

Rural public goods supply system reform -- Analysis from the perspective of "anti-common tragedy" theory and multi-task moral hazard model

LIANG Junqi ^{1,a}

^a18811311646@163.com

*LIANG Junqi

Keywords: public goods supply, anti-common tragedy, multi-task moral hazard, principal-agent

Abstract: There is always a problem of insufficient quantity and uneven quality in the supply of rural public goods in China. Most of the existing literatures are explained from the perspective of administrative management and public organization. This paper introduces institutional, property rights and contractual factors, and explains them from the perspective of "anti-common tragedy" theory and multi-task moral hazard model, and proposes corresponding policy recommendations.

1. Problems in the supply of rural public goods

For a long time, the supply of rural public goods in China has significant problems such as insufficient public goods, quality deviation, abnormal development, and mismatch with rural residents' needs.

Insufficient education expenditure in rural areas leads to a huge gap between the quality of education and the central urban areas. Left-behind children have difficulty in attending school and lack of care; the medical and health service conditions in rural areas are backward, and the coverage of remote rural medical insurance is insufficient. Rural residents face problems of seeing sickness if they are sick; Liberal and cultural facilities such as libraries, cultural squares and parks are scarce, and the spiritual and cultural needs of rural residents have not been fully addressed for a long time. Once the infrastructure such as roads and water irrigation is damaged, it will not be repaired in time, affecting the normal life of rural residents; the government provides farmers with Fertilizers, agricultural implements, and rice seeds are shoddy and the quality is uneven.

At the same time, however, some rural farmers have no excess supply of rural public goods. This is dominated by public services that tend to highlight political achievements, such as high-end resorts and high-end residential areas. These often exceed the actual willingness and ability of rural residents to pay, and do not match the needs of rural residents, but it is easy to accumulate political achievements for township government officials.

Table 1 Comparison of urban public service level and rural public service level in Qingdao in 2010

Minimum social security expenditure for urban residents	2.4 billion yuan
Minimum social security expenditure for rural residents	1.18 billion yuan
Minimum social security expenditure per capita urban resident	11309 yuan
Minimum social security expenditure per capita for rural residents	2300 yuan
Urban residents receive temporary relief	17800
Rural residents receive temporary relief	2306

Source: Qingdao Daily

2. the cause of the problem of rural public goods supply

2.1 The grassroots township government departments are pushing each other and the responsibilities are not clear, resulting in "the tragedy of the anti-common land"

The "anti-common tragedy" theory was proposed by Professor Heller of the United States in 1998. This theory emphasizes the possibility that resources are underutilized. There are many rights owners in the commons. In order to achieve a certain purpose, each party has the right to prevent others from using the resource or to set up barriers to use each other, and no one has effective use rights, resulting in the idleness and underutilization of resources, resulting in waste. The tragedy of the commons."

Since a government function cannot be completed by a single department, the provision of a public service often requires cooperation between multiple departments. Therefore, there is a crossover of power and responsibility between the various departments of the grassroots township government.

On the one hand, for the sake of maximizing profit, each department hopes that other departments will provide public services and gain leisure or achievements. As a result of individual rational decision-making, all departments involved in this public service are not motivated to provide public services, resulting in waste of resources and insufficient supply of public services.

On the other hand, the department involved in this public service owns the property rights of this public service and has the power to veto the provision of this public service, but does not have the full right to use this public service. In this way, the departments are arguing and shirking each other. If any department does not cooperate, public services will be difficult to provide.

The essence of "the tragedy of the anti-common land" lies in the issue of property rights. The various departments that provide public services are the mainstays of interest. For the "public land" of public service, each has no complete right to use, each has a veto power, and each has no equality. The right to income, each has no complete disposal rights. Property rights are fragmented. Private individuals may not be able to enter the rural public goods market to provide services due to excessive investment costs, slow results or due to barriers imposed by the government.

2.2 The township government, as a multi-tasking agent, has to choose between different tasks.

The behavior of township governments can be analyzed using the "trust-agent" model. The appointment of Chinese township government officials must pass the assessment of the higher level government, and its political assessment and promotion are also determined by the superior leadership. Therefore, as an agent, the township government should try to complete the tasks of the higher level government in order to complete the assessment and obtain promotion.

At the same time, the township government does not just have to complete a single task, but on the contrary, the township government is a multi-tasking agent. It has to complete many tasks such as economic assessment, social stability assessment, and environmental assessment. Providing public services for rural residents is only one of the multi-tasking of township governments. Moreover, the task of providing public services is often not easy to observe the level of effort, that is, it is not easy to be effective. According to the research results of Holmsotrm and Milgrom (1991), when an agent engages in two tasks that are equally important but easy to assess, and there is an alternative relationship between the efforts of different tasks, the agent will tend to spend more effort on Easy to assess tasks. The articles by Nie Huihua (2006) and Yu Jian and Song Xiaoning (2009) also prove this inference that the township government will spend more energy on explicit tasks and implicit tasks to do explicit tasks.

3. The theoretical model

We use the cost minimization model in advanced microeconomics to characterize this problem. The parameters of explicit tasks (the task of easy assessment such as GDP) and implicit tasks (the tasks of providing public services and other difficult assessments) are transformed into economic output. Assume that the higher level government acts as the principal and the township government acts as

the agent. The level of effort provided by the agent for explicit and implicit tasks is $a = (a_1, a_2)$, $a_1 + a_2$, and $a_1 + a_2$ is a constant. The wage level provided by the client for explicit tasks and implicit tasks is $w = (w_1, w_2)$, which is the promotion incentive. In order to solve the problem conveniently, we assume that the cost of effort is $c = (c_1, c_2) = (0, 0)$, the ability of explicit task to transform into economic output is $q_1 = Aa_1$, and the implicit task is transformed into economic output. The ability is $q_2 = Ba_2$, $A > B$, $w = q$. The problem can be translated into

$$\begin{aligned} \text{Min } & w * a \\ a \geq & 0 \\ \text{s. t. } & f(a) \geq q \end{aligned}$$

According to the Lagrange equation and the Kuentak condition, when the principal cost is minimized, there is an equal marginal cost on both efforts, that is, $w_1 * A = w_2 * B$, so $w_1 / w_2 = B / A$.

Therefore, in order to minimize the cost of the principal (maximizing production, that is, maximizing economic output), the principal should be more motivated by the agent's implicit task and less explicit for the explicit task.

4. Suggestions on solving the problems of the supply of rural public goods

4.1 Integrating property rights and clarifying the scope of responsibility and power of all departments of township governments

Clearly address the responsibilities and powers between the various departments providing public services and coordinate actions between various stakeholders. Clarify property rights and responsibilities, confirm the attribution of responsible entities and income rights, and solve the problem of unclear property rights and responsibilities among various departments and unclear ownership rights. Prevent the various departments of the township government from arguing and shirking each other.

4.2 Increasing the number of agents and introducing private property rights to make up for the lack of public service provision

In the article by Jian Jian and Song Xiaoning (2009), the problem of agent multitasking is solved by adding an agent. Therefore, in addition to clarifying the responsibilities of various government departments to increase the number of agents, private property rights can be introduced from outside to compete with government departments in the sectoral field to compensate for the insufficient quantity and quality of public services provided by government departments.

The introduction of private property rights can effectively play the role of market mechanisms and encourage the government to improve work efficiency. The government can adopt a method of entering into contracts with enterprises for standards, quantity of services and quality of service. It can also stimulate the enthusiasm of private enterprises or non-profit organizations to produce public goods through subsidies and taxation policies.

Into the production and supply efficiency of public goods.

4.3 Reducing the incentives for the explicit tasks of township governments and increasing incentives for the implicit tasks of township governments

According to the conclusion of the theoretical model, we can adjust the incentives for the explicit tasks and implicit tasks of the township governments, and reduce the incentives for explicit tasks such as GDP assessment to encourage the township government to attach importance to providing public services to rural residents.

4.4 Changing the work style and attaching importance to the establishment of a public service appeal expression mechanism for rural residents

In the rural public goods market, local governments are the main providers of public goods, and farmers are consumers of public goods. Under the conditions of market economy, the production of producers should always be guided by market demand. Therefore, in the process of production and supply of rural public goods, the government must adhere to the principle of “taking the needs of rural residents as a guideline” to gain an in-depth understanding of the actual needs of farmers for public goods. When the government makes public product supply decisions, it should pay attention to listening to the demands of rural residents.

4.5 Improve the peasants' level of democratic participation and the main role of villagers' autonomy

At present, the work of the rural village committee is largely controlled by the township government. The village committee, as an agent of the township government, also faces multi-task options. Therefore, this will inevitably lead to the village committee will also make more efforts on the explicit tasks to complete the assessment of the higher-level township government. Therefore, by improving the degree of peasant organization, the peasants can play the main role in the election of village committees to ensure that villagers can effectively exercise the right to democratic elections, democratic management, and democratic supervision.

References

- [1] Zhai Jian, Song Xiaoning. Local Government Governance in China——A Multi-task Moral Risk Model[J]. Nankai Economic Research, 2004(3).108-115.
- [2] Nie Huihua. The effect of canceling agricultural tax on the behavior of township government: a multi-task principal-agent model [J]. World Economy, 2006(8).71-78
- [3] Chu Yongsheng, Zhang Yunping. Defects and Solutions of Rural Public Goods Supply System——Based on the Perspective of Rural Governance[J]. Theoretical Journal, 2006(12).72-74
- [4] Guo Zebao. Establishing and improving the expression mechanism of rural public goods demand selection[J]. China Administration, 2004(12).17-20
- [5] Teng Shihua. Supply of Public Goods in the Vision of Public Governance[J]. China Administration, 2004(7).90-94
- [6] Yan Rong. Anti-common tragedy and innovation of public service supply system[J]. Economic System Reform, 2007(5).29-33
- [7] Zhang Xuchen. Analysis of farmland property rights and the phenomenon of “tragedy of the commons” and “tragedy of the commons” in rural China [J]. Journal of Lanzhou University(Social Science Edition), 2012(6).109-114
- [8] Holmstrom, Bengt. and Paul, Milgrom. Multitask Principal-agent Analysis : Incentive Contracts, Asset Ownership, and Job Design[J]. Journal of Law, Economics, and Organization, 1991, (7) : 24—51.