

The System of Agricultural Risk Management in China——A Framework Design*

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Abstract: Currently, Chinese agriculture is caught in the dilemma of high risks and low efficiency of risk management due to lacking of management tools and system of integrated risk management. By constructing the system of integrated risk management of “agriculture insurance plus contract farming plus futures market of agricultural commodities” can offer effective solutions to the dilemma. In the meantime, the government shall formulate related laws and regulates, improve system of management organization and innovate agricultural risk management tools.

Key words: Agricultural risk, System of integrated risk management, Government’s role

1 Preface

Agriculture interweaves natural reproduction and economic reproduction, and it is influenced by a series of natural, economic and social factors like climate, market, technology and policy, therefore, it is a kind of industry featured by high-risk^{[1][2][3][4]}. As a developing great country featured by “Small Peasant”, Chinese agriculture was mainly facing natural risks before the reform; however, along with opening up markets for agricultural products as the main contents of agriculture and the rural reform process in depth, the market mechanism is playing an increasingly important role in allocating agricultural resources, leading to radical change of the production and circulation system of agricultural products, the market risks are becoming more and more prominent^[5]. The agricultural production is restricted by both natural risks and market risks, and the phrases “Years of wealth is damaged by one disaster” and “One-day overstock results in a-quarter losses” just reflect the dual risks that the agriculture (the farmer) enduring. With China’s entry into WTO in 2001, in the background of economy globalization, market internationalization, and trade liberalization, Chinese agriculture is therefore not only facing the risks from domestic market but the risks like price fluctuation and foreign-investment monopolization from international market. In this case, the conflicts between “small farms and large market” will be intensified, and the agricultural risks will become diverse and complicated accordingly.

Currently, the agricultural risk management is encountering a series of hard nuts. Disaster relief is frequently used to handle agricultural risks, though it functions after the disaster. Price protection and agriculture subsidy are employed to stabilize the agricultural development and reduce the agricultural risk, but they are not designed to cope with agricultural risks^[6]. As a method to transfer risks, contract farming presents direct or indirect faults. Farmers breaching the contract, enterprises rejecting agricultural products, lowering prices and loan arrearage occurring during fulfilling the contract may result in credit risk, and the input of asset specificity in agriculture may lead to racketeering (If the framers change the planting mode according to the contract and grow something with large investment and high technology,

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they will have to rely on the contract sponsor) [7]. In this case, the agriculture will be trapped into larger risks. In addition, some other methods to control agricultural risks such as emergency loan, information service, infrastructure construction, research and extension of new varieties and diversified planting are under research or attempt, though the overall efficiency is not high.

On the whole, Chinese agriculture is caught in the dilemma of high risk and low efficiency of risk management. This paper will discuss such dilemma, on this basis, proposing the framework system for agricultural risk management, which aims to realize the agricultural risk management effectively.

2 Analysis on Cause of the Dilemma in Agricultural Risk Management

The Theory of Modern Industrial Organization holds that integrating enterprises and individuals engaged in agricultural production, processing, circulation, scientific research, marketing and related fields into a compact industrial chain with shared risks and interests will improve the agricultural industrialization, sharpen market competitiveness, then protect and advance China's agricultural industry. In this chain, production and processing (circulation) are the key links, and the cooperative tightness between the farmer and the processing (circulation) enterprise determines the organization level of the agricultural industry. Specifically speaking, coordinated by governments, associations and various agricultural cooperative organizations, farmers and agricultural products processing (circulation) enterprises can be integrated by contracts. Under the contract, the agricultural products processing (circulation) enterprises will provide the farmers with seed, fertilizer, pesticide and technical services while transacting with the farmers as per the stipulated price and quantity, and the farmers will supply agricultural products with qualified quality and quantity following the production process and technical requirements stipulated by the enterprises. Tight cooperation means solid organization and strong market competitiveness. However, tight and continuous cooperation relies on whether to establish effective institution and mechanism for shared risks and interests, which based on the principle of fairness, justice and equality. With fragile and limited capability to resist risks, in addition to Chinese agriculture's high risk and lack of effective risk management tool, China's small-scale farmers and agricultural products processing (circulation) enterprises often breach the contract in the face of great risk impact. In this case, the integrated organization will become very fragile, and the farmers and enterprises can share the interests rather than the risks.

Agricultural industry mainly faces the natural risk and market risk. In developed countries, the effective management tool for natural risk is crop insurance, which decentralizes natural risk suffered by the producers to many insureds. For market risk, the effective management tools are contract farming (marketing contract) and futures market, of which the contract farming transfers the producer's risks to the traders and processing enterprises purchasing the products. And the traders and processing enterprises can transfer or decentralize the risks to speculators through futures market, as the speculators enjoy gaining enormous profit in bearing huge risks. In developed countries, the mature risk management tool and perfect system of risk management will ensure tight and stable cooperation among the producers, sellers, channel dealers and various agents in agricultural industry. Chinese farmers, however, without or with nonstandard risk management tools, are not affordable for the post-disaster reconstruction, nor can they obtain secure bank loan without insurance. Therefore, the stable and continuous growth of agricultural production is hard to be assured. In recent years, when facing market risk, the farmers tried to transfer the risk to traders or processing enterprises through contract farming. However, lacking management consciousness and experience of market risk (including domestic and international market), domestic traders and processing enterprises are unable to utilize futures market (modern market risk management tool) to transfer and decentralize the risk, moreover, no industrial management organization designs and instructs the integrated risk management from the perspective of industrial chain. In this case, when disadvantageous factors occur in the market, the agricultural products processing enterprises will suffer great losses, even become bankrupt after fulfilling the contract, or they will have to transfer the risks to farmers by means of rejecting products, lowering price or payment arrearage despite the break up

with the farmers. Therefore, lacking risk management tools and system of integrated risk management will finally lead to “independent risk and benefit” between the farmers and processing (circulation) enterprises and the both sides cannot form an integrated organization in a real sense. Eventually, the agricultural risk management will fall into the dilemma.

3 Design of the System Framework for China’s Integrated Agricultural Risk Management

According to the above analysis, to crack the dilemma of China’s agricultural risk management needs an integrated risk management tool based on the agricultural industrial chain. The Theory of Risk Management of Modern Agriculture holds that risk difference exists between the links of the industrial chain, and the risks function in different ways. By analyzing the mechanism enabling the risks, we need to confirm major risks at different links, seek pertinent management strategies, and scientifically combine the risk managements to realize risk management effectively. Selecting risk management strategies shall meet three requirements: to resolve the major risks at the link; to coordinate the risk management strategies at the link; and to correlate with risk management strategies of other links. For the purpose of facilitating research, given that the industrial chain of Chinese agriculture only consists of farmers (upstream) and agricultural products processing (circulation) enterprises (downstream), different risk management tools should be designed. Therefore, the integrated risk management tool for Chinese agriculture can be briefly illustrated as: agriculture insurance plus contract farming plus futures market of agricultural commodities (see figure 1).

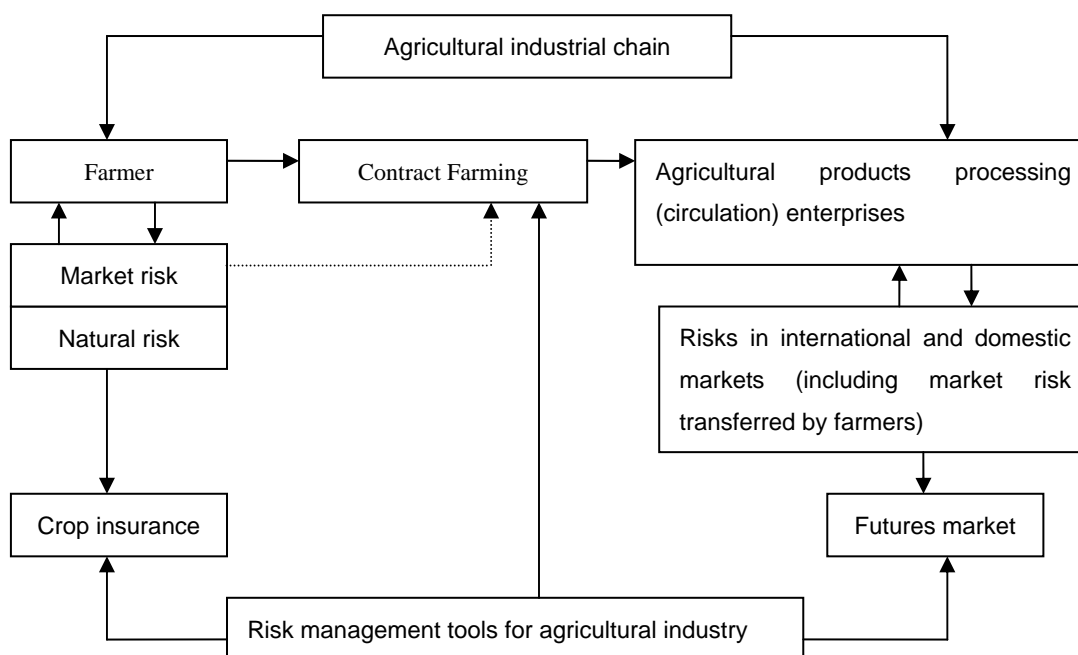


Fig. 1 The System of China’s Agricultural Risk Management

Agriculture insurance is mainly used to decentralize the natural risks in agricultural production. By designing and promoting the policy agricultural insurance, the government will offer subsidiary to encourage the farmers to participate in crop insurance in accordance with the appropriate proportion and ensure the stable production of agriculture, thus ensuring stable raw-material supply for processing (circulation) enterprises. Contract farming is mainly used to transfer or decentralize the farmers’ market risks to contract enterprises and help the farmers gain stable income, and meantime ensures the processing (circulation) enterprises obtain stable raw materials. Futures market of agricultural

commodities aims to provide an effective risk-avoidance tool for numerous scattered agricultural-product processing (circulation) enterprises, including transferring and decentralizing the market risks from the farmers through contract farming to speculators in the futures market. In addition, the futures market is capable of discovering prices, offering scientific and reasonable guidance for the production, processing and circulation of agricultural products. Besides offering reference price for contract farming, the price of futures market can act as the basis to determine the variety and quantity of agricultural products, which will decrease the blindness in fulfilling the contract and avoid violent rise and fall of agricultural production.

After designing and fulfilling the integrated risk management tool of “Agriculture Insurance plus Contract Farming plus Futures Market of Agricultural Commodities”, the farmers, featured by small scale, numerous quantity and scattered production, the agricultural products processing (circulation) enterprises are united together as an integrated organization shared the risks and the interests. Thus, the organization of China’s agricultural industry will be advanced to combat various agricultural risks effectively. The above-mentioned risk management system can be extended to overseas production-base and the international market. To avoid the risks from international market effectively, a series of strategies can be employed, for instance, building planting base and storage facilities abroad, transacting with overseas farmers through contract farming, in addition, formulating related policies to permit agricultural products processing (circulation) enterprises to enter international futures market via special means or channels for hedging.

4 Government’s Role in System of Agricultural Risk Management

4.1 To formulate related laws and regulations on agricultural risk management

The effective implementation of the system of integrated agricultural risk management shall be ensured by laws and regulations. The Policy Agricultural Insurance Regulations (abbreviated as Regulations below) has specified the following items: objective and orientation of policy agricultural insurance companies, rights and liabilities of participant parties, standardization of insurance activities, management activities and capital utilization activities, as well as code of conduction of local governments and related industries in fulfilling the policy agricultural insurance. The Regulations covers the insurance scope, insurance degree, insurance items, governmental financial subsidies(subsidiary to the farmers and insurance companies), allocation principle of management fee and insurance fee, operation mode of organizations, institutions, and etc. In addition, standard rules and regulations related with contract farming shall be made, with Law of Contract being improved, which covers: to make contract sample system for contract farming, form contract system, party concerned renegotiation system, replaceable dispute settlement system apart from litigation(procedure selection right granted to the farmers and the enterprises).Interim Regulations on Management of Futures Transaction shall be modified and improved, which mainly covers: legal status of futures market, legal protection of futures-transaction organizers and participators, and encouragement of bank credit funds to support agricultural-product processing (circulation) enterprises for hedging, in order to accelerate the opening-up of the futures market to become the pricing center for China and even the world’s agricultural commodities.

4.2 To improve organization of agriculture insurance management

The government is definitely the major subject for integrated agricultural risk management, and it plays a key role in ensuring the successful implementation of the agricultural risk management. After learning from US’ institution of the agricultural risk management——Risk Management Agency, we propose that a similar institution should be set under the Ministry of Agriculture to coordinate the relationship and policies among related functional departments. The basic function of the institution is: to

enact and carry out related policies on agricultural risk management, to engaged in agricultural risk division and rate partitioning; to research on innovation of agricultural risk evaluation & risk management tool, and to manage the financial subsidy of agricultural risks & insurance. Meanwhile, such risk management institution shall support the agriculture associations to give a full play to their roles, and in the case of restricted foreign exchange, the institution shall permit domestic agricultural products processing (circulation) enterprises to enter international futures market for hedging as an association.

4.3 To innovate agricultural risk management tools

The implementation of integrated agricultural risk management shall be realized via scientific and reasonable tools, and the tools shall be innovated and developed in accordance with the characteristics of the risks and the insurance bearers, in order to meet the demands of the production and operation units in risk management. Currently, various agricultural risk management tools shall be developed and improved, such as agricultural insurance (like cost insurance, yield insurance, income insurance, and meteorological index insurance), contract farming (such as compact contract——both sides specify the planning area, price, procurement, profit returning and seeds supply by enterprises; loose contract——the contract only specifies the minimum protective purchase price and basic quality requirement, and does not specify the purchase amount, price fluctuates with the market when price is higher than protective price), and futures market of agricultural commodities (like various contracts, index futures of agricultural products, weather index futures, and agricultural commodities options).

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