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Investigation of Rural Living Environment Improvement Problems and Farmers' Satisfaction Degree

—— Taking Xingtun Village, Cangxian County, Hebei Province as an Example

[Abstract] Nowadays, with the rapid development of China's economy, a series of rural problems are becoming increasingly prominent. While the government is vigorously promoting infrastructure construction, the improvement work still faces many problems. This article will take Xingtun Village of Cangxian County as an example to study the present situation of the rural environmental governance policy implementation and compare it with the true will of rural residents. The article also puts forward that the government should fully reflect the public's opinions, accelerate the living environment improvement work and improve rural residents' quality of life.

[Key words] rural areas; living environment improvement work; satisfaction survey

1. The introduction of rural living environment improvement

1.1 Background of rural living environment improvement

Nowadays, with the rapid development of China's economy, a series of problems in rural areas are becoming increasingly prominent. While the government is vigorously promoting infrastructure construction, the improvement work still faces many problems. The improvement work of rural living environment is one of the key issues in China now. The quality or health level of rural ecosystem, agricultural production system and rural living environment system directly affect the health level of rural residents. Among them, rural living environment has a greater impact on rural residents' health, and there is an obvious positive correlation between good living environment and life span. With the continuous improvement of rural residents' income, the demand level is gradually improving, etc. "Paying attention to food safety, drinking water safety and living environment safety has become the most obvious characteristics of the new era. Generally speaking, there are many factors affecting the quality of rural living environment, including both natural factors and cultural and social factors. The main factors in different regions have certain differences, which also show that different regions improve the rural living environment in different ways. Improving the rural living environment is an important part of improving the living condition of rural residents and realizing the rural ecological revitalization"(Yu,2019,p.80-85).

At the end of 2018, in the 19th report of the National People's Congress of the Communist Party of China put forward the concept of rural living environment renovation for the first time. Rural living environment renovation refers to a series of rural infrastructure renovation project which can improve rural residents' living condition and the rural environment construction, including sewage treatment, road reconstruction, toilet renovation, involving all aspects of rural life.

1.2 Improvement process of rural living environment in China

Before the rural living environment improvement action was formally put forward, China had also implemented many policies that are essentially rural living environment improvement. The toilet revolution, which began in the 1980s, aims to improve the number and environment of toilets of the whole country. This revolution has thus far transformed more than half of the toilets in rural area. On this basis, the content of the rural living environment improvement work has been significantly expanded, almost all aspects of rural life have been transformed, and the remaining problems of the implementation of the past work have been further solved.

Regional departments have comprehensively promoted rural living environment regulation. However, the overall quality level of China's rural living environment is not high, there are still problems such as unbalanced regional development, imperfect basic living facilities and imperfect management and protection mechanisms, and there is still a gap between the requirements of agricultural and rural modernization process and the farmers' will for a better life. In order to accelerate the improvement of rural living environment, The State Council of China has formulated the Five-year Action Plan for the Improvement of Rural Living Environment (2021-2025).

— By 2025, the rural living environment will be significantly improved, and new progress will be made in the construction of ecologically livable and beautiful villages. The penetration rate of sanitary toilets in rural area will be steadily increased, and toilet waste will be basically effectively treated; rural sewage treatment rate will be increased, rural sewage discharge will be controlled; rural household waste's harmless treatment level will be significantly improved, conditional village will succeed in reducing and classifying the household garbage; rural living environment treatment level will be significantly improved, and long-term management and protection mechanism will be basically established.

2. Overview of the survey area

2.1 Introduction of Xingtun Village

In order to carry out the research work more deeply, this article chose the more familiar place, Xingtun Village, Gaochuan Township, Cangxian County, Hebei Province, as the investigation object. Cangxian County, under Cangzhou City, Hebei Province, is located in the southeast of Hebei Province and the east of the Central Hebei Plain. The total area is 153,300 hectares. In 2020, Cang county had a total population of 734,300 residents. There are many nearby tourist attractions such as Cangzhou Iron Lion, Du Lin Deng Ying Bridge, Ji Xiaolan's former residence site and cemetery, as well as Cangzhou golden jujube, Ding's sausage and other local speciality.

Xingtun village is the administrative village under the jurisdiction of Cangxian County, with a permanent resident population of 1500 people. The village and national and provincial roads are not directly connected, but there are rural roads connect with the surrounding area. At the end of last century, most villagers took planting jujube as the main source of income. In recent years, due to the fierce competition in the jujube market, more people went out to work, mainly engaged in repetitive labor in the surrounding jujube processing enterprises.

2.2 Action to improve the living environment in Xingtun Village

Before 2018, the overall living environment of Xingtun Village was relatively backward. Although it has changed slightly over the years, the effect is not obvious. Since the implementation of the "Three-year Action on Living Environment Improvement" in 2019, the work report of the Cangxian People's Government shows that the government has made a lot of investment in the improvement of the rural living environment and people's livelihood within its jurisdiction. In 2019, the government invested 65 million yuan in waste treatment work, renovated 12,100 toilets,

restore 600 ponds; and create 53,000 beautiful courtyards. In 2020, the government raised 3.35 billion yuan to implement infrastructure improvement projects such as hydropower and gas, built 437 roads; renovated 67 dangerous bridges; opened 24 bus lines; built 1371 km of power lines, 5 substations, 2568 distribution transformers; laid 221.8 km of water supply network. In 2021, the government newly built 161.6 km of power lines, 151 transformer, 178 rural road networks, 21 dangerous bridges, 2 bus lines, 22,000 rural toilets, 165 public toilets, 81 waste treatment stations. The rural infrastructure is continuously improved.

Under the strong promotion of the county government, all the villagers of Xingtun Village have made joint efforts to achieve a significant breakthrough in the improvement of the living environment in the past two years. The village aimed to build an economically strong, harmonious and beautiful village. It has vigorously promoted toilet transformation, garbage storage and other measures. After investigation, the changes in the environmental remediation of the village are mainly reflected in the following aspects:

- ① Changing coal to gas. At present, all the 320 families in the village use natural gas, which can both be used to cook and keep warm. In the past, using coal to heat up was dirty and laborious, but now people can just turn on the switch, which is cleaner and more convenient. The government also gives users one yuan per cubic gas subsidy, so that the villagers are willing to use, rest assured to use.
- ② Toilet renovation. The village has 150 houses which have completely renovated the double urn bucket type water flushing toilet. In the past, rural family toilets were dirty, messy and smelly, but the toilets after transformation are much cleaner. Unrenovated toilets are also under construction.
- ③ Garbage disposal. The village set up 60 dustbins, throughout every corner of the village. In the past, household garbage was casually poured, mosquitoes and flies were everywhere. On windy days, plastic bags and other items were flying everywhere. Now the villagers consciously bag the garbage into the trash cans. Some large garbage has special storage sites. The cleaning work is done by 5 environmental protection workers. This is a significant change of the village's sanitation conditions.
- ④ Planting trees. On both sides of the village road, the vacant homestead are planted with evergreen trees, shrubs and other plants. In the past two years, the villagers have planted more than 400 mu of coastal defense forest, forming a beautiful scenery line.
- ⑤ Road hardening. The original village roads were narrow and muddy. Now the main streets of the village have realized the cement pavement hardened of more than 3000 meters; the roadside homestead slope protection hardened of more than 2000 meters, the streets and alleys can be walked on safely in rainy days, and the private cars in the village are gradually increasing.

To sum up, the living environment of Xingtun village has been significantly improved compared with before, which makes the villagers healthy and comfortable and improves everyone's enthusiasm for life and production. Through the renovation action, the villagers have enhanced the sense of identity of the village leadership, and have the willingness to actively participate in the work.

3. Survey data and analysis

3.1 Data sources and characteristics

In order to further obtain the recognition of the grass-roots people to the renovation action, the villagers near Xingtun Village were interviewed in the form of questionnaire. Affected by the

pandemic,the work was mainly carried out in the form of online questionnaires, supplemented by telephone and wechat communication. Fifty-three valid questionnaires were collected. According to the basic information of the people participating in the survey, the participation of the middle-aged and elderly people is relatively high, and the overall educational level is general. The proportion of party members is moderate. The basic information of the samples is shown in Table 1.

Table 1. Basic information of the samples

Type	Option	Number of samples / person	Proportion /%
Sex	Man	22	41.5
	Woman	31	58.5
Age	< 25	1	1.9
	26-40	10	18.9
	41-55	19	35.8
	> 55	23	43.4
Record of formal schooling	Junior high school and below	24	45.3
	Senior high school	7	13.2
	Junior college	17	32.1
	Bachelor degree or above	5	9.4
Political status	Party Member	13	24.5
	The Masses	40	75.5

3.2 Data analysis

3.2.1 Policy attention

This survey has designed the option of "understanding of the rural living environment improvement policy", hoping to obtain the promotion intensity and publicity effect of the policy. The collected questionnaire shows that 12 people out of the 53 samples chose "no understanding" in the topic, accounting for 23%. Further analysis found that 10 of the 12 people were the masses and were generally older than 55 years old, as ordinary people may pay more attention to the specific actions related to their own interests. Although they do not pay much attention to the policies themselves, they also show the willingness to actively participate in various renovation actions. On the other side, this questionnaire was mainly collected online, so the respondents' insufficient understanding of the topic itself also affected the choice of the project. If face-to-face communication was used, the data of attention rate might increase.

3.2.2 Satisfaction with the living environment improvement action

The village carried out many renovation actions, including changing coal to gas, toilet renovation, road hardening, garbage recycling, greening construction, sewage treatment transformation and other aspects. Evaluation data before and after the remediation were implemented are shown in Table 2.

Table 2. Evaluation data before and after remediation

Type	Option	Before the regulation	After the regulation	Improve situation
Changing coal to gas	Meet the level of demand	50%	98%	↑↑↑
Road hardening	Meet the level of demand	74%	94%	↑↑
Toilet renovation	The proportion of low-quality old toilets	64%	11%	↑↑
Rubbish recycling	The proportion of fixed disposal sites	55%	98%	↑↑
Sewage disposal	The proportion of self-discharge	85%	49%	↑
Planting trees	Satisfaction rate	45%	78%	↑

According to the data, the villagers are generally very satisfied with the changes brought about changing from coal to gas. The toilet renovation and garbage recycling work have brought significant changes to the original backward situation. In particular, problems of toilets finally have a solution. After the villagers saw the actual effect of the model households, they actively contacted the villagers' committee to apply for transformation as soon as possible. As long as the villagers can effectively improve their living environment, they will consciously vote without thinking twice.

3.2.3 Comprehensive evaluation of the satisfaction degree

According to the scoring principle of 1-5 points (5 points are the highest). The comprehensive evaluation of the satisfaction data are shown in Table 3.

Table 3: Comprehensive evaluation of the satisfaction data

Option	Before renovation / person	Proportion	After renovation / person	Proportion
5 Points (satisfied)	15	30.2%	28	54.7%
4 Points (relatively satisfied)	8	15.1%	16	30.2%
3 Points (Basic satisfaction)	18	34.0%	7	13.2%
2 Points (not very satisfied)	9	17.0%	1	1.9%
1 Point (dissatisfied)	2	3.7%	0	0

Through the evaluation results, it can be seen that after the renovation action, the villagers' satisfaction has increased significantly. The number of satisfied people was increased from 15 to

28. The percentage of 4-5 points was increased from 45.3% to 84.9%. It can be seen that the villagers generally recognize the changes brought by the renovation action to the countryside, which can meet the expectations. In particular, the young and middle-aged people are very satisfied with the convenience brought by the changing coal to gas to the daily life of the elderly, and no longer worry about the risk of pollution and gas poisoning brought by the coal burning. In winter, the elderly can enjoy clean, comfortable and warm heating like the city residents in winter.

4. Conclusion and Discussion

4.1 Existing problems of rural environmental renovation work

Through this survey, we can find that although the phased achievements of the improvement of living environment have been obvious, there are still following typical problems in the renovation work of rural living environment like Xingtun Village:

① Domestic sewage disposal is still a difficult problem. Most families still can only dump the sewage into the nearby pit or the original pigsty,

② Waste recycling work can't be completely finished. Although household garbage has been collected at fixed sites, there is no better solution for recycling and subsequent disposal, and it is difficult to achieve satisfying results by simply relying on short-term investment.

③ Most of the employers are engaged in simple and repetitive labor, which can cause cervical spine diseases and lumbar and leg strain.

④ Due to the poor management, the nearby breeding industry's location is too close to the village residence, which brings a lot of inconvenience to the villagers' life.

⑤ As there are more young and middle-aged workers who go out to the city to work, the middle-aged and elderly people generally have a low educational level. Asking these people who have a low educational level to raise their grandchildren will have a deep impact on the children's education quality.

4.2 Measures to solve the problems

① The government should continue to carry out a thorough campaign to improve the rural living environment. Cangxian, for example, the government promised in 2022, it will renovate the rural planning, rural toilets, road hardening, rural greening, key project construction, and long-term management mechanism construction, improve rural life with practical actions. At the same time, the content of rural living environment improvement is different, and the required technologies and models are also different. Even with the same improvement content, required technologies and models of different villages are also different. Therefore, we should make use of technical means, adapt measures to local conditions to bring more practical help to the villagers.

② On the basis of improving the living environment, the government should gradually lead the ordinary villages like Xingtun Village to the road of rural revitalization and high-quality development. The government can constantly encourage the surrounding small producing and processing enterprises to become bigger and stronger, increase the number of workers, improve working conditions and solve the employment problem of surplus rural labor force, so that farmers can obtain a relatively stable income without staying far away from their homes. The government will continue to increase the investment to attract more high-quality enterprises to invest and build factories in the local area, and explore a new development model of win-win cooperation between village and enterprises. It is suggested that the mature rural domestic sewage and garbage treatment technology and the toilet renovation technology or treatment mode of private enterprises should also be included. On the one hand, the selectivity of the technology or mode can be increased, and on the

other hand, the enthusiasm of enterprises to participate in the improvement of rural living environment should also be mobilized.

③The government can also learn from advanced villages, such as the village-enterprise cooperation mode between Tayuanzhuang Village and Tongfu Group in Zhengding, Hebei province, to attract young people to return to the countryside, stay in the countryside, make their own contributions to the development of the countryside, and make the countryside grow young and revitalized.

4.3 Conclusion

Through this survey, it can be seen that since the "three-year living environment improvement action", Xingtun Village has carried out changing coal to gas, toilet renovation, garbage storage and other measures, and the living environment has been significantly improved. The villagers actively participate in the work, and the overall satisfaction has been greatly improved. However, except changing coal to gas, there is still a big gap between the other measures' true results and the expected results. For example, the toilet renovation has not yet been completed, the garbage recycling methods need to be changed urgently, and the domestic sewage treatment methods still need to be improved. These problems should rely on the joint efforts of the government and the villagers to be perfectly solved.

Express thanks

This research activity has been strongly supported and helped from the school, teachers and many parents. Through this survey, I have a clearer understanding of the rural living environment, and I am also full of confidence in the future rural revitalization. It is a very important growth experience. Thank you very much.

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