Subsidy Policy System for Agricultural Natural Disasters in China

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Abstract From theories and cases, this paper analyzed current situation of subsidy policy system for agricultural natural disasters in China. Improvement and perfection of subsidy policies for agricultural natural disasters need clear classification and additional special subsidy plan. It is recommended to improve and perfect subsidy policy system for agricultural natural disasters through attaching importance to scientific studies on reduction and prevention of agricultural disasters and gradually supplementing agricultural disaster reduction and prevention system.

Key words Agricultural natural disasters, Subsidy policy system, Case analysis, Clear classification

In recent years, China has formulated various policies to subsidy those farmers suffering from agricultural natural disasters. These policies play an important role in helping farmers restoring production and living. However, existing subsidy policies for agricultural natural disasters have no clear and special classification and fail to meet requirements for reduction and prevention of agricultural natural disasters, related subsidy policy system is not perfect. Therefore, it is required to improve and perfect subsidy policy system for agricultural natural disasters, so as to better promote living guarantee and production development of farmers.

1 Current situation of subsidy policy system for agricultural natural disasters

Subsidy for agricultural natural disasters is oriented towards for agricultural life and production of farmers suffering from natural disasters. At present, there is no express provision about remedy or subsidy for agricultural natural disasters, only agricultural subsidy and natural disaster remedy touch upon remedy and subsidy for agricultural natural disasters. In recent 10 years, this issue receives closer and closer attention and government has issued many documents to support reduction and prevention of natural disasters.

2 Theoretical analysis on establishing and improving subsidy policy system for agricultural natural disasters

The subsidy for agricultural natural disasters is a policy formulated by the government for reduction and prevention of natural disasters, in the hope of benefiting farmers suffering from natural disasters. This policy is directly related to agricultural production. According to subsidy purpose and operation method, we classify existing subsidy for agricultural natural disasters into three types: (i) subsidy for facilities for disaster reduction and prevention of rural construction; (ii) subsidy for setting up risk fund for agricultural natural disasters; (iii) financial subsidy for farmers' purchasing insurance for agricultural disaster reduction and prevention.

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The first type is to guarantee normal operation of agricultural production, stabilize smooth development of agricultural production, raise equipment level of agricultural disaster reduction and prevention, raise funds for construction of water conservancy projects for disaster reduction and prevention, and also to provide favorable conditions for promoting modern agricultural development. It implements the principle of "first purchase then subsidy", and the subsidy is directly given to farmers. The second type is setting up risk fund, to reduce hidden risks and future losses. Such fund is set up to prevent disasters. The third type is to guarantee safety of agricultural production, reduce losses of agricultural natural disasters, and promote development of farmers' future agricultural production. Thus, this type has significant long-term effect. Such subsidy belongs to policy insurance, depends on perfect insurance and re-insurance market. For premium of special insurance, state finance subsidizes the larger part, and farmers pay a small portion. Farmers will not obtain subsidy until they have purchased agricultural insurance, so the subsidy object is definite.

The above subsidy policies have different features, but they are not contradictory. Instead, they are highly compatible and can be implemented together at most time. They basically constitute existing agricultural natural disaster subsidy policy system. In this sense, we should not only improve policies, but also increase other types of subsidy policies.

3 Case analysis of subsidy policy system for agricultural natural disasters

3.1 Subsidy for disaster reduction and prevention facilities and projects *Announcement Sheet about Subsidy Fund for Natural Disasters for Shiqiao Town in Hubei Province* indicates that disaster-stricken villages obtained subsidy amount of 8 000 - 82 000 yuan. Such subsidy was mainly used for fighting drought, drilling well and repairing pump stations. Besides, it granted relief fund for agricultural production disasters. Some villages and towns obtained 5 000 - 35 000 yuan disaster relief fund. In addition, China has "one project one meeting" financial reward and subsidy project. Shiqiao Town applied this financial reward and subsidy project in village-level public service construction in that year and ob-

tained subsidy for building disaster reduction facilities.

In June to September, 2009, Liaoning Province underwent high temperature and shortage of rain. State Agriculture Comprehensive Development Office allocated lump-sum subsidy of 9 million yuan to Liaoning Province, to restore disaster-stricken agricultural comprehensive development projects. According to *Report of Central Finance* (2010), central finance allocated a total of 168.3 million yuan for restoration of agricultural comprehensive development projects damaged by natural disasters, to help disaster-stricken farmers restore production as soon as possible and carry out self-assistance as much as possible. The subsidy range covers 17 provinces (cities), including Qinghai, Jilin and Chongqing stricken by major natural disasters, such as earthquake and flood.

Capital sources of this subsidy fund are many, including government fund, department assistance, villager financing, collective financing, and social donation. The subsidy amount increases, and the subsidy object is more definite and clear. Both small facility and big project can obtain subsidy of state finance in various degree. To cope with disasters and make effort to enlarge area for guaranteeing harvest through fighting droughts and floods, it is imperative to launch related water conservancy projects and facilities. Although the investment is huge, it brings long-term effect. In actual implementation, it needs strict supervision system to guarantee specific fund for specific purpose and increase fund utilization efficiency.

3.2 Subsidy for disaster prevention fund One of unshirkable responsibilities of government at all levels is guiding and supporting people to prevent major natural calamities, minimize harm of extreme weather to agricultural production. People have gradually realized urgency of establishing disaster prevention fund. Agricultural production badly needs such subsidy and umbrella. At the fourth meeting of the eighth CPPCC of a county in Nanjing City in 2011, some representative introduced No. 19 proposal of setting up disaster prevention fund. This proposal is only oriented towards major agricultural natural disasters and does not touch upon detailed and specialized classification, but it is already an excellent start. In line with various agricultural natural disasters, both central and local governments have carried out a lot of work and made outstanding achievements. However, disaster prevention fund is not widely applied in actual work. For many county-level governments, there is no financial ability to support such fund construction. In this situation, central government needs formulating corresponding policies to plan and guide measures related to disaster prevention fund.

3.3 Subsidy for agricultural insurance Shandong Province is a large province with frequent occurrence of agricultural disasters. It is reported that about an average of 4 000 mu agricultural crops suffer from damage of various natural disasters annually. Taking agricultural insurance of Shandong Province as an example, Shandong Province further revised *Methods for Management of Financial Subsidy Fund for Premium of Crop Cultivation*, to properly manage the whole process of subsidy fund. In 2012, Shandong Province planted a total of 70 million crops and the coverage area was close to 50 million mu. In October of the same year, to deal with possible agricultural natural disasters, Shandong Province allocated 537 million yuan of financial subsidy for agricultural insurance to all counties in advance. Provincial department asked financial departments of cities and counties to allocate fund to agricultural insurance handling organizations, to encourage specialized organizations to handle agricultural insurance business.

This project is a great preferential policy for farmers, strengthens farmers' ability of resisting natural disasters to a great extent, and guarantees farmers' agricultural production. Taking stabilizing farmers' income and ensuring national grain security as major precondition, it is imperative to implement agricultural insurance policy. This not only can develop rural finance and improve rural financial system, but also can integrate China's agricultural with the world rules, and finally raise competitiveness of China's agricultural market. In actual implementation, grass-root agricultural insurance organizations concern about whether financial subsidy fund is timely and whether the subsidy amount is adequate. To really benefit farmers, related government organs must ensure fund of premium subsidy is put in place. For insurance organizations, it is better to allocate subsidy fund as soon as possible; for disaster-stricken farmers, it is better to dispense claims amount as soon as possible after the damage is determined. Only through this, may it be able to optimize operation efficiency of financial fund, and implement this preferential policy.

4 Policy recommendations for establishing and improving subsidy policy system for agricultural natural disasters

4.1 Making clear classification for existing subsidy policy of agricultural natural disasters and improving existing policy system on the basis of further development of existing policy

At the same time of strengthening construction of farmland infrastructure, it is recommended to establish agricultural disaster monitoring network system, and organization, material and technological guarantee systems for agricultural disaster prevention and reduction at state, provincial, city and county levels, to realize institutionalized guarantee of agricultural disaster reduction and prevention in policy, fund and team. Besides, it is recommended to attach importance to risk fund policy for agricultural natural disasters, to gradually realize legal and institutional policies related to risk fund for agricultural natural disasters, and develop financing channel and standardize financing channels. For agricultural insurance, related parties involve government, market, farmers, and departments. Government at all levels and related departments should fully mobilize enthusiasm of all related parties. All parties should carefully perform their duties, jointly take charge and stably push forward, to establish diversified agricultural insurance model. If multiple level agricultural insurance guarantee system can be established to strengthen supervision of agricultural insurance operation and implement claims settlement of agricultural

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the judgment matrix has satisfactory consistency.

5.2.5 Carrying out the alternative weight ranking. The pairwise evaluation and analysis are carried out on the three alternatives, and the utility matrix in the alternative layer is calculated as follows:

$$B = \begin{bmatrix} 0.55 & 0.47 & 0.58 \\ 0.27 & 0.32 & 0.18 \\ 0.18 & 0.21 & 0.24 \end{bmatrix}$$

Thus the weight ranking of the three alternatives is as follows:

$$C = B \cdot W = \begin{bmatrix} 0.55 & 0.47 & 0.58 \\ 0.27 & 0.32 & 0.18 \\ 0.18 & 0.21 & 0.24 \end{bmatrix} \begin{bmatrix} 0.15 \\ 0.28 \\ 0.57 \end{bmatrix} = (0.55, 0.23, 0.22)$$

The results show that building the collaborative decision-making mechanism is of the greatest importance to improving the efficiency of green supply chain of fruits and vegetables, and the weight is 0.55; the weight of promoting the fruit and vegetable cold chain technology, and developing the supply chain based on the model of "linking farmers and supermarkets", is 0.23 and 0.22, respectively.

It is found that the key driving force for improving the efficiency of green supply chain of fruits and vegetables is building a scientific and rational collaborative decision-making mechanism.

6 Conclusions and recommendations

With economic development and consumers' increasing requirements of fruit and vegetable quality, it is an inevitable trend to develop the green supply chain of fruits and vegetables. However, the efficiency of the green supply chain of fruits and vegetables in China is not high.

By analyzing the driving force for improving the efficiency of green supply chain of fruits and vegetables based on AHP method, we draw the conclusion that the key driving force for improving the efficiency of green supply chain of fruits and vegetables is building a scientific and rational collaborative decision-making mechanism, to ensure that the goals and interests of all fruit and vegetable supply chain subjects are consistent.

Scientific and rational collaborative decision-making mechanism includes benefit-distributing collaborative decision-making mechanism, cost-sharing collaborative decision-making mechanism, risk-sharing collaborative decision-making mechanism and collaborative decision-making security mechanism.

All the subjects of fruit and vegetable supply chain should first highlight the necessity of building collaborative decision-making mechanism, and then establish normal communication mechanism to strengthen communication and coordination, and seek fair and reasonable benefit-distributing, cost-sharing and risk-sharing collaborative decision-making approaches.

It is necessary to build scientific and rational collaborative decision-making mechanism to improve the efficiency of green supply chain of fruits and vegetables, and promote the development of green supply chain of fruits and vegetables in China.

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insurance, this will be a great breakthrough in prevention and relief of agricultural natural disasters.

4.2 Increasing other special subsidy policies and supplementing and improving existing policy system Restoration and development of rural production and living are particularly important. Restoration of farmers' confidence and guidance of farmers' psychological trauma are also extremely important. However, existing policy system cares little about those parts. Thus, it needs special subsidy to help farmers restore living and production confidence. Therefore, in future, with the increase in national financial strength, agricultural natural disaster subsidy policy should follow the people-oriented principle, care more about living conditions of people, and properly increase subsidy for their psychological construction.

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