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# Difficulties in Implementing Supply Mechanism of Rural Public Goods in the Context of Urban-rural Integration

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**Abstract** Through in-depth interviews and questionnaires, we take Mianyang City, Aba Prefecture, and Suining City in Sichuan Province as the study object, to analyze the relationship between the basic situation of farmers and the supply mechanism implementation of rural public goods. The research results show that the younger the farmers, the higher the educational level, the higher the annual household income, and the higher the enthusiasm in participating in the discussion of the supply of rural public goods. And the correlation between farmers' annual household income and participation in the supply of public goods is the highest. Finally corresponding countermeasures and proposals are put forth based on farmers' educational level and annual household income, the two difficulties in supply mechanism implementation of rural public goods.

**Key words** Rural public goods, Supply mechanism, Difficulties in implementation

## 1 Introduction and hypothesis

China has long been affected by the urban-rural dual structure, and there is a huge difference in the level of public goods supply between urban and rural areas. There are some problems in the supply mechanism of rural public goods, such as inadequate input, ambiguous responsibilities and economic rights in the government at all levels, lack of bottom-up demand expression mechanism, and single fund-raising channels<sup>[1]</sup>, thereby seriously affecting the supply quantity and quality of rural public goods, greatly hindering socio-economic development in rural areas. With the accelerated pace of coordination between urban and rural areas, the requirements of narrowing the urban-rural gap are even clearer, and the supply of rural public goods becomes the issue to be urgently solved. Apart from inherent problem in supply mechanism of rural public goods, if the farmers' self-status affects the implementation of supply mechanism, it will become a difficulty that needs to be considered in the supply mechanism of rural public goods. Only after we determine these difficulties can we fundamentally improve the implementation efficiency of supply of rural public goods.

Through literature research and field interviews, this article believes that farmers' age, educational level, and the annual household income may influence the farmers' participation in the supply of public goods, thereby affecting the implementation of supply mechanism of rural public goods. Using questionnaires and quantitative analysis, this article conducts correlation analysis of the above three basic factors and participation in public goods, namely verifies the three typical variables that

may have important impact on the implementation of supply mechanism of rural public goods, in order to clarify the difficulties in the implementation of the supply of rural public goods and fundamentally improve the efficiency of the supply of rural public goods.

## 2 Analysis of samples

**2.1 Data source** In the period September-december 2011, members of our group visited 12 villages and towns, 59 villagers' committees, in Mianyang City, the Aba Tibetan Autonomous Prefecture and Suining City, Sichuan Province. 5 households were randomly selected from each villagers' committee for questionnaire survey; 295 questionnaires were distributed, and 290 valid questionnaires were called back, with questionnaire response rate of 98.31%. The analysis and summarization of the sample's age, educational level, and the annual household income can be shown in the following tables (Table 1 – Table 3).

**Table 1 Age distribution and percentage of respondents**

| Age bracket  | Frequency | Percentage//% | Cumulative percentage//% |
|--------------|-----------|---------------|--------------------------|
| 0–24         | 0         | 0             | 0                        |
| 25–39        | 112       | 38.6          | 38.6                     |
| 40–54        | 136       | 46.9          | 85.5                     |
| 55 and above | 42        | 14.5          | 100                      |

Data source: Our questionnaire survey.

In addition to the options on the information of the respondents in the questionnaire, there are also options on the respondents' demand for the supply of public goods, evaluation of the supply of public goods, and participation in the supply of public goods. Through analyzing the correlation between the basic situation of the farmers and farmers' participation in the process of supply of public goods, this article aims to verify

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whether the basic situation of the farmers will be the difficulty to the supply mechanism implementation of rural public goods.

So here we mainly use question B2 (When the village convene a meeting to discuss public issues, which one do you choose; A. Actively participate in, willingness to express personal views; B. Participate in most time, but just listen, do not

express personal views; C. Participate in only if the conference content is closely related to their own interests; D. Do not participate in most time; E. Never participate in) to represent farmers' participation in the process of supply of public goods. The descriptive statistical results of this option can be seen in Table 4.

**Table 2 Educational level distribution and percentage of respondents**

| Educational level   | Frequency | Percentage//% | Cumulative percentage//% |
|---|-----------|---------------|--------------------------|
| Primary school and below  | 122       | 42.1          | 42.1                     |
| Junior high school  | 82        | 28.3          | 70.4                     |
| Senior high school/ technical secondary school/ technical school/vocational high school | 78        | 26.9          | 97.3                     |
| Junior college  | 8         | 2.7           | 100                      |
| Regular college and above   | 0         | 0             | 100                      |

Data source: Our questionnaire survey.

**Table 3 Annual household income distribution and percentage of respondents**

| Annual household income | Frequency | Percentage//% | Cumulative percentage//% |
|-------------------------|-----------|---------------|--------------------------|
| Below 50 00 yuan        | 42        | 14.5          | 14.5                     |
| 5 000 – 10 000 yuan     | 126       | 43.4          | 57.9                     |
| 10 000 – 30 000 yuan    | 64        | 22.1          | 80.0                     |
| Above 30 000 yuan       | 58        | 20.0          | 100                      |

Data source: Our questionnaire survey.

**2.2 Analysis method** Using the statistical analysis method of correlation analysis, this article conducts correlation analysis between the respondents' age, educational level and annual household income, and answers to B2 that can reflect the respondents' participation in the supply of public goods in the questionnaire, respectively, thereby knowing whether the respondents' basic situation is correlated with their participation in the supply of public goods in rural areas.

The concept of correlation was developed by Francis Cal-

ton during the period 1877 – 1888. Subsequently, Karl Pearson systemized this theory, and applied it widely. To commemorate him, the correlation coefficient in the correlation analysis is called Pearman's correlation coefficient<sup>[2]</sup>. The so-called correlation means that when discrete point of two continuous variables in the scatter plot shows the straight-line trend, it can be believed that there is trend of simple correlation between the two. The Pearman's correlation coefficient is an indicator for people to quantitatively describe the degree of linear correlation.

The value of correlation coefficient is<sup>[-1,1]</sup>. When  $r > 0$ , it is positive correlation; when  $r < 0$ , it is negative correlation. After getting the correlation coefficient, we need to test it. The test method is mainly t-test, and the statistic is calculated through the t-test calculation method. Finally according to the degree of freedom,  $P$  value is derived. When  $P < 0.05$ , we believe that this correlation coefficient is significant.

**Table 4 Respondents' status of participation in the process of rural public goods supply**

| Status of participation   | Frequency | Percentage//% | Cumulative percentage//% |
|---|-----------|---------------|--------------------------|
| Actively participate in, willingness to express personal views                          | 144       | 49.7          | 49.7                     |
| Participate in most time, but just listen, do not express personal views                | 38        | 13.1          | 62.8                     |
| Participate in only if the conference content is closely related to their own interests | 0         | 0             | 62.8                     |
| Do not participate in most time   | 72        | 24.8          | 87.6                     |
| Never participate in  | 36        | 12.4          | 100                      |

Data source: Our questionnaire survey.

**2.3 Data analysis** Using the statistical analysis software SPSS16.0 for data analysis, this article conducts correlation analysis of three variables ("age", "educational level", "annual household income"), and the variable "participation", respectively. As is shown in Table 1 and Table 2, these variables are ordinal variables, rather than continuous variables. So we select the Kendall's tau-b coefficient in the dialog box of Biivariate Correlations, namely the ordinal correlation coefficient. Through software analysis, the analysis results of correlation of variables concerning farmers' basic situation and "participation in the supply of rural public goods" are as follows.

Correlation analysis of rural residents' age and status of participation in rural public goods supply can be shown in Table 5.

**Table 5 Correlation analysis of rural residents' self-status and status of participation in rural public goods supply**

| Analysis item           | Status of participation |                 |     |
|-------------------------|-------------------------|-----------------|-----|
|                         | Correlation Coefficient | Sig. (2-tailed) | N   |
| Age                     | .330 *                  | 0.048           | 290 |
| Educational level       | -.336 *                 | 0.041           | 290 |
| Annual household income | -.462 * *               | 0.004           | 290 |

\*. Correlation is significant at the 0.05 level (2-tailed). \* \*. Correlation is significant at the 0.01 level (2-tailed).

Data source: Our questionnaire survey.

The correlation coefficient of farmers' age and participation in the meeting to discuss the public issues is 0.33. The validity

test of correlation coefficient is two-sided test, and  $P$  value is  $0.048 < 0.05$ , so the correlation coefficient is valid, indicating that the respondents' age level is positively correlated with the status level of participation in the meeting to discuss public issues. According to the descriptive statistics in Tables 1 and Tables 4, we can find that in the permanent population aged more than 25 in rural areas, the younger the age, the higher the degree of participation in the meeting to discuss public issues, and the greater the willingness to actively express their views; on the contrary, the older the age, the lower the degree of participation in the meeting to discuss public issues, and the smaller the willingness to express their views.

The analysis results of farmers' educational level and participation in the supply of rural public goods are shown in Table 5. The correlation coefficient of farmers' educational level and participation in the meeting to discuss public issues is  $-0.336$ , the validity test of correlation coefficient is two-sided test,  $P$  value is  $0.041 < 0.05$ , so this correlation coefficient is valid, indicating that the respondents' educational level is negatively correlated with their participation in the meeting to discuss public issues. According to the descriptive statistics in Tables 2 and Tables 4, we can find that in the permanent population, the higher the farmers' educational level, the higher the degree of their participation in the meeting to discuss public issues, and the greater the willingness to actively express their views; on the contrary, the lower the farmers' educational level, the lower the degree of their participation in the meeting to discuss public issues, and the smaller the willingness to express their views.

As is shown in Table 5, the correlation coefficient of farmers' annual household income and their participation in the meeting to discuss public issues is  $-0.462$ , and the  $P$  value of correlation coefficient is  $0.004 < 0.01 < 0.05$ , indicating that this correlation coefficient is valid, that is, farmers' annual household income is negatively correlated with their participation in the meeting to discuss public issues. According to the descriptive statistics in Tables 3 and Tables 4, we can find that the higher the farmers' annual household income, the higher the degree of their participation in the meeting to discuss public issues, and the greater the willingness to actively express their views; on the contrary, the lower the farmers' annual household income, the lower the degree of their participation in the meeting to discuss public issues, and the smaller the willingness to express their views.

From the correlation analysis between the above three types of farmers' basic status and their participation in the meeting to discuss public issues, we can find that farmers' age, the educational level and the annual household income will all affect farmers' participation in the meeting to discuss public issues and express their views, that is, farmers' basic status will affect their participation in the process of the supply of public goods in rural areas, thus affecting the implementation of supply mechanism of rural public goods. In addition, it can be seen from the above analysis that the correlation between farmers' annual household income and their participation in the process of the supply of rural public goods is the highest.

### 3 Conclusions

#### 3.1 Farmers' basic conditions will affect the implementation of the supply mechanism of rural public goods

Through the correlation analysis between farmers' age, educational level, annual household income and other basic status, and their participation in the meeting to discuss public issues, we can conclude that the hypothesis previously proposed is valid, that is, farmers' age, the educational level and the annual household income, will affect the farmers' participation in the supply of public goods. Among them, farmers' age is positively correlated with their participation in the supply of public goods; farmers' educational level is negatively correlated with their participation in the supply of public goods; farmers' annual household income is negatively correlated with their participation in the supply of public goods, and the correlation between farmers' household income and their participation in the supply of rural public goods is the highest. The three types of basic status, by affecting the farmers' participation in the process of the supply of public goods, affect the implementation of supply mechanism of rural public goods.

#### 3.2 The basic situation of the farmers will become a difficulty in the implementation of supply mechanism of rural public goods

Through the analysis and research using correlation method, farmers' age, the educational level, and the annual household income, will affect the farmers' participation in the supply of public goods in varying degrees, thereby affecting the construction and implementation of supply mechanism of rural public goods. Therefore, in order to build and implement effective supply mechanism of rural public goods, we must pay attention to the basic status of farmers, and improve farmers' participation in the process of supply of public goods. To promote and improve farmers' educational level and family income level, we need to consider the level of education in rural areas, the level of economic development and other aspects, that is, the policies, guidelines and supporting facilities on education, economy and other aspects, should meet the development requirements of the supply level of rural public goods. Only by doing this can we well play the role of educational level and family income level in promoting farmers' participation in the supply of public goods, and improving the supply level of rural public goods in terms of quantity and quality. However, the improvement in the educational level and economic level, involves various aspects of the reform and development, thus it is difficult to achieve good effect in a short time.

#### 3.3 Countermeasures and recommendations for resolving difficulties in the implementation of supply mechanism of rural public goods

The goal of urban-rural coordination is to guide the government in realizing the balanced development in urban and rural areas. It is based on the ideas of eliminating the biased institutional costs, achieving the rural and urban equality, and promoting joint development of urban and rural areas. Under the premise of respecting the role of market mechanisms and regarding the government as main body, urban-rural coordination is the unified planning and arrangement of economy, politics, culture and other aspects between urban and rural

areas. In accordance with the connotation of coordinated urban-rural development, coordinating supply of public goods is one part of the coordination. At present, due to the huge differences in the supply of public goods between urban and rural areas, the lack of public goods in rural areas, not only affects the development of the rural economy, but also causes the backwardness of the rural social undertaking construction. Correcting the bias of the supply of public goods in favor of urban areas, and achieving effective supply of public goods in rural areas, is one of important ways to achieve urban and rural economic development, and social stability. Therefore, increasing the supply of rural public goods is of great significance to achieving urban-rural coordination.

According to the above research conclusions and the status quo of supply of rural public goods, as far as we are concerned, we should focus on the following aspects to solve difficulties in the implementation of supply mechanism.

(i) The implementation of supply mechanism of rural public goods should take into account the basic situation of the local farmers, and focus on people-oriented view and adjusting measures to local conditions.

In various regions, the residents' age, educational level and annual household income, will have different effects on the implementation of supply mechanism of public goods, so before the formulation and implementation of supply mechanism of rural public goods, we have to learn more information about the local farmers, and construct different demand expression channels based on this according to local conditions, to improve the degree of farmers' participation in the supply of public goods. Meanwhile, in the process of implementing the supply mechanism of public goods, the local government should call on the young educated farmers with relatively high income to participate in the process of supply of public goods and express their views. In this way, on the one hand, we can give full play to the leading role of these people, driving more local residents to participate in the process of the supply of public goods, to ensure that the supply of public goods can meet local economic and social development; on the other hand, we can make the farmers' needs be fully expressed, and promote the process of political democracy in rural areas.

(ii) The institutional environment of the supply of rural public goods should be created.

China's long-term dual pattern of urban and rural areas has formed the corresponding urban-rural supply mechanism and system of public goods, which makes the rural public goods inferior to the urban public goods in terms of quantity and quality. Therefore, in order to speed up the rural economic and social development, we must improve the quantity and quality of the supply of public goods in rural areas, and create favorable institutional environment for the implementation of supply mechanism of public goods. On the one hand, we should adjust the government policy on public spending in rural areas, increase investment in agriculture and rural areas, make the responsibilities of governments at all levels clear in the supply of public

goods, and ensure that the implementation of supply mechanism of public goods has correct policy guidance. On the other hand, we should provide the other supporting facilities for the effective supply of public goods in rural areas, and develop the rural economy to constantly enhance the financial strength of the rural communities, increase multiple supply subjects of public goods, broaden the channels of supply of public goods in rural areas to meet the needs of rural development, and at the same time, establish certain laws, regulations and oversight mechanisms.

(iii) The farmers' demand expression mechanism of the supply of rural public goods should be established.

In order to ensure that the rural residents can fully participate in the supply of public goods and express their own demand, it is necessary to change the preference-based decision-making mechanism of the higher levels of government, into the "bottom-up" decision-making mechanism that can express the farmers' will. This can not only prevent "offside" of the government, but also ensure the supply efficiency of public goods in rural areas. The "bottom-up" decision-making mechanism of the supply of rural public goods should be combined with the democratic political construction in rural areas. Through the development of rural democratic system, we can improve the organizational level of farmers, promote farmers to participate in the decision-making of the supply of public goods, to better express their needs and wishes<sup>[3]</sup>.

We systematically researches the general law between farmers' basic status (such as age, the educational level and the annual household income) and farmers' participation in the supply of public goods; based on this, put forth the recommendations for solving the difficulties in the supply mechanism implementation of rural public goods. It will be of theoretical and practical significance to promoting the establishment and implementation of supply mechanism of rural public goods, meeting the development needs of rural economy and farmers, promoting the new rural construction, achieving harmonious society, and propelling the coordinated urban-rural development.

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