AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Agricultural Mechanism of Spreading Catastrophe Risk in China and Legislation Conception

LI Xu-dong *, **SUN Yao-wei**

Law Department of Southwest University, Chongqing 400716, China

Abstract This paper introduces agricultural catastrophe and its characteristics, and conducts comparative analysis on existing mechanism of spreading agricultural catastrophe risk, indicating that the mechanism of administrative remedy has the greatest efficiency and highest cost; the mechanism of social assistance has the lowest cost, but its efficiency is lowest and there are unstable factors; market mechanism, namely the insurance of agricultural catastrophe, is the rational choice of agricultural department in mechanism of risk spreading. This paper analyzes the status quo of China's insurance of agricultural catastrophe, indicating that the main body of management in China's insurance of agricultural catastrophe is missing. In addition, the market demand is critically scanty, and insurance of agricultural catastrophe lacks external development environment. The gap of China's insurance law of agricultural catastrophe has become the greatest obstacle to the development of insurance of agricultural catastrophe. From legislative purpose, basic principle, nature, main body of legal relations, management range, policy support, supervision and management and so on, the legislation conception of China's insurance of agricultural catastrophe is put forward.

Key words Agricultural catastrophe, Spreading mechanism, Agricultural insurance, Legislation, China

Agriculture in China's national economy plays a decisive role. China is a large agricultural country, but also the country prone to have natural disasters. The natural disasters, especially the catastrophic natural disasters pose a serious threat to the stable development of agriculture in China. Especially in recent years, the frequency of occurrence of agricultural catastrophe and the concurrent agricultural loss caused by agricultural catastrophe show the upward trend. For example, in early 2008, the south China's snow disaster affected more than 20 provinces (autonomous regions and municipalities) and millions of people, with the affected area of 11.868 7 million hm^2. Even 1.666 7 million hm^2 crops fail to be harvested, and the direct agricultural economic losses reaching 25 billion to 50 billion yuan[1]. On May 12, 2008, the earthquake in Wenchuan affected population more than 30 million in disaster-stricken rural areas, thousands of hectares of farmland were destroyed, and millions of livestock died, which caused local agricultural economic losses as high as 6 billion yuan. In 2009, a severe drought in northern China affected the production bases of winter wheat, with affected crop area of 9.066 7 hm^2 million, of which 2.654 million hm^2 suffered from severe drought[2]. In 2010, the Southwest suffered from drought likely to happen in a century, with incalculable losses, while the south of the lower reaches of the Changjiang River suffered from flood disaster constantly, inflicting heavy damage on agriculture.

A string of startling figures sound the alarm to China's agriculture again and again. Agriculture is the foundation of national economy. If agriculture develops steadily, the nation will be peaceful and prosperous. Agriculture, the basis for national survival and development, related to people's livelihood, is the key to social stability and economic development, so faced with agricultural catastrophe, the problem of how to resist agricultural catastrophe risk needs to be resolved, and establishing the mechanism of agricultural catastrophe risk spreading is urgent.

Received: April 11, 2011 Accepted: April 24, 2011

* Corresponding author. E-mail: lixudong@swu.edu.cn

1 Comparative analysis on agricultural catastrophe and the existing risk spreading mechanism

1.1 Agricultural catastrophe and characteristics This concept of catastrophe was first proposed by the World Trade Organization and its basic connotation means that after a disaster in one region, the region with its own forces have been unable to control or have been difficult to control the consequences of disasters, and it is able to control it only by virtue of the help of external forces (such as international aid and social contributions). China scholars hold that the agricultural catastrophe is the agricultural natural disaster with small probability of occurrence, but a loss is larger than expected, and cumulative losses overwhelm the bearing capacity of the main body (farmers, insurance companies or government)[3]. The extension of the catastrophe mainly includes severe drought disaster, flood disaster, typhoon, snow storm and the devastating earthquake disaster.

Different from the general agricultural natural disasters, the main characteristics of agricultural catastrophe are embodied as follows:

1.1.1 Low frequency. In comparison with the general natural disasters, agricultural catastrophes tend to have characteristic of low frequency of occurrence. In an area, the agricultural catastrophe rarely occurs in succession, such as the hundred-year snow disaster in 2008, can be described as once in a century.

1.1.2 Unpredictability. When the catastrophe occurs in a region, how widespread it is and how much the losses, are diffi-

cult to predict. We still take snow disaster in 2008 as an example, with existing technology means, people cannot predict the occurrence of this snow disaster and consequences.

1.1.3 High-degree variability. Because different areas have different climatic conditions and geographic conditions, so the risks often vary in size in different regions. People can not prevent and control the same natural disasters by experience, which makes agricultural catastrophe have high-degree variability.

1.1.4 Seriousness of aftermath. The consequence of agricultural catastrophe is that it often causes considerable losses and a wide range of damage. Once a agricultural catastrophe occurs in one region, it is difficult to or even cannot control the catastrophe only with its own strength in local area in the short run, and it must rely on external forces to reduce the resulting losses.

1.2 Comparative analysis on the existing spreading mechanism of agricultural catastrophe risk As noted above, the consequence of agricultural catastrophe is often very serious, we can not control the consequences of catastrophe relying solely on the strength of the local areas, therefore, after agricultural catastrophe occurs, the place where the catastrophe happens needs to rely on the external strength to resist risks and spread risks, so as to share losses resulting from catastrophe and this external strength is spreading mechanism of agricultural catastrophe risk.

1.2.1 Overview of existing spreading mechanism of agricultural catastrophe risk. After making a general survey of agricultural catastrophe risk spreading mechanisms in the world, we sum up them as follows:

1.2.1.1 The mechanism of administrative remedy. The mechanism of administrative remedy, as one of the most ancient mechanism for risk spreading of agricultural catastrophe, plays an important role in history. In China's history, once an agricultural natural disaster occurs in one region, the government will organize relief funds for disaster-stricken areas. Nowadays, the mechanism of administrative remedy is still the main mechanism for risk spreading of agricultural catastrophe in China, for example, during the drought in northern China in 2009, the financial subsidy allotted by the state finance for drought relief and relieving the victims of a disaster in severe-disaster-stricken areas was a case of the mechanism of administrative remedy spreading agricultural catastrophe risk.

1.2.1.2 The mechanism of social assistance. The so-called social assistance is a risk spreading mechanism through social forces to spread or share losses in the region where the agricultural catastrophe occurs. Usually the forms of social assistance are social contributions (social donation and social endowment fund). With the development of human society, the social assistance, as the civil power, has become an important form of risk spreading of agricultural catastrophe. After Wenchuan earthquake on May 12, 2008, throughout the country, all regions make donations in order to aid the disaster-stricken rural area to recover daily life and agricultural production. It is a good example.

1.2.1.3 Market mechanism. Market mechanism, as a mechanism for risk spreading of agricultural catastrophe, appears relatively late, but it has incomparable advantages as against other risk spreading mechanisms. The main form of market mechanism is insurance of agricultural catastrophe, which uses insurance to regulate risk of agricultural catastrophe spontaneously, and plays the role of "stabilizer" in agricultural economic development and "firewall" of agricultural risks.

1.2.2 Analysis of the above three spreading mechanisms of agricultural catastrophe risk. The mechanism of administrative remedy, the mechanism of social assistance and market mechanism all play their own role in spreading agricultural catastrophe risk, but in the long run, the market mechanism, namely the insurance of agricultural catastrophe is the rational choice of risk-sharing mechanism of agricultural catastrophe.

1.2.2.1 The mechanism of administrative remedy has highest efficiency, but the cost is also highest. The state uses its administrative power to resist agricultural catastrophe and spread agricultural catastrophe risk. Because the state has political coercible power and economic strength, therefore, the mechanism of administrative remedy is most efficient in spreading risk of agricultural catastrophe. However, the cost of mechanism of administrative remedy is most, because the mechanism of administrative remedy is financed mainly from government revenue. This huge expenditure, especially for a country with less powerful economic strength, is undoubtedly a huge financial burden. The government's administrative remedies alone often cannot fully compensate the economic losses caused by disasters.

1.2.2.2 The mechanism of social assistance has lowest cost, but the efficiency is also lowest and there are unstable factors. Social contributions and social donations mainly depend on folk power which can voluntarily share the loss of the disaster-stricken areas. The cost of this mechanism is lowest, and it doesn't increase the government's financial burden. In addition, it can play a role in compensating the loss of agricultural catastrophe to some extent. However, because social contributions and social donations are often affected and restricted by economic level, personal awareness, moral, love and other factors, which makes it difficult to determine the extent of compensation in the disaster-stricken areas. Moreover, if the social contributions delay too long, it often makes it that the capital and material can not be ensured in the short term, which will undoubtedly affect smooth reconstruction work in agricultural disaster-stricken areas.

1.2.2.3 Market mechanism, namely the insurance of agricultural catastrophe, is the rational choice of agricultural department in mechanism of risk spreading.

The insurance of agricultural catastrophe is insurance measure specifically provided for spreading risk of agricultural catastrophe. It refers to a kind of agricultural insurance which shares critical economic losses and provides compensation for agricultural producers who suffer from great natural disasters . The insurance of agricultural catastrophe spontaneously uses insurance market to spread agricultural catastrophe risk, which fundamentally overcomes the defects of the mechanism of administrative remedy and the mechanism of social assistance, so the insurance of agricultural catastrophe is rational choice of risk spreading mechanism of agricultural catastrophe, in line

with the trend. The insurance of agricultural catastrophe can not only effectively spread the natural risk of agricultural production, stabilize income of the farmers and stabilize rural society, but also improve the credit level of the main body of agricultural management and promote stability of China's rural financial system.

2 The analysis of status quo of insurance of agricultural catastrophe in China

China is a large agricultural country. Agriculture is a relatively weak industry in China, but it is the fundamental industry for national survival and development. Developing agricultural insurance plays a vital role for solving issues concerning agriculture, countryside and farmers, and prompting harmonious development and stability of society. Since the reform and opening up, China's agricultural insurance recovers, and then gropes and develops slowly for three decades. In recent years, it achieves successful experience, but in comparison with that of developed countries, China's insurance of agricultural catastrophe develops slowly and there are many problems in practice. The status quo of insurance of agricultural catastrophe is not so rosy.

2.1 The main body of management in China's insurance of agricultural catastrophe is missing There is the problem that the main body of insurance is missing during the development of the insurance of agricultural catastrophe in China. With the exception of Shanghai Anxin, Jilin Anhua and several other regional professional agricultural insurance companies, only China People's Insurance Company and China United Property Insurance Company and several other business insurance companies operate the business concerning insurance of agricultural catastrophe.

As a large agricultural country, China has scarce main body of insurance management of agricultural catastrophe and few operation businesses, which is rare among the countries with developed agriculture. It is mainly caused by the contradiction between high loss ratio of agricultural catastrophe and low premium income of agricultural catastrophe. According to statistics, from 1998 to 2006, only in 2003, the net loss ratio of China insurance of agricultural catastrophe was 60%, and the net loss ratio of China insurance of agricultural catastrophe in other years is more than 70%, the highest loss ratio up to 88%, far higher than the critical point of 70% recognized by the insurance industry. At the same time, the proportion of premium income of China's insurance of agricultural catastrophe in the total premium income gradually declines. In 2005, the premium income of agriculture was 650 million yuan, accounting for 0.13% of total premium income. In 2006, the premium income of agriculture was 846 million yuan, reaching record level, but in comparison with the total premium income of 564.14 billion in 2006, the premium income of agriculture accounted for only 0.15%[4]. The insurance companies with such high loss ratio dare not to attend to the insurance of agricultural catastrophe, and even if the insurance companies conducting agricultural insurance business also become punctilious, and gradually reduce the type of business they operate. The low premium income makes the commercial insurance company which pursues the maximization of interests gradually shift the agricultural insurance business to other lucrative insurance business, or make the commercial insurance company relinquish agricultural insurance business.

2.2 The market demand of insurance of agricultural catastrophe in China is critically scanty The effective demand for agricultural catastrophe insurance in China is very low, asymmetric with China's status of large agricultural country. Some regions almost have no market. The agricultural natural disasters are frequent in China, and serious damage to agriculture occurs every year, while farmers are indifferent to risk in agriculture, and few farmers take the initiative to participate in agricultural insurance. The main cause of this strange phenomenon is follows.

2.2.1 There is contradiction between high cost of insurance of agricultural catastrophe and low income of rural households. The coverage of insurance of agricultural catastrophe is mainly for plants and animals, and the main source of the risk is natural disaster. Because the devastating natural disaster is difficult to predict and control, so the insurance of agricultural catastrophe has high risk. In terms of the insurance company, high risk means high yield, only high yield can maintain the normal operation of the insurance company, so the agricultural insurance premium rates are often as high as 6% to 10%. While for the majority of farmers, such high premium rate makes them falter in face of the insurance of agricultural catastrophe. China's current rural economy has not yet developed well, and even some areas are at poor and backward stage, where most farmers can not afford such " exorbitant" insurance of agricultural catastrophe. Therefore, the contradiction between high cost of insurance of agricultural catastrophe and low income of rural households is one of the reasons of insufficient demand for insurance of agricultural catastrophe.

2.2.2 The farmers have outdated consciousness and lack awareness of agricultural risk. Since a long time, the inherent mechanism of administrative remedies has been rooted in the mind of most farmers. Once the agricultural catastrophe happens, most of farmers merely count on financial subsidies and civil relief. This causes farmers' psychological dependence that once they suffer from agricultural catastrophe, they will just wait for administrative remedies, lacking awareness of proactive prevention and risk circumvention. Free administrative relief not only causes tremendous financial pressure, but also indirectly causes a serious shortage of the insurance market of agricultural catastrophe. In addition, due to the lack of publicity of knowledge of agricultural insurance, most farmers have fluke mentality, poor awareness of risk and positive coverage, which has seriously hampered the development of the insurance of agricultural catastrophe.

2.3 The insurance of agricultural catastrophe in China lacks external development environment Agriculture is the foundation of national economy, and if the agricultural catastrophe risk cannot be effectively spread, it is bound to affect social stabil-

ity and development. Consequently, the insurance of agricultural catastrophe can not be equivalent to general commercial insurance, and the characteristics of the insurance of agricultural catastrophe determine that it has the nature of quasi-public goods, thus has obvious characteristics of commonweal, so it should have national policy support and legislative system as guarantee. However, China's insurance of agricultural catastrophe lacks good external environment of survival and development.

2.3.1 The degree of policy support is not enough. The nature of quasi-public goods of insurance of agricultural catastrophe determines that it must have strong policy support. Most of the foreign countries with developed insurance industry, offer subsidies for agricultural insurance, for example, the subsidy rate in the United States reaches more than 30%, and the subsidy rate in Japan reaches more than 60%[5]. Since a long time, China's agricultural insurance has no direct subsidies for premium. Until 2006, *China Insurance Regulatory Commission formulated Policy Agricultural Insurance Pilot Program*, which made China's agricultural insurance have cognizance of policy. However, it starts late, coupled with limited strength of China, compared with developed countries, the support offered by China is far from enough.

2.3.2 It lacks law and statute as guarantee. Given the special status and important role of the insurance of agricultural catastrophe, the developed countries have determined the system by legislation, and address arbitrariness and short term of policy by authority of law, so as to ensure the continuity and stability of the insurance of agricultural catastrophe. The successful experience of all countries regarding development of the insurance of agricultural catastrophe shows that agricultural insurance law is a system guarantee for development of insurance of agricultural catastrophe. For example, the United States promulgated *Crop Insurance Act* as early as 1938, and amended it for several times; Japan promulgated *Livestock Insurance Act* in 1929, promulgated *Agricultural Insurance Act* in 1938, and merged them as *Agricultural Disaster Compensation Law* in 1947; the Canadian government in 1959 enacted *Federal Crop Insurance Act*. The promulgation and implementation of these laws provide standard system guarantee for the national agricultural insurance and promote healthy development of catastrophe insurance of domestic agriculture.

Since China's agricultural insurance recovery in 1982, it has experienced nearly three decades of explorative development, but as of today, there are no specialized agricultural insurance laws and other relevant laws and regulations to be promulgated in *China. China's Agricultural Law* and *Insurance Law* both circumvent agricultural insurance, for example, Article 2 in *Insurance Law* stipulates that the insurance in this law means that according to the stipulation in contract, the insured pays insurance premiums to the insurer, and the insurer takes the responsibility of compensating insurance if the possible occurrence of accidents stipulated in contract, cause property losses or make the insured die, disable, and ill, or when it reaches the age and time limit stipulated in contract, the insurer bears the responsibility of paying insurance, which is commercial insurance behavior. From this article, we can see that the nature of Insurance Law is commercial insurance law, and it doesn't adjust legal relations of agricultural insurance. Article 155 in this law further stipulates that: the state supports the development of insurance which provides services for agricultural production, and the agricultural insurance is stipulated by law and administrative regulation. However, so far the laws and regulations regarding agricultural insurance have not yet been promulgated. Article 46 in *China's Agriculture Law* stipulates that the state gradually establishes and perfects the policy agricultural insurance system; encourages and supports farmers and agricultural organizations of production and management to establish interdependent cooperative insurance organizations which provide service for agricultural activities of production and management; encourage commercial insurance company to carry out agricultural insurance business. Thus, the law just stipulates one article in principle on agricultural insurance, and it has no operability, so it has no practical significance.

3 Legislation conception of China's insurance of agricultural catastrophe

The insurance of agricultural catastrophe, as an important system for stable development of agriculture, relies heavily on a complete legal system. Only relying on Insurance Act of agriculture can the insurance of agricultural catastrophe find law as basis, can we standardize the behaviors of main body including the government, and can we overcome issues concerning China's insurance of agricultural catastrophe. However, China's current *Insurance Law* is commercial insurance law, circumventing problems concerning the insurance of agricultural catastrophe. Because there is no legal basis for catastrophe insurance in China's agriculture, many fields in catastrophe insurance are still in legal vacuum, for example, the status of government in the insurance of agricultural catastrophe is not established by law, and the main body of management in the insurance of agricultural catastrophe is also disorderly. Therefore, nowadays China needs an agricultural insurance law urgently. This paper argues that China's agricultural insurance law should at least include the legislative purpose, basic principle, the nature of the insurance of agricultural catastrophe, the main body of legal relations of agricultural catastrophe, the operation range of the insurance of agricultural catastrophe, policy support of the insurance of agricultural catastrophe, supervision and management and so on.

3.1 Legislative purpose Legislative purpose is the primary issue in legislation of agricultural insurance, which plays a leading role in the whole process of legislative activities of agricultural insurance. Only by determining the legislative purpose, can we guide the following design of system. The legislative purpose of all countries in the legislative process of agricultural insurance is different, which is mainly caused by the level of economic development of country and basic actual situation. For example, the agricultural insurances in the United States, Japan, Canada and some developed countries in Western Europe are seen as an important part of agricultural protection pol-

icies and rural social welfare system. Due to the high level of economic development, the government support is very powerful; and the legislative purpose in some developing countries, such as India and Philippine is mainly to develop agriculture and share risk, while enhancing the social welfare of farmers is of secondary importance.

As a developing country, although China has become the world's second largest economy, the per capita level is relatively low, and the economic development level is still very backward in vast rural areas. Therefore, the legislative purpose of China's agricultural insurance law can be determined as follows: promote rural and agricultural development; ensue the farmers' income growth; standardize the insurance behaviors of relevant main body; promote the development of agricultural insurance; guarantee the safety of agricultural production; maintain rural economic and social stability.

3.2 Basic principle The special nature of the insurance of agricultural catastrophe determines that the basic principles of agricultural insurance law are different from that of the general insurance law. Therefore, this paper holds that China's agricultural insurance law should follow the principles of utmost honest, interest protection, compensation of losses and proximate cause in *Insurance Law*. In addition, it should also follow the following several special basic principles.

3.2.1 Principle of differentiation. China has vast territory, and different provinces and regions have uneven levels of agricultural development, so different levels of agricultural development cause the big difference of development of agricultural catastrophe insurance. Therefore, in order to minimize the costs of institutional change, the agricultural insurance law should follow the principle of differentiation, namely that according to actual situation, different regions can formulate the coverage, type and mode of development of agricultural catastrophe insurance within the framework of agricultural insurance law.

3.2.2 Principle of government support. Quasi-public nature of agricultural insurance determines that the government should offer the necessary support for the insurance of agricultural catastrophe. Throughout the foreign countries with developed agricultural insurance, without exception, this principle is embodied. Adhering to the principle of government support means that we must give full play to the role of government on financial subsidies, tax incentives, financial support and so on, so as to stir the enthusiasm of participatory main body in agricultural catastrophe insurance and promote the healthy and rapid development of agricultural catastrophe insurance.

3.2.3 Principle of combination of voluntary insurance and induced forcible insurance. As for the coverage of agricultural catastrophe insurance, all countries actively guide the farmers to establish risk awareness so that farmers voluntarily participate in the insurance. For the agricultural products related with people's livelihood, some countries stipulate the principle of compulsory insurance, for example, *Agriculture Compensation Law* in Japan stipulates that all food crops, spring silkworms, cattle, horses, pigs and other livestock related with people's livelihood, are incorporated into statutory insurance coverage, that is , it implements compulsory insurance. Although in principle the United States implements the voluntary insurance, *Agricultural Insurance amendment* passed in 1994 stipulated that those who do not participate in crop insurance programs can not get other government welfare programs. This interest inducing policy results in the compulsory insurance in fact. According to China's national conditions, if we stipulate the compulsory insurance directly at the early stage of agricultural insurance legislation, there will be difficulties of operation. If we stipulate the compulsory insurance directly, on one hand, it will spark resentment and aversion of some farmers, and on the other hand, it will increase government financial expenditure. Therefore, at current stage, China should adopt the principle of combining voluntary insurance and inducing compulsory insurance. In the provisions of legislation, we should adopt the principle of voluntary insurance, but for a number of important insurance objects, the government takes certain economic interests as inducement. Only by participating in insurance can farmers obtain economic interests.

3.3 The nature of insurance of agricultural catastrophe of China The nature of catastrophe insurance catastrophe insurance is an important symbol of distinguishing the insurance of agricultural catastrophe and commercial insurance. The nature of quasi-public goods of the insurance of agricultural catastrophe determines that it have the policy characteristics. China's *Agriculture Law* for the first time defines the policy nature of the insurance of agricultural catastrophe in China in the form of legislation. Article 46 in this law stipulates that the state gradually establish and perfect the agricultural insurance system with policy nature; encourage and support farmers and organizations of agricultural production and management to establish interdependent cooperative insurance organizations which provide services for agricultural production and management; encourage the commercial insurance companies to carry out business of agricultural catastrophe insurance. The agricultural insurance implements the principle of voluntariness. Any organization or individual must not force compel farmers and organizations of agricultural production and management to participate in agricultural insurance.

3.4 The main body of legal relations of insurance of agricultural catastrophe in China The special nature of the insurance of agricultural catastrophe determines its policy attributes, while the policy attributes require that the participatory main body in the insurance of agricultural catastrophe should include government, in addition to the insurer and the insured. The main purpose of legislation of the insurance of agricultural catastrophe is to coordinate conflict of interest among main body of agricultural insurance by re-orientation of interest relationship of main body. Through the legislation activities with national coercive power, we should incorporate all main body in the insurance of agricultural catastrophe into adjustment category of law, so as to realize balance of interests among farmers, government and insurance organization.

3.5 The management range of insurance of agricultural catastrophe The operation scope of the insurance of agricul-

tural catastrophe is the coverage of the insurance of agricultural catastrophe. At the present stage, there is no need and no ability to include all agricultural risks into insurance law of agriculture, and we can merely incorporate the insurance of agricultural catastrophe which has significant impact on agricultural development and people's livelihood, into China's agricultural insurance law as its business scope. As for different types of insurance, we should implement different support policies in accordance with actual situation. In the legislative process of China's agricultural insurance law should be " broad rather than fine". The law should generally stipulate the business scope of the insurance of agricultural catastrophe. In addition, it should actively explore and gradually expand the business scope of the insurance of agricultural catastrophe, according to actual situation.

3.6 The main ways of policy support of insurance of agricultural catastrophe in China At present, the policy support ways on the insurance of agricultural catastrophe by countries in the world can be generalized as follows: tax relief, offering financial subsidies for farmers' insurance premium, offering reinsurance, establishing fund of catastrophe and financial support and so on, of which the financial subsidies can be divided into offering financial subsidies for farmers' insurance premium and offering subsidies for operating expenses of insurance organizations.

3.6.1 Tax relief. Tax relief means the policy support behaviors that the government offers tax reduction or exemption of business tax and other taxes for the organizations operating the insurance of agricultural catastrophe. According to China's current tax policy, the state exempts the insurance of cultivation industry and breeding industry from business tax and stamp duty. In comparison with foreign developed countries, the tax relief degree of China's agricultural insurance is insufficient, therefore, in the legislation, we should consider that in addition to exempting the insurance of cultivation industry and breeding industry from business tax and stamp duty, we should reduce income tax, so as to enhance the solvency ability of agricultural insurance company and reinforce the activity of carrying out the business of insurance of agricultural catastrophe.

3.6.2 Offer subsidies for farmers' insurance premium. The subsidies for farmers' premium offered by China are direct subsidies, and the part of the money is from the state treasury which pays directly for the farmers. Premium subsidies effectively address the problem of high insurance rate of the insurance of agricultural catastrophe, which is conducive to encouraging farmers to actively participate in the insurance of agricultural catastrophe. This paper argues that on the standard of premium subsidies, we should fully consider the principle of differentiation, adopt different subsidizing proportion for different types of insurance and give priority to subsidizing grain crops. Different regions should also take different subsidy standards, and the proportion of central government's subsidy economically in backward areas should be higher than that of developed regions.

3.6.3 Offer subsidies for operating expenses of insurance organizations. The characteristics of high risk and high loss ratio of the insurance of agricultural catastrophe, makes the insurance company avoid any agricultural catastrophe insurance business therefore, the government should subsidize costs of agricultural insurance organizations, in order to fully stir the enthusiasm of agricultural insurance organizations to promote rapid development of agricultural insurance in China.

3.6.4 Provide reinsurance. In economics, the reinsurance is known as " insurance of insurance" and it is a management tool of effectively spreading the risk of insurance companies and especially the catastrophe risk. The characteristic of high risk of agricultural catastrophe insurance renders the insurance company in face of great risk when it operates the business of the insurance of agricultural catastrophe. Especially for the original insurance company with limited funding levels, a catastrophe would bring substantial operational crisis. In other countries, the reinsurance is generally funded by the government or directly managed by the government, which shifts risk borne by the insurance company to the government or the taxpayers in whole society, so as to spread the risk widely. Therefore, the reinsurance of agricultural catastrophe is the most important means of insurance company to transfer catastrophic risk.

3.7 Supervision and management of insurance of agricultural catastrophe in China The supervision and management of the insurance of agricultural catastrophe in China mainly include the main body of management, and target of supervision and content of supervision.

3.7.1 The main body of management. The main body of supervision is the implementation main body of supervision and management, which solves the problem of who is to supervise and manage insurance. At present, China's insurance regulatory authority is the Insurance Regulatory Commission. Some scholars believe that the special nature of the insurance of agricultural catastrophe makes Insurance Regulatory Commission inappropriate to supervise and monitor the insurance of agricultural catastrophe. We should establish independent system of supervision and management of the insurance of agricultural catastrophe. The supervision and management institutions of insurance of the State Council, the State Council financial departments, the departments of agricultural administrative management of the State Council and governments at all levels should be responsible for supervision and management of activities of the insurance of agricultural catastrophe in accordance with their respective responsibilities[6]. This paper argues that China Insurance Regulatory Commission, as the specialized insurance regulatory institution, with solid professional and technical capacity, Has the ability to undertake the task of regulating the insurance of agricultural catastrophe, therefore, the main body of China's insurance of agricultural catastrophe can still be assumed by China Insurance Regulatory Commission.

3.7.2 The target and content of supervision. Target of supervision is to solve the problem that the main body supervises and manages what behaviors. As mentioned before, the main body of China's insurance of agricultural catastrophe includes the government, insurance organization and farmer. The behavior

(To page 29)

ly. We believe that this will be of great significance for promoting Hebei Province and even China to formulate rural policies better and address the issue of farmers. So, the Engel's coefficient should be perfected under the circumstance of objective situation of rural areas at present.

The Engel's coefficient of rural areas is as follows:

Firstly, Engel's coefficient = Percentage of expenditure variation (food + education + medical service)/Percentage of total expenditure variation; Engel's coefficient = Percentage of expenditure variation (food + education + medical service)/Percentage of income variation.

Secondly, Engel's coefficient = Percentage of expenditure variation of food/Percentage of variation of (total expenditure-educational expenditure-medical expenditure.

Thirdly, Engel's coefficient = Percentage of expenditure variation of food/Percentage of total expenditure variation.

Among them, education, health care and other objective factors cannot be simply lumped together into the total expenditure. We should elaborately analyze the farmers' variation situation of these aspects, so that the real living standards of farmers are revealed.

We should pay special attention to that the education expenses and medical expenses in the above formula of the Engel's coefficient are not total expenditure on education and health care regardless of the actual situation and regional difference, but a certain education and medical care expenditure under particular circumstance in given regions, or reasonable education, and health care expenditure. We should not copy mechanically and apply indiscriminately the Engel's coefficient and should not dogmatize the Engel's coefficient, otherwise, the Engel's coefficient with its own characteristics is more superficial than real, and it cannot reflect the real living standards of farmers.

References

[1] CHEN H, TU WJ. Discussion with the engel coefficient to measure the current standard of living of the limitations of people[J]. Jiangsu Commercial Forum, 2005(2): 125 – 126. (in Chinese).

[2] China Statistical Yearbook Database[DB]. http://tongji.cnki.net/kns55/index.aspx. (in Chinese).

[3] GUO CA, WANG HL. Relevance factors in Engel Index[J]. Journal of Ningbo University of Technology, 2007(3): 15 – 18. (in Chinese).

[4] Hebei Bureau of Statistics. Hebei Economic Yearbook 2009[M]. Beijing: China Statistics Press, 2009. (in Chinese).

[5] Hebei Bureau of Statistics. Hebei Economic and Social Development, Statistical Bulletin [R]. Beijing: China Statistics Press, 2009. (in Chinese).

[6] LIU X. Illusion of prosperity brought by the Engel coefficient[J]. Decision – Making, 2006(5): 44 – 45. (in Chinese).

[7] GE F, HUANG J, MU YY. Comparative analysis on the effects of income structure on consumption level of rural residents in eastern and western China: A case study on Jiangsu and Xinjiang Province [J]. Asian Agriculture Research, 2009, 1(8):1 – 5.

[8] OUYANG WH, LI YS. A reflection on the issue of the Engel's coefficient and its application in China[J]. Journal of Hunan Business College, 2005, 12(2): 2 – 6. (in Chinese).

[9] HUANG J, GE F, MU YY. On the relations between income structural change and consumption of rural residents in China[J]. Asian Agriculture Research, 2009, 1(8):11 – 14, 48.

[10] YANG TH. On failure of Engel coefficient and its correction: Case study of Inner Mongolia[J]. Journal of Nanjing University of Aeronautics & Astronautics: Social Sciences, 2009, 11(3): 8 – 11. (in Chinese).

[11] LIU M, WANG GR, WANG HJ. Propensity analysis on consumption expenditure of rural residents in Hebei Province, China[J]. Asian Agriculture Research, 2009, 1(8): 20 – 23, 43.

[12] WANG F. Statistical analysis on Engle coefficient[J]. Forecasting, 2003, 22(2): 3 – 6. (in Chinese).

[13] ZHANG J, XIE JQ, ZHOU WY. Comparative analysis of rural consumption expenditure in China[J]. Asian Agricultural Research, 2009, 1(6):10 – 12.

(From page 23)

of main body of insurance is important content of supervision and management. Therefore, the targets of the insurance of agricultural catastrophe are government's behavior, the insurance organization's behavior and the behavior of rural households. Supervision and management on government's behavior, in fact, are the supervision and management on its policy support behavior of the insurance of agricultural catastrophe. Whether the insurance of agricultural catastrophe gets the government's policy support, depends on the action of government, therefore, China's insurance law of agricultural catastrophe clearly stipulates the supervision and monitoring on the government's behavior.

Supervision and management on agricultural insurance organizations are mainly to monitor it that whether the insurance organizations carry out insurance business and daily operation and management illicitly, and whether the insurance organizations do harm to the interests of the state and the farmers. Supervision and management on farmers are to supervise and manage moral hazard of farmers.

References

[1] YAN Q. Accelerate the development of agricultural insurance in China urgent – reflections after catastrophe[J]. South China Finance, 2008(4): 49 – 50. (in Chinese).

[2] LI DL, ZHONG WZ. Mode selection and policy suggestion of agricultural catastrophe insurance in China[J]. Social Scientist, 2009 (5): 59 – 62. (in Chinese).

[3] LI DL, ZHONG WZ, XU H. Review of agricultural catastrophe insurance theory [J]. Social Sciences in Guizhou, 2009(5): 67 – 70. (in Chinese).

[4] ZU ZL. Catastrophe insurance of China's agricultural development [J]. Green Finance and Accounting, 2009(1): 10 – 12. (in Chinese).

[5] WANG JF. Agriculture insurance legislation on government regulations – the perspective of public choice theory[J]. Administrative Tribune, 2009(4): 46 – 48. (in Chinese).