influence scope and a more complex mechanism. High uncertainty and complexity often drew heated debate between the public and even the experts, which made the risk appraisal and decision more difficult. The limitations of traditional risk management institutions which are based on the quantitative scientific measurement and expert system of a single discipline have been exposed. The coming of "risk society" brings new challenges of traditional risk management mechanisms to the human society (Wu 2011).

## **(2) Disaster risk management**

Disaster risk management is a social system to manage and adapt to the risk and its consequences. Risk prevention emphasizes multi-subjects, multi-mechanisms, while the disaster risk management emphasizes a single subject and a single mechanism.

### **① The institutional basis for disaster risk management**

Disaster risk management emphasizes the systematical establishment of the risk management considering the characteristics of risk society, the universality, globalization, artificiality, and uncertainty of the risk. In China, the disaster risk management system is based on the relevant laws, regulations, ordinances, standards, specifications, approach, schemes, plans, etc.

The general laws include laws, administrative regulations, local regulations, and rules. Chinese laws follow the principle that the special law is prior to the general law, while the new law is prior to the old law. As for the coverage of the laws, the ranking is as follows, laws > administrative regulations > rules > local regulations > autonomous regulations > specific regulations.

Regulations refer to the normative documents enacted by the state organs. Administrative regulations are formulated by the State Council, while the local regulations are established by the local people's congress. Ordinances are comprehensive and systematic regulatory documents with long-term effectiveness formulated and published by the state authorities or administrative authorities in accordance with the policies and laws, considering certain specific matters within the political, economic, cultural, and any other fields. Standards are a summary of the scientific, technical, and practical experience. Specification refers to the behavioral criteria established by the group. Approach is the file making specific practices and requirements on a certain aspect of the work or a problem established by relevant organs or departments based on the guidelines, policies, and regulations of the Party and State. Planning refers to the comprehensive long-term development plan established by individuals or organizations, which is the overall, long-term, basic considerations for the future and can be used to design the action programs of the future.

According to the Management Science, plan has a double meaning. One is the "planned work," i.e., the organizational goals and ways to achieve goals within a certain period, based on an analysis of external and internal conditions. The second is the "planned form," which refers to the management events including action orientation, content, and mode within a certain period in the future, arranged by organization expressed in the form of words and targets and members of different sectors within the organization.

## ② Policy foundations of disaster risk management

Take the USA, for example, its disaster risk management policy includes force, reminder, recovery, technology development, technology dissemination, regulation, investment and cost-sharing, system management, system optimization, guidance.

Enforce policy is formulated by the high authority, which aims to force the local government to carry out disaster reduction activities.

Reminder policy is designed to warn the public, organizations, and the government about the damage caused by the disaster, prompting state, local, and individuals to initiatives to respond actively to reduce losses.

Recovery policies are designed to help individuals, families, villages, and counties to rebuild their homes and resume production.

Technology development policy is committed to the development of new knowledge and the development of new technologies in support of disaster reduction and mitigation policies.

Technology diffusion policies are oriented to individuals, all levels of governments and other objects for imparting knowledge on disaster reduction as well as

the long-term applications of this knowledge (such as disaster planning) and short-term applications of this knowledge (such as hazard warning applications).

Regulatory policy is to standardize the decision and behavior of government institutions and the private institutions, to mitigate their losses. Such policies often include mandatory disaster prevention, reinforcement of buildings, sites, and other mitigation measures.

Investment and the cost-sharing policy determine the control conditions of the above and the following activity funding and cost-sharing. This kind of policy decides when and where to aim the investment, why to devote their money, and who to bear the cost.

System management policy is aimed at defining responsibilities and measures, developing principles which mitigation plans should follow.

System optimization policy is to ensure the effectiveness of other policies, so that it is consistent with the objectives of the system, and achieve internal coordination.

Guide policy is to implement a policy, such as infrastructure or building migration (immigration) policy.

For the implementation of the disaster risk management policies and to ensure a unified action, the USA has established the Federal Emergency Management Agency (FEMA) in 1979, of which the original five departments, i.e., the National Fire Administration, Federal Insurance Administration, Civil Defense Preparation, Federal Disaster Relief Administration, and the Federal Guard Service, had emerged as a whole. The President also designated FEMA to be in principal charge of all the disaster preparation and disaster reduction plans. And in the institutional restructuring file which is submitted to the Congress, it is said that his work has been guided by four principles: (1) an official who is accountable to the president owns the federal power to be responsible for dealing with major domestic emergencies; (2) an efficient civil defense system needs the most effective use of all emergency (disaster) resources; (3) whenever possible, emergency response rests with the federal official body; (4) the federal disaster mitigation activities should be integrated with emergency preparedness and response functions. Since the implementation of disaster risk policy, it has played an important role in disaster risk management and disaster risk reduction of the USA. After the “911” in 1999, the Federal Emergency Management Agency (FEMA) of USA was integrated into the National Homeland Security, which strengthened the overall collaboration and respond capacity on disaster risk management.

### ***8.1.2 Academic Schools of Disaster Risk Management***

#### **(1) Chinese model—school of integrated disaster risk government**

It refers to the overall disaster management for the disaster system, i.e., the disaster risk management in general, and includes system management of disaster

prevention, disaster resistance, disaster relief, and risks. Disaster prevention management includes disaster monitoring, early warning, preparedness, education management; disaster resistance management includes disaster reduction engineering, assessment, measures, and technology management; disaster relief management: includes disaster impacts, help, relief, and reserve management; risk management includes disaster risk identification, monitoring, early warning, assessment, simulation, etc. (Shi 2009, 1993). This genre of disaster risk management practice is based on China's disaster risk management, with its scientific basis of the geography of human–earth relationship and regional system theory.

It highlighted the comprehensive implementation of the disaster relief strategy of the Central Government, followed the development concept of “innovation, coordination, green, open, and share,” and coordinated domestic and international situations. It is also prevention-oriented, integrating disaster prevention, resistance, and relief together and achieving a comprehensive disaster risk management (Shi 2014).

Build institutional mechanisms for disaster prevention, resistance, and relief which are compatible with the economic and social development; enhance the ability of society to withstand natural disasters; safeguard people's life and property, providing a solid guarantee to the building process of a well-off society. Adhere to the unity of normal and abnormal response for disaster reduction, and strive to achieve focus on predisaster prevention rather than disaster relief; transform from single disaster to comprehensive disaster reduction, from disaster risk reduction to disaster losses reduction.

Adhere to people-oriented as well as harmonious development. To protect people's lives and properties and ensure the basic living of the affected personnel, follow the laws of nature and promote sustainable economic and social development through disaster risk reduction.

Adhere to prevent-orientation, supplemented with comprehensive disaster reduction. Focus on strengthening natural disaster monitoring and early warning, risk appraisal, engineering precaution, education, and other prevention efforts; persist in combining disaster prevention and relief, integrated use of resources, and a variety of means; coordinate work in all areas of disaster management in the whole process.

Adhere to the laws and insist on relying on science and technology. Upholding the rule of law thinking, administration according to law, improve the standardization and institutionalization of disaster relief work and the level of the rule of law. Strengthening scientific and technological innovation, improve disaster relief support ability and level of science and technology.

Adhere to the leading role of government, and assisted by the whole society. Adhere to the dominance all levels of government in the disaster relief work; take full advantage of the market mechanism and the social forces; strengthen the coordination with the government and society to form a joint force.

Adhere to hierarchical management and rely mainly on the local. Perfect the disaster response mechanisms with central guidance, local assistance, hierarchical accountability and mutual cooperation; strengthen the principal responsibility of the local governments in disaster relief work.

## (2) Western models—school of disaster risk management

As shown in Fig. 8.1, disaster risk management includes consensus, quantification, transparency, responsiveness, equity and inclusion, effectiveness and efficiency, according to law and regulation, participatory, etc. (Qi and Cai 2010). The school emphasizes the disaster risk management and has significant difference from the governance of adapting to climate changes (Table 8.1).

The International Risk Governance Council (IRGC) is the creator and promoter of disaster risk management school. IRGC is initiated by the Switzerland Government, formed by a nonprofit independent organization in 2003. IRGC has proposed a risk governance framework with better systematizations and operability. The traditional expert governance mode has put one-sided emphasis on rationality

**Table 8.1** Differences between disaster risk management and adaptation to climate change governance (Qi and Cai 2010)

	Disaster risk management	Adapting to climate change governance
Target	Disaster prevention and disaster loss probability reduction	Reduce climate risk, enhancing adaptive capacity, and develop the potential development opportunities
Risk types	Risk of natural disasters (such as earthquakes, floods, typhoons, droughts), man-made disaster risks (such as pollution, industrial accidents, fires)	Climate change risks (sudden and extreme weather and climate events such as typhoons, floods, storms, heat, drought, lightning, haze, etc.); gradual long-term risks (such as rising sea levels, desertification, loss of biodiversity)
Risk perception features	Sudden disasters and long-term disasters	Long-term, irreversible, with uncertainty
Risk profile	Danger, hazard, exposure, disaster-formative environment	Extreme events, exposure, vulnerability
Timescale	Responses to incidents (before, during, and after), focus on individual events, static process	Long-lasting changes, continuous dynamic processes, concerns associated with sustainable development
Sphere of influence	Disaster chain effect (linear effects)	Risk amplification effect (nonlinear effects)
Theoretical basis	Disaster science and disaster system theory	Social-ecological systems, toughness, the theory of risk society
Risk appraisal	Risk probability forecast based on historical events	Based on climate risk appraisal
Leading policy	Disaster planning	Planning for adaptation to climate changes
Competent authorities	Department of Emergency Management, the Ministry of Civil Affairs, the Weather Bureau	Development Planning Department (NDRC), the Meteorological Department, Department of Environmental Management

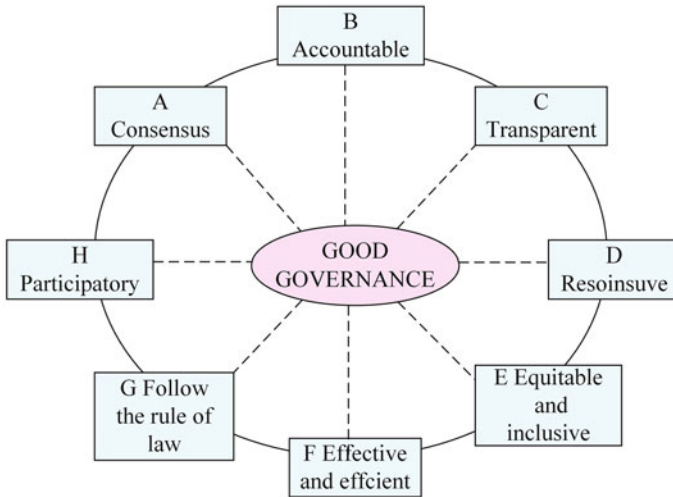


Fig. 8.1 Diagram of disaster risk management model (Qi and Cai 2010)

of science and technology. In contrast, the IRGC framework is more advanced in the sense that it also considers the cultural context factors and democratic participation decision into risk decision and governance, and attaches importance to the participation of stakeholder at the same time (IRGC 2005). This framework consists of early evaluation, risk appraisal, judge of bear degrees and accepts degrees, risk management, and risk communication.

IRGC has developed a new theory of international risk governance framework, including five elements (Fig. 8.2).



Fig. 8.2 Framework for integrated risk governance (IRGC 2016)



Risk pre-assessment, i.e., risk warning and “framework” risk, is aimed to provide a structured definition of the problem, which is composed of different stakeholders and the optimized way to deal with.

Risk appraisal combined the scientific risk appraisal (risk and probability) with the system evaluation (public concerns and perceptions), which can provide a knowledge base for the subsequent decision.

Characterization and Evaluation: The risk level can be assessed and divided into three categories, i.e., acceptable, tolerable (need alleviation), or cannot be tolerated (unacceptable), based on scientific data and a thorough understanding of the social value.

Risk Management: To avoid, reduce, or reserve actions and remedial measures required for the risk.

Risk Communication: To avoid, reduce, or reserve actions and remedial measures required for the risk.

Meanwhile, the international risk governance framework attaches great importance to participation of stakeholders (IRGC 2005). The core theory of international risk governance framework is as follows. Identify potential risks as early as possible; understand this problem and the related risks, the ongoing risk appraisal, the management agencies as well as the structure and processes of risk governance; find out the governance gaps which is hampering the risk management structure and effectiveness of the existing processes; make recommendations to overcome these gaps ([www.IRGC.org](http://www.IRGC.org)).

Disaster risk management school holds the idea that China’s comprehensive risk management strategy should include the following items: Integration of departments and regions at different levels is a risk management mechanism with Chinese characteristics, which is mainly dominated by executive orders, and achieved through disaster prevention and mitigation practices. China’s response to the catastrophe is of high efficiency, while the national mobilization system makes the benefits of China’s response to the catastrophe lower. China needs referring to the international experience and perfects the market mechanism and community mechanisms for the whole process of risk management, as well as adhering to China’s experience. Form a functional system of regional comprehensive disaster reduction by the government, enterprises, and communities. Plenty practice of disaster management showed that, after a disaster, the initial disaster relief emergency is mainly self-rescue and mutual aid of people in the disaster areas. Enhancing the community awareness of climate changes and playing the role of communities in disaster prevention and mitigation have played a more and more important role in risk management in China. Market disaster compensation system is market-subject, by means of actuarial risk and commercial insurance as the main contents, which formed a particular compensation and dispersion mechanisms among private insurance companies. The most typical form of market compensation mechanism for disaster is business insurance, which is used to achieve protection against risks (Shi 2014).

## 8.2 Construction of Disaster Risk Management Institution in China

Chinese society is also getting into the “risk society” due to globalization and the enormous social changes. Though the China SARS events in 2003, the bird flu outbreak in 2004 and disasters which have frequently caused major casualties in recent years seemed not related to each other, they are intrinsically linked together to herald the coming of a high-risk society (Wu 2011).

The situation in China is more complicated, and as a developing and populous country which is in the social transformation period, the traditional and modern risks coexist. The challenge faced in risk management is more difficult. China is entering a crucial stage of social and economic development, which is the key to development as well as the period of prominent contradictions.

China needs to explore new disaster risk management system which is feasible and suitable for the modern society in the context of “risk society.” In China, the law is enacted by the national people’s congress. The disaster risk management system is based on the relevant laws, regulations, ordinances, standards, specifications, schemes, plans, etc. (Shi et al. 2006).

### 8.2.1 *China’s Legal System of Disaster Risk Management*

#### (1) Law

China’s legal system of disaster risk management is being perfected. Since the 11th five-year plan, China has formulated or revised the Law on Response to Emergencies, and the China Reusable Energy Bill, the Circular Economy Promotion Law, the Law on Energy Saving, the Cleaner Production Promotion Law, the Soil and Water Conservation Law, and the Island Protection Law, etc. Since the 1980s of the twentieth century, China enacted more than 30 volumes of laws, such as the Meteorology Act, the Water Act, the Flood Control Act, the Sand Prevention Act, the Forestry Act, the Water and Soil Conservation Act, the Fire Service Act, etc. which are all associated with disaster risk management. Disaster risk management is gradually integrated into the orbit of legalization, and the legal framework is taking initial shape (Qin 2015; Shi 2014).

#### (2) Cases

Administrative regulations which are promulgated and implemented by the State Council are the Natural Disasters Rescue Ordinance, the Flood Ordinance, the People’s Republic of China Drought Ordinance, the Hydrological Ordinance, the Artificial Effect Weather Management Ordinance, the Geological Disaster Control Ordinance, the Forest Fire Ordinance, the Forest Pest Control Ordinance, the Prairie Fire Ordinance, the Army Participate in Rescue Relief Ordinance, the Post-disaster

Recovery and Reconstruction Ordinance of Wenchuan Earthquake, and more than 200 other related administrative regulations. The Post-disaster Recovery and Reconstruction Ordinance of Wenchuan Earthquake which WAS signed on June 8, 2008, by Premier Jiabao Wen is China's first specialized administrative regulations for post-earthquake recovery and reconstruction, which is also considered as an important symbol indicating that China's post-earthquake reconstruction work has entered the legal system orbit. The Natural Disaster Relief Regulations were officially promulgated and came into force on September 1st, 2010, filling the legal gap of the natural disaster relief work, providing a legal basis for natural disaster relief (Qin 2015; Shi 2014).

### (3) Specifications

Regulatory documents published and implemented are as follows: the State Council's Opinion on Strengthening the Work of Meteorological Disaster Monitoring, Early Warning and Information, Opinions on Strengthening Flood Construction and Management by the Ministry of Water Resources Department Forwarded by the General Office of the State Council, the Action Plan to Address Climate Change in Industrial Fields (2012–2020), and the Living Assistance Work Procedures for Victims in Winter and Spring (Qin 2015; Shi 2014).

### (4) Approaches

Approaches issued by relevant state departments are as follows: Ministry of Civil Affairs' Guide Views on Strengthening Natural Disaster Rescue Assessment, the Ministry of Civil Affairs' Relief Emergency Work Procedures, the Living Assistance Work Procedures for Victims in Winter and Spring, Ministry of Civil Affairs' Guide Views on Strengthening Relief Emergency System Construction, Meteorological Disaster Warning Signal Released and Spread Approaches, Anti-mine Mitigation Management Approaches, Ministry of Civil Affairs Office's Opinion on Further Strengthening Disaster Information Member Team Construction, Ministry of Civil Affairs' Relief Emergency Work Procedures, and the Civil Affairs' Guidance on Strengthening Disaster Emergency Response System (Qin 2015; Shi 2014).

### (5) Plans

Plans published and implemented are as follows: Climate Change Science and Technology Development Plan of the 12th Five-Year Plan, the National Earthquake Prevention and Disaster Reduction Plan (2006–2020), the National Flood Prevention and Control Plan, the Geological Disaster Prevention Plan and so on (Qin 2015; Shi 2014).

### (6) Technical standards

Technical standards include terminology standards of disaster relief series, standards of social contributions series, standards of disaster loss assessment series, standards of disaster relief and disaster needs assessment series, standards of rescue

capacity assessment, standards of the housing reconstruction for victims, standards of disaster and disaster relief division series, standards of disaster relief and rescue products, standards of disaster information data series, standards of rescue qualification criteria and so on (Qin 2015; Shi 2014).

The systems greatly enhanced the level of disaster risk management in China's legal system and established the legal framework for disaster risk management in China (Qin 2015; Shi 2014).

## ***8.2.2 The Disaster Risk Management System***

### **(1) System of leadership in disaster risk management**

In order to strengthen the disaster risk management in China, considering the current global climate disaster and complexity in recent years in China, the Chinese Government has strengthened the coordination between departments and the overall deployment, emphasizing comprehensive defense of all kinds of extreme weather events and various links. The leadership system in disaster risk management is under a unified leadership of the government, with the divisions responsible for disaster management and territory management of extreme weather events. Under the unified leadership of the State Council, Central Government has set up the national leading group to address climate change, the National Committee for disaster reduction, the state flood control and drought relief headquarters, the national forest fire prevention headquarters and the national disaster relief coordination office, and other agencies, which are responsible for the risk management of extreme weather events and disasters and manpower coordination. For all individual extreme events in China, the national development and Reform Commission, China's climate change Department, the Ministry of Civil Affairs disaster relief Division, the China Meteorological Administration, Ministry of Water Resources, Ministry of Land and Resources, Ministry of Agriculture, the State Forestry Administration, State Oceanic Administration, etc., were established, which are responsible for individual business organization and management. Currently, from a provincial level, there are 27 provinces (autonomous regions and municipalities), the Xinjiang Production and Construction Corps, and 3 bureaus which have set up provincial disaster Committees or disaster mitigation coordination agencies. All of the 34 provinces (autonomous regions and municipalities) and the Xinjiang Production and Construction Corps have set up the provincial flood control and drought relief headquarters.

### **(2) The core institutions and the functions of national disaster risk management**

The core institutions responding to extreme weather events and the national disaster risk management include the leadership group to address climate changes, the National Disaster Reduction Committee, the State Council Office of emergency

management, the climate change Division of National Development and Reform Commission.

### ① The national leading group to address climate change

In June 2007, the State Council decided to set up the national leading group to address climate changes as the deliberation and coordination agencies of the countries to cope with climate changes. The National Development and Reform Commission is responsible for the daily work of the leading group. Main tasks of the leading group are researching and establishing strategies, policies, and measures for major developing countries to cope with climate changes, setting up unified plans to deal with climate changes, studying and dealing with international cooperation and negotiation on the case, coordinating the resolution of major issues in the work to address climate changes; they also include organizing and implementing policies related to energy saving and emission reduction work of the State Council, setting up unified deployment of energy saving and emission reduction work, studying and dealing with major policy proposals, coordinating and solving the major issues in the work.

### ② National disaster reduction commission

Approved by the State Council, “China Council for the International Decade for Natural Disaster Reduction” was formally established in April 1989; in 2000, its name was changed as China International Committee for disaster reduction; in December 2004, its name was changed as the National Committee for disaster reduction. The committee is mainly responsible for the development of national disaster reduction policies and plans, coordinating major disaster reduction activities, guiding local disaster reduction, and promoting international exchange and cooperation on disaster reduction. The National Disaster Reduction Committee Office is in the Disaster Relief Division, the Ministry of Civil Affairs.

### ③ The state flood control and drought relief headquarters

The central flood headquarter was formally established after new China was founded on June 3, 1950, approved by the Central People’s Government Administration Council. Then, its name changed several times. In 1992, it was renamed as the state flood control and drought relief headquarters. Its main duties are developing national policies, regulations, and systems for flood and drought prevention; organizing the development of flood prevention for rivers and adjustable water program across provinces, autonomous regions and municipalities administrative divisions; timely mastering the national situation of floods, droughts, and disasters and further organizing and implementing flood rescue and the drought mitigation measures; conducting unified regulating and scheduling of national water and hydropower facilities; carrying out flood management work, organizing post-disaster disposal, and coordinating. Meanwhile, the state flood control and drought relief headquarters are responsible for leading and organizing national flood control and drought relief work. The office of the state flood control and drought relief headquarters is at the Ministry of Water Resources.

④ **Emergency management office of the state council**

It is responsible for the emergency measures, information aggregation and coordinating responsibilities, which plays the role of hub operation.

⑤ **Comprehensive analysis of climate change department of the national development and reform committee**

The effects of climate changes on economic and social development were comprehensively analyzed. Important strategies, planning, and major policies were developed; it leads national implementation related to the United Nations Framework Convention on climate changes, together with related departments to take the lead organization to participate in international negotiations on climate changes; it also coordinates international cooperation and capacity-building to address climate changes; organize and implement the clean development mechanism work; take the specific work of national climate change and energy saving and emission reduction work group which is related to climate change.

### ***8.2.3 Disaster Risk Management Mechanism***

**(1) Disaster early warning consultation and information sharing mechanism**

In warning information aspects, meteorological sector timely released meteorological disaster monitoring forecast information and established corresponding meteorological, secondary meteorological and derivative disaster monitoring, forecast and warning linkage mechanism together with departments such as police, civil administration, environmental protection, land resources, traffic transport, railway, water, agricultural, health, security regulatory, forestry, power regulatory, marine and other related sectors, which has achieved real-time information sharing of the related disasters, dangers, etc. In terms of consultation conferences about extreme weather events and disasters information, National Disaster Reduction Commission has set up disaster information consultation mechanism together with the civil administration, water conservancy, meteorology, earthquake, land resources, agricultural, marine, statistics department, etc. In the beginning of each year, conference analyzing disaster trends of the year is organized by the relevant departments. Analysis on the disaster situation of last month was assessed at the beginning of each month for predicting disaster trends this month, and the monthly conference communiqué was published, which can provide decision basis for disaster emergency management for the Central Committee and the State Council. In terms of information release, meteorological disaster information should be timely, accurate, objective, and comprehensive. Information release form includes authoritative publications, news releases, organized report, and interview with reporters, press conferences, etc. Information release content includes monitoring

and early warning of meteorological disasters and their secondary or derivative disasters, casualties, economic losses, and rescue situation due to disasters. (Shi 2014).

## (2) Disaster emergency response mechanism

In order to cope with the national extreme climate and disaster event effectively, according to national natural disasters rescue emergency plans and factors such as natural disaster degree, the National Mitigation Committee has set four emergency response grades for the national natural disaster rescue; i.e., level I response is unified organized and led by national mitigation Board Director; level II response is organized and coordinated by national mitigation Board Deputy Director (Ministry of Civil Affairs Minister); level III response is organized and coordinated by national mitigation Board Secretary-General; level IV response is organized and coordinated by national mitigation Board Office. Members of the various departments of National Committee for disaster reduction units act according to the needs of response levels. According to the national meteorological disaster emergency plan, early warning standards of meteorological disasters such as typhoons, rainstorms, blizzards, droughts, ice, cold, heat are provided, and the launch conditions for level I–IV response were all set (Shi 2014).

According to the National Flood and Drought Emergency Plans, the emergency response is divided into four levels by the degree and effect range of floods and droughts. The launch conditions for level I–IV response were set; i.e., for level I response, the conferences is presided over by the commander in chief; for level II response, the conferences is presided over by the vice commander; for level III response, the conferences is presided over by the Secretary-General; for level IV response, the conferences is presided over by the Office Executive Deputy Director; all the members and units do their work according to their division of functions.

## (3) Social mobilization and participation mechanisms

All levels of people's governments or emergency response administrations of meteorological disaster areas can extensively mobilize social forces to participate in weather disaster emergency disposal based on the nature, extent, and scope of meteorological disasters. Vehicles, material, personnel, etc., can be requisitioned or called under emergency situations according to law. After the meteorological disasters, all levels of governments and appropriate emergency organizations of the disaster areas should organize grassroots units and personnel to carry out rescue and mutual rescue; people's government of neighboring provinces (regions and municipalities) and cities (locals, states or unions) should organize and mobilize social forces to help out with the disaster areas according to the disaster situation. Donations and aids of natural persons, legal persons, or other organizations (including international organizations) according to the Donations for Public Welfare Law and other related laws and regulations were encouraged. Audit departments are responsible for the auditing and oversight of the use of donated funds and materials. After the flood and drought disaster, according to the nature and degree of the

disaster event, emergency control can be carried out by the flood control and drought relief command, to prevent further expansion of the situation and harm approved by the local government. If necessary, local people's governments can extensively mobilize social forces to participate in the emergency disposal. Vehicles, material, personnel, etc., can be requisitioned or called under emergency situations (Shi 2014).

#### (4) **Emergency reserve mechanism**

Coordinated by the Ministry of Civil Affairs and Manpower, 17 central disaster relief material reserves were planned and constructed, for reserving the tents, clothes and other relief materials. Local civil affairs departments at all levels have further strengthened the construction of material reserves, according to the regional disaster characteristics and population distribution. The province, city, county, and municipal (street) level disaster relief material reserves have been established, respectively. At present, the provincial disaster relief materials storage area is more than 320,000 m<sup>2</sup>, among which there are 309 prefectural reserves and 2286, counties (cities and districts) reserves. According to the local situation, combined with the demand for relief materials, consultative reserve systems were established in most areas, and reserve agreements were signed with the related material buying and selling units, with which transportation can be achieved in a timely manner when required, which better meet the rehousing demand of the affected people (Shi 2014).

#### (5) **Decision mechanism**

In response to extreme weather events and disaster risk management, a relatively perfect decision mechanism was established. The National Committee for Disaster Reduction is a national natural disaster relief emergency coordinator, which is responsible for organizing, leading national natural disaster relief work and coordinating particularly significant and major natural disaster relief activities. The offices for the National Disaster Reduction Committee Office is in the Ministry of Water Resources. The National Disaster Reduction Commission has established the Experts Committee to provide policy advice and recommendations for the major decision making, planning, major natural disaster assessment, emergency rescue, and disaster relief (Shi 2014).

The state flood control and drought relief headquarters are responsible for the organization and leadership of the national flood control and drought relief work, whose head office is at the Ministry of Water Resources. When there is a wide range of meteorological disasters causing great harm, it is up to the State Council to decide whether to launch the corresponding national emergency command mechanism and carry out unified leadership and command of meteorological and its secondary, derivative disaster emergency response efforts. The command of the state flood control and drought relief headquarters are responsible for response to typhoons, rainstorms, drought-induced floods, mountain torrent disasters, subsurface waterlogging disasters, typhoon storm tides, droughts, etc.



For rain, freeze, low temperature, cold wave, which seriously affect the normal operation such as transportation, electricity, energy, the National Development and Reform Commission should initiate the coal, electricity, oil, and gas safeguard interdepartmental coordination mechanisms; For those who have serious impact on communication, important industrial product guarantee, agricultural and animal husbandry production, urban operations, etc., the relevant functional departments should be responsible for coordinating the work.

The offshore wind disaster prevention and relief work is the responsibility of the Ministry of transport, Ministry of agriculture and the State Oceanic Administration in accordance with the Division of functions. The meteorological disasters relief work is organized by the National Committee for disaster reduction implementation. If disasters such as high temperature, dust storms, lightning, wind, frost, fog, haze happen, it is the local people's governments' task to launch the corresponding emergency command mechanism or the establishment of emergency mechanism for the handling work, under the guidance of relevant departments of the State Council.

#### **(6) Accountability mechanisms**

During the national extreme climate events, material circumstances such as late reporting, misrepresent, conceal and fail to report and other negligence or misconduct in emergency management will be given an administrative sanction according to law; when the circumstances constitute a crime, criminal responsibility shall be investigated according to law. As for the supervision of natural disaster relief funds and goods, disaster relief fund supervision coordination mechanisms were set up by monitoring, audit, finance, civil affairs, finance, and other departments. Civil Affairs at all levels and financial departments are responsible for the management and use of disaster relief funds, especially for special inspections in the grassroots distribution stage as well as the tracking performance. Various localities and departments should work with the supervision and auditing departments to supervise the management and use of the disaster relief funds and donations. Those who caused losses of natural disaster relief work because of negligence, or seriously overstate, conceal the disaster situation shall be ascertained, according to the relevant laws and regulations; while those constitute a crime, criminal liability shall be investigated.

### **8.3 Case Study on Disaster Risk Management System Construction of China**

Chinese Government has gained experience and learned lessons in the process of building the disaster risk management system. The development and implementation of National Comprehensive Disaster Planning (2011–2015) which was enforced in October 2011 have achieved significant results. Wenchuan

Post-earthquake Recovery and Reconstruction Ordinance which was released on June 8, 2008, has played a decisive role in ensuring the post-quake recovery and reconstruction work to be done forcefully, orderly and effectively.

### ***8.3.1 Summary of the Disaster Prevention and Mitigation During the 12th Five-Year Plan***

The state of the art, challenges, and opportunities of disaster prevention and mitigation work we are facing during the 12th Five-Year Plan period should be clearly defined. This plan details the proposed guideline, basic principles, goals, main tasks, major projects, and supporting measures (State Department of the People's Republic of China 2011).

#### **Attachment 1: National Integrated Disaster Planning (2011–2015)**

To implement the disaster prevention and mitigation policies issued by the Party Central Committee and the State Council and further improve the ability of disaster prevention and mitigation, and furthest guarantee the safety of people's life and property, this plan is enacted according to the People's Republic of China for National Economic and Social Development of the 12th Five-year Plan and the other relevant laws and regulations.

#### **1 Status and situation**

- (1) **“the 11th Five-Year Plan” during the disaster prevention and relief work has achieved remarkable results.**

“The 11th Five-Year Plan” period is an extraordinary five years for China's disaster prevention, mitigation, and relief development. Various natural disasters appeared frequently, including the occurred in the middle and lower reaches of the Yangtze River severe summer drought, Beijing–Tianjin–Hebei floods, Sichuan Lushan earthquake, earthquake in Min County, Gansu Province, Heilongjiang Songhua River–Nenjiang River floods, “Wei Maosen” super typhoon, Ludian earthquake and other major natural disasters. In the face of complex and serious natural disaster situation, the CPC Central Committee and the State Council presented strong leadership and scientific decision making. All regions and relevant departments are responsible for their duties, cooperate closely, and strengthen the capacity-building for disaster prevention and mitigation, and carry out disaster relief work effectively, and finally achieved remarkable results.

First, the disaster management mechanisms and the legal systems are constantly improved. Disaster reduction committees and disaster mitigation coordination agencies were established in 27 provinces, autonomous regions and municipalities, carrying disaster coordination functions into full play. The Earthquake Disaster Mitigation Act, the Emergency Response Act, the Natural Disaster Relief Regulations, the Regulations on Prevention of Meteorological Disasters, the Drought Ordinance and other laws and regulations were revised and published.

Second, the natural disaster monitoring and early warning system are basically formed. Natural disaster monitoring network and early warning reporting system for meteorological, seismic, geology, hydrology, agriculture, forestry, marine, environmental, and other types of disasters were further improved; the building process of observing system for weather and automatic meteorological began to take shape; monitoring and prevention system for geological disasters and torrential flood was further improved; the early warning level of typhoon had been increased; monitoring and early warning capacity of plant diseases, insect pests of agriculture, forestry, and grassland fire was strengthened. Environment and disaster monitoring and forecasting small satellite constellation A, B, the No. 3 Fengyun Satellite A, the No. 2 Fengyun Satellite E were successfully launched, indicating that the operational satellite applications for disaster reduction system were preliminarily established.

Third, the natural disasters engineering defenses increase steadily. The flood control and drought relief, renovate, drinking water safety, road disaster prevention, and other major projects were implemented; the flood control capacity for rivers were further increased; the key flood control protected area has reached the required flood protection standards; the hidden geological disaster areas of densely populated areas, cities, and national key project construction areas have received initial treatment; renovation project for the primary and secondary school buildings, safety projects for schoolhouses are fully implemented; rural residents renovation projects are also promoted steadily.

Fourth, the capacity responding to major natural disasters has increased significantly. The disaster emergency response system which has emergency command, emergency rescue, disaster relief, recovery and reconstruction as the main contents was established. The emergency rescue, transportation, living assistance, medical aid, epidemic prevention, emergency response capacities are greatly increased, which has effectively responded to a series of major natural disasters such as earthquakes, droughts, landslides, further minimized the disaster losses, and maintained the social harmony and stability.

Fifth, the support of science and technology becomes evident. Mechanism of natural disaster occurrence, development, and evolution were further researched; disaster monitoring and early warning, risk assessment, emergency response, and other technology have improved continuously; remote sensing, satellite navigation, communication, and broadcasting technologies have played an important role in the major natural disaster response process; relevant disaster prevention research institutions have been established, and technology platform is being formed.

Sixth, disaster personnel and professional team have expanded gradually. The disaster mitigation talent team construction were involved into the National Medium and Long-Term Talent Development Planning Platform for (2010–2020); combination of full-time and part-time disaster mitigation talent team was preliminary formed; the people's liberation army, armed police forces, police and militia reserve have played a backbone role in disaster mitigation; professional teams for flood and drought control, seismic relief, forest fire control have expended constantly; disaster information member team with more than 500,000 people was

established; the disaster mitigation relief team construction was promoted comprehensively.

Seventh, the community involvement of disaster mitigation had increased. The social mobilization capacity and social disaster resources integration capacity increased significantly. Faced with serious natural disasters, actively caring all walks of life, living aids, rescue, and rehabilitation of life have formed a good atmosphere together toward disasters both at home and abroad. May 12th was established as the “Disaster Prevention and Reduction Day”; disaster prevention publicity and education activities were promoted gradually; public awareness of disaster prevention and mitigation has been improved significantly.

Eighth, the international cooperation and exchanges in disaster prevention and reduction were deepening. The cooperation between China and other international organizations, institutions, and some other concerned governments in the field of disaster prevention and mitigation was deepened. The disaster prevention and relief cooperation mechanism and action plan are established under the framework of the Shanghai Cooperation Organization, the Association of Southeast Asian Nations, China–Africa Cooperation Forum, and regional cooperation between China, Japan, and Korea. Our government is actively assisting countries which were affected by serious natural disasters; i.e., China has fulfilled the international obligations of disaster prevention and reduction, and its international impact in the field of disaster prevention and reduction is further increased.

## **(2) China’s situation, challenges, and opportunities for disaster prevention and relief work during the 12th Five-Year Plan period.**

During the period, in the context of global climate change, the risk of natural disasters further increased, and the disaster prevention and reduction work situation is grim. Disaster risks such as drought, floods, typhoon, cold, ice and snow, high temperature have increased; disasters such as heat waves, sandstorms, pests and diseases, avalanches, landslides, mudslides, flash floods are of high-occurrence trend. New changes occurred in spatial and temporal distribution of natural disasters, the extent, effect depth and breadth of the losses; the abruptness, anomalism and unpredictability of various types of disasters are more and more significant. Meanwhile, with the acceleration of industrialization and urbanization, the urban population density increases, as well as the infrastructure load and impact of natural disasters on urban areas; vast rural areas especially in the central and western regions, where the economic and social development is lagging behind, are of low levels of fortification, and their ability to withstand disasters is relatively weaker. Risk of natural disaster-induced secondary and derivative disasters remains high.

The disaster prevention and reduction work is facing many challenges during the 12th Five-Year Plan period. First, the natural disaster monitoring network density, early warning forecast accuracy as well as the level and timeliness of information dissemination should be improved. Second, the standard of urban and rural infrastructure is low; shelter construction is lagging behind, and the disaster prevention and reduction capability remains relatively weak. Third, emergency relief

materials reserve type and quantity can barely meet the relief needs; the emergency equipment, techniques, communication, and emergency broadcast facilities are relatively backward; the disaster prevention and reduction science and technology capacity needs to be further improved. Fourth, the disaster construction of qualified personnel is lagging behind; collaboration mechanisms between departments and regions need to be further improved; disaster prevention and reduction education and training system need to be improved; the public awareness and capacity of disaster prevention and mitigation need to be improved.

Facing severe disaster situation and challenges, the Party Central Committee and the State Council placed the disaster prevention and relief work as an important part of the government's social management and public service, and it is also incorporated into the economic and social development plan; it will be considered as priorities in the work of the government for disaster risk reduction; the status and role of disaster prevention and mitigation are becoming more and more prominent. Meanwhile, China's economy has maintained a steady and rapid development; the overall national strength is significantly enhanced; solid material foundation was laid for disaster prevention and reduction. Active participation of communities in disaster prevention and mitigation has created a good social atmosphere to develop comprehensive disaster reduction work. During the 12th Five-Year Plan, the disaster prevention and reduction work needs to be based on the national economic and social development, comprehensively plan the development of disaster prevention and mitigation, accelerate various capacity-building, and continuously improve the comprehensive disaster prevention and mitigation system to safeguard people's life and property safety.

## **2 Guidelines, Basic Principles, and Objectives**

### **(1) Guidelines.**

Regard Xiaoping Deng's theory and the thought of Three Represents as the guide; implement the science development views in depth; according to the requirements of people-oriented and build a socialist harmony society, consider various natural disasters and all stages of disasters; use various resources and variety means; promote the coordination between disaster mitigation and economic social development, urban construction combined with rural regions; adapt to climate changes; give full play to the leading role of all levels of governments in disaster mitigation work; actively mobilize all parties' power; comprehensively strengthen the integrated capacity-building in disaster prevention and mitigation; safeguard people's life and property safety; ensure comprehensive, coordinated, and sustainable development of economy and society.

### **(2) Basic principles.**

Government-led leading and society participating. Stick to the leading role of the government at all levels in disaster prevention and relief work; strengthen coordination between different departments and organizations; and mobilize social forces to participate in disaster prevention and mitigation.

People-oriented and relying on science. To protect people's lives and properties and ensure the basic living of the affected personnel, take scientific and technological progress as an important support to improve disaster prevention and reduction capabilities.

Focusing on prevention and being supplemented with comprehensive disaster reduction. Strengthen the monitoring and early warning of natural disasters, risk surveys, engineering, defense, education, and other prevention efforts; persist in combining disaster prevention, response, and relief; and promote all aspects of the work of all aspects of disaster management.

Planning as a whole and stressing the key point. Plan for disaster prevention and disaster mitigation work from a strategic height; promote capacity-building in disaster prevention and mitigation, solid foundation, step by step; stress practical results; give priority to key and outstanding problems in disaster areas.

### (3) **Planning objectives.**

Found out the national natural disaster risks in key area; establish a national integrated information platform for disaster reduction and risk management; improve natural disaster monitoring and early warning, information services and statistical verification capabilities.

The number of deaths caused by natural disasters under the same disaster intensity declined more significantly than that during the 11th Five-Year Plan period. The average annual direct economic losses due to disasters were controlled within 1.5% percent of the GDP.

Disaster prevention and mitigation was involved into all levels of the national economic and social development planning; disaster prevention and reduction is also presented in the planning for land use, energy supply, resource management, urban and rural construction, poverty relief and development, etc.

Within 12 h of natural disasters, basic preliminary relief in the lives of victims was obtained. The percentage of insurance indemnity of natural disasters increased of the direct economic losses. Post-disaster rebuilt infrastructures and houses have generally reached the required standards.

National awareness of disaster prevention and mitigation was enhanced obviously; knowledge of disaster prevention and reduction is significantly improved among the students and the public.

The national disaster prevention and relief personnel have been expanding, with more reasonable personnel structure, and a total human resource number of about 2.75 million.

5000 national comprehensive disaster reduction demonstration communities were created. Each urban and rural grassroots community own at least one disaster information staff.

Disaster prevention and reduction system was further improved. Comprehensive coordination mechanisms of disaster prevention and mitigation were established in all provinces, autonomous regions, municipalities, as well as disaster-prone counties (cities or districts).

### 3 Main Tasks

#### (1) Main tasks to strengthen capacity-building for natural disaster monitoring and early warning.

Speed up the construction of natural disaster monitoring and early warning system; improve natural hazard monitoring networks; strengthen meteorological, seismic, geology, hydrology, agriculture, forestry, oceans, grasslands, wildlife disease epidemic, and other natural disaster monitoring network construction and strengthen interagency information sharing to avoid duplication. Perfect the natural disaster reporting and statistical verification systems, with particular emphasis on monitoring the below-county-level infrastructure; increase the density of all types of natural disasters monitoring network; optimize the functional layout; improve the level of monitoring. Sound prediction and early warning of natural disasters and information dissemination mechanisms; strengthen capacity-building in early warning of natural disasters.

Strengthen national disaster mitigation space information infrastructure construction; gradually perfect environment and disaster monitoring forecast small satellite constellation, meteorological satellite, marine satellite, resources satellite, and aviation remote sensing system, etc.; promote environment and disaster monitoring and forecasting small satellite constellation in rail “4 + 4” constellation construction; strengthen still track disaster monitoring warning gaze satellite construction; improve comprehensive natural disasters observation capacity, high-resolution observation capacity, and emergency observation capacity. Strengthen the interface with relevant planning; integrate various satellite applications, integrate satellites, satellite applications, and related infrastructure development; improve comprehensive ability of the composite observation and ground systems. Make full use of all kinds of civil and military earth observation tools and wireless sensor networks; increase the wide range, all weather, multi-element, high-density, integrated stereo monitoring capabilities of natural disasters and operations levels.

#### (2) Strengthen the capacity-building in disaster information management and services.

Improve the level of disaster prevention and mitigation information management; scientifically plan and efficiently use all types of information resources; expand access to information and tools; improve the level of information processing and analysis; improve disaster information collection, transmission, processing, and storage of the standards and norms. Establish comprehensive national disaster databases; improve disaster information dynamic update mechanism; improve the standards of safety and protection of information systems; guarantee information security of disaster prevention and reduction.

Strengthen the capacity of disaster information sharing; build comprehensive national disaster mitigation and risk management information platform; improve disaster information integration and intelligent processing and service level; strengthen the related departments at all levels of disaster information

interconnection, exchange, sharing, and collaboration services. Take full advantage of satellite communication, radio, television, Internet, navigation positioning technologies and mobile information terminals, and other equipment to enhance information access, teleconferences, public services, and emergency support capability and promote “digital disaster reduction project.”

**(3) Strengthen disaster risk management capacity-building.**

Strengthen national integrated risk management of natural disasters; improve disaster risk reduction measures; establish natural disaster risk-sharing mechanisms and accelerate the establishment of disaster evaluation system. For the investigation at the county level, carry out national survey of natural disaster risks and disaster mitigation capacity, find out the truth and establish databases, improve the ability of real-time updating capacity. Establish national, regional comprehensive disaster risk evaluation index system and evaluation system; study on integrated natural disaster risk assessment and critical disaster conditions; carry out comprehensive disaster risk evaluation pilot and demonstration work.

Establish and improve national natural disaster evaluation system; improve the assessment level of risks, emergency response, damage, and social impact and performance evaluation standards; improve comprehensive assessment mechanism of major natural disasters; improve disaster assessment to more scientific and standardized levels. With the feasibility study of major construction projects, production construction and regional development project, natural disaster risk assessment pilot project was carried out, which emphasized in rational use of natural resource and ecological protection. Study one establishing prevention mechanism for reducing human-triggered natural disasters.

**(4) Strengthen the defense capacity-building of natural disaster projects.**

Strengthen the prevention and resilience of flood and drought, earthquake, cold frost, wind, moisture, sand, forest and grassland fire, pests, wildlife diseases for disaster prevention and reduction construction key projects; improve the engineering of major natural disaster defenses. Improve the disaster prevention performance of urban and rural building (structures), especially those densely populated places, major construction projects and lifeline engineering project; promote the safe schoolhouses and safe hospital construction.

Strengthen the river governance and the danger-removing and reinforcement for reservoirs; prevent mountain torrents comprehensively govern the eco-environment of disaster-prone areas; increase renovation of dilapidated buildings, irrigation and water conservancy facilities, drought emergency water supply, rural drinking water safety projects and agricultural disaster prevention and reduction work input. Speed up the implementation of natural disaster risk avoidance on key management and relocation of residents.



**(5) Strengthen regional and urban and rural grassroots capacity-building in disaster prevention and mitigation.**

Integrate and coordinate regional capacity-building for disaster prevention; combine the disaster prevention and reduction with regional development planning, the main function region construction, and optimization and upgrading of industrial structure and the improvement of ecological environment. Improve the fortification criterion of buildings and public facilities in urban and rural areas; enhance urban transportation, telecommunications, radio and television, electricity, gas, sewer, schools, hospitals, and other infrastructure resilience-building. Vigorously promote the capacity-building in disaster prevention and mitigation for cities, urban agglomerations, population centers, economic concentration and economic development regions; effectively use the existing venues such as schools, parks and stadiums; construct or renovate urban and rural emergency shelters; establish new model of urban comprehensive disaster prevention and mitigation.

Strengthen urban and rural grassroots capacity-building for disaster prevention; improve the urban and rural grassroots system of disaster prevention and mitigation mechanisms; improve the township and community emergency response plan for natural disasters and organize drills; strengthen the capacity-building in the early warning information release. Carry on “national comprehensive disaster-reduction demonstration community” activities; strengthen household disaster preparedness in urban and rural grassroots communities. Improve the ability of disaster prevention and mitigation in rural areas, combined with the construction of new socialist countryside. Put more support on the capacity-building in serious natural disasters in old revolutionary areas, ethnic minority areas, border areas, and poor areas in disaster prevention and mitigation.

**(6) Strengthen capacity-building in natural disaster emergency response and reconstruction.**

Strengthen the construction of national disaster rescue command system; establish and improve the unity of command, coordination, management, graded responsibility, territorial management-oriented disaster emergency management and coordination mechanism and orderly and efficient functioned operation. Persist in combining government and social participation; establish and improve emergency rescue and disaster relief cooperation mechanism.

Strengthen the construction of emergency equipment; develop the standards of emergency equipment at all levels; strengthen the life detection, communication and broadcasting, rescue search and rescue vehicles, helicopters, ships, machinery and equipment, and other equipment. Give priority to equipping the underdeveloped areas and disaster-prone areas in the west.

Strengthen the construction of emergency relief supplies; make reserve plans; expand the reserve coverage; enrich the reserve categories and improve the efficiency of material provisioning. Fully play the role of resources in emergency relief support; increase the capacity of important emergency relief supplies, national strategic reserve; take advantages of the communications reserve and the national

defense enterprise reserves to establish and improve the emergency safeguard mechanism which is governments' reserve-oriented and community reserves as complementary at both peacetime and wartime.

Strengthen the living capacity-building of disaster-stricken people; advance the construction of rescue funds long-term protection mechanism with the national economic and social development levels fitting the real-life demand of affected people; improve natural disaster relief policies; enrich the natural disaster relief projects; increase subsidies for natural disaster relief funds in due time; improve the quality and fortification level of affected people. Strengthen the handling capacity-building of injured persons for major natural disasters.

Strengthen post-disaster recovery reconstruction capacity construction; establish sound recovery reconstruction assessment system and major project hearing system; complete assessment, planning location, engineering implementation and technology guarantees which is needed for recovery reconstruction; strengthen the psychological assistance for the affected masses; improve the recovery reconstruction capacity of urban and rural housing, infrastructures, public service facilities, industries, ecological environment, organization system, social relations, and so on; improve the recovery reconstruction regulatory level.

**(7) Strengthen the capacity-building in disaster prevention and reduction science and technology support.**

Strengthen disaster prevention science; research on the formation mechanism and evolution of natural disasters; focus on strengthening the early warning of natural disasters, major chain of natural disasters, interaction between natural disasters and socioeconomic environment, natural disaster risk in the context of global climate change, and so on. Prepare the national disaster prevention and reduction science and technology program, focusing on disaster prevention and mitigation, as well as interdisciplinary researches in multi-professional fields.

Enhance remote sensing, geographic information systems, navigation and positioning, triple play, Internet and application of digital earth, and other key technologies in the field of disaster prevention and mitigation studies; promote the integrated transformation and application of disaster prevention and reduction science and technology achievements. Conduct research on new materials, new products, and equipment in disaster prevention and reduction fields. Establish disaster prevention and relief technical standards system; raise the standardization level of disasters.

Strengthen the exchange of disaster prevention and reduction science and technology cooperation; introduce and absorb international advanced technology of disaster prevention and mitigation; promote the construction of national key laboratories and engineering research centers as well as Asian regional disaster Research Center in disaster prevention and reduction field. Promote the development of disaster industry; improve industrial development policies; and strengthen the support of national strategic emerging industries in the field of disaster prevention and mitigation.

**(8) Strengthen capacity-building in disaster prevention and reduction of social mobilization.**

Perfect disaster social mobilization mechanism; establish disaster social participation channels; improve the policies and measures of encouraging enterprises, institutions, social organizations, and volunteers to take part in disaster prevention and mitigation; establish disaster relief assistance compensation mechanism and form a good atmosphere for active participation of the whole society. Fully play the role of philanthropic institutions in disaster prevention and mitigation; improve the social donation management mechanism for natural disasters; and strengthen the management, use, and supervision of donations.

Give full play to the function of social organizations, grassroots organizations and the public participating in disaster prevention, emergency rescue, disaster relief donations, medical aid, epidemic prevention, recovery, reconstruction, and post-disaster psychological interventions. Research and establish the guidance to strengthen disaster volunteerism; help the grassroots community to build disaster volunteer teams. Improve the disaster prevention knowledge and skills of volunteers; promote the development of disaster volunteer teams.

Establish a sound disaster insurance system; give full play to role of insurance in disaster risk transfer; broaden the channels of disaster risk transfer; and promote the establishment of reasonable risk-sharing mechanisms.

**(9) Strengthen the construction of disaster prevention and reduction personnel and professional team.**

Promote disaster prevention and reduction personnel strategy; develop human resources for disaster prevention and reduction; expand the whole team, optimize the structure; improve the team management and improve the team quality to form a disaster management and professional team as the backbone; regard all kinds of disaster emergency rescue team as the assault force; regard the disaster social workers and volunteers as the auxiliary force of the disaster team.

Strengthen the personnel training in the fields of disaster prevention science, engineering and technology, disaster emergency and administration; strengthen the construction of disaster relief emergency team, combined with the characteristics of disaster relief and rescue work; carry out training and skills training regularly; foster and develop relief and rescue professionals with the characteristics of “a team of multipurpose, full-time and part-time, civil-military integration, wartime and peacetime.” Give full play to the people’s Liberation Army, armed police, public security police, health care, mine rescue, militia and reserve, national defense mobilization and other related professional support teams and the Red Cross and community volunteer forces in the relief work. Strengthen the construction of grassroots hazard information team; promote the social work personnel construction of disaster prevention and reduction.

Strengthen the discipline construction of higher education related to natural disasters and risk management; expand the scale of graduate and undergraduate students of the related majors; and pay attention to the talent training in technical

professional fields and badly needed fields. Strengthen the building of the Experts Committee of the Committee on disaster reduction at all levels; give full play to experts in disaster prevention and relief work as an advisory role.

**(10) Strengthen the cultural construction of disaster prevention and mitigation.**

Regard the cultural construction of disaster prevention and mitigation as an important part of the socialist cultural advancement; regard the disaster prevention and mitigation services as an important component of the country's public cultural service system; improve the soft power of comprehensive disaster prevention and reduction. Strengthen the consciousness of disaster responsibilities of governments at all levels; enhance the disaster risk management and emergency management level of leading cadres at all levels; improve the cooperation of government departments, social organizations, and the news media in disaster prevention publicity and education work.

Raise the community's awareness of disaster prevention and mitigation, and cultural literacy. Combined with national "disaster prevention and reduction day" and "international day for disaster reduction," organize various forms of disaster prevention publicity and education activities. Involve the disaster prevention education in the national education system; strengthen the education of disaster prevention knowledge and skills in primary, secondary schools, and kindergartens; involve disaster prevention knowledge and technology into the culture, science and technology and health popularization activities. Carry out evacuation, self and mutual medical aid exercises regularly, and improve the public's ability to respond to natural disasters.

Introduce innovations of propaganda and education of disaster prevention knowledge and skills; strengthen the culture of disaster prevention and mitigation site construction and give full play to the important role of public cultural institutions at all levels; promote the construction of disaster awareness education base and national disaster education network platforms; play its education and warning function of serious natural disaster sites and related memorials.

#### **4 Major Projects**

**(1) National natural disaster integrated risk survey project.**

Based on full use of the existing catastrophes survey results, this project was to establish a survey index system of disaster integrated risk and mitigation capacity by conducting a survey on national natural disaster integrated risk and mitigation capacity, and finally to establish the database, model base, method base and the national natural disaster integrated risk survey and assessment technologies system; this project was also to establish national natural disaster integrated risk mapping standards system and technologies system by the work of typical disasters risk assessment, multi-hazard and disaster chain integrated risk assessment and disaster mitigation capacity evaluation.

The natural disaster risk maps and integrated zoning maps of national, provincial, municipal and the county administrative unit in disaster-prone areas were drawn out to establish risk information updates, evaluation, and products service mechanism. The natural disaster risk maps on the national (proportion scale: one to one million), provincial (proportion scale: one to 250 thousands), municipal and the county (proportion scale: one to 50 thousands) administrative unit in disaster-prone areas could provide a scientific basis for regional development plan of the central and local government, natural disaster prevention, emergency rescue and disaster relief, major construction projects, etc.

**(2) National integrated disaster mitigation and risk management information construction project.**

Relying on uniform national e-government network, and demographic information base, legal entities repository, geospatial information database, and other basic information resources, by means of information construction and improvement, this project was to achieve collaboration and sharing of resources for relevant departments involved in disaster business, enhance acquisition, analytical, judging ability of disaster risk information, and rescue information for the central and provincial government, as well as abilities of consultation of disaster relief, mitigation and decision making, which could support disaster prevention and mitigation collaboration effectively for relevant state departments.

**(3) National natural disaster emergency relief and command system construction project.**

Disaster emergency relief command system was built in this project to realize information timely delivery and transfer on the disaster situation, decision making, directing, material transportation, and other kinds of information. Disaster damage losses assessment, and plan deduction information systems are constructed to provide scientific decision-making information for disaster emergency relief. This project could greatly enhance abilities of quick communication of command information during disaster emergencies.

**(4) National relief materials reserve project.**

Following the principles of coordinate planning, rational distribution, and resources integration, this project was to build or renovate a batch of disaster relief materials reserve for living by comprehensive utilization of existing state-own and civilian-run storage warehouse. People's governments at the provincial, city, and county level in multi-hazard and disaster-prone regions should build disaster relief materials reserve for living in accordance with the actual needs to form a hierarchical management, rapid response, reasonable layout, full range, appropriate scale, complete function, logistical support, in line with China's national conditions of central-province-city-county levels of relief materials reserve network.

This project was also to improve the materials reserve for affected people living assistance, health and epidemic prevention, emergency transportation security,

forest fire prevention, etc., particularly to strengthen the disaster relief materials reserve and information management capabilities in Midwest to optimize the management and use of relief supplies. A national relief materials transportation network with function of assembly capacity, resources supplies, and vehicles maintenance was gradually established to improve material delivery capability.

**(5) Construction project of environmental disaster reduction satellite constellation.**

This project was to strengthen three-dimensional monitoring capacity of obtaining natural disaster information and disaster prevention spatial information infrastructure construction, to gradually improve the small satellite constellation of environment and disaster monitoring and forecasting, to strengthen the demonstration of “heaven, earth, live” technology index integration system, to promote the construction of “4 + 4” constellation which consists network of eight satellites, to form the observation capability of high-flexibility, high-density, high-precision, wide-coverage, and multi-means combination, to achieve disaster revisit observation in 12 h, and to ensure the continued and continuity of satellite orbit and the stability of the ground application system construction and development. Also, the project was to strengthen the organic convergence of research satellite and disaster reduction test satellite, to fully use the domestic and foreign satellite resources, to improve the capacity of comprehensive disaster observation, high-resolution observation, and emergency observation capabilities, to improve disaster application model, remote sensing methods and standards, to improve the capacity of business system processing, analysis and service levels, to improve the business systems and product systems of disaster monitoring and warning, disaster assessment, emergency response, and rehabilitation, and so on, to demonstrate and establish a comprehensive disaster prevention and reduction spatial information services platform.

Furthermore, the project was to strengthen the demonstration and promotion of disaster reduction satellite application technologies, to improve the capacity and level of technology application, to the use of the national remote sensing check field, target detection and integrated field experiment field resources, to improve the disaster quantitative application level, to promote the cooperation mechanism of major natural disaster emergency monitoring satellite and airborne remote sensing, to promote the construction of regional and provincial disaster reduction application capabilities, to improve existing regional and provincial disaster reduction satellite application center, and to improve the level of satellite disaster reduction application.

**(6) Construction project of the national major catastrophic natural disaster prevention simulation system.**

This project was to do the numerical simulation research of the mechanism of disaster development, scenario analysis, and numerical simulation studies emergency response, and so on based on the national major catastrophic natural disaster.

Focusing on the disaster chain as seismic–geology, typhoons–rain–floods, heat–drought–dust, cold–freezing–cold, and so on, it is to achieve dimensional visual simulation on disaster risk warning, emergency response, and command deduction decision optimization, and so on, to provide condition platform and technology support of assessments and decision making for major catastrophic natural disasters by overall integration of existing resources, and establishment of the computer simulation system. Also, it was to carry out floods, earthquakes, and other disasters real simulation system, to establish a large-scale experimental platform and running environment of typical natural disasters, and to do research and cooperation of disaster preparedness and reduction.

**(7) Construction project of comprehensive disaster reduction model communities and shelters.**

The project was to create 5000 “national comprehensive disaster reduction model communities” according to national standards. It was to build the nearest emergency evacuation and temporarily resettled shelter in urban and rural communities, to configure emergency supplies, to set the emergency escape logo and radio facilities, to equip family disaster prevention facilities and life preserver, to compile contingency plan and disaster risk maps in urban and rural communities, to do community disaster relief exercise, to establish community volunteer team and so on. Combined with regional and urban construction and development plan, it was also to construct emergency shelters with functions of emergency command, emergency shelter, and medical care, and so on by fully using schools in city center or densely populated areas, large urban public service facilities, and large green areas alike. And these areas were settled in city agglomeration like Beijing–Tianjin–Hebei Region, the Yangtze River Delta, the Pearl River Delta region and the central and western newly emerging and developing cities or some typical cities. While in rural disaster-prone areas, it was to newly build or expand rural emergency shelters according to rural layout, population distribution, and disaster risk distribution relying on public places like existing schools, stadiums.

**(8) Public education and dissemination of science projects of disaster prevention and reduction.**

Using the existing facilities, the project was to newly build or expand at least one culture publicity and education base of disaster prevention and reduction in every province focusing on the midwest disaster-prone areas support, to equip disaster prevention and reduction related professional facilities and multimedia equipment, to afford the public with free experiential, participatory disaster prevention and reduction cultural service, to develop national publicity and education network platform of disaster prevention and reduction, to establish database of resource and expert, to build national disaster prevention and reduction digital library, and to achieve functions like resource sharing, online communication, distance education. Also, it was to develop of series of popular science books, wall charts, and audio and video products on disaster prevention and reduction, to compile education and

training materials of disaster prevention and reduction suitable for different groups, to organize forms of knowledge publicity and professional training on disaster prevention and reduction, to do emergency drills of different natural disasters, to strengthen disaster prevention and reduction education on leading cadres at all levels, to enhance public awareness of disaster prevention and reduction, and to improve self-care and buddy-aid skills.

## **5 Safeguard Measures**

### **(1) Measure to improve work mechanism.**

This measure was to further strengthen the comprehensive coordination functions of the National Committee for Disaster Reduction, to improve the comprehensive coordination mechanisms of disaster prevention and mitigation between the local governments at all levels. Improve the disaster prevention and mitigation decision making and operational mechanism of the Cohesion and coordination among sectors, the upper and lower linkage, social participation, division of labor; establish and improve the disaster prevention and mitigation funding, information sharing, compensation for expropriation, social mobilization, personnel training, international cooperation and other mechanism; improve disaster prevention and mitigation performance evaluation, accountability system, to form a more perfect state integrated disaster prevention system and mechanism.

### **(2) Measures to improve laws and regulations and plan system.**

This measure was to promote the construction of disaster prevention and mitigation legal system. Each region should develop or revise the local regulations of disaster prevention and mitigation in accordance with the provisions of national laws and regulations. Strengthen the revised work of disaster prevention and disaster relief plans at all levels and categories; improve disaster prevention, mitigation, and relief plan system, and continuously improve the scientific, feasibility, and operability of plan. Strengthen policy research and standard formulation (revise) work of disaster management, relief supplies, rescue equipment, disaster information products, and so on; improve the normalized and standardized level of disaster prevention and reduction.

### **(3) Measures to increase fund investment.**

This measure was to improve fund investment mechanism of disaster prevention and mitigation, to widen funding channels, to increase fund investment of disaster prevention and mitigation infrastructure construction, major projects construction, scientific research, technology development, science advocacy and education and training. Improve and perfect mechanisms of fund investment in grade between the central and local governments of disaster prevention and mitigation projects; strengthen management and use of disaster prevention and mitigation fund. Perfect the natural disaster relief policies; improve disaster relief assistance project; specify subsidy standards; establish and improve management, use, and supervising mechanisms of disaster relief and donations. The central financial institution shall



strengthen fund support of disaster prevention and mitigation in the central and western regions, focused contiguous poor areas and rural areas. Establish financial supported major natural disaster risk-sharing mechanism, and explore to realize compensation and transfer loss-sharing for natural disasters through financial, insurance, and other diversified financial mechanisms.

**(4) Measures to carry out extensive international cooperation and exchanges.**

This measure was to promote international cooperation and exchanges in the field of disaster prevention and mitigation information management, education, professional training, research, and development, and so on; establish and improve the mechanism of cooperation and exchanges with the United Nations organizations, international and regional disaster prevention and mitigation agencies, governments, and non-governmental organizations in the fields of disaster prevention and mitigation; widely publicize the achievements and experience of disaster prevention and mitigation in China, and actively learn from advanced international concepts and practices in disaster prevention and mitigation; introduce foreign advanced technology in disaster prevention and reduction. Further implement the “Strengthening the Resilience of Nations and Communities. For example, Hyogo Framework for Action 2005–2015” play the role of Space and Major Disasters International Charter mechanism, UN Management and Emergency Response UN-SPIDER Beijing office and UN reduce the International Centre for Drought Risk; deepen international cooperation in space IT field for disaster reduction.

**(5) Implementation and evaluation of plan.**

To implement this plan is coordinated by the National Committee for Disaster Reduction, by optimizing and integrating various resources of disaster prevention and reduction, to enhance the organization and coordination and implementation of security work. The member units of National Disaster Reduction Committee shall develop the local integrated disaster prevention and mitigation planning around this plan objectives and major tasks, supported by sector plan, and organic convergence to this planning; local government shall develop local disaster prevention and mitigation planning in practice. Ministry of Civil Affairs, National Development and Reform Commission together with relevant departments shall organize and promote the planning of major projects construction in accordance with relevant laws, regulations, and basic construction program requires.

National Disaster Reduction Committee shall establish planning monitoring and evaluation system to strengthen the follow-up analysis of planning implementation. The member units of the National Disaster Reduction Committee and the provincial governments shall strengthen evaluation of the implementation of the relevant work require in the planning. Midterm assessment of planning and overall implementation of the planning shall be reported to the State Council.

### **8.3.2 Summary of Regulations of Wenchuan Post-earthquake Restoration and Reconstruction**

After the Wenchuan earthquake, the Chinese Government had attracted worldwide attention and made great success in emergency response, rescue, and reconstruction work. “Regulations of Wenchuan Post-Earthquake Restoration and Reconstruction” was the first Chinese regulation for reconstruction after large-scale natural disasters; therefore, we took “Regulations of Wenchuan Post-Earthquake Restoration and Reconstruction” as an example to introduce disaster prevention and mitigation regulations.

“Regulations of Wenchuan Post-Earthquake Restoration and Reconstruction” was formulated according to the “Emergency Response Law of People’s Republic of China” and the “People’s Republic of China Earthquake Disaster Mitigation Act.” It was aimed to guarantee the Wenchuan post-earthquake restoration and reconstruction work in a strong, orderly and effective manner, recovering to conditions of normal living and producing, learning, working positively and safely in stricken areas, and to promote the recovery and development of economy and society in disaster areas. The regulations had nine chapters, including general principles, transitional settlement, investigation and assessment, recovery and reconstruction planning, implementation of recovery and reconstruction, fundraising and policy support, supervision and management, legal liability and supplementary provisions, a total of eighty articles (including Annex).

It is in the framework of “Regulations of Wenchuan Post-Earthquake Restoration and Reconstruction.” The Wenchuan earthquake restoration and reconstruction work was basically completed in three years. Tremendous changes had happened in earthquake-stricken areas, attracting the world’s attention (State Department of the People’s Republic of China 2008).

#### **Attachment 2: Regulations of Wenchuan Post-Earthquake Restoration and Reconstruction**

##### **Chapter I General Provisions**

**Article 1** These Regulations are formulated in order to guarantee the Wenchuan post-earthquake restoration and reconstruction work in a strong, orderly and effective manner, recovering to conditions of normal living and producing, learning, working positively and safely in disaster areas, and to promote the recovery and development of economy and society in disaster areas, in accordance with the “Emergency Response Law of People’s Republic of China” and the “People’s Republic of China Earthquake Disaster Mitigation Act”.

**Article 2** The post-earthquake recovery and reconstruction shall adhere to the policies of people-oriented, scientific planning, overall planning, step by step, self-reliance and national support, social assistance.

**Article 3** The post-earthquake recovery and reconstruction should be guided by the following principles:

- (1) Combine self-reliance and self-sufficiency with national support and counter-part support in disaster-affected areas;
- (2) Combine government-led with social participation;
- (3) Combine in-situ restoration with off-site new construction;
- (4) Combine quality-oriented with efficiency-oriented;
- (5) Combine the current with the long term;
- (6) Combine the economic and social development with the protection of ecological environmental resources.

**Article 4** Governments at all levels shall strengthen the leading, organizing, and coordinating work in the post-earthquake recovery and reconstruction. If necessary, post-earthquake reconstruction coordination organization shall be established to organize and coordinate post-earthquake recovery and reconstruction work.

Under the unified leadership of the people's government, the relevant of governments at or above the county level shall closely cooperate and take effective measures to jointly improve earthquake recovery and reconstruction work, according to the division of responsibilities.

**Article 5** The governments in earthquake-stricken areas at all levels shall be self-reliant, hardworking, thrift, and raise funds and materials in multiple channels to carry out post-earthquake reconstruction.

The state shall give financial support, tax incentives, financial support and actively provide supports on material, technical and human resources aspects to post-earthquake recovery and reconstruction.

The state encourages citizens, legal persons, and other organizations to actively participate in post-earthquake recovery and reconstruction work and supports the use of advanced technologies, equipment, and materials in the post-earthquake recovery and reconstruction.

The state receives the post-earthquake reconstruction needed assistance of foreign governments and international organizations.

**Article 6** For the units and individuals who made outstanding contributions to the post-earthquake reconstruction work, recognition, and reward shall be given according to the state regulations.

## **Chapter II Transitional Resettlement**

**Article 7** The transitional resettlement of the earthquake-affected people in earthquake-stricken area shall be based on the actual situation of the earthquake, combining in-situ resettlement with off-site resettlement, centralized resettlement with scattered resettlement, government resettlement with living with relatives and friends, self-arranged resettlement.

The government shall give appropriate subsidies to those affected people who choose to live with relatives and friends and other means of self-arranged resettlement. Specific measures shall be formulated by the provincial government.

**Article 8** The transitional resettlement sites shall be selected in the region with convenient traffic conditions to facilitate the affected people to restore production and life, and avoid the region with earthquake active fault and region where floods

may occur, landslides and avalanches, landslides, ground subsidence, lightning as well as production, storage of flammable and explosive dangerous goods factories and warehouses.

Implementation of transitional resettlement shall occupy wastelands, clearings, avoid occupying or occupying less farmland, and avoid natural reserves, drinking water source protection areas and ecologically fragile area.

**Article 9** The governments at all levels shall arrange temporary accommodation in the earthquake-stricken area in accordance with actual conditions and local conditions. Temporary shelter can be tents, tarpaulin room, also simple housing and portable house if conditions allowed. If temporary accommodation difficulties do exist, playgrounds of school and the identified safe stadiums, etc., can be taken as a temporary shelter.

The State encourages rural residents in the earthquake-stricken areas to build temporary shelter that meet safety requirement and shall be supplemented. Specific measures shall be formulated by the provincial government.

**Article 10** The materials for transitional resettlement shall ensure quality and safety. Production units shall ensure the quality of tents, tarpaulin room. Construction units, production units shall adopt quality acceptable materials and ensure safety and quality and seismic performance of the simple housing and portable house.

**Article 11** Transitional resettlement sites shall build supporting infrastructure such as water, electricity, roads, and be equipped with schools, medical centers, centralized water points, public toilets, refuse collection points, daily necessities supply points, minority special requirement supply points and the necessary facilities to promote its cultural and other supporting public service facilities in accordance with the proportion of affected number, to ensure that the basic needs of the affected people.

The scale of the transitional resettlement site shall be appropriate, and the necessary lightning protection facilities shall be installed and the necessary fire emergency passages shall be set aside, and corresponding fire-fighting facilities shall be equipped to prevent fires and lightning disasters.

**Article 12** Temporary shelters shall have the function of preventing fire, wind, rain, etc.

**Article 13** Portable house shall give priority to the people in the hardest hit areas, the affected people need for relocation, and the worst-hit families whose houses were collapsed and difficult to rebuild in the short term, especially for the families of the victims, pregnant women, infants and young children, orphans, lonely old people, persons with disabilities as well as schools, medical centers, and other public service facilities.

**Article 14** The distribution and use of temporary shelter, transitional resettlement funds, and materials shall be open and transparent, published regularly by authorities and supervised by the related departments and the public. Specific measures shall be formulated by the provincial government.

**Article 15** Transitional resettlement land shall be used as the temporary land use. It can be first used and go through the related land use formalities in accordance

with the law afterward; if it has not been turned to permanent land after due date, users shall return it to the original land user after reclamation.

**Article 16** The county-level people's government at transitional resettlement sites shall organize relevant departments to strengthen the monitoring of secondary disasters, drinking water, food hygiene, surveillance and investigation of epidemiological outbreaks and environmental remediation. The used disinfectants, cleaning agents shall comply with the requirements of environmental protection, to avoid contamination of soil, water, and environment.

The public security organ at transitional resettlement sites shall strengthen security management and punish violations timely to maintain normal social order.

The affected people shall establish security and fire united company to carry out security, fire inspections and other self-defense, self-help work under the organizing of transitional resettlement site located county and township (town) people's government.

**Article 17** The people's governments at all levels in earthquake-stricken areas shall organize the affected people and enterprises to carry out self-help production, actively resume production, and do the affected people's psychological aid work.

**Article 18** The people's governments at all levels and their agricultural administrative departments in the earthquake-stricken areas shall repair damaged agricultural infrastructure promptly, carry out rush-harvesting and rush planting, and provide technical guidance to ensure supply of agricultural inputs and agricultural machinery and equipment.

**Article 19** The people's governments at all levels and relevant departments in earthquake-stricken areas shall give priority to organizing to resume production of enterprises such as power, water, gas and provide support to large-scale backbone enterprises to resume production, which could provide the conditions for the full recovery of production and management of industrial and service industry.

### **Chapter III Investigation and Assessment**

**Article 20** The relevant departments of the State Council shall organize the work of earthquake disaster investigation and assessment to provide the basis for the preparation of post-earthquake recovery and reconstruction planning.

**Article 21** The earthquake disaster investigation and assessment should include the following items:

- (1) The extent and quantity of damage of towns and villages;
- (2) Casualties, the extent and the number of damaged houses, infrastructure and public service facilities, industrial and agricultural production facilities and trade circulation facilities, the degree and quantity of destructed agricultural land;
- (3) The number of people to be resettled, the number of disabled persons in need of help, the number of elderly persons and minor children in need of help, the number of houses to be provided, the infrastructure and public service facilities need for rehabilitation and reconstruction, the production facilities need for

rehabilitation and reconstruction, the agricultural land need for organizing and reclamation, etc.;

- (4) The situation of environmental pollution, ecological damage, and destruction of the natural and historical heritage, etc.;
- (5) The situation of the carrying capacity of resources and environment as well as geological disasters, secondary hazards, and hidden danger, etc.;
- (6) The affected circumstances of hydrogeology, engineering geology, environmental geology, landform and river regime and hydrological situation and the major hydropower projects;
- (7) The public health emergencies and hidden danger;
- (8) Other matters need to be investigated and assessed in the preparation of post-earthquake recovery and reconstruction planning.

**Article 22** The people's governments at or above the county level shall organize the relevant departments and experts in accordance with their respective division of responsibilities to take project quality and seismic performance appraisal on severely damaged water, roads, electricity and other infrastructures, schools and other public service facilities and other construction projects, save the relevant information and samples, and conduct investigation and assessment of the failure mechanism of seismic activity to related construction project, and provide a scientific basis for improving the construction seismic design specifications, construction standards, and quakeproof measures.

**Article 23** The earthquake disaster investigation and assessment shall take the integrated investigation, spot survey and comprehensive evaluation to ensure data authenticity, accuracy, timeliness, and reliability of the conclusions.

Earthquake department and earthquake monitoring network shall collect and store all data and information of before-earthquake, on-earthquake, post-earthquake and establish a complete file.

The earthquake disaster investigation and assessment shall abide by national laws, regulations and technical standards and requirements.

**Article 24** The earthquake disaster investigation and assessment report should be reported to the State Council promptly.

#### **Chapter IV Recovery and Reconstruction Planning**

**Article 25** The development and reform department of the State Council in company with the relevant departments of State Council and provincial governments jointly organize the preparation of post-earthquake restoration and reconstruction planning and implement after the State Council's approval.

The post-earthquake recovery and reconstruction planning shall include an overall plan of post-earthquake recovery and reconstruction and urban system planning, rural development planning, urban and rural housing construction planning, infrastructure planning, public service facilities planning, productivity layout and industrial restructuring plan, market service system planning, disaster prevention and ecological restoration planning, land use planning and other special planning.

**Article 26** The city and county people's governments in earthquake-stricken areas shall organize the preparation of post-earthquake recovery and reconstruction

planning and implementation in its administrative region under the guidance of the provincial people's government.

**Article 27** The preparation of post-earthquake recovery and reconstruction planning shall implement the scientific approach comprehensively and follow the principle of people-oriented, giving priority to restoration and reconstruction of the affected people's basic life and public service facilities; we should respect science, respect nature, and fully consider the carrying capacity of resources and environment; combine overall planning and all-round consideration with promoting industrialization, urbanization, new rural construction, the construction of the main functional areas and the optimization and upgrading of industrial structure, and adhere to the rules of the unified arrangements, division of labor responsibility system, distinguish priorities.

The preparation of post-earthquake recovery and reconstruction planning shall abide by the laws, regulations, and relevant national standards.

**Article 28** The obtained geological, exploration, mapping, hydrology, environment, and other basic information from post-earthquake investigations and assessments shall serve as a basis for the preparation of post-earthquake recovery and reconstruction planning.

The department responsible for seismic work shall review the ground motion parameter zoning map based on the research results of the seismic geological seismic activity features and seismic intensity distribution, to provide a basis for the preparation of post-earthquake recovery and reconstruction planning and earthquake-proof construction.

**Article 29** Post-earthquake restoration and reconstruction planning shall include the condition of earthquake disaster and regional analysis, the principles and objectives, spatial distribution and tasks and policy measures of recovery and reconstruction, the protection of the earthquake sites and relics with scientific value, the restoration of damaged cultural relics, buildings and structures with historical value and ethnic characteristics, and steps and stages of the implementation, etc.

Post-earthquake recovery and reconstruction planning shall focus on the layout of towns and villages, housing construction, infrastructure, public service facilities, agricultural production facilities, industrial facilities, disaster prevention, protection of natural resources, ecological environment and historical and cultural heritage, land consolidation and reclamation, and other arrangements.

**Article 30** The restoration and reconstruction of production, life, and other facilities of the central-owned enterprise were included in the post-earthquake recovery and reconstruction planning coordination arrangements.

**Article 31** The preparation of post-earthquake recovery and reconstruction planning shall absorb authorities, experts, and the views of the affected people should be fully considered; major events shall organize relevant experts to conduct special demonstration.

**Article 32** If towns and villages were completely destroyed in the earthquake, and significant security risks or population size beyond the capacity of the environment make the needs of off-site construction and re-siting, the site shall avoid seismic active faults or ecologically fragile and possible floods, landslides,

avalanches, landslides, ground subsidence and other disaster areas, and natural foci infectious diseases.

People's governments at or above the county level in the earthquake-stricken areas shall organize the relevant departments and experts to demonstrate on the new site, listen to public opinion, and report to the next higher level people's government for approval.

**Article 33** The State Council approved post-earthquake recovery, and reconstruction planning is the fundamental basis of post-earthquake reconstruction. It shall be published promptly. Any units and individuals shall comply with legally approved post-earthquake recovery and reconstruction planning and obey the planning management.

The change of basic information based on post-earthquake recovery and reconstruction planning, and other objective conditions change need to be modified, or the condition needs to be modified for reconstruction work, should be reported to the State Council for approval.

## **Chapter V The Implementation of Reconstruction**

**Article 34** The provincial people's government in earthquake-stricken areas shall organize and implement post-earthquake recovery and reconstruction in a planned, step-by-step way according to post-earthquake reconstruction planning and the level of local economic and social development.

The relevant departments of State Council shall support, assist, and guide the work of restoration and reconstruction in earthquake-stricken areas.

Urban rehabilitation and reconstruction shall take full account of the original city, town overall planning, pay attention to reflecting the architectural style of the original minority, reasonably determine the scale of urban construction and standards, and meet seismic requirements.

**Article 35** The development and reform departments shall specifically take charge of the overall planning, policy advice, arranging investment planning, organization and coordination and major construction projects of post-disaster restoration and reconstruction.

The finance department in conjunction with relevant departments shall specifically take charge of proposing funding arrangements and policy recommendations and specifically be responsible for management and disbursement of post-disaster recovery and reconstruction funds.

The transportation, water conservancy, railways, electricity, telecommunications, radio and television, and other departments shall specifically take charge of organization and implementation of the relevant infrastructure disaster recovery and reconstruction in accordance with the division of responsibilities.

The construction department shall specifically take charge of organization and implementation of disaster recovery and reconstruction of housing and municipal utilities.

The civil affairs department shall specifically take charge of organizing basic livelihood security, hardship relief, destruction of rural housing reconstruction assistance, reconstruction and social welfare facilities for orphans, lonely old



people, people with disabilities resettlement allowance, psychological assistance, and disability rehabilitation of affected people.

The education, science and technology, culture, health, radio and television, sports, human resources and social security, business, industry and commerce departments shall specifically take charge of organization and implementation of disaster recovery and reconstruction of public service facilities, health and epidemic prevention and medical treatment, employment services and social security, important supply of daily necessities and maintain market order in accordance with the division of responsibilities. Colleges and universities, scientific and technological research, and development institutions shall strengthen research on thematic issues for post-earthquake recovery and reconstruction and provide scientific and technical support.

The agriculture, forestry, water resources, land resources, business, industry, and other departments shall specifically take charge of organization and implementation of specific animal disease surveillance, restoration of agricultural production facilities and restore the conditions for agricultural production, post-earthquake reconstruction of land arrangements, land consolidation and reclamation, geology disaster prevention, trade flows, industrial production facilities, recovery, and reconstruction in accordance with the division of responsibilities.

The environmental protection, forestry, civil affairs, water conservancy, science and technology, production safety, earthquakes, meteorology, surveying, and mapping departments shall specifically take charge of environmental protection and disaster prevention and mitigation, security, technical support and production recovery and reconstruction of public service facilities in accordance with the division of responsibilities.

The People's Bank of China and the banking, securities, and insurance regulatory authorities shall be specifically responsible for the development and implementation of financial support and service policies of earthquake recovery and reconstruction in accordance with the division of responsibilities.

The public security departments shall take charge of maintaining social order and stability in quake-hit areas.

The customs, inspection, and quarantine departments shall specially take charge of organization and implementation of import of reconstruction goods, foreign donations clearance, inspection, and quarantine according to law in accordance with the division of responsibilities.

The Ministry of Foreign Affairs in company with relevant departments shall take charge of coordinating foreign affairs post-earthquake reconstruction in accordance with the division of responsibilities.

**Article 36** The competent department for seismic work under the State Council together with cultural relics and other relevant departments shall organize investigation on ruins of the earthquake site with experts, scoping typical, representative, scientific value and memorable earthquake ruins and sites, building earthquake site museum.

**Article 37** The provincial people's government in earthquake-stricken areas shall organize ethnic affairs, construction, environmental protection, earthquake,

and other cultural relics departments and experts, according to the earthquake disaster investigation and assessment results to develop clean-protection programs; they should also specify earthquake ruins and sites and cultural relics protection units as well as buildings of historical value and ethnic characteristics, structures and other protected objects and their regional context, and report to the State Council for approval.

**Article 38** The earthquake disaster site cleanup protection shall implement when there are no signs of human life and no major epidemic, according to the principle of unified organizing, scientific planning, overall consideration, focusing on protection. Once signs of human life at earthquake disaster site are found, the rescue shall be implemented immediately.

**Article 39** The clean-protection program determined earthquake ruins, and sites shall be protected within the scope of effective measures, the technical data and physical data with scientific value shall be preserved and collected, and necessary reinforcement of buildings and structures with danger of collapse shall be taken if no effect on the overall outlook, and necessary cleanup of toxic and hazardous waste, and the residue be taken.

Protection of cultural relics protection units shall be in the original site. For the retainable and immovable cultural relics and buildings, structures, and historic buildings with historical value and ethnic characteristics, the reinforcement and other protective measures shall be taken; for the units which cannot be reserved but are likely to rebuild, their image data shall be collected.

The artifacts collection, private collections, and other movable cultural relics and the material carriers of intangible cultural heritage shall be timely rescued, organized, registered, and organized movable cultural relics and the material carrier of intangible cultural heritage shall be transported to a place for safe keeping.

**Article 40** The cleaning up of earthquake disaster site shall be carried out in zoning and classification according to protection plan. The cleaned-out bodies of the victims shall be dealt with properly according to local traditions and customs of ethnic minorities; the cleaned-out property shall be recorded in detail and properly preserved according to its type, characteristics, quantity, cleanup time, place, etc. If possible, the victims' families and the property owners shall be notified to spot.

The cleaned up abandoned hazardous chemicals and other wastes, residues shall be classified and disposed in accordance with relevant state regulations.

**Article 41** The people's governments at all levels in earthquake-stricken areas shall do well in the job of animal epidemic prevention and control of earthquake-stricken areas. The cleaned up animal carcasses shall be disinfected, destructed, and other harmless measures should be taken to prevent the occurrence of major animal epidemic.

**Article 42** The waste construction materials that dismantled or removed in the process of on-site cleanup and the portable houses after the end of the transitional resettlement period and no longer in use, which can be recycled, should be recycled.

**Article 43** The earthquake recovery and reconstruction shall coordinate to arrange for transport, railways, telecommunications, water, electricity, housing,

schools, hospitals, social welfare, culture, radio and television, finance and other infrastructure and public service facilities.

The earthquake recovery and reconstruction in town shall coordinate to arrange for municipal utilities, public services, and other facilities and determine the construction scale and timing properly.

The earthquake recovery and reconstruction in village shall respect the wishes of farmers, let villagers play a role of self-government, give priority to self-building, social assistance, targeted aid; it shall adjust according to local conditions, use land economically and intensively, and protect arable land.

The county people's government shall organize the relevant departments in the earthquake-stricken areas to provide guidance for villagers on housing construction sites and provide a variety of design of building houses in line with local conditions for choosing of villagers. The villagers' houses shall meet requirements for seismic resistance, reflecting the original local characteristics, national characteristics, and traditional style.

**Article 44** The approved post-earthquake recovery and reconstruction projects can arrange for the use of land in advance based on overall planning of land use, in a manner of construction while approval and go through the formalities in accordance with the relevant provisions of the land. The destroyed arable land due to the earthquake disaster, farm roads, emergency rescue and disaster relief land, transitional resettlement land, discarded towns, villages, and mining site shall conduct land consolidation and reclamation and management of geological disasters according to the law.

**Article 45** The relevant departments of State Council shall organize to review for ground motion parameters, seismic resistance design requirements, construction standards in the earthquake-stricken areas; if really necessary, they shall be revised timely.

The seismic resistance requirements and relevant engineering construction standards in the earthquake-stricken areas shall be revised accordingly based on the revised earthquake ground motion parameters.

**Article 46** The building, structures, and facilities still useful in the earthquake-stricken areas shall take anti-seismic performance qualification in accordance with the requirements of seismic resistance in the earthquake-stricken areas and take reinforcement, transformation, and other measures based on the identification results.

**Article 47** The site selection of post-earthquake reconstruction projects shall comply with the post-earthquake recovery and reconstruction planning and earthquake disaster prevention and mitigation requirements avoid seismic active fault, ecologically fragile areas, areas that may cause significant disasters and natural source of infectious diseases.

**Article 48** Design units shall make construction seismic resistance design strictly in accordance with the design requirements for seismic resistance and mandatory standards and be responsible for the quality of seismic resistance design and accuracy of the issued construction drawings.

Construction units of contractor shall construct in accordance with the construction design documents and mandatory standards for construction and be responsible for construction quality.

Construction units of employer and construction units of contractor shall select construction design documents and the materials, components, and equipment specified by relevant national standard.

Construction supervising units shall implement supervision in accordance with the construction design documents and mandatory standards for construction and be responsible for supervision of construction quality.

**Article 49** When inspection on post-earthquake restoration and reconstruction work is in accordance with relevant national regulations, it shall focus on whether to comply with the requirements of seismic resistance; if it cannot meet the requirements for seismic resistance, a final acceptance report should not be issued.

**Article 50** The schools, hospitals, stadiums, museums, cultural centers, libraries, theaters, shopping malls, transportation hubs, and other crowded public service facilities shall be designed higher than the requirements for seismic resistance of local housing construction to enhance seismic resistance ability.

**Article 51** The heritage conservation, natural reserves, wildlife protection and earthquake ruins and sites protection involved in earthquake recovery and reconstruction shall be implemented in accordance with the provisions of national relevant laws and regulations.

**Article 52** The government procurement of goods, works, and services during post-earthquake restoration and reconstruction shall be strictly enforced in accordance with the relevant provisions of the “People’s Republic of China Government Procurement Law”.

## **Chapter VI Financing and Policy Support**

**Article 53** The people’s governments at or above the county level shall raise earthquake recovery and reconstruction funds through government investment, counterpart assistance, social raising, market operations, and other means.

**Article 54** The state shall establish post-earthquake recovery and reconstruction funds in accordance with the actual situation and other factors, and the loss of strength of the earthquake, earmarked for post-earthquake recovery and reconstruction.

Post-earthquake recovery and reconstruction funds consist of budgetary funds and other financial resources.

The raising and using regulations of post-earthquake recovery and reconstruction fund shall be formulated by the financial department of the State Council.

**Article 55** Donations by citizens, legal persons, and other organizations for the post-earthquake recovery and reconstruction are encouraged by the state. The use of donated funds and materials shall respect the donors’ wishes and be brought into post-earthquake recovery and reconstruction planning.

If the donors are people’s governments at or above the county level and their departments, the donations shall be for earthquake recovery and reconstruction. If the donors are public welfare organizations, public nonprofit institutions, the

donations, and the use and management of donated property shall be open and supervised by the relevant government departments, donors, and community.

If the donors are people's governments at or above the county level and their departments, public welfare organizations, nonprofit public institutions, donations bills issued uniformly by the provincial or above department of finance shall be printed to donors.

The reconstruction funds, goods and personnel services, arranged and implemented bilateral and multilateral post-earthquake recovery and reconstruction projects provided by the foreign governments and international organizations, shall be arranged in accordance with relevant state regulations.

**Article 56** The state encourages citizens, legal persons, and other organizations to invest in infrastructure and public service facilities of post-earthquake restoration and reconstruction according to the law.

**Article 57** The state implements tax benefits on post-earthquake recovery and reconstruction in law. The specific measures shall be formulated by the financial department and the tax department of the State Council.

During the earthquake disaster recovery and reconstruction, the people's governments at or above the county level implement local tax benefits in law.

**Article 58** The administrative fees in earthquake-stricken areas may be relief appropriately. Specific measures shall be formulated by the competent authorities.

**Article 59** The state shall provide financial discount of housing loans and public service facilities reconstruction loans, industry and services business loans for resuming production, agricultural loans for resuming production and other loans. The specific measures shall be formulated by the financial department of the State Council together with other relevant departments.

**Article 60** When the state arranging construction funds, priority should be given to transports, railways, energy, agriculture, water conservancy, communications, finance, municipal utilities, education, health, culture, radio and television, disaster prevention and reduction, and environmental protection infrastructure, and public service facilities as well as key projects related to national security facilities.

If mapping, meteorology, seismology, hydrology, and other facilities destroyed by the earthquake, the people's government of the earthquake-stricken areas shall take urgent measures to have them repaired, ensuring proper operation.

**Article 61** The people's governments at all levels and relevant government departments shall strengthen vocational training for the affected people, employment services, and employment assistance and encourage businesses and institutions to employ the qualified affected people; the governments at all levels and relevant government departments may relieve affected people by organizing them to participate in the work of earthquake disaster recovery and reconstruction.

**Article 62** For the students receiving compulsory education in earthquake-stricken areas, whose guardians are incapable or dead due to the earthquake disaster and whose families have financial difficulties due to the earthquake disaster, their cost of living subsidies shall be given by the state; for other students in earthquake-stricken areas, whose guardians are incapable or dead due to the earthquake disaster and whose families have financial difficulties due to the

earthquake disaster, under the same conditions, their schools can prioritize their integration into the national subsidy policy system to be funded.

**Article 63** The people's governments at all levels and relevant government departments in non-affected areas shall take targeted aid and other forms of support for earthquake recovery and reconstruction in accordance with national and local government arrangements.

The state encourages enterprises and institutions from non-affected areas to support post-earthquake recovery and reconstruction through aid and other various forms.

**Article 64** For matters needed in the administrative examination and approval procedures of post-earthquake recovery and reconstruction, the people's government and relevant departments with approval authority shall handle according to law in a timely manner and for principle of facilitating the masses, simplifying procedures, improving efficiency.

## **Chapter VII Supervision and Administration**

**Article 65** The people's governments at or above the county level shall strengthen supervision and inspection of the post-earthquake reconstruction work to the people's governments at lower levels.

The relevant departments of people's governments at or above the county level shall strengthen supervision on the post-earthquake reconstruction and construction quality and safety product quality.

**Article 66** The people's governments at all levels in earthquake-stricken areas shall first survey before determining the funds and materials allocation of post-earthquake recovery and reconstruction and housing allocation scheme and publish scheme after democratic appraisal.

**Article 67** The people's governments at all levels shall regularly publish the source, amount, distribution, and use of post-earthquake recovery and reconstruction funds and materials and accept social supervision.

**Article 68** The financial department shall strengthen supervision and management of disbursement and use of the earthquake recovery and reconstruction funds.

The development and reform, construction, transportation, water conservancy, electricity, railways, industry, and information technology departments shall carry out post-earthquake reconstruction project supervision and inspection in accordance with the division of responsibilities for the organization. The development and reform department of the State Council shall organize inspection for major construction projects of post-earthquake reconstruction.

**Article 69** The audit institutions shall strengthen the whole process audit trails of the mobilization, allocation, disbursement, use, and effectiveness of the post-earthquake recovery and reconstruction funds, regularly publish the use of post-earthquake reconstruction funds and materials, and announce the final results of the audit after the audit.

**Article 70** The people's government and relevant departments and units at all levels in the earthquake-stricken areas shall register and establish a sound file on the

raise, distribution, allocation, usage of construction project and post-earthquake recovery and reconstruction funds and materials. They should timely transfer files to the construction department or other relevant departments after completion and acceptance of construction project and at the end of post-earthquake recovery and reconstruction.

**Article 71** The supervisory organ shall strengthen monitoring of the state organs that participate in post-earthquake reconstruction work and the laws and regulations granted organizations and their staff which have the authority of managing public affairs.

**Article 72** Any unit and individual have the right to report violations of law and discipline post-earthquake reconstruction.

The people's governments or relevant departments that receive a report shall immediately investigate according to law and to keep the secret for reporter. The results shall be turned back and informed to reporter with the real name. And the results shall be announced to the public if the violations of laws and disciplines have great social impacts.

### **Chapter VIII Legal Liability**

**Article 73** When the local people's government and its department occupy, intercept, or misappropriate post-earthquake recovery and reconstruction funds or materials, the financial department and the audit authority shall order them to make amend and recover the occupied, withheld, misappropriated post-earthquake recovery and reconstruction funds or materials and confiscate the illegal income within their respective mandates. The unit shall be given a warning or reprimand; the directly responsible person in charge and other directly responsible personnel shall be given sanctions of degradation, dismissing position or even dismissed by the appointment and removal or supervisory authorities in accordance with the personnel management authority in law; whereas the case constitutes a crime, criminal responsibilities shall be affixed in law.

**Article 74** When in the post-earthquake recovery and reconstruction, the relevant local people's governments and relevant government departments default payment on construction unit for projects, or express, imply the design units, construction units in violation of requirements for seismic resistance and mandatory standards for construction, reducing the quality of construction projects, resulting in major accidents, which constitutes a crime, shall be investigated for criminal responsibility in law; when no crime was constituted, the directly responsible person in charge and other directly responsible personnel shall be given sanctions of degradation, dismissing position or even dismissed by the appointment and removal or supervisory authorities in accordance with the personnel management authority in law.

**Article 75** When in the post-earthquake recovery and reconstruction, the construction units of employers, reconnaissance units, design units, construction units of contractors, or construction supervision unit reduce the quality of construction projects, resulting in major accidents, which constitutes a crime, shall be

investigated for criminal responsibility in law; when no crime was constituted, the construction department of the local people's governments at or above the county level or other relevant departments shall give punishment in accordance with the relevant provisions of the "Construction Quality Management Regulations".

**Article 76** When the severely damaged infrastructure, public service facilities, and other construction projects are identified and confirmed to be the major problems for the quality of the project in the survey and assessment, when a crime was constituted, the responsible construction units of employers, design units, construction units of contractors, project supervision units, and other directly responsible persons shall be investigated for criminal responsibility; when no crime was constituted, the construction department of local people's governments at or above the county level or other relevant departments shall give punishment in accordance with the relevant provisions of the "Construction Quality Management Regulations". Where is suspected of bribery, criminal responsibilities shall be affixed in law.

**Article 77** In the post-earthquake recovery and reconstruction, those who disrupt public order and pose a violation of public security management, shall be punished by the public security organ according to law.

**Article 78** Where the national staff in the post-earthquake recovery and reconstruction work misuse of authority, derelict of duty, and play favoritism and commit irregularities, they shall be punished in law; when a crime was constituted, they shall be investigated for criminal responsibility in law.

## Chapter IX Supplementary Provisions

**Article 79** The application of other relevant laws and relevant policies in the post-earthquake reconstruction shall be further formulated by the State Council in law or made provisions by the relevant departments of State Council, provincial governments within their respective mandates.

**Article 80** The Regulations shall be taken effect on the date of promulgation.

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