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The Supply-Demand Analysis and Mechanism Innovation of Chinese Rural Public Goods

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Abstract The connotation of rural public goods is expounded. The rural public goods refer to the products and labors that satisfy the production and living of rural residents, economic growth and social progress. The rural public goods is characterized by non-excludability, non-competitiveness and indispensability of other general public goods. The supply situation of Chinese government to rural public goods is analyzed, as well as the demand situation of rural public goods, which includes farmers' demand on training, the assistance demand of rural weak groups, farmers' demand on comfortable living conditions and farmers' demand on "soft" public goods. The paths for innovating the supply mechanism of rural public goods are put forward, which cover perfecting the decision mechanism of public goods supply; scientifically distributing the supply responsibility of rural public goods; facilitating the reform of each supporting equipment and exploring the multiple capital collecting channels of rural public goods.

Key words Rural public goods, Supply-demand analysis, Mechanism innovation, China

With the rapid development of Chinese economy and society, the current rural public goods supply system can not satisfy the needs of real situation. Especially after the implementation of a series of reforms (for example reform of taxes and charges), both the supply mechanism and the management mode of the former public goods all lag behind the developmental process of realizing social development. In terms of realizing the urban-rural coordination, the problems of rural public supply are put on the agenda. The *Central Government's Decision on Several Problems of Perfecting Socialist Market Economy*, approved by the Third Plenary Session of the Sixteenth Central Committee of the Communist Party in China, first put forward the strategic thought of "coordinating urban-rural development". One of the important parts for coordinating the effective supply of rural public goods is to coordinate the urban and rural development. The problems of current Chinese rural public goods supply are imperfect rural public goods and defective public services. Although rural economy is backward and farmers' income is low, rural areas have high demands on rural public goods and public services. The problems form the basic contradiction of Chinese rural public goods supply. In view of the current Chinese economic and social development, as the major supplier of public goods and public service, especially as the main body of undertaking the functions of social public management, the government should intensify the policy support and provide preferential policies. On the basis of systematically analyzing rural public goods demand and supply, the paper puts forward the innovation mechanism of rural public goods supply.

1 Connotation of rural public goods supply

Paul A. Samuelson pointed out in his *The Pure Theory of Public Expenditure* that the pure public goods will not lead other

people to reduce the products and labors out of the reason that every people consume the products and labors. The public goods have the following three characteristics, including indivisibility of effects, non-competitiveness of consumption and non-exclusive of beneficiary. Private products are the products that can be occupied and shared by individuals. They are characterized by competitiveness, exclusiveness and divisibility. Rural public goods refer to the products and labors that can satisfy rural residents' demands on production and living, economic growth and social development. Rural public goods have the general features of other public goods in terms of non-exclusiveness, non-competitiveness and indivisibility. Public goods can be divided into pure public goods and public goods to be. Rural pure public goods refer to the products and labors provided by the local government (or the subordinate institutions) for free, and in the process of consumption, they own the complete non-competitiveness and non-exclusiveness. The rural pure public goods include the rural development plan, the management service of rural grass-root government (at township or countryside level), rural information system, rural compulsory education, rural elementary science research, the administration of rivers and rural environmental protection. Rural public goods-to-be refer to the products between rural pure public goods and private goods provided by the government and the third party department with non-competitiveness and non-exclusiveness in the consumption process^[1].

2 Supply-demand analysis on Chinese rural public goods

2.1 The government's analysis on the supply and demand of rural public goods Rural public goods have specific characteristics. Although Chinese rural community is at the grass-root level and has extensive area, the operation is still small scale operation and farmers' thought patterns are hard to transfer, the productive mode is backward and farmers' cultural

quality is low, so they have high demand on public goods. In China, the central government provides decisions and organizations on public goods with national scale and overall features; the local governments supply decisions and organizations for public goods with local scale and geographic restrictions.

Since the implementation of rural taxes and charges, farmers' burden has been greatly relieved, but the inadequacy of rural public goods supply has not been solved completely. Chinese government has eliminated the agricultural taxes, taxes on slaughtering animals and so on, which reduced the financial resources of local government. Thus, the financial situation of local governments is tough and can not be made up through the transfer payment of governments at higher level, so the local governments' supply on public goods is affected. The funds used for constructing various kinds of production and public causes should be determined by the villagers' congress, but due to the tight fiscal situation, the villagers' congresses can not be continuously and effectively launched. The pilots of new cooperative medical care system have been launched in some rural areas and the fiscal supports from the central government and local governments have been increasing gradually, but comparing with excessive large population, the new cooperative medical care system can not cover the whole China. Rural social security system is under construction, some legal rights of farmers still have long way to go comparing with that of urban residents. But the supply of rural public is changing to the positive direction and farmer's burden is transferring to the mutual burden bore by the nation and farmers^[2]. However, coupled with alleviating farmers' burden, the elimination of agricultural taxes and some other taxes squeezes the funds of rural public goods, thus leads to the local governments confronting with even bigger problems in supplying public goods.

2.2 Analysis on the demands of Chinese rural public goods

2.2.1 Farmers' demands on training. The key to increasing farmers' income, solving the "three agriculture" problems and coordinating urban-rural development is the enhancement of knowledge and skills of rural human resources. How to let farmer workers acquire the skills for survival and development in cities is one of the major tasks of public management department at various levels to provide public goods and public services. In recent years, the government pays close attention to the training of farmers, but the training organizations are imperfect^[3]. According to the statistics of National Statistical Bureau, by the end of 2006, only 10.8% of towns and villages in the whole nation have vocational and technical schools, 71.3% of towns and villages have broadcast and TV stations, 30.2% of villages have kindergartens and nurseries, 10.7% of villages have sports centers, 13.4% of villages have libraries and cultural stations, 15.1% of villages have farmers' spare-time cultural organizations. The inadequate public facilities have impeded the training and study of farmers. At the same time, the training on farmer workers still has difficulties and problems. It mainly reflects on three aspects. In the first place, the training work has not formed the joint forces and the coordination mech-

anism has not been smoothened; in the second place, there is on special funds to guarantee; in the third place, the separation of training and employment transfer.

2.2.2 Assistance demand of rural weak groups. So far, the social assistance provided by Chinese governments can not fully satisfy the basic needs of rural low income family. According to data of the sample investigation on 68 000 rural households from 31 provinces (autonomous region, municipalities) conducted by the National Statistical Bureau in 2010, the national poverty population was 26.88 million in 2010 and poverty happen rate was 2.8%. Although the poverty population is decreasing, the basic number is large, so the tasks are tough. However, the regional differences are large. In 2010, the poverty population in western China was 17.51 million, accounting for 65.1% of total poverty population in China. The poverty rate was 6.1%. Central China had 8.13 million poverty populations, accounting for 30.2% of total poverty population; the poverty rate was 2.5%. Eastern China has 1.24 million rural poverty populations, accounting for 4.7% of total poverty population with the poverty rate of 0.4%. Therefore, Chinese rural low income households have high demand on assistance service. Assistance service is the primary tasks for the supply of rural public goods.

2.2.3 Rural residents' demand on comfortable dwelling environment. Comfortable dwelling environment is the demand and aim of new village construction. China is trying to intensify the plan and reform of rural villages and increase the input on improving rural dwelling situation. Though the efforts, water, electricity, fuel, transportation and some other public service conditions have been improved greatly, but comparing with the huge population, it still need improving^[4].

According to the data issued by the National Statistical Bureau in 2010 that the drinking water in Chinese rural areas was not so optimistic, the safety of drinking water and the satisfactory service of drinking water needed to be further improved. 22.65 million rural households reported that they have difficulties in obtaining drinking water, which accounting for 10.3% of total population in Chinese rural areas; 107.54 million rural households used water pipe, accounting for 48.6% of total rural population; 51.01 million rural households used purified drinking water, accounting for 23.1%. The energy used by rural residents for cooking was mainly the straw and 133.18 million people used the straw, accounting for 60.2%. Small proportion of rural households uses coal or other clean energy. 57.62 million rural households used coal as major fuel, accounting for 26.1% of total rural households; 26.42 million rural households used coal gas or natural gas, accounting for 11.95% of the total rural households. 1.45 million rural households used marsh gas, accounting for 0.7% of total rural households. 1.82 million rural households used electricity, accounting for 0.8% of total rural households (Table 1).

2.2.4 Farmers' demand on "soft" public goods. The public goods provided by the government, for example, roads, water facilities *etc.*, can be included in the political performance, which can be presented to the leaders at higher level and socie-

ty. But the "soft" public goods including culture, sanitation, education, social security and the promotion of science and technology achievements can not show the obvious results as the former one with its large investment and slow effects. So under the inadequate governmental finance for providing rural public goods, the governments tend to invest capital to the "hard" public goods, which leads to the increasing demands

on rural "soft" public goods. It is demonstrated from the data issued by the National Statistical Bureau in 2006. In 2006, the educational and cultural equipments construction in China villages and towns still can not satisfy farmers' demand. The proportions of villages and towns with cultural and educational equipments are relatively low (Table 2).

Table 1 The construction of partial infrastructure in Chinese rural areas

Items	Item	The whole nation	Eastern China	Central China	Western China	Northeastern China
The rural drinking water situation in 2010	Proportion of rural households which have difficulties in getting drinking water	10.3	2.8	9.6	22.2	1.3
	Proportion of rural households which use water pipe	48.6	71.1	28.5	42.9	41.3
	Proportion of rural households which use purified water	23.1	44.2	8.8	13.3	15.0
Rural households divided by the major energy used for cooking	Straw	60.2	53.1	56.9	66.2	88.2
	Coal	26.1	18.5	38.4	27.1	7.4
	Coal gas, natural gas	11.9	27.2	3.8	3.2	4.0
	Marsh gas	0.7	0.2	0.7	1.3	0.1
	Electricity	0.8	1.0	0.2	1.3	0.3
	Others	0.3	0.0	0.0	0.9	0.0
Rural households divided by the household sanitary equipment	Flushing toilets	12.8	26.0	6.0	6.2	1.3
	Toilets without water flushing equipment	44.3	38.3	54.1	40.6	49.2
	Simple toilets or no toilet	42.9	35.7	39.9	53.2	49.5

Note: data in the table is summarized according to the websites of National Statistical bureau.

Table 2 The proportion of towns or villages which had cultural and educational equipments in 2006

Situation of township and village cultural equipment	The whole nation	East China	Central China	West China	Northeast China
Villages and towns with vocational schools	10.8	14.3	12.3	7.8	11.7
Towns or villages with parks	11.7	23.3	9.9	6.6	8.9
Towns or villages with broadcast and TV station	71.3	72.6	75.6	67.4	74.7
Villages with cable TV access	57.4	73.6	48.2	43.4	74.5
Villages with kindergarten and nurseries	30.2	35.1	31.1	22.0	37.3
Villages with fit equipments	10.7	19.0	6.7	4.8	7.6
Villages with libraries and cultural station	13.4	18.1	9.7	10.9	16.4
Villages with leisure cultural organization	15.1	19.4	12.8	12.0	15.4
Natural villages with cable TV access	44.3	70.6	34.3	35.5	57.3

Note: the data comes from the website of National Statistical Bureau.

3 Measures on perfecting the supply mechanism of rural public goods supply

3.1 Perfecting the decision-making mechanism of public goods supply

The prerequisite of the optimized supply of public goods is to transfer individual preferences to collective actions through political procedures. Therefore, only by expand the interests channels of farmers and let farmers to express their political preference, will the effective decision-making information be provided to decision-making department; will the decision be easy to execute; will the supply of public goods be more scientific and effective and can farmers' demands on public goods be satisfied. But at present, the decision-making mechanism on rural public goods supply mainly adopts the way of expert's domination and leader's domination. The two parties control the speak right of public goods rather than the real beneficiaries. The willingness and appeals of farmers are excluded, thus, the farmers' demands can not be effective expressed and the decision-makers can not master the real information and it is hard for them to make right decisions. There-

fore, in order to match the demand of public goods with the governmental department, the government should establish perfect expression mechanism on farmers' demands. In the first place, the government should establish the information collection channel from the bottom to the top and perfect villagers' self-governance to realize self decision making, self management and self service. The government should display the role of leading and supporting. In the second place, the government should accelerate the construction of transparent government and issued the use of public resources regularly to farmers to achieve the transparent public affairs and village affairs to accept the supervision of people.

3.2 Scientifically distributing the supply responsibilities of rural public goods

In order to realize the effective supply of rural public goods, the nation should adopt different measures according to different features of rural public goods and rationally define the responsibilities and compulsories of local governments to rationally arrange the work and coordinate arrangement and combine the central government, provinces, counties and farmers to form the supply layout of rural public goods

which integrate four parties into a whole^[5]. In the supply of rural public goods, the central government and the provincial government play leading role and take the responsibilities as coordinators and masters. They should rationally use the county and village finance and provide rural public goods according to levels and the demand level of rural public goods to alleviate the severe situation of insufficient supply of Chinese rural public goods to satisfy farmers' demand. The national rural public goods should be provided by the Central government. At present, the Central government should intensify the transfer payment to central and western China. Under the tough fiscal situation, the productive rural public goods, such as rural road construction, rural water facility construction, rural power grids enhancement, cable TV network and so on should be solved through transfer payment provided by the provincial government to county government. To be specific, the provincial government provides money and the county level government handles businesses. At the same time, the government should encourage farmers to provide themselves the public goods they need.

3.3 Accelerating the reform of the supporting equipment

In order to solve the problems in the supply of rural public goods, the government should closely match the way of solving the problems with the "three agriculture" problems and accelerate the reform of supporting equipments. In the first place, the government should reform rural land use right transfer system. The transfer of land use rights and land concentration are the inner demand of land marketization. They connect with the transformation of agricultural "industrialization". At present, some rural public goods may become private products as a result of land concentration, for example, rural small water conservancy facilities, rural road construction, *etc.* In the second place, the government should reform household registration system and allow farmers to migrate freely. The free movement of rural population can improve the agricultural marginal products; improve farmers' income and enhance farmers' capability in supplying public goods. Farmers' free movement is conducive to farmers choking the excessive control of grass-root governments through the "vote by feet" to reduce corruption among government officials; stimulate the competition among

grass-level governments to effectively provide rural public goods. In the third place, the government should reform the officials' appointment method. The relations between the central government and local governments should be restricted by law to ensure the democracy, legislation and transparency of budget.

3.4 Carving out the multiple capital collection channels of rural public goods supply

The government is the main body for providing rural public goods, but the responsibility of government is not limited. Besides the fiscal expenditure pressure, the government alone can not bear the burden of providing public goods. Therefore, we should accelerate the exploration the channels of capital; widely absorb the power of society and the third department and conduct mechanism innovation. In the first place, as for the rural public goods, for example, telecommunication, distinctive agricultural information service *etc.*, the government can use government guarantee, fiscal interests subsidies, fiscal subsidies, tax reduction and elimination *et al.*, to absorb private investment, or adopt the way of governmental supply and private supply. In the second place, the advantages of the non-governmental organizations should be fully displayed to rationally use and allocate resources to make up the "vacancy" of the government in providing rural public goods to provide more effective and convenient public services.

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