

Rural Waste Treatment Model Based on the Development of Rural Circular Economy

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Abstract: *In order to overcome the limitations of the traditional rural waste treatment mode and reduce the harm brought by the traditional rural waste treatment mode, a novel rural waste treatment mode based on the development of rural circular economy is proposed in this paper. This model fully combines the current general situation of rural construction and development in China, and innovates and develops on the basis of the traditional rural waste treatment model. The results demonstrate that this model fully implements the concept of rural circular economy development, combines economic development with environmental protection, and can effectively strengthen the participation and consciousness of rural residents.*

Keywords: *Rural construction; Circular economy; Waste disposal; Green economy*

1. Introduction

At present, China's rural construction is in the stage of rapid development. The development of China's rural economy and society has attracted the attention of private individuals from all walks of life. At the same time, we can also find that the living standard of China's rural private individuals is constantly improving. However, it is worth noting that the problem of rural waste treatment is becoming more and more serious, which has become one of the key problems in China's rural construction. Obviously, if the garbage problem in rural areas is not well handled, it will seriously hinder the construction and development of rural areas in China, and even affect the improvement of private individuals' living standards and the quality of living environment, and ultimately affect the health of rural private individuals. Therefore, how to scientifically and efficiently solve the problem of rural waste treatment is one of the primary problems that must be solved in the current rural development work.

Through the research and analysis of the current rural circular economy construction project, and combined with the general situation of rural development, this paper believes that there are difficulties in rural waste treatment in most rural areas. Therefore, this paper believes that the problem of rural waste treatment can be used as the main breakthrough of rural development and construction. If the problem of rural waste treatment is solved, it can promote and drive the sustainable development of rural economy and society.

2. Theoretical Basis

2.1 Circular Economy

In essence, circular economy is a way to guide social and economic activities according to ecological laws. Its purpose is to use the least resources to maximize economic and social benefits. At the same time, circular economy can also fully reflect the indispensable idea of the harmonious development of human society and natural environment, which also reflects the scientific development model of human society in order to realize the sustainable development of economy and society. At the same time, the circular economy model is mainly composed of three parts: reduce, reuse and recycle, as illustrated in Fig. 1.

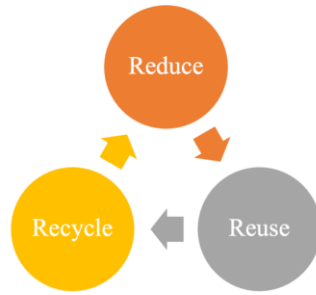


Fig. 1 "3R principle" of circular economy

2.2 Circular Economy Agriculture

Circular economy agriculture, in essence, is the application of circular economy in the field of agriculture, which belongs to an indispensable part of ecological agriculture. As shown in Figure 2, circular economy agriculture is an indispensable part of circular economy. There are many types of circular economy agriculture, among which the most typical is the ecological agriculture model linked by biogas. However, this is only an indispensable application of circular economy in agriculture. With the continuous improvement of human society's awareness of environmental protection, circular economy has a broader and bright development prospect in the field of agriculture.

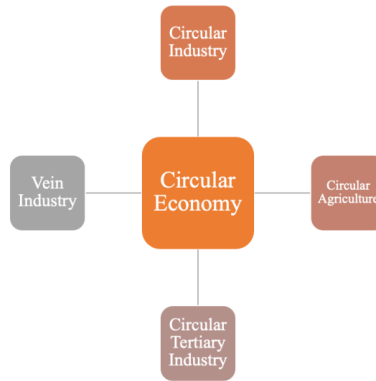


Fig. 2 Four branches of circular economy

3. Innovation of Rural Waste Treatment Mode Based on the Development of Rural Circular Economy

If we want to realize innovation and development in the current rural waste treatment mode and combine the development concept of rural circular economy, we must first understand the specific situation of rural waste treatment. Fig. 3 shows the basic method of waste disposal.



Fig. 3 Three basic methods of waste treatment

First, throw away the garbage at will. In rural areas, many private individuals throw away outdoor garbage at will. For most private individuals in rural areas, they only deal with the domestic waste generated in their living space, but do not pay attention to the waste produced outdoors, and do not pay

attention to the ecological development of the whole area. Therefore, in rural areas, the phenomenon of dumping garbage at will is very common. What's more, they dump their personal domestic garbage on the streets at will.

Second, the mode of incineration treatment. In some rural areas, private individuals still use incineration to treat domestic waste. Through the incineration mode, private individuals can not only solve the garbage, but also produce some fertilizers for agricultural production. However, it is worth noting that with the continuous development of economy and society, the current types of garbage are more inorganic chemical products such as plastic and chemical fiber, which means that through the incineration treatment mode, not only the fertilizer required for agricultural production can not be obtained, but also a large number of harmful gases may be produced. Therefore, the way of burning garbage will not only pollute the environment, but also endanger private individuals' health.

Third, buried in different places. With the improvement of private individuals' living standards and quality of life, the waste treatment method buried in other places has also become the main way of waste treatment in some large-scale and economically better villages. From the overall point of view, this waste treatment method is a waste treatment method with high feasibility at present, which can not only better deal with a large amount of waste, but also avoid the environmental pollution caused by waste stacking together. However, this waste treatment method needs to invest a lot of money, and also needs to be managed and treated by special personnel. For some remote and backward rural areas, its feasibility is low.

Fourth, it is used for land filling. This waste treatment method is mainly applicable to construction waste, which can centrally transport the waste without environmental pollution caused by building decoration to the construction site that needs filling. This waste treatment method can not only better dispose of a large number of waste generated by building decoration, but also effectively save resources. It is a waste treatment method advocated by the concept of circular economy.

Fifth, biogas conversion. This waste treatment method not only follows the scientific principle, but also follows the principle of environmental protection. Specifically, this waste treatment method is to put the garbage that is easy to decay and decompose into the biogas digester, which can not only effectively and scientifically dispose of the domestic garbage, but also save a lot of fuel costs for the private individuals in rural areas. However, it is worth noting that this waste treatment method is limited to the waste that is easy to decay and decompose, such as human and animal manure, straw, etc.

Fig. 4 demonstrates three main waste treatment methods at home and abroad.

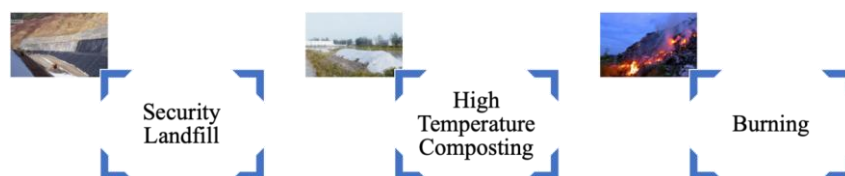


Fig. 4 Three main waste treatment methods at home and abroad

3.1 Issues

3.1.1 Imperfect laws and regulations

At present, China's rural environmental protection is lack of effective management mechanism and service system. In addition, the current legislative concept of relevant laws and regulations has been relatively backward. In other words, the existing laws and regulations have insufficient pertinence to the problem of rural waste treatment, and these existing rural environmental protection laws and regulations pay more attention to pollution prevention and control and ignore the utilization of resources, which has been difficult to adapt to the current development background of rural society.

Moreover, if there is no corresponding rural environmental protection policy, the service consciousness of the grass-roots government will be relatively backward, so it is difficult to solve the

problem of rural waste treatment efficiently and scientifically.

3.1.2 Backward infrastructure and treatment technology

At present, China's support for rural infrastructure construction and waste treatment technology is low, which also makes China's financial investment in rural infrastructure construction and waste treatment low, which hinders the speed of solving the problem of rural waste treatment in China. At the same time, compared with urban residents, the income level of rural residents in China is low and the awareness of environmental protection is weak, which makes the spontaneous demand of rural residents for environmental protection weak.

3.1.3 Low awareness of rural environmental protection

At present, rural residents' awareness of environmental protection is relatively weak. On the one hand, this is due to the low level of education of rural residents, and on the other hand, grass-roots cadres pay less attention to rural environmental protection. Specifically, the current grass-roots cadres pay less attention to rural environmental protection, which is due to the lack of corresponding evaluation mechanism. For rural grass-roots cadres, in the new rural construction project, most rural grass-roots cadres pay more attention to economic development, but lack of attention to environmental protection and publicity of the concept of sustainable development. Therefore, in China's rural construction projects, the application and development of circular economy model is slow, mainly because rural cadres have a weak understanding of rural circular economy and do not establish the concept of protecting rural environment and sustainable development of rural ecological environment.

At present, the education level of rural residents is low, and many rural residents have received systematic quality education, which makes many rural private individuals have not formed the concept of environmental protection and sustainable development advocated by the state. For many rural private individuals, they only see the immediate economic benefits, but do not see the benefits brought by the long-term development of the ecological environment. Then they carry out predatory and extensive management of the ecological environment, which also leads to the rural circular economy model, which is difficult to operate and develop smoothly.

3.2 Countermeasures

3.2.1 Implement of perfect laws and regulations

There is no doubt that facing the laws and regulations related to rural construction that need to be improved urgently, this paper believes that if we want to build a legal and regulatory system with advanced ideas and scientific and reasonable structure, we need to solve it from the source of waste generation, so as to eliminate the differences between urban and rural areas and industrial differences. In addition, government organs, enterprises and farmers should establish the concept of taking garbage as a recyclable resource, which will help government organs, enterprises and rural residents see the long-term development interests. However, it is worth noting that due to China's vast territory and great differences between regions, on the basis of establishing unified legislation, China should also adjust and optimize according to the specific local conditions.

3.2.2 Enhancement of capital investment and infrastructure construction

A large amount of capital investment and sound infrastructure construction are not only an indispensable foundation for the development of rural circular economy, but also a prerequisite for solving the problem of rural waste treatment. If we want to strengthen capital investment and infrastructure construction, we should introduce market-oriented operation mechanism and build a perfect and scientific rural waste recycling management system. At the same time, both government agencies, enterprises and rural residents should regard rural waste treatment as a long-term social service project with high long-term benefits. Only by establishing a correct long-term concept of sustainable development can the government, enterprises and rural residents invest more energy and funds in the initial stage and successfully complete the construction of rural infrastructure. At the same time, we can also learn from foreign experience in waste treatment. For example, the concept of rural waste recycling and treatment in the United States is to "let waste companies go deep into the countryside". Specifically, in the United States, rural waste treatment is generally carried out by small-scale family companies, while large-scale companies are responsible for waste transportation. Since then, although the living area of rural residents in the United States is not concentrated, the garbage of each household can also be collected and treated efficiently and scientifically.

3.2.3 Improvement of rural environmental protection awareness

At present, many rural residents still have weak awareness of environmental protection, which hinders the construction and development of rural environmental protection projects and the solution of rural waste recycling and treatment. The reason behind this phenomenon mainly lies in the low educational level of rural residents, and many rural residents are not aware of the adverse consequences of improper waste treatment. Therefore, we should publicize the knowledge of science, health, culture and environmental protection to rural residents for a long time, make full use of meetings, blackboard newspapers, leaflets and publicity lectures, and actively publicize the harm of improper waste treatment to the surrounding environment and private individuals to rural residents.

4. Conclusion

To sum up, the progress of rural waste treatment is closely related to the physical and mental health of rural residents, the living environment quality of rural residents and the future development direction of rural areas. Therefore, this paper believes that the current rural waste treatment problem needs to be solved urgently. We can deal with the rural waste problem according to the concept of circular economy, which is also an indispensable way to give consideration to economic development and ecological environment protection.

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