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# Research on Effective Supply Mode of Rural Public Goods

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**Abstract** On the basis of definition and classification of rural public goods, this paper analyses the status quo of public goods supply in vast rural areas of China, and it indicates that the electricity and communication facility in rural areas have not yet been popularized; the culture and education facility is critically backward; the medical care and social welfare institutions are short. It points out the rational supply model of public goods as follows: the government plays dominant role in the public goods supply with a large amount of investments, related to the quality of living and production of multitudinous farmers; small wieldy quasi-public goods that can be easily supplied and marginalized public goods can introduce multiplex supply main body under the framework of government guidance. According to this model, corresponding policy suggestions are put forward as follows: increase financial inputs, and perfect local financial system; actively encourage the majority of farmers in rural areas to participate in public goods supply mechanism, so that the supply has pertinence; vigorously develop multiplex supply system of rural public goods, to ensure effective supply.

**Key words** Public goods, Multi-center, Supply model, China

Owing to the properties of public goods, the public goods supply will be likely to encounter the problems of malfunction under the condition of market economy, thus the public goods can be only supplied by the government. However, driven by the unreasonable view of performance, the local government often tends to take into account the maximization of personal interests when providing public goods, leading to the characteristics of "when we need urgently, it lacks; when we have, it overflows" regarding the supply of public goods in the underdeveloped rural areas. As Samuelson puts it, "the limited total resources that can produce all kinds of goods, force the society to choose amid all kinds of relatively scarce goods"<sup>[1]</sup>. Most of the investments of government in the rural infrastructure should be the inputs in the public goods related to people's livelihood. However, in previous studies, it is always taken for granted that the supply main body of public goods-government is stereotyped as the group pursuing maximization of public interests. As a matter of fact, providing public goods is the maximization of pursuing utility. In the year 1981, Robert Bates in his book *Tropical Africa Market and the State* noted after analysis that the decision-making of government officials is based on individual rationality, not only realizing maximization of their wealth, but also sustaining their rule. Although these policies harm the overall interests of the country, they help the government officials to achieve maximization of personal interests<sup>[2]</sup>. Therefore, this is just the realistic delineation of "inefficiency", "vanity project" of public goods supply in the vast rural areas. In order to change the status quo of inefficiency of current public goods supply, we need to refer to Vincent Ostrom's multi-center management theory, introduce multiplex themes on the basis of public goods supply in the rural areas, breach the single-

model of government monopolized supply, and then actively encourage the direct beneficiaries of public goods, namely the residents in the rural areas, to widely participate in the public products supply. From the definition and classification of public goods in the rural areas, we analyse the status quo of public goods supply in the vast rural areas of China, probe into the effective supply model of public goods in the rural areas, point out the rational supply model of public goods, and put forward the corresponding policy suggestions.

## 1 The definition and classification of rural public goods

There are many definitions and classifications regarding public goods, and well-known economist Paul Samuelson defines the public goods as that "each one's consumption of this good will not reduce other people's consumption of this good", namely "each one's consumption of this good doesn't need to deduct other people's consumption of this good"<sup>[3]</sup>. According to this definition, the economists generalize 3 characteristics of public goods as follows: indivisibility of utility, non-competitiveness of consumption, non-exclusiveness of benefits. The public goods with the following characteristics are called as pure public goods, such as national defense. Buchanan pointed out that the commodities or services provided by the collective organizations for any group or mass organization due to any factor, are defined as public goods<sup>[4]</sup>. Huang Zhichong thinks that the public goods in the rural areas are the social products, different from farmers' private-owned products, that are used to meet the social public needs in the rural areas, with non-competitive and non-exclusive characteristics<sup>[5]</sup>. As pure public goods are with these characteristics, so in the consumption, there are phenomena of "overuse", "low efficiency", "inequality" and so on. What corresponds to this are pure private goods, while the goods in between the two are called as quasi-public goods. The

characteristics of public goods determine the supply model should be supplied by the government for free, but under the market economy system, in order to meet people's needs for public goods and promote the use efficiency, supply of part of public goods with payment is adopted, so that the original pure public goods are with exclusive or competitive characteristics. These are so-called quasi-public goods, such as roads, water channel and so on. In view of the above characteristics, we can divide the rural areas public goods into three types: pure public goods, such as elementary education in rural areas; quasi-public goods in rural areas, such as water channel, road, pond and so on; marginal public goods in rural areas. The supply can be privatized, or the government supplies public goods, such as pond, woods, agricultural machinery, irrigation channels. On the basis of the above study, we define the public goods in rural areas as the general term of specific products and services, dominated by the government and provided for agriculture, countryside, and farmers in rural agricultural production, farmers' daily life, rural social development and modernization construction, with the non-competitive and non-exclusive characteristics in terms of consumption. The public goods in rural areas include rural water conservancy facilities, rural elementary education, roads, communication facilities, electricity, health and environmental protection.

## 2 The status quo of public goods supply in vast rural areas of China

China's 2010 government work report noted that we need to strengthen agricultural infrastructure construction, give priority of financial expenditure for the development of agriculture and rural areas, give priority of investment in fixed assets to agricultural infrastructure and rural livelihood projects, and use

land transfer revenue preferentially for agricultural land development and rural infrastructure construction. These positive policies of benefiting agriculture and farmers are mainly targeted for public goods. But at present, the service-oriented concept of governance in the local government of China has not yet burgeoned, and the wrong "view of achievements" focusing on pursuit of maximum personal interests out of the consideration of "rational man" has not been fundamentally reversed, which causes the most of government financial expenditures not to be used on public product inputs closely related to farmers' living, but on inputs of bulk public goods which have prominent short-term effects to highlight "marvellous achievements" such as squares, gardens, roads and so on, while there is a critical shortage of public goods that needed urgently by the farmers, in that these public goods are closely related to their daily life. Secondly, it lacks communication between government, as the main body of public goods supply in the rural areas, and farmers, as the main body of direct beneficiaries of public goods supply in the rural areas, therefore, information asymmetry, combined with the external characteristic of public goods, leads to dire need for public goods supply in the vast rural areas, for example, the financial support for rural compulsory education is short; social security system is flawed in the rural areas; rural infrastructure is in disrepair, needing reconstruction; promotion degree of agricultural science and technology research is not high<sup>[6]</sup>.

**2.1 The electricity and communication facility in rural areas have not yet been popularized** In late 2006, 81.9% of towns completed power grid transformation in the rural areas, and 98.7% of villages had electricity; 98.3% of villages and 93.7% of natural villages had telephone; 81.1% of towns had postal office (Table 1).

**Table 1 The proportion of towns or villages with electricity and communication facility at the end of 2006**

Towns or villages	China	The eastern region	The central region	The western region	The northeastern region
The towns that have completed rural grid transformation	81.9	96.8	87.7	67.2	97.6
The towns with post office	81.1	86.2	89.2	71.6	90.7
The villages with electricity	98.7	99.8	99.8	96.0	99.9
The villages with telephone	97.6	99.6	98.6	93.8	99.6
The natural villages with electricity	98.3	99.6	99.4	96.1	99.9
The natural villages with telephone	93.7	97.0	95.2	89.6	98.9

Note: the data are from China Statistical Bureau.

**2.2 The culture and education facility is critically backward** At the end of 2006, 10.8% of towns had vocational and technical schools; 11.7% of towns had parks; 71.3% of the towns had radio and television stations; 87.6% of the villages had primary schools within 3 km, and 69.4% of the villages had middle schools within 5 km; 97.6% of the villages can receive TV programs, and 57.4% of villages had cable TV; 30.2% of the villages had kindergarten and nursery; 10.7% of the villages had sports and fitness venues; 13.4% of the villages had library and cultural center; 15.1% of the villages had amateur farmer cultural organizations.

**2.3 The medical care and social warfare institutions are short** At the end of 2006, 98.8% of towns had hospitals and

health centers, and 66.6% of towns had home for the aged; 50.2% of the villages were 3 km away from hospitals and health centers; 74.3% of villages had clinics; 76.1% of the villages had doctors with certificate of practicing medicine; 16.3% of the villages had midwife with certificate of practicing medicine.

From Table 1 – 3, we can see that the public goods supply, closely related to farmers' daily life, needed urgently by the farmers in China's vast rural areas, is still short, and especially in rural areas of central and eastern China, electricity, telecommunications, health care, basic health education and other aspects still lag behind, therefore, we have to change the formerly government-led single supply mode, to classify the public goods. At the same time, we should introduce enterprises, in-

dividuals and other partners with ability to participate in public goods supply, to spread the pressure of government supplying public goods. For some pure public goods, they should be specially supplied by the government; for the quasi-public goods or marginal public goods, we can introduce multitudinous partners. The service-oriented government we advocate

is just a kind of oriented government. Only by invigorating large enterprises while relaxing control over small ones, strengthening supervision and participation by many sides, can the status quo of dire need for public goods in vast rural areas be reversed, and benefit brought by the public goods be substantially ameliorated.

**Table 2 The proportion of towns or villages with culture and education facility**

%

Towns or villages		China	The eastern region	The central region	The western region	The northeastern region
The towns with vocational schools		10.8	14.3	12.3	7.8	11.7
The towns with parks		11.7	23.3	9.9	6.6	8.9
The towns with broadcast and television station		71.3	72.6	75.6	67.4	74.7
Classification according to the distance away from primary schools	Primary schools within villages	32.4	25.9	37.8	34.1	38.2
	1 – 3 km	55.2	64.4	51.8	48.5	47.2
	4 – 5 km	6.3	5.7	5.8	7.6	7.2
	6 – 10 km	3.9	3.0	3.4	5.3	5.1
	11 – 20 km	1.5	0.9	1.1	2.6	1.8
Classification according to the distance away from middle schools	20 km above	0.7	0.1	0.1	1.9	0.5
	Middle schools within villages	5.8	5.3	6.2	5.9	6.9
	1 – 3 km	43.6	52.2	47.1	31.1	32.2
	4 – 5 km	20.0	21.1	21.1	17.1	23.0
	6 – 10 km	18.2	15.3	17.7	21.1	27.1
	11 – 20 km	8.3	4.8	6.4	14.5	8.7
	20 km above	4.1	1.3	1.5	10.3	2.1
The villages that can receive TV program		97.6	99.2	98.0	94.9	99.7
The villages with cable television		57.4	73.6	48.2	43.4	74.5
The villages with kindergarten and nursery		30.2	35.1	31.1	22.0	37.3
The villages with sport center and gymnasium		10.7	19.0	6.7	4.8	7.6
The villages with library and cultural center		13.4	18.1	9.7	10.9	16.4
The villages with amateur farmer cultural organization		15.1	19.4	12.8	12.0	15.4
The natural villages that can receive TV program		95.3	97.2	96.0	92.9	99.3
The villages with cable television		44.3	70.6	34.3	35.5	57.3

Note: The data are from China Statistical Bureau.

**Table 3 The proportion of towns or villages with medical care and social welfare**

%

Towns or villages		China	The eastern region	The central region	The western region	The northeastern region
The towns with hospital and community hospital		98.8	99.2	99.2	98.8	96.4
The towns with home for the aged		66.6	81.8	76.2	49.5	81.1
Classification according to the distance away from hospital and community hospital	Hospital and community hospital within village	7.2	7.0	6.7	7.8	7.4
	1 – 3 km	43.0	51.8	43.1	34.1	29.8
	4 – 5 km	21.0	21.3	22.9	18.5	22.4
	6 – 10 km	19.3	15.5	19.9	22.0	29.0
	11 – 20 km	7.5	3.9	6.2	12.8	9.7
	20 km above	2.0	0.5	1.2	4.8	1.7
The villages with clinic		74.3	74.1	79.6	68.1	81.7
The villages with doctors having certificate of practicing medicine		76.1	75.9	80.8	68.9	91.5
The villages with midwife having certificate of practicing medicine		16.3	9.3	19.3	20.9	23.9

Note: The data are from China Statistical Bureau.

### 3 The rational supply model of public goods and corresponding policy suggestions

**3.1 The rational supply model of public goods** At present, the factors responsible for dire shortage of public goods supply, which is closely related to farmer's living and production in China's vast rural areas, are as follows: the structure of public goods supply is in imbalance; the financial inputs are short;

there is a large gap of supply between urban and rural areas; the supply efficiency is not high; the local government finance is flaccid in face of myriad people's dire need for public goods<sup>[7]</sup>. So it is necessary to change the original government-led single supply mode, into diversified supply mode.

**3.1.1** The government plays dominant role in the public goods supply with a large amount of investments, related to the quality of living and production of multitudinous farmers.

Since the government imposes taxation on citizens, and

" what is taken from the people is used in the interests of the people" , so the government must assume the responsibility of providing public goods to citizens. Smith in his masterpiece *The Wealth of Nations* mentioned 3 functions of the government as follows: protect the community from violation of other independent communities; protect everyone in the community as much as possible from abuse or oppression by any person in the community; establish and maintain certain undertaking and public facilities<sup>[8]</sup>. This shows that in any case the government should be the provider of public goods, such as social security in rural areas, elementary education in rural areas, information system construction in rural areas and so on. Due to the non-exclusive and non-competitive characteristics of these pure public goods, these public goods cannot adopt marketization supply, only to be supplied by the government.

**3.1.2** Small wieldy quasi-public goods that can be easily supplied and marginalized public goods can introduce multiplex supply main body under the framework of government guidance.

Due to the lack of government financial resources, the local government finance appears to be inefficient and low-quality in face of supply of miscellaneous public goods in the rural areas. In addition, the government is also the group of " rational man" , which is in pursuit of maximization of personal interests when providing public goods, so many problems infest, such as rent-seeking behavior, gray income, corruption and so on. Therefore, we can allow the enterprises or individuals with necessary conditions to participate in the supply of public goods, and invest them with property rights with certain term, so that these public goods have exclusive features. This can not only improve the efficiency of supply, and prevent the generation of corrupt transactions, but also reverse the status quo of dire need for some public goods timely. These public goods are irrigation facilities in the rural areas, communication facilities, road construction and so on.

**3.2 Policy suggestions** The effective supply model of public goods in rural areas can adopt the government-led multi-perspective supply mode to address the serious shortage of public goods, meet the urgent need for public goods in the rural areas, and improve supply efficiency. The original government-led single model should shift into government-market model. However, in order for realization, under this model, it needs the joint efforts of the government with strong governance concept and spirit of public services, and the villagers with awareness of democratic participation.

**3.2.1** Increase financial inputs and perfect local financial system. At present, China's financial funds for supporting agriculture can not meet the needs of majority of the rural areas for public goods supply. The financial system in backward areas is chaotic, leading to blindness of supply system of public goods. The urgently needed goods supply is critically short but the goods supply we have not yet needed overflows, therefore we should increase capital inputs in the rural areas, offer preferential policies for the rural areas, and strengthen the regulatory system, so as to ensure the supply of public goods needed urgently by the rural areas, maintain high efficiency and reduce

blindness.

**3.2.2** Actively encourage the majority of farmers in rural areas to participate in public goods supply mechanism so that the supply has pertinence " Collective choice" refers to the process that all participants are to determine the scheme of collective action by mutual negotiation based on certain rules<sup>[9]</sup>. Buchanan in his *Public Choice Theory* talked about rationality and practicality of vote principle in public policy making. Therefore, in the process of public goods supply in the rural areas, we must deliberate the opinions of villagers, to provide urgently needed and practical public goods, and reduce blindness and waste, so that the scarce resources will be allocated rationally.

**3.2.3** Vigorously develop multiplex supply system of rural public goods, to ensure effective supply. We should introduce market competition mechanism, break government-led monopolized single supply model of public goods, which can not only promote supply efficiency, spread government pressure and reduce the local governments' burden of insufficient financial resources, but also effectively reverse the status quo of dire need of the majority of rural areas for public goods. According to the principle of " giving more , taking less and loosening control" , we should establish diversified supply system<sup>[10]</sup>. We should give full play to the role of government, market, and non-governmental organizations, so as to form a virtuous supply system, what we need urgently at present. In addition to the establishment of government-led diversified public goods supply system in the rural areas, we must actively cultivate civil servant's service idea in government departments, transform government function, and accelerate the pace of building service-oriented government, so as to lay solid foundation for effective supply of public goods in rural areas and prosperity of rural areas.

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