

Practice and Exploration of the Improvement of Rural Human Settlement Environment Under the Rural Revitalization Strategy—Take Malingang Town, Mudan District, Heze City as an Example

Weizheng Jin¹

¹ Shandong Agricultural Ecology and Resource Protection Station, Jinan, Shandong 250100, China
Correspondence: Weizheng Jin, Shandong Agricultural Ecology and Resource Protection Station, Jinan, Shandong 250100, China.

doi:10.56397/JRSSH.2023.05.02

Abstract

In recent years, Shandong Province has vigorously implemented the strategy of rural clean project construction throughout the whole province, endeavoring to improve the prevention and control level of rural non-point source pollution, and has carried out beneficial practical exploration on the measures of rural environmental remediation under the strategy of rural revitalization, effectively promoting the rapid and healthy development of the new socialist countryside, which is well received by grassroots cadres and farmers. A number of rural clean project construction demonstration villages have been built preliminarily, which has played a good demonstration and driving role in strengthening rural environmental governance in the future. This paper takes related villages of Malingang Town, Mudan District, Heze City, with obvious effects of rural environmental governance as an example, summarizes the beneficial experience and measures in the governance process, and analyzes the existing problems. From the four aspects of guiding social investment, strengthening the construction of the rule of law, optimizing the fund guarantee and increasing the technical support, the paper provides some useful suggestions for the improvement of rural living environment under the strategy of rural revitalization in Shandong Province in the future.

Keywords: rural revitalization, rural and living environment improvement

1. Introduction

1.1 Overview of Rural Cleaning Project in Malingang Town, Mudan District

Muli Village, Malingang Town, Mudan District, is located 3 kilometers southwest of Heze City. It has jurisdiction over four natural villages: East, west, south and North Muli. There are 398

households in the village, with a population of 1676 and a cultivated land area of 1696 mu. Agricultural production mainly vegetable and fruit trees, per capita 0.8 mu fruit trees, 0.2 mu vegetables. The village's "papaya, persimmon cake, dough sculpture" enjoys a high reputation, has the reputation of "the first village of dough sculpture", is one of the first batch of provincial

listed cleaning project demonstration villages in Heze City. In recent years, under the leadership of the village branch secretary, the village has understood the situation, made bold innovation, and walked out of a good way of ecological agriculture, circular agriculture and tourism agriculture, becoming an advanced example of the prevention and control of non-point source pollution in Heze agriculture.

1.2 Garden Cleaning Project

The cadres and the masses in the village combined with the local conditions, focusing on improving the comprehensive production capacity of the farmland and reducing the pollution of the ecological environment of the farmland, effectively controlling the pollution of non-point agricultural sources, realizing the clean production of agriculture and improving the quality and safety of agricultural products by reducing the amount of pesticides and fertilizers, controlling the use of highly toxic and highly residual pesticides, and improving the utilization level of straw resources. We will promote production development and increase farmers' incomes. The following work is focused on:

- 1) Actively promote the application of low-toxicity and low-residue high-efficiency pesticides, degradable agricultural film and other new agricultural inputs;
- 2) It has carried out the promotion and application of the comprehensive control technology of crop diseases, pests and weeds, installed 100 frequency-vibration-type insect killing lamps, planted plant traps and killed pests, established 50 professional control teams, carried out "unified control and control", effectively improved the comprehensive control level and efficiency of diseases, pests and weeds, reduced the input of chemical pesticides, and reduced environmental pollution;
- 3) The experimental demonstration of soil testing and formula fertilization was strengthened, the fertilizer structure was optimized, and the scientific fertilization level of farmers was improved. The area of soil testing and formula fertilization reached more than 90% of the total cultivated land of the village;
- 4) Set up special recycling points and toxic and harmful substances discharge pool, centralized recycling and processing of toxic and harmful packaging bags and agricultural film in the field, and improve the construction of related

supporting facilities of recycling points and discharge pool;

- 5) Popularize the technology of straw returning directly to the field, over the field, etc., so as to hill - hill soil, increase soil organic matter content, improve soil aggregate results, and ensure high and stable agricultural production. Farmers with conditions have developed ecological circular economic models such as "livestock - bog - fruit" and garden economy.

1.3 Home Cleaning Project

Muli Village put the construction of rural cleaning project in an important position, starting from the transformation of production and life style, adopt the comprehensive measures of "prevention at the source, process control and treatment at the end" to promote the comprehensive improvement of rural environment. Focus on the following work:

- 1) consolidate and improve the "village access", "household access" road project results, continue to do a good job in the village, group, household to household road hardening work, so that villagers clean, convenient, safe travel;
- 2) do a good job of "star civilized households" evaluation work, so as to mobilize the enthusiasm and creativity of farmers to participate in the home cleaning project;
- 3) vigorously develop biogas construction, has built 320 households with biogas digester, accounting for 80% of the total number of the village, human and animal feces, domestic wastewater into the biogas digester, through anaerobic fermentation, biogas, used for cooking and lighting, waste into treasure, purification of the environment, reduce pollution;
- 4) Gradually establish a long-term mechanism for garbage treatment, and establish a garbage removal station for centralized, classified, resource-based and harmless treatment. At the same time, garbage cans are set up in villages and households, which are orderly arranged along both sides of the road and equipped with special garbage trucks for irregular removal.
- 5) hardening the village road and the ground in the courtyard, building garden beds, planting flowers and grass, according to local conditions to build "small garden", "small vegetable garden", "small orchard", beautify the household environment.

1.4 Water Source Cleaning Projects

Muli Village pays attention to protecting rural water resources from the source. Focus on the following work:

- 1) Strengthen the construction of infrastructure and environmental protection facilities in major water sources such as drinking water for residents and agricultural irrigation water;
- 2) Take effective measures to strengthen the control of water pollution, strengthen the supervision of rural sewage discharge, and gradually reduce rural water pollution;
- 3) Strengthen the comprehensive management of farmland, gradually realize the centralized discharge of rural sewage, and use physical, biological and other treatment methods to purify domestic sewage.
- 4) The construction of household waste treatment plant (station), etc., to realize that garbage does not go out of the village, sewage does not enter the river, human and animal dung urine into the biogas digester, straw directly returned to the field, to ensure the clean water source.

1.5 Rural Property Management

It has formulated and improved the Village Regulations and Covenants, institutionally constrains and standardizes the daily production and living behaviors of villagers, and converts the requirements of spiritual civilization construction and advanced production and living styles into moral and behavioral norms for farmers. In accordance with the principle of "self-management, self-service and self-development", a rural property management service organization is established to be responsible for the collection, treatment and utilization of rural household garbage, livestock and poultry manure and crop straw, to ensure the normal operation and management of engineering infrastructure, and to repair and maintain the village public welfare places and the overall environment. With the guidance of the government, farmers' cooperation organizations and farmers' participation, a rural materialization service system with villages as the unit, farmers as the service objects and property service technicians as the team has been established and improved, and paid services for rural property management have been gradually implemented to ensure the long-term and effective operation of engineering facilities.

1.6 Healthy Development of Ecotourism

In recent years, on the basis of the adjustment of planting structure, Muli Village aims at the rural tourism market, centering on the strategic goal of building a new socialist countryside, carefully planning, highlighting advantages, giving play to characteristics, vigorously promoting the development of rural tourism, and fully demonstrating the positive role of rural tourism in promoting the construction of a new socialist countryside. Tourism projects include: visitors orchard picking activities; Fish pond fishing activities organized by fishing enthusiasts; All kinds of famous and excellent agricultural products exhibition in Peony District; Lu brocade, bone carving, egg, paper cutting, fur toys and other handicrafts exhibition; Organize Muli Village dough molding artists to perform the art of dough molding, showing the style of dough molding art village; Organize the performance of many kinds of boxing, schools and martial arts equipment, such as plum Blossom boxing, Hong Boxing, Tai Chi; Organizing local opera performances with the theme of new rural construction with the participation of multiple operas; Farm food tasting activities, etc.

In the construction process of Muli Demonstration village, incentive policies have been formulated and incentive funds have been put in place. It has established a benign ecological cycle mechanism combining agriculture and animal husbandry with national characteristics. The combination of eco-tourism and demonstration village construction has achieved good results.

2. Mudan District Malinggang Town Rural Cleaning Project Achieved Results

According to the relevant departments of agriculture, rural work in Shandong province, combined with the actual situation of the local, in accordance with the principle of "first pilot, gradually promoted", with the county as a unit, to the natural village as a unit, built a number of rural clean project demonstration typical, appeared to point with surface, constantly expand the scale of construction situation, comprehensive benefits are becoming increasingly prominent, rural clean project development prospects broad.

2.1 Economic Benefits

Through the implementation of the rural cleaning project, the comprehensive utilization

of crop straw, soil testing and formula fertilization, and the comprehensive control measures of crop diseases and pests, the soil fertility was effectively improved, the soil organic matter content was increased, the soil aggregate structure was improved, and the quality of agricultural products was improved. At the same time, the construction of rural cleaning project has improved the utilization of waste resources, reduced the use of chemical fertilizers and pesticides, saved money, reduced production costs, and significantly improved farmers' economic benefits.

2.2 Ecological Benefits

The construction of rural cleaning projects has effectively improved rural sanitation and environmental conditions, raised the quality of the agricultural environment, reduced harmful gas emissions and the amount of pesticides and fertilizers applied, reduced pollution from non-point agricultural sources, and vigorously promoted the virtuous cycle and sustainable development of the rural ecological environment.

2.3 Social Benefits

The emerging cleaning project demonstration villages have carried out various forms of publicity and technical training in a planned way, formulated the "rural health Convention", signed the health responsibility certificate, carried out socialized management and services, and established property management stations to undertake property management, with garbage sweeper and fixed personnel, garbage cleaning regularly. The synchronous development of energy, planting and breeding has been realized, the rural environment has been purified and beautified, and the incidence of diseases has been reduced. The ecological environmental awareness of the cadres and the masses in the whole village has been significantly enhanced, and the spiritual outlook of the masses has taken on a new look, which plays a significant role in promoting the construction of the new socialist countryside.

3. Mudan District Malingsgang Town Rural Cleaning Project Main Experience

3.1 Raise Awareness, Strengthen Leadership, Increase Measures, and Carry Out In-Depth Construction of Rural Clean Projects

Rural cleaning project is in line with the actual needs of the current rural areas, is the most

realistic, the most direct, the most urgent way to solve the farmers, the local government attaches great importance to and concerns. Since the implementation of the rural clean project, in strict accordance with the "Shandong Province Rural clean project demonstration village construction standards" requirements, combined with the actual, scientific and reasonable development of the demonstration village construction planning and implementation scheme. With the implementation of rural biogas project and the construction of "One Pond and three reforms" ecological home demonstration households as the breakthrough point, effectively control the pollution of rural domestic sewage, manure and urine of livestock and poultry breeding, crop straw and other wastes, implement the water source cleaning project; Based on the implementation of agricultural standardization, effectively control the use of chemical fertilizers and pesticides, the implementation of pastoral cleaning projects; With the construction of harmless treatment facilities for household garbage as the focus, the implementation of home cleaning projects. Due to the effective measures, the construction of rural clean project demonstration village was ensured to be carried out quickly, efficiently and orderly, and remarkable results have been achieved.

3.2 Leaders Pay Attention to Ensure the Smooth Development of the Construction of Demonstration Villages

Leaders at all levels in Peony District attach great importance to the prevention and control of non-point source pollution in rural areas and regard the construction project of rural clean project demonstration village as an important part of the construction of new countryside. Led by the Municipal Agriculture Bureau, the county Agriculture Bureau and the township government have set up a special working organization to assign competent personnel to guide the implementation of the project throughout the year. Leaders of the Municipal Bureau dispatch to the site or telephone to carry out the work irregularly. Check the implementation. At the same time, the demonstration village was set up to the village party secretary as the leader, to the two committee members, village documents, village agricultural technicians for the members of the leading group, set up a special office, at the same time to recruit young promising, active

and capable, serious and responsible young people to take the lead in action, to ensure that the demonstration village construction work smoothly.

3.3 Strengthen the Publicity, Improve the Broad Masses of Cadres and the Importance of Doing a Good Job in the Construction of Rural Clean Project Model Village Understanding

Make full use of various rural media to carry out extensive and in-depth publicity on the construction of rural cleaning projects. Through meetings, broadcast loudspeakers, village affairs open column, clean project white paper and other forms, widely publicized the significance of clean project demonstration village, construction standards and other specific content, so as to effectively improve the rural cadres and masses of the ecological civilization consciousness, arouse their enthusiasm to consciously join the rural clean project. It has created a favorable atmosphere for government guidance, social support, mass participation and action by all.

3.4 Formulate Detailed Construction Plans and Establish an Orderly Long-Term Management Mechanism

Agricultural departments at all levels have included the construction of rural cleaning project into the important agenda of village planning and village committee, and established and improved a set of long-term management mechanism suitable for the actual situation of demonstration villages with strong operability. Through the establishment of sanitation and cleaning system, three guarantee responsibility system in front of the door, the implementation of full-time and part-time cleaning, management and protection personnel and supervision personnel, make the village appearance clean, street cleaning, tree management and protection routine, institutionalized and standardized. At the same time, various forms of "civilized and hygienic household" selection activities were carried out, with regular inspection and evaluation, and announcements made through radio and bulletin boards to guide villagers to develop healthy and good hygiene habits, thus establishing a long-term management mechanism of self-education and self-management.

3.5 Establish and Improve Various Rules and Regulations, so as to Institutionalize and Regularize the Project Construction

Centering on the construction of rural clean project demonstration village, research and formulation of relevant rules and regulations, so as to ensure that there are rules to follow, and effectively clarify responsibilities, layer by layer implementation, strengthen the whole process supervision and inspection of the construction of various projects, formulate and improve the village rules and conventions represented by the "Villagers' Health Convention", guide villagers to self-governance, encourage villagers to self-management, mutual supervision. At the same time, it carries out the performance evaluation of the organization and management of the rural cleaning project, and establishes a relatively perfect reward and punishment system.

3.6 Actively Carry Out Agricultural Science and Technology Training to Provide Technical Guarantee for the Construction of Clean Project Demonstration Villages

The construction of rural cleaning project must rely on the progress of science and technology and the improvement of the workers' cultural and technological quality. To this end, the relevant agricultural departments of Peony District repeatedly hired relevant experts to carry out various forms of technical training and guidance. Through the training, a large number of farmers have fully mastered the scientific and rational use of chemical fertilizers and pesticides, the standardized production technology of green food and organic food, the late utilization technology of crop straw, rural biogas production technology and other new technologies. At the same time, the standardized technical procedures of various new technologies have been printed on white paper and distributed to farmers in pamphlets. So as to comprehensively improve the level of science and technology of farmers in our city, do well in the construction of demonstration village to lay a technical foundation.

3.7 Strengthen the Integration of Resources and Strive for Financial Support

The construction of rural cleaning project involves many fields and departments. According to this situation, we actively cooperated with the relevant departments of environmental protection, health, construction, etc., took the initiative to communicate and coordinate, and won the strong support of the relevant departments. At the same time, the

agricultural interior has strengthened the organic combination with the existing rural biogas, rural drinking water safety project, promoting governance by award, soil testing formula fertilization and rural water, kitchen and other projects, the various project funds in the rural clean engineering plate integration, integration and enlargement, really integrate resources, form a joint force, and constantly promote the rural clean project construction to achieve actual results. Not only that, but also try every means to actively strive for the support and help of various policies and regulations related to the construction of rural clean engineering, in order to ensure the smooth development of rural clean engineering construction.

4. The Problems of Shandong Province Human Settlement Environment Remediation

At present, local governments at all levels in Shandong Province actively implement the decision-making requirements of the CPC Central Committee and The State Council on the improvement of rural human settlement environment, and have made remarkable progress. However, there are still some problems compared with the practical experience of the rural cleaning project in Malingang Town, Peony District.

4.1 Low Social Participation

At present, the human settlement environment remediation in Shandong Province is still dominated by local governments at all levels and the villagers participate spontaneously, which is not mature and perfect enough to introduce social capital and carry out market-oriented operation and development. As a long-term and systematic environmental governance work, rural residential environment improvement involves the collective interests of most villagers. Only through effective coordination of multiple stakeholders such as the local government, village collectives, resident enterprises and villagers can long-term effects be achieved.

4.2 The Rule of Law and Regulations Are Not Perfect

Strict and standardized environmental laws and regulations system and smooth and efficient legal supervision and implementation system are the basic projects to promote the modernization of rural environmental governance. In the past period, Chinese environmental legislation mainly focused on

industrial pollution and urban environmental governance. There were few professional laws related to rural residential environment, and the legal provisions were relatively broad. Although relevant laws such as "Civil Law", "Environmental Protection Law", "Soil Pollution Prevention and Control Law" and other relevant laws had certain guidance for the punishment basis of rural environmental pollution, However, the specific supervision and enforcement of rural environment are not targeted enough to exist the problem of lack of laws.

4.3 Insufficient Financial Security

The improvement of rural living environment is a systematic management project lasting a long time, involving the overall planning of villages, the construction and maintenance of roads and Bridges, the cleaning and daily maintenance of public toilets, garbage collection and transportation, and a lot of work content, related to the vital interests of hundreds of millions of rural people, all need to invest a lot of funds, relying solely on government financial investment. Financial pressure is greater, it is difficult to high-quality, high intensity of sustained investment.

4.4 The Means of Environmental Remediation Lag

At present, due to the difference of local economic level, the rural environment remediation in different regions is quite different, and the technical means used in the specific content of the remediation are different. For example, there are different types of treatment of rural household refuse. For areas with weak economic development, more economical sanitary landfill and chemical incineration are adopted. For areas with high economic development level and more investment in the improvement of human settlement environment, more pyrolysis methods are adopted. Another example of rural sewage treatment, due to its large pollution range, complex pollutant composition, resulting in high disposal costs, there is still a lack of more effective treatment technical means.

5. Suggestions on the Improvement of Human Settlement Environment in Shandong Province

At present, with the comprehensive implementation of the rural revitalization strategy, many difficulties in rural environmental governance need to be solved. Combined with the practical experience and existing problems of the rural cleaning project in

Malingang Town, Mudan District, it is suggested to continue to improve in the following aspects.

5.1 Actively Guiding Public Input and Improving Governance

Social participation in the improvement of human settlement environment is the core problem facing the construction and development of rural environmental governance system. Environmental governance policies in our country have evolved from government-dominated “control” model to “management” stage with the combined efforts of the government, villages and villagers. Areas with higher level of economic development have begun to evolve into “governance” stage with social capital input. However, there is still a big gap between them, so we should further actively guide social investment to improve rural environmental governance.

5.2 Strengthening the Rule of Law and Innovating Institutional Guarantees

Due to the lack of special laws and regulations related to rural environmental remediation and the differences in the natural environment in the vast rural areas, rural human settlement environment remediation needs to formulate village rules and regulations according to local conditions under the premise of conforming to the relevant upper legal system and combining with their own actual resource endowment, and create codes of conduct universally accepted and observed by all villagers. At the same time, it is also necessary to actively absorb and summarize the successful experience of rural environmental improvement in Malingang Town, Peony District, and elevate it into a special law or system norm.

5.3 Increasing Financial Support and Improving Funding Guarantee

As a basic livelihood work with large financial input and slow effect, rural residential environment improvement needs continuous investment support from the government. According to the current division of the property rights and duties in our country, the relevant expenditure belongs to the power of the people's government at the county level, but in the situation of the current county revenue is generally tight, how to crack the problem of the general insufficient financial investment in the county region, we need to make full use of the financial policy, relying on the green subsidy,

agricultural aid fund loan preference, environmental tax return, tax reduction and other support measures, We will actively introduce relevant social capital and optimize the source of funds.

5.4 Optimize the Means of Environmental Remediation and Increase Technical Support

Due to the difficulties of complex causes and wide distribution of pollutants in various regions, the environmental remediation means of rural human settlements must be reasonably optimized within the financial limits according to the capital input of various regions, and the technological changes brought about by information technology should be given full play to timely adjustment by making full use of the data monitoring situation. In addition, we should innovate the incentive policy tools and actively innovate the research and development and application of environmental remediation technology.

References

- Five-year Action Plan for improvement of rural Human Settlement Environment (2021-2025). People's Daily, 2021-12-06(1).
- Huang Chengliang, Yang Kaizhong, Gao Shiji. (2022). The basic process of the Party's century-old ecological civilization construction and its view of the People. *Management World*, (5), 6-19.
- Jin Taijun, Lu Bin. (2022). On National governance capacity and its modernization. *Journal of China West Normal University (Philosophy and Social Sciences Edition)*, (5), 1-9.
- Liu Peng, Cui Caixian. (2020). Study on legal guarantee of rural human settlement environment Governance in the new era. *Journal of Northwest A & F University (Social Science Edition)*, (5), 102-109
- Zeng Jingwen. (2021). Optimization of new rural human settlement environment from the perspective of rural revitalization. *Journal of Agricultural Economics*, (12), 51-52.
- Zhang Hui, Xu Yue. (2022). Adhere to and strengthen the leadership of the Party to promote the construction of ecological civilization to achieve a historic turning point of overall change. *Management World*, (8), 1-11.