

## **Recognition to the “three rights division” of rural land from farmers’ perspective: based on the survey data in Hubei province<sup>1</sup>**

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**Abstract:** Exploring farmers’ recognition of the “three rights division” of rural land has important theoretical and practical significance for the comprehensive implementation of land property right reform and the thorough development of farmland conversion. Taking Hubei province as the research area, this paper establishes an evaluation system for farmers’ recognition of the “three rights division” policy (including policy awareness, policy satisfaction and policy concern), evaluates the policy recognition of three different types of farmers (flow-in, flow-out and non-flow) by Fuzzy evaluation method. The results show that farmers’ policy recognition of the “three rights division” can be ordered in a sequence like: land flow-in farmers’ (0.401) > land flow-out farmers’ (0.354) > non-flow farmers’ (0.338). Different types of farmers also have different focuses on policy awareness, policy satisfaction and policy concern. To improve farmers’ recognition, some differentiated policy suggestions for different types of farmers are put forward for smoothly implementing the “three rights division” policy.

**Keywords:** the “three rights division” policy, farmland conversion, farmers’ recognition, fuzzy evaluation method

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Date of Submission: 26-07-2018

Date of acceptance: 10-08-2018

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### **I. INTRODUCTION**

Farmland conversion is an inevitable consequence of the development of China's rural economy to a certain stage. In the long-term practice of farmland conversion, many significant changes have taken place in Chinese countryside and gradually tend to "hollowing out" and "flowing out" because of rural labor flow. In order to solve these problem, many scholars have actively explored the innovation of the land property right system. As early as 1990s, Shuncheng village in Zaoyang city carried out the reform experiment of division of three rights" land ownership right, land contract right and land management right", which has achieved great success<sup>1</sup>. In the following decades, many scholars held a positive attitude towards the division of the three rights. They believed that it would help farmers generate long-term expectations of agricultural production, promote the rational land conversion among different users, improve the situation of fragmented plots and small-scale operations, and it is benefit to boost the development of the land market<sup>2,3,4</sup>. China's central Document No. 1 of 2014 proposed that the right of land contract management should be divided into land contract right and land management right. In 2016, the third plenary session of the 18th CPC Central Committee decided to implement the operational mode of division of three rights (ownership, contract and management) in the Chinese countryside. This is a major institutional innovation of rural land reform following the household contract responsibility system, which points out the direction for the reform of rural land system and agricultural management system<sup>5</sup>. Since then, a large number of literature about the "three rights division" has sprung up. Most of them focus on policy function, rights arrangement and institution innovation<sup>6,7,8</sup>.

As the largest group in Chinese countryside, farmer's explicit and potential response should be an important part of any research on influence at present, but is often ignored by studies in China<sup>9</sup>. In the process of

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<sup>1</sup> **Foundation Items:** *Humanity and Social Science Planning Fund Project of Ministry of Education (17YJA630075). Fundamental Research Funds of the Central Universities (2662015PY198)*

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carrying out the "three rights division" policy, farmers' recognition of the policy ( including every aspect of satisfaction and concern) is the core to the smooth implementation of rural land reform. From the economic hypothesis of " rational person", only when the sum of the income from non-agricultural profession and the land rent(obtained) exceeds the income from agricultural production will the contractors choose to flow out the land. Similarly, only when the income from land operation exceeds the sum of the opportunity cost of cultivating land and land rent(obtained) will farmers choose to flow in the land. That is to say, only when the above two conditions are met at the same time can the land conversion take place. Previous studies have mostly focused on farmers' welfare measurement and behavioral willingness analysis during farmland conversion<sup>10,11</sup>. There is only little discussion on farmers' recognition of land policy with are relatively simple variables of evaluation, which makes it difficult to systematically explain the inherent relationship between farmers' attitudes and farmland conversion. In view of this, taking Hubei province as the research area, this paper establishes an evaluation system for farmers' recognition of the " three rights division" policy ( including policy awareness, policy satisfaction and policy concern), evaluates the policy recognition of different types of farmers (land flow-in farmers, land flow-out farmers and non-flow farmers ), and put forward some policy suggestions for smoothly implementing the " three rights division" policy. Conclusions of this study may provide useful information and advice for relevant departments to improve China's current land property right system and farmland conversion mechanism.

## II. METHODS AND DATA RESOURCE

### Quantitative method

Fuzzy evaluation method is widely used to measure a series of problems that are difficult to quantify such as welfare level, poverty level, and subjective willingness<sup>12,13</sup>. This paper uses this method to measure the farmers' recognition of the " three right division" policy. Since the evaluation indicators of policy recognition are all virtual binary variables as the Table no1 lists, formula (1) can be used as the membership function of each indicators  $x_{ij}$ .

$$\mu(x_{ij}) = \begin{cases} 0 & x_{ij} = 0 \\ 1 & x_{ij} = 1 \end{cases} \quad (1)$$

This paper selects the weight structure defined by Cheli and Lemmi (1995)<sup>14</sup> and the summation formula proposed by Cereoli and Zani (1990)<sup>15</sup> to determine indicators' weight.

$$\omega_{ij} = -\ln[\mu(x_{ij})] \quad (2)$$

In the function (2) ,  $\omega_{ij}$  is the weight of each indicator  $x_{ij}$ . The advantage of this formula is to give higher weight to the variables which has lower membership. In the whole process of evaluation, dimensions and indicators with lower policy recognition should be paid more attention. At present, the formula is mainly used in the research of farmers' welfare level and people's livelihood perception<sup>12,16</sup>.

Next, policy recognition can be defined as:

$$f(x_i) = \frac{\sum_{j=1}^k \mu(x_{ij}) * \omega_{ij}}{\sum_{j=1}^k \omega_{ij}} \quad (3)$$

In the function(3), k indicates there are k secondary indicators in i primary indicators.

### Evaluation Indicators

As far as farmers are concerned, the "three rights division" system can possibly bring them many benefits. For example, it can help farmers who want to settle down in cities transfer their contracted land freely, then they can obtain the rent through land renting or taking shares. On the other hand, since the right of land management will have legal and financial guarantees by contracting and mortgage, the scale of agricultural operation will be expanded and agricultural income will be increased. Nevertheless, farmers also worry about the negative effects caused by implementation of the policy. For example, land flow-out households are concerned about some problems about old-age employment, soil fertility and land reclamation. In addition, the policy will inevitably increase the cost of transferring land management right conversion and create the risk of scale management. And for farmers who want to apply for mortgage loans by land management right, the difficulties of assessing land value and the lack of a standardized trading platform and procedures are all problems which cannot be ignored in the short term.

Based on the characteristics of Hubei province's countryside and policy implementation of " the three rights division", this paper evaluates farmers' recognition of the policy from three aspects of policy awareness, policy satisfaction and policy concern, and establishes an indicator system as the Table no 1.

**Table no 1:** Indicators and brief descriptions of farmers' recognition to the policy

Primary indicators	Secondary indicators	Description
Policy awareness $X_1$	Have you heard the "three rights division" policy before? $X_{11}$	Yes=1 No=0
	Has the collective propaganda the policy? $X_{12}$	
	Can farmers keep the land contract right after setting down in cities? $X_{13}$	
	Can farmers apply for mortgage loan by land management right? $X_{14}$	
Policy satisfaction $X_2$	Land ownership is more clear; $X_{21}$	Satisfied=1 Not satisfied=0
	It can promote conversion and reduce abandonment; $X_{22}$	
	It can promote scale operation and increase land output; $X_{23}$	
	Land flow-in farmers can get more income from renting land; $X_{24}$	
	Land flow-out farmers can get fund from mortgage loan; $X_{25}$	
Policy concern $X_3$	Land contracting right is more secure; $X_{26}$	Concern=1 Not concern=0
	The mortgage loan of land management right is hard to be repaid; $X_{31}$	
	The cost of transferring farmland management right is higher than before; $X_{32}$	
	The actual value of land management right is difficult to be assessed, and the procedure is not standard; $X_{33}$	
	Long-term investment in farmland decrease, and soil fertility decrease; $X_{34}$	

#### Data resource

Hubei province, reputed as "the province of thousands of lakes" and "the hometown of fish and rice", is located in the south-central part of China and the middle reaches of the Yangtze river. According to the statistics of China's Ministry of agriculture, by the end of 2016, the conversion area of contracted farmland in rural households in Hubei province had reached 118.67 thousand hectare, accounting for 39.5 % of the total area of contracted farmland, which is above the national average level. The moderate scale of cultivated land in the province has reached 600 thousand hectare with an increasing of 235.2 % over the "11th five-year plan" period. The registration and certification of contract management right of rural land has been carried out throughout the whole province, and majority of cities (counties, districts) have been almost completed.

The empirical study in this paper selects 10 cities (districts, counties) in Hubei province. They are Zhongxiang city, Daye city, Chibi city, Suixian county, Yunmeng county, Huangpi district of Wuhan city, Hongan county, Macheng city, Liangzihu district of Ezhou city, and Xianan district of Xianning city. Among them, the former five regions are the first batch of pilot areas for mortgage loan of land management right in China. A random questionnaire survey was carried out by choosing four households in each village, five villages in each town and three towns in each region. In order to make farmers' perception of land conversion more accurate, the time for land conversion of survey samples should be selected as far as possible between the year from 2010 to 2017. 690 questionnaires were distributed and 646 valid questionnaires were obtained, so the effective rate of the questionnaire reached 93.62 %. According to the experience of land conversion, all the interviewed farmers can be divided into three types: land flow-in farmers, land flow-out farmers and non-flow farmers (farmers who have not participated in land conversion). Among them, land flow-in farmers, land flow-out farmers and non-flow farmers were 79, 280 and 296 respectively (there are 9 farmer households who have participated in both farmland flow-in and farmland flow-out).

### III. RESULTS AND ANALYSIS

The simple statistical analysis of the survey demonstrates that only 23.21% farmers know the "three rights division" and only 11.94% farmers think their collective have advocated it. After they were told what the policy is and what its main characteristics on the spot, 69.62% of them chose  $X_{22}$  (it can promote land conversion and reduce land abandonment), 51.42% of them chose  $X_{26}$  (farmers can keep land contract right after settling down in the cities), and 44% of them chose  $X_{21}$  (the ownership is more clear). For the policy concern, 42.91% farmers chose  $X_{31}$  (the actual value of the land management right is hard to be accessed), 33.15% farmers chose  $X_{32}$  (the mortgage loan is hard to be repaid, and their land right may be damaged).

By the fuzzy evaluation method, farmers' policy recognition of "the three rights division" is comprehensively evaluated from three aspects as farmers' policy awareness, policy satisfaction and policy

concern. the results are shown in the Table no 2.

**Table no 2:** Results of policy recognition of different types of farmers

	Land flow-out farmers		Land flow-in farmers		Non-flow farmers	
	Membership degree	weight	Membership degree	weight	Membership degree	weight
Policy awareness $X_1$	0.308	1.178	0.312	1.165	0.264	1.333
Policy satisfaction $X_2$	0.469	0.755	0.584	0.537	0.502	0.689
Policy concern $X_3$	0.326	1.121	0.406	0.901	0.325	1.124
Policy recognition	0.354		0.401		0.338	

As the Table no 2 shows, from high to low, the policy recognition of all interviewed households can be ordered as follows: Land flow-in farmers' ( 0.401 ) > Land flow-out farmers' ( 0.354 ) > non-flow farmers' ( 0.338 ). All households show the trend as: their result of policy satisfaction > policy concern > policy awareness.

Compared with the land flow-out farmers, the reason for the higher policy recognition of land flow-in farmers is that their degree of satisfaction on the realization of scale management (  $X_{23}$  ) and the application for mortgage loan by land management right (  $X_{25}$  ), as well as their concerning about inability to repay the mortgage loan (  $X_{31}$  ) are obviously higher, thus making the policy recognition of the land flow-in farmers significantly higher as a whole.

In the process of survey, it is found that farmers rarely sign formal contracts for the conversion of small-scale farmland and do not have a certain conversion period. Therefore, they always face the restriction that the owner of the contracted land will take back the land at any time. As a result, the land flow-in farmers generally does not willing to invest in the land for a long term. However, the implementation of the " three rights division" policy gives small-scale land flow-in farmers legal and stable right to operate, eliminating the concern that the farmland will be taken back at any time, which is conducive to large-scale management. In addition, about a quarter of the survey samples were transferred to farmers with a scale of more than 0.67 hectare, accompanied by big challenge of financing. The investment in various aspects such as agricultural machinery and soil fertility is insufficient, and the quality of the crops produced is not high, thus affecting agricultural income and consequently unable to increase capital investment. This is a vicious cycle which is always difficult to be broken. After the implementation of the " three rights division" policy, the flow-in farmers can apply for mortgage loans to open up financing channels by land management right, thus greatly improving the satisfaction of the policy. At the same time, the possible poor harvest caused by natural or man-made disasters may make them difficult to repay the loan, thus increasing the worries of the land flow-infarmers about the policy. Therefore, compared with the land flow-out farmers, the policy of land flow-in farmers is more satisfied and worried, and the overall policy recognition of them is higher.

Compared with the land flow-out farmers, policy awareness of the farmers who have never participated in land conversion is significantly lower, so the overall policy recognition is lower although there are not obvious differences between their policy satisfaction and policy concern. In the survey areas, farmers' access to policy is relatively blocked. In addition, since they have never participated in the land conversion, there is no past experience to be referred to for the advantages and disadvantages of the " three rights division" policy . so the overall policy recognition of them is not as good as that of other types of farmers.

#### IV. CONCLUSIONS AND DISCUSSION

In general, all the farmers' policy recognition of "the three rights division" can be ordered in a sequence as: land flow-in farmers' (0.401) > land flow-out farmers' (0.354) > non-flow farmers' (0.338). Different types of farmers also have different focuses on policy awareness, policy satisfaction and policy concerns. ①Policy awareness. The degrees of policy awareness of the land flow-in farmers and the land flow-out farmers are higher than that of the non-flow farmers. ②Policy satisfaction. The land flow-in farmers and the land flow-out farmers are all satisfied with that the " three rights division" policy can reallocate land resource and reduce the abandonment, while the non-flow farmers are most satisfied with the fact that the policy can clarify the ownership. ③Policy concerns. The Land flow-out farmers and the non-flow farmers have the higher degree of concern about the value evaluation of land management right, while land flow-in farmers are most worried about that if they cannot repay the mortgage loan of land management right, their rights and interests of farmland will be damaged.

When farmland flows from the land flow-out farmers to the land flow-in farmers constantly, the scale of farmland of flow-in farmers is expanding, while some land flow-out farmers may turn into the agricultural

surplus labor force. In order to continuously improve the living standards of both sides, on the one hand, governments should increase the subsidy of agricultural integration, agricultural machinery and improved varieties, establish an evaluation system for the moderate scale operation of agriculture, and develop a socialized agricultural service system to resolve the contradiction between small-scale agricultural production and large markets. On the other hand, governments should promote the smooth transfer of rural surplus labor force by improving the compensation for land conversion and the insurance in medical care, pension and living allowance, increasing public investment in education and reemployment training, accelerating the reform of the household registration system, and promoting the full coverage of the basic public services in cities and towns.

Developing various forms of moderate scale management is the core of the "13th five-year plan" for China's agricultural development. In the survey, it is found that the phenomenon of part-time farming, extensive farming, low scale benefit, and non-standard contracts are still widespread. To fundamentally solve these problems, the "three rights division" policy must be promoted by making use of results of land ownership registration and certification, consolidating the policy of extending the farmland contract period for another more 30 years, and exploring effective modes of releasing land management right such as exchange, lease and trusteeship, and so on. Only by these ways can the goals of 2 million hectare of agricultural moderate scale management area by 2018 and agricultural moderate scale management area is over 50% by 2020 be achieved in Hubei Province<sup>17</sup>.

The implementation of the policy of "three rights division" needs the recognition and support of farmers. At the special stage where the registration of farmland ownership is still incomplete, the formal market of farmland conversion is still imperfect, and the pilot project of mortgage loan of land management right has just begun, the policy has not had obvious effect on affecting the of farmers' livelihood and improving their welfare. Therefore, it is important to intensify the propaganda of the "three rights division" policy and formulate corresponding policies and measures so as to promote the orderly farmland conversion and realize the double-win goal of "transferring labor force and increasing agricultural income" of the policy.

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Peng Kai-Li"Recognition to the “three rights division” of rural land from farmers’ perspective: based on the survey data in Hubei province :IOSR Journal Of Humanities And Social Science (IOSR-JHSS). vol. 23 no. 08, 2018, pp. 01-06