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The Development Model of Agricultural Insurance in Anhui Province

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Abstract The agricultural economy in Anhui Province is developing so fast, but farmers are severely affected by the frequent occurrence of natural disasters. The current agricultural insurance mode is not suitable, therefore, the research on agricultural insurance modes of Anhui Province helps to promote the steady development of the agricultural production. Starting from situation of agricultural insurance in Anhui Province, learning from both experience of foreign country and the latest successful domestic modes, we try to put forward agricultural insurance mode framework which is suitable for Anhui Province. Based on the actual situation of Anhui Province, it is necessary to adopt the mode of government leading combined with agricultural mutual aid rather than copy the existing mode.

Key words Agricultural insurance, Development model, Government leading

1 Introduction

China's agricultural insurance development is still in its infancy, lacking accumulated experience, and there have been diverse models due to different actual situation in different regions. Liang Ming studies the agricultural insurance model and divides it into the following five kinds: government leading model; mutual association model; individual-run government-aided model; government monopoly model; state support model. Currently the representative models of agricultural insurance include Shanghai Anxin model, Heilongjiang agricultural mutual aid model and so on. Anhui Province has experienced rapid development of agricultural economy, but in the context of currently frequent natural disasters in Anhui Province, the agricultural production has been severely affected. In 2010, the total area of arable land in Anhui Province was 9053400 ha, and the affected area was 2071000 ha, (Table 1), accounting for 22.88% of the total area of arable land in Anhui Province. Due to geographical conditions, the drought and flood disasters occur frequently. From 2006 to 2010, the affected area showed an overall increasing trend, and agricultural production and farmers' life were often affected, so farmers had a very urgent demand for agricultural insurance. In recent years, the CIRC has conscientiously implemented the pilot work of agricultural insurance in China, and Anhui Province has also carried out various forms of agricultural insurance pilot work. Therefore, the study of development model of agricultural insurance in Anhui Province and exploration of the agricultural insurance model suitable for Anhui Province, is conducive to building market-oriented agricultural support and protection system, and promoting agricultural economic development. In recent years, the policy-related agricultural insurance pilot work in Anhui Province has been carried out steadily,

and the agricultural insurance system has been basically formed.

Table 1 Area covered and affected by natural disasters in Anhui Province from 2006 to 2010 (103 ha)

Year	Area covered	Area affected	Ratio of area affected//%
2005	2882	1616	56.10
2006	1472	544	36.96
2007	1990	1063	53.42
2008	1277	621	48.63
2009	2101	320	15.23
2010	2071	485	23.42

2 Current situation and problems concerning agricultural insurance in Anhui Province

2.1 Current situation of agricultural insurance in Anhui Province The agricultural insurance in Anhui Province started from 1983, and was organized by the Chinese People's Insurance Company. During 1983 to 2003, due to natural disasters, imperfect relevant policy system and other reasons, the development of agricultural insurance was relatively slow. Since 2004, the agricultural insurance policies and premiums in Anhui Province have been adjusted and changed accordingly.

2.1.1 Adjustment of agricultural insurance policy. From 2004 to 2009, Central Government issued important documents about the issues concerning agriculture, countryside and farmers. Agricultural insurance, as an important part of agricultural support policy, has been elevated to unprecedented height. *Several Opinions of the State Council on Insurance Reform and Development* issued on June 15, 2006, marked a dramatic change in China's agricultural insurance policy and ideas.

2.1.2 Change in agricultural insurance premium in Anhui Province. In 2007, the agricultural insurance premium in Anhui Province reached 60.9099 million yuan, and this figure increased by 43 times compared with 2006's 1.2 million yuan. In 2008, Anhui Province was identified as the agricultural insurance financial sub-

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sides pilot province. After bidding, the policy agricultural insurance in Anhui Province was managed by Anhui Guoyuan Agricultural Insurance Company and Anhui Branch of PICC, and the premium exceeded 0.3 billion yuan for the first time. In 2011, the premium income amounted to 1.38319 billion yuan.

The premiums and payments are the important indicators measuring the development of agricultural insurance, and the growth rate of premium reflects the dynamic development of insurance. As shown in Table 2, since 2007, the development of agricultural insurance in Anhui Province has been very rapid. The premium increased from 1.38 million yuan in 2005 to 1.38319 billion yuan in 2011, and the payment rate increased from 12.67% in 2007 to 56.95% in 2011.

Table 3 The property insurance income and agricultural insurance income in Anhui Province (10^4 yuan)

Year	Agricultural insurance income Y_1		Property insurance income Y_2		$Y_1/Y_2//\%$
	Absolute number 10^4 yuan	Growth rate over the same period//%	Absolute number 10^4 yuan	Growth rate over the same period//%	
2005	138	40.82	307 022	16.28	0.04
2006	120.48	-12.7	397 423	29.44	0.03
2007	5 343	4334.76	516 718	30.02	1.03
2008	30 774.42	475.98	639 588	23.78	4.81
2009	99 754	224.15	875 885	36.95	11.39
2010	124 732.76	25.04	1 196 167.5	36.57	10.43
2011	138 319	10.89	1 428 173	19.40	9.7

Table 4 The agricultural insurance depth and density in Anhui Province from 2005 to 2011

Year	Agricultural premium income $Y_1//10^4$ yuan	Agricultural GDP $Y_3//10^4$ yuan	Agricultural population $P//10^4$ persons	$Y_1/Y_3//\%$	$Y_1/P//\text{yuan}$
2005	138	8 184 809	5 148	0.002	0.027
2006	120.48	9 075 313	5 160	0.001	0.023
2007	5 343	10 540 065	5 208	0.051	1.026
2008	30 774.42	11 978 860	5 243	0.257	5.870
2009	99 754	12 897 937	5 277	0.773	18.904
2010	124 732.76	1 544 4267	5 278	0.808	23.637
2011	138 319	17 148 396	5 299	0.807	26.103

The agricultural insurance depth is the proportion of agricultural premium income to agricultural GDP, which reflects the status of the agricultural insurance in the agricultural economy of the entire region. The agricultural insurance density refers to the proportion of agricultural insurance premium income to local agricultural population, which reflects the extent of local agricultural insurance coverage, and also reflects the extent of agricultural population being protected. It indicates that in general, the depth and density of agricultural insurance are positively correlated with the level of agricultural economic development (Table 4). In Table 4, Y_1/Y_3 represents agricultural insurance depth, and Y_1/P represents the agricultural insurance density. From 2005 to 2007, the agricultural insurance depth and density values in Anhui Province were very low. For the agricultural insurance depth, it was 0.808% on the average at the end of 2010, only reaching the average level of world's agricultural insurance depth in 2008. For the insurance density, it has developed rapidly since 2008, and the average level reached 23.637 yuan in Anhui Province at the end of

As shown in Table 3, the proportion of agricultural insurance income to property insurance income in Anhui Province increased from 0.04% in 2005 to 9.7% in 2011.

Table 2 The agricultural insurance premiums and payments in Anhui Province (10^4 yuan)

Year	Agricultural premiums	Growth rate over the same period//%	Payments	Payment rate//%
2005	138	40.82	89	64.49
2006	120.48	-12.7	65.57	54.42
2007	5 343	4335	677	12.67
2008	30 774.42	475.98	10 648.64	34.60
2009	99 754	224.15	49 473.27	49.60
2010	124 732.76	25.04	98 552.74	79.01
2011	138 319	10.89	78 767	56.95

2010, however, the world's average insurance density was 3498 yuan in 2008. The above analysis shows that the agricultural insurance in Anhui Province made great progress in the past five years, but it has not yet reached the world average. Overall, there are still few types of agricultural insurance in Anhui Province at present, and the agricultural insurance development in rural areas is far from being able to meet the majority of farmers' growing demand for insurance.

2.2 Problems concerning agricultural insurance in Anhui Province

2.2.1 Imperfect local and national policies and insufficient funds. Currently, China's legal protection system for agricultural insurance is extremely weak. China's insurance law provides that the state supports the development of insurance business for agricultural production, and the agricultural insurance shall be provided by laws and administrative regulations. But so far, there have been not complete legal regulations on agricultural insurance in China. In addition, the state also lacks stable agricultural insur-

ance policies. From the development process of China's agricultural insurance, the extent of government's attention is closely linked to the development of China's agricultural insurance business. In the early years of reform and opening up, agricultural insurance was considered a livelihood project, and the insured was mainly the farmer; the insurance way was the blanket insurance with township and county as unit, and governments at all levels were responsible for the assessment of agricultural insurance completion by lower levels of government. At the end of 1990, the province's agricultural insurance premium income reached more than 15 million yuan, and after 1992, the premium income experienced rapid growth, and the premium income reached 65.473 million yuan. From 1993, China's insurance market underwent some changes, and the financial incentives for insurance companies phased out. Since 2004, as the most effective means to spread agricultural risks, agricultural insurance system has been once again taken seriously, and the agricultural insurance pilot work has made some progress, but the agricultural insurance depth and density are still below the international average. In 2009, Anhui Province spent 25.921 billion yuan on agriculture, forestry, and water conservancy, accounting for 12.10% of total fiscal expenditure; in 2010, Anhui Province spent 29.252 billion yuan on agriculture, forestry, water conservancy, accounting for 11.42% of total fiscal expenditure. As a major agricultural province, Anhui Province spent insufficiently on agriculture, forestry, water conservancy, and the development of agricultural insurance model lacks fund guarantee.

2.2.2 Frequent natural disasters and complex terrain posing great difficulty in agricultural insurance. Since Yangtze River, Huaihe River and Xin'an River flow through Anhui Province, the natural disasters are frequent, posing great threat to agricultural production. In addition, due to the low level of economic development of Anhui Province, low level of agricultural infrastructure and lack of adequate ability to resist flood and drought, natural disasters undoubtedly deal a blow to the agricultural production in Anhui Province. These factors lead to greater risk and serious loss of agricultural insurance business in Anhui Province. During the 1991 floods, the compensation expenses reached 63.743 million yuan, with the loss ratio of 212%; during the 1994 floods, the agricultural insurance indemnity expenditure amounted to 29 million yuan, with the loss ratio of as high as 244%. In 2011 when there was no great disaster, the average loss ratio of agricultural insurance in Anhui Province also reached 57%. Anhui Province has complex terrain, there is a wide range of agricultural risk types, and the rural transport is not convenient, causing great difficulties in underwriting and claims.

2.2.3 Poor operation mechanism of agricultural insurance and lack of talent increasing the difficulties in claims. Presently, the agricultural insurance in Anhui Province is mainly run by Anhui Branch of PICC. In terms of the nature, it is a commercial insurance system, with the pursuit of profit as the business objectives. Including agricultural insurance in the merchandise management system has limited the development of agricultural insurance and

resulted in poor operation mechanism of agricultural insurance. Talent problem is one of the most serious problems facing the agricultural insurance industry in Anhui Province. In fact, little importance is attached to the cultivation of agricultural insurance talent and the agricultural insurance personnel's salary is not high. Due to the complexity of agricultural insurance operation, many insurance professionals are reluctant to engage in agricultural insurance. The lack of agricultural insurance talent elongates the compensation cycle, increases the transaction costs, and also affects farmers' expectation of indirect agricultural insurance utility.

3 Typical domestic and foreign agricultural insurance models

There are more than 40 countries around the world having implemented agricultural insurance. The study of advanced agricultural insurance models in China and some typical countries (such as USA, Japan, Western Europe) can provide a reference for Anhui Province to choose appropriate agricultural insurance models.

3.1 USA-government leading model As the world's largest exporter of agricultural products, USA uses government leading development model in the case of private insurance companies failing to operate crop insurance and independently bear enormous risks. It mainly adopts the following approaches. (i) Business subsidies. It subsidizes the business costs of commercial insurance companies, and encourages them to develop agricultural insurance business. (ii) Economic support. The federal government offers many crop insurance subsidies. (iii) Reinsurance. Through Federal Crop Insurance Corporation, the government provides a certain percentage of reinsurance and excess loss reinsurance protection for the private insurance companies. (iv) Tax exemption. Laws provide that except payment of 1%–4% sales tax, the private insurance companies participating in agricultural insurance program are exempt from other taxes.

3.2 Japan – government-supported mutual association model (i) The feature of policy is strong. Through the legislation, the state implements the legal insurance for the crops and domesticated animals having a great impact on people's livelihood and farmers' income; the insurance for other crops and animals is voluntarily implemented. (ii) What directly runs agricultural insurance is the non-profit mutual association rather than government departments or commercial insurance companies. (iii) It covers a very wide range. (iv) The central government is responsible for the agricultural insurance supervision and guidance, provision of reinsurance for agricultural mutual aid association through official and unofficial institutions, and offering of subsidies for agricultural insurance premiums and management fees.

3.3 Shanghai Anxin model The agricultural insurance operation mode of Shanghai Anxin model is featured by government policy support, and market-oriented operation. The main insurance currently operated by Anxin Company is the rural farming and breeding insurance. China Insurance Regulatory Commission requires that the proportion of the insurance premium income on

farming and breeding to the total premium income must not be less than 60%. Shanghai has given a certain percentage of premium subsidies for the insured participating in the agricultural development-oriented insurance. Government subsidies cover nine categories of agricultural insurance, greatly promoting the development of Anxin's business. With the rapid development of Anxin insurance, the number of insurance type increased from 17 to 65 in 2011, but only 9 of them received the support of the government, and the highest proportion of insurance subsidy was also only 35%. Shanghai Anxin model is to set up specialized insurance company in the government's financial support, which is characterized by strong local financial support to ensure the sound development of agricultural insurance. This model is only suitable for the regions where the agricultural GDP accounts for a small proportion of regional GDP. Therefore, Anxin agricultural insurance is not representative, but from it we can find that through the government support, Anxin gradually reduces the dependence on the government and the degree of market functioning is improved.

3.4 Heilongjiang-agricultural mutual aid model Heilongjiang agricultural insurance uses the method of company operation, and its purpose is not for profit, but for providing low-cost insurance to policyholders. Sunlight Agricultural Mutual Insurance Company adopts the mutual agricultural insurance model. A mutual insurance company is an insurance company owned entirely by its policyholders. Any profits earned by a mutual insurance company are rebated to policyholders in the form of dividend distributions or reduced future premiums. In contrast, a stock insurance company is owned by investors who have purchased company stock; any profits generated by a stock insurance company are distributed to the investors without necessarily benefiting the policyholders. On February 20, 2009, Sunlight Agricultural Mutual Insurance Company founded the Guangdong branch after being approved by China Insurance Regulatory Commission. The main effect of "mutual agricultural insurance system model" is reflected in the following three aspects: (i) The management system and operational mechanism are getting perfect; (ii) The management system tends to be standardized; (iii) The public service functions tend to be strengthened. The innovation practices of mutual agricultural insurance system model of Sunlight Agricultural Mutual Insurance Company have ensured the agricultural development of the Heilongjiang reclamation area and promoted stable agricultural economic development. The mutual agricultural insurance system model unifies the identity of the insurer and the insured, thereby reducing intermediate links and operating costs. This model requires that the degree of organization is high in the insured area, and the agricultural production has a certain scale. The mutual agricultural insurance system model also requires the government support in terms of taxes and insurance subsidies.

4 The choice of development model of agricultural insurance in Anhui Province and recommendations

4.1 Choice of model Anxin model is very successful in

Shanghai, but it can not be directly copied for Anhui Province. However, the local government's direct fiscal subsidy policy is worth learning for the Anhui provincial government. Because of developed economy and sound finance in Shanghai, the government can give both financial and policy support, and the agricultural GDP has a small share in GDP, as shown in Table 5. Taking 2010 for example, Shanghai's GDP was 1.716598 trillion yuan, the per capita GDP was 74570 yuan, and the agricultural GDP accounted for only 0.066% of Shanghai's GDP; Anhui's GDP was 1.235 933 trillion yuan, and the per capita GDP was 20772 yuan (only 27.86% of Shanghai's GDP per capita), and the agricultural GDP accounted for only 14% of Anhui's GDP^[4].

Table 5 GDP of Shanghai City and Anhui Province^[8]

Year	Shanghai's GDP//10 ⁸ yuan	Anhui's GDP//10 ⁸ yuan
2005	9 154.18	5 375.12
2006	10 572.24	6 112.5
2007	12 494.01	7 360.92
2008	14 069.86	8 851.66
2009	15 046.45	10 062.82
2010	17 165.98	12 359.33
2011	19 195.69	15 110.3

Data source: China Statistical Yearbook (2012).

Since Yangtze River, Huaihe River and Xin'an River flow through Anhui Province, the natural disasters are frequent, posing great threat to agricultural production. In addition, due to the low level of economic development of Anhui Province, low level of agricultural infrastructure and lack of adequate ability to resist flood and drought, natural disasters undoubtedly deal a blow to the agricultural production in Anhui Province. These factors lead to greater risk and serious loss of agricultural insurance business in Anhui Province, and keep general commercial insurance companies away. Based on the data, Shanghai offers 10 million yuan to subsidize agricultural insurance annually, accounting for 25% of total agricultural insurance and rural housing insurance premiums in Shanghai. There is similarity between the agricultural insurance model of Japan and the agricultural insurance model of Sunlight Agricultural Mutual Insurance Company in Heilongjiang, namely building the mutual association. Similar to rural credit cooperatives, the mutual insurance companies adhere to the spirit of mutual cooperation, and they are the corporate organizations jointly established by all insured persons. The mutual insurance company's investor is the insured, and the general meeting or members' congress is the company's highest authority responsible for electing board of directors as decision-making body, and supervisory board as the supervisory body on the company's operation. The business management authorities selected by board of directors are the company's business organizations. This organizational structure adapts to the needs of modern enterprise management, promotes the business operation and development, and effectively protects the interests of policyholders. The mutual insurance model is the innovation of the insurance system, and the implementation of mutual insurance model has the advantages of property right u-

nity, risk management cooperation, interest co-ownership, and operating flexibility. The model of agricultural insurance subsidized by the government and jointly operated by Agricultural Insurance Bureau is conducive to mobilizing the enthusiasm of farmers for participating in insurance, and the financial support has certain limits, so according to the actual situation in Anhui Province, the model of government leading combined with agricultural mutual aid is suitable for Anhui Province.

4.2 Recommendations

4.2.1 Increasing the financial support of Anhui provincial government. It is necessary to highlight the role of government in providing financial support to premium and offering preferential policies, strengthen the propaganda of agricultural insurance to mobilize the farmers to get insured, and vigorously train insurance personnel. Through the analysis of the operation status of agricultural insurance operating entity, the agricultural insurance loss ratio is very high, and if the commercial insurance companies do not get support from the government, they will stay away, and can not operate alone. And if there are no government subsidies, the farmers' willingness to buy agricultural insurance is not strong. In addition, the agricultural insurance is a quasi-public product, which has strong public nature and externality, and the government support to agricultural insurance helps to promote stable development of rural economy.

4.2.2 Stepping up publicity to encourage farmers to actively buy insurance. It is necessary to establish the agricultural insurance model in line with the actual situation of the region. The hills and mountains account for two-thirds of Anhui's total land, and the natural disasters occur frequently, so there is a need to determine insurance model according to the actual situation of Anhui, and increase government support and guidance to mobilize the enthusiasm of farmers for buying insurance. It is also necessary to strengthen the farmers' risk education and agricultural insurance publicity, and guide farmers to establish risk awareness, so that farmers voluntarily participate in insurance.

4.2.3 Carrying out the insurance pilot work and determining the proportion of underwriting and claims. The whole idea of agricultural mutual aid model can refer to the agricultural mutual aid model of Heilongjiang as a reference, but the proportion of underwriting and claims should be slightly adjusted based on the actual situation of Anhui Province. Anhui Province can adjust the proportion of underwriting and claims according to the pilot situation and farmers' acceptance. The agricultural mutual aid model is very successful in Heilongjiang, but due to the differences in the level of economic development and agricultural risk environment between Heilongjiang and Anhui, it is impossible to completely copy

the original model, so it is necessary to re-conduct the pilot work in Anhui Province and re-determine the proportion of underwriting and claims according to the local conditions. Shanghai Anxin model and Heilongjiang agricultural mutual aid model are gradually explored and perfected from the insurance polite work. Anhui insurance model also can refer to this path as a reference, to first conduct small-scale pilot work and then perform large-scale extension. It is necessary to carry out the policy adjustment and perfect the model in the pilot work, to form the agricultural insurance model suitable for the economic development of Anhui and benefiting farmers.

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