

PAPER • OPEN ACCESS

Policy Suggestions on Government-led Rural Habitat Environmental Governance

To cite this article: Zhi Wang 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **295** 012059

View the [article online](#) for updates and enhancements.

Policy Suggestions on Government-led Rural Habitat Environmental Governance

Zhi Wang*

Institute of Agricultural Information and Economics, Beijing Academy of Agricultural and Forestry Sciences, CHINA

*Corresponding author's e-mail: angelwang1009@163.com

Abstract. The rural settlement of human settlements is the first hardship to implement the rural revitalization strategy. Improving rural living environment as an important aspect to solve the imbalance between urban and rural development and inadequate rural development is the starting point for urban-rural integration and the basic guarantee for rural areas to enter a well-off society. Rural sewage treatment and domestic garbage are the key and difficult points in the renovation of human settlements. Based on the field researches of the major cities in China, this paper discusses the role of government-led in light of the current situation, combined with the theory of public management and the actual situation of China's township work, in order to explore a government's management path for the effective management of rural human settlements.

1. Introduction

Improving the rural living environment is an important aspect to solve the imbalance between urban and rural development and the lack of rural development. It is an important starting point for the Chinese government to implement urban-rural integration and a basic guarantee for the progress of rural communities. On February 4, 2018, the Chinese government issued the "Central No. 1 Document", that is, "Opinions of the Central Committee of the Communist Party of China and the State Council on Implementing the Rural Revitalization Strategy", clearly proposing that by 2050, the rural areas will be fully revitalized, with strong agriculture, rural beauty, and peasant wealth[1]. In February 2018, the Chinese government issued the "Three-Year Action Plan for the Rehabilitation of Rural Human Settlements", demanding the promotion of rural domestic garbage, sewage treatment and village appearance as the main direction, mobilizing all forces and integrating various resources[2]. We will strengthen various measures, speed up the short-board of the rural living environment, and lay a solid foundation for the goal of "building a well-off society in an all-round way" as scheduled[3-5].

Rural sewage treatment and domestic garbage are the key and difficult points in the renovation of human settlements. Based on the current situation, combined with the public management theory and the actual situation of China's township work, this paper explores the leading role of the government, in order to explore a government management path for the effective management of rural human settlements.

2. The government is the manager of the interests of rural environmental governance

Rural sewage treatment and domestic waste treatment are important components of rural public utility management in China. Public management emphasizes the need to strengthen government governance, improve government performance and the quality of public services, and thus achieve public interest.



The management of rural sewage and domestic garbage has the characteristics of natural monopoly[4-6]. Rural residents share sewage treatment services and enjoy a clean rural environment. Rural sewage and domestic garbage management are quasi-public goods, which is an important management category in public utility management.

The government determines the system and operation of the entire public utility management, and is the manager of the interests of rural sewage treatment and domestic garbage disposal. Rural environmental governance should be led by the government.

3. Current Status of Rural Sewage and Rural Domestic Waste Management in China

3.1. Current status of rural sewage treatment

The task of sewage treatment in rural China is profound and arduous. At the end of 2016, the proportion of villages that were concentrated or partially concentrated in domestic sewage was about 17.4%, much lower than the urban sewage treatment rate of 93.44%[7, 8]. The characteristics of rural sewage treatment in China are distinct: First, the large amount, hundreds of millions of people distributed in more than 2 million natural villages[9,10], is a huge systematic project. Second, the regional differences are large. The climate, geomorphology, culture and economic conditions vary widely. Third, the gap in current capital investment is large. In addition, the formulation of rural sewage discharge standards is still in its infancy. On September 29, 2018, the Ministry of Ecology and Environment and the Ministry of Housing and Urban-Rural Development jointly issued the Notice on Accelerating the Formulation of Emission Standards for Local Rural Domestic Sewage Disposal, which indicates that the country has the willingness to set standards, which is a breakthrough in the current rural sewage. The bottleneck problem encountered in governance has a historic significance.

3.2. Current status of rural domestic waste treatment

At present, in most parts of China, there is no management method for rural domestic waste. The management objectives of rural domestic waste need to be clearer. The goal of domestic waste management should be resource, harmless, reduced, and low-cost. Recycling allows more valuable products to enter the market with reduced processing costs; harmless refers to not simply landfilling, but non-polluting emissions to the environment in the context of scarce land; It is necessary to classify waste from the source and reduce the discharge of rural domestic waste. The goal of low cost should reflect the comprehensive goal of management efficiency.

The composition of rural domestic waste is special. The composition of rural domestic garbage is mainly lime soil and kitchen waste, which is quite different from urban domestic waste components. Recognizing the source and composition of rural domestic garbage in China and classifying it from the source has profound practical significance for cost saving, resource waste reduction and resource recovery. There are huge differences in the composition of domestic garbage in different regions. The management of rural domestic waste in China should be divided into regions to plan and manage.

Table 1: Comparison of the composition of domestic garbage in rural and urban areas.

area	category	Kitchen waste	Paper	Rubber and plastic	Textile	Wood bamboo	Lime soil	Brick and tile ceramics	Glass	Metal	other
Beijing City	Urban area	53.96	17.64	18.67	1.55	3.08	2.15	0.57	2.07	0.26	0.05
	Rural	26.28	3.94	5.48	1.16	3.05	57.47	1.5	0.9	0.16	0.06
Shenyang City	Urban area	59.77	7.85	12.85	3.61	2.52	2.23	3.11	5.40	2.01	0.64
	Rural	4.43	0.08	0.14	0.13	0.19	94	0.03	0.97	0.03	0
Shanghai City	Urban area	72.49	6.01	13.79	2.14	1.88	0	0.28	3.09	0.24	0.09

	Rural	50.00	2.00	5.00	5.00	10.00	3.00	15.00	15.00	0	0
Hangzhou City	Urban area	61.52	7.18	14.52	2.01	1.31	9.13	1.49	1.94	0.81	0.12
	Rural	43.71	8.13	14.48	3.73	4.10	11.98	5.46	4.69	0.62	3.07
Hefei City	Urban area	48.33	13.08	20.19	3.38	3.37	4.94	3.25	2.66	0.82	0
	Rural	28.26	17.85	23.65	2.59	5.74	13.72	5.93	2.13	0.14	0
Qingdao City	Urban area	69.00	9.50	8.40	3.00	0.30	6.30	0.30	2.20	0.90	0.10
	Rural	32.80	3.20	5.40	1.30	0.90	39.20	14.50	2.30	0.20	0.20
Hainan Baisha Li Autonomous Prefecture	Urban area	47.44	5.94	12.46	1.92	0	0	6.53	2.84	2.56	20.31
	Rural	54.12	10.76	10.10	0.18	2.98	0	2.08	5.00	0.53	14.53
Luzhou City	Urban area	59.60	10.30	16.80	1.80	2.87	5.50	0	1.60	1.53	0.00
	Rural	57.55	8.35	8.30	0.47	6.95	7.31	0.50	2.55	0.67	7.38
Lhasa City	Urban area	20.45	23.74	14.84	4.50	2.76	22.83	0.00	4.73	5.12	1.03
	Rural	12.77	10.73	20.77	5.91	10.26	33.12	2.04	1.83	1.54	1.02

4. Problems in the management of rural sewage and rural domestic waste in China

4.1. Lack of a complete rural human settlements environmental regulation system at the national level

The top-level design and regulation system at the national level is not sound. The discharge standards for rural sewage treatment should mainly target ozone-depleting substances, with emphasis on sanitation and black odor. At present, the government has not issued scientific and effective emission standards for the management of rural sewage treatment emissions. In terms of rural domestic waste management, the Chinese government issued the “Measures for the Acceptance of Rural Domestic Wastes” in 2015. However, in terms of local management, the level is different. Some places have local standards, and some have no action.

4.2. The management system of rural sewage and rural domestic garbage is relatively simple

From the perspective of management of rural sewage treatment, due to various historical and institutional mechanisms, the responsibility and management of rural sewage treatment are still unclear. Different management, different subjects. The responsibility and management of the water sector, the agricultural sector, and the environmental protection department at the local level are not clear. The billing method is not standardized, the charging standards are not uniform, and the rural environmental governance system and mechanism are still unclear. The rural domestic waste management system is single, there is no unified standard, the government's financial support is weak, and the management effect is poor. Compared with urban domestic waste management, the urban domestic waste management system is huge, and the management effect of urban domestic garbage and the management of rural domestic garbage are huge.

4.3. Lack of funding for rural sewage and domestic waste management

According to the demand for funds for rural domestic sewage treatment, it is preliminarily estimated that if each natural village invests 1 million yuan in construction costs and 100 million yuan in annual operating expenses, the national total construction cost is 2 trillion yuan, and the annual operating cost is 200 billion yuan. The amount of money is huge. Therefore, in order to establish a rural environmental governance system and mechanism, it is necessary to cultivate and develop various forms of market entities on agricultural non-point source pollution control and rural sewage waste disposal. Introduce a diversified financial mechanism.

5. The role of the government in the treatment of rural sewage and rural domestic waste

5.1. Improve the relevant policies and regulations system for rural human settlements governance as soon as possible

In terms of sewage treatment, it is urgent to issue regulations for rural sewage management and rural sewage discharge management standards, and to require regional planning for rural sewage treatment in different regions. When managing large villages, they can be divided into several areas and then processed centrally; small-scale villages can be treated directly and in a unified manner. In mountainous or hilly areas, it is difficult to construct a collection pipe network. A technical guide such as processing in situ can be used depending on the situation. It is recommended that the management measures and rules for rural domestic garbage be issued as soon as possible so that provincial governments and local governments can rely on laws to implement work faster and better.

5.2. Forming a governance system for multi-level and simultaneous governance of rural human settlements

Encourage and pilot some provinces and cities from the central level, and establish a multi-center governance structure for rural human settlements governance in the demonstration provinces. A system of joint governance can be established to encourage the demonstration provincial, municipal, and township governments to jointly assume the responsibility of rural domestic sewage and rural domestic waste. All three assume the formulation of a three-year plan and have different functional divisions in management. Take rural domestic garbage as an example: each township and town analyzes the material flow of its own garbage according to its three-year plan, in order to formulate targets and specific measures such as resource recycling and garbage disposal facility agreements. The municipal government is responsible for the formulation of goals, the development of guiding plans, data statistics, coordination and cooperation with towns and villages, and technical support. Provincial governments are responsible for higher levels of supervision and inspection. The central government is responsible for the macro-control work of the layout and overall planning of the pilot work.

5.3. Play a financial guiding role and establish a central-level Habitat Environmental Governance Fund

It is proposed to establish a medium- and long-term funded Habitat Environmental Governance Fund. The Habitat Environmental Governance Fund is similar to the special subsidy fund, and the subsidy ratio depends on the local financial capacity. The fund increased capital investment in underdeveloped areas, provided financial support to areas with relatively backward economic conditions, and regularly checked the use of audit funds. Under the guidance and supervision of the government, in the process of designing, distributing and operating the Habitat Environmental Governance Fund, it is necessary to clarify the status and role of government agencies and balance the relationship among various stakeholders.

5.4. The grassroots government should give full play to the governance of rural human settlements

Rural environmental governance is a system in which multiple entities participate in joint governance. The active participation of local and townships and other factors plays a crucial role in the operation of

the garbage control system. Because the regional differences in rural domestic sewage are very strong, it is necessary to give full play to the strength of the grassroots government, and in the specific implementation process, according to local conditions, form a regional governance planning and governance system. In the management of domestic waste, due to different living environments and living habits in different regions, the role of the grassroots government should be fully mobilized. County and township governments are encouraged to explore and implement new models of grassroots governance.

5.5. Establishing a performance appraisal indicator system for county-level rural human settlements governance

It is suggested to establish a set of indicator systems for rural human settlements governance, such as rural sewage treatment rate, rural villagers' satisfaction index, etc., to give full play to the advantages of grassroots government, establish an index evaluation system, and link the indicator tasks with the evaluation of leading cadres. At the same time, it will strengthen the disclosure of information, open up social media and citizen supervision, and ensure that if problems are found in the course of operation, they can be amended immediately. Maintain operations under regulatory conditions and allow public management to proceed in an open and transparent environment.

5.6. Rural domestic waste management should be prioritized for resource and pilot waste sorting

The management of rural domestic waste should also be differentiated from the city, and a path suitable for its own development should be explored. In the early stage of rural domestic garbage, it is necessary to classify wastes, and carry out classification and reduction, resource recovery and harmless treatment, and carry out the classification and resource utilization of rural domestic waste in towns and villages. Actively use the capital market to encourage economic entities that operate resource utilization.

References

- [1] CPC Central Document No. 1 (2018) <http://www.gov.cn/zhuanti/2018lh/2018zfgzbg/zfgzbg.htm>
- [2] Three-year action for the rectification of rural human settlements (2018) http://www.gov.cn/zhengce/2018-02/05/content_5264056.htm
- [3] Jia Qi, Yue Yan, Li Su-tong. (2017) Analysis of the Causes of Rural Environmental Pollution under the Background of Social Transformation. J. Environmental science, 01:27-29.
- [4] Liu Xiao-mao. (2014) Thoughts on Improving the Living Environment of Rural People. J. Journal of Shandong Agricultural Engineering College, 31,1:17-20.
- [5] Peng Zhen-wei, Lu Jia. (2009) Development of Human Settlement Environment in Countryside Based on Urban-Rural Integrated Development. J. CITY PLANNING REVIEW, 33, 5:92-95.
- [6] Li Bing-di. (2016) Thinking About Improving the Residential and Environmental Situation in the Country. J. Journal of Beijing Institute of Civil Engineering and Architecture, 22, 4:1-5.
- [7] Bulletin of the Third National Agricultural Census (2016)
- [8] Ministry of Housing and Urban Development. 2016 Urban and Rural Construction Statistics Bulletin
- [9] Chen Ge, Yang Jin, Liu Wen-tao. (2008) Strengthening rural environmental protection and improving rural living environment. J. ENVIRONMENT AND SUSTAINABLE DEVELOPMENT, 6:36-39.
- [10] Yang Kun, Yu Hong-xia. (2008) Study on Countermeasures for Sewage Treatment in Villages and Towns in Beijing. J. ENVIRONMENT AND SUSTAINABLE DEVELOPMENT, 6:69-72.