

Research on the Management of China's Rural Infrastructure Projects under the Background of Rural Revitalization Strategy

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Abstract: Agriculture is a fundamental industry in China, contributing to economic and social development and historical progress. Therefore, China has also put forward the strategy of revitalizing the countryside to develop agriculture. And to achieve rural revitalization, rural infrastructure projects must be carried out. This paper elaborates on the development of rural infrastructure projects, and then identifies the current problems in the management of rural infrastructure projects in China: the legal system of project management has not yet been improved, the project management is not standardized, the construction cost, the construction schedule and the project quality are not coordinated, and the bidding is not rigorous enough. Finally, we propose measures to solve the problem: continuously improve the engineering management system, enhance the quality and knowledge of construction personnel, strengthen the safety supervision of rural infrastructure projects, and establish a warranty system for rural infrastructure projects to promote the construction of rural infrastructure projects in China.

Keywords: Rural revitalization; Rural infrastructure; Project management

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1. Introduction

In China, agriculture, a basic industry in China, has played a decisive role in driving social development throughout the 5,000-year long history of the Chinese nation. Agricultural production tools have also developed from the most primitive iron age to modern intelligent agriculture, which increasingly shows that the development of agriculture needs the promotion of science and technology of the times. And China's rural infrastructure projects further promote the development of agricultural engineering. The rural infrastructure

project is to open up the roads between villages in such places as rural areas, which are far away from cities, through the investment of national government funds, to further promote China's modern machinery and equipment to further enter the rural areas through the infrastructure roads and use mechanization to promote further development of agricultural production. Modern agriculture and rural infrastructure projects are inseparable. With the help of infrastructure projects, more and more rural people are better able to enjoy the dividends of technological development, helping many

rural agricultural plantings to form mechanization, industrialization and scale, and helping rural areas to eliminate poverty. For people who have lived in rural areas for generations, agricultural production is the basis for their own survival and development, and is also a guarantee for family support, but in the past, due to the influence of the geographical environment, most rural people still use manual methods for planting and harvesting, and there is no way to improve agricultural production, which seriously limits the development of local agriculture. Therefore, rural infrastructure projects play a vital role in expanding the scale of agricultural production and introducing mechanization for agricultural production, which is the basic project to guarantee agricultural production, create more production for farmers and promote the development of modern agriculture.

In 2017, China first proposed to implement rural revitalization. China emphasizes the need to solve the "three rural issues" and the need to revitalize the countryside to promote the modernization of agriculture^[1]. The realization of the rural revitalization strategy reflects that China attaches more and more importance to the construction of rural areas, and financial resources are tilted and transferred from urban construction to rural construction to realize the integration of townships. The implementation of the rural revitalization strategy is an important step in building a modern economy and an important measure to realize the common prosperity of all people and make all people share the fruits of reform and opening up. And through rural infrastructure projects to open the link between rural areas and the supply and marketing market, to realize the value-added products of agricultural products, to bring higher income to rural people, to achieve rapid development of agriculture, and to meet the production needs of modern agriculture. We explore the problems in the management of rural infrastructure projects at the present stage and propose solutions to take rural infrastructure projects as an important step to achieve rural revitalization, realize the mutual promotion between the two and drive the further development of rural industries.

2. Development of rural infrastructure projects

Infrastructure projects have a great role in promoting local economic and social development. After twenty years of rapid development of Chinese infrastructure projects, the engineering management technology of infrastructure projects has been progressing and innovating. In the past, infrastructure projects generally relied on traditional human methods of construction, which not only had high input costs but also were greatly constrained by geographical location, low project management efficiency, long construction cycle and low project quality. With the progress of the times, more and more new machinery is put into infrastructure projects, and the use of scientific management methods to manage, reduce the input costs of infrastructure projects, and greatly enhance the completion rate of the project. In conclusion, the development of agriculture is inseparable from the support of rural infrastructure projects, and on the contrary, the development of agriculture further promotes the construction of rural infrastructure projects, and the two are mutually complementary and organically integrated. The prosperous development of rural agriculture is closely related to the development of rural infrastructure projects. Decision-making, construction and management innovation of rural infrastructure projects are important links to support agricultural development, and when project management can play a role in saving costs, improving project quality and extending the service life of rural infrastructure projects, it can bring great economic benefits to the countryside.

3. The main problems in the management of rural infrastructure projects

3.1 The legal system of project management has not been perfected

Although China's rural construction projects have been more rapidly developed after the country proposed the rural revitalization strategy. Local governments also continue to strengthen the importance of rural road construction, and to guide and supervise the bidding

and winning aspects of rural infrastructure projects, and constantly put forward guidance to ensure that the bidding is carried out properly. However, as a whole, the lack of adequate supervision in the construction project winning bids for the construction phase has created a lack of clarity in the responsibilities of infrastructure management departments, implementation bodies^[2]. And there are imperfect laws and regulations in engineering management laws, which cannot form a complete legal system with national standards, causing confusion in China's rural infrastructure projects, which not only wastes the national financial budget, but also has a negative impact on the construction of rural infrastructure projects, which is not conducive to the long-term development of rural agriculture in the future.

3.2 Project management is not standardized

Now, rural infrastructure projects are in full swing all over China's countryside. Construction companies also want to take advantage of this to contract more rural infrastructure projects to maximize corporate profits. And with the increase of projects, it is difficult to ensure the professional level of project construction personnel, while the geographical environment of different villages varies, which puts forward higher requirements for project management personnel, who must have sufficient adaptability to carry out construction suitable for the location. Therefore, from the perspective of engineering management, the rapid development of society will certainly bring about higher requirements for engineering management, and the standardization of management must be realized. However, the current development status of rural infrastructure projects in China shows that there is insufficient management and lack of supervision in the actual project management of rural infrastructure projects, the lack of professional knowledge of the management team to control the engineering design, site construction, etc^[3], and the uneven engineering quality of rural infrastructure projects, which seriously hurts the enthusiasm of rural people. For example, the construction of the project is mixed with more stone and sand to save cement, thus saving construction costs and thus getting the

maximum benefit, but the just-built project experiences less than two years, the pavement potholes appear, bringing great safety hazards. Therefore, poor engineering management is also a factor that affects the longevity of infrastructure projects.

3.3 Inconsistency between construction cost, construction progress and project quality

Chinese infrastructure projects play a big role in China's economic construction, and the stable development of infrastructure projects plays a big role in stabilizing China's economic development and can effectively promote the further development of China's economy. The construction phase is the key stage of capital investment, which directly affects the whole construction cost^[4]. However, in the process of project management in China's rural infrastructure projects, there is an excessive pursuit of completion time and cost saving, thus neglecting the quality of the project, which not only damages the reputation of the enterprise, but also affects the construction of subsequent projects, making the construction cost, construction progress and project quality uncoordinated. There are also some construction enterprises in pursuit of profit maximization, the recruitment of the use of construction personnel lack of common sense construction, in the project indiscriminately, jerry-built, and even serious construction problems of improper concrete configuration, further reducing the quality of the project.

3.4 Insufficient rigor in bidding

When carrying out the construction of rural infrastructure projects, it is necessary to bid for the project, set up various costs for the construction of the project, and prepare a bidding plan to ensure the quality of the project while minimizing cost control. However, many bidding enterprises in the bidding process, malicious collusion, resulting in bidding in a formality^[5], blindly bidding with a low price scheme, and did not take into account the market price of raw materials and the cost of construction personnel, no control, in the actual construction found that the construction project exceeded

the winning bid, thus forced to use some inferior materials for construction, to ensure the profits of enterprises, and greatly reduce the quality of rural construction projects. Although there are also some enterprises strictly in accordance with the market correct materials and labor costs to prepare the bid proposal, but the price difference with other bidding enterprises is very large, it is difficult to win the bid, seriously dampen the enthusiasm of such enterprises to bid.

4. Management and control measures for rural infrastructure projects

4.1 Continuously improve the project management system

In order to guarantee the smooth implementation and completion of rural infrastructure projects, it is necessary to continuously improve the engineering management system in combination with the actual situation of construction units, ensure that the engineering management system is implemented in a timely manner, clarify the key positions of management responsibilities, authority, work content, etc.^[6]. Increase the standards related to engineering management quality and safety testing. Once the project is detected to have problems, correct and rectify immediately, and continue the construction after reaching the standard. In the process of construction projects, it is necessary to do the double coordination of construction progress and project management at the same time, and focus on the management of construction progress, to ensure the quality of the project at the same time, try to improve the project progress and improve the economic interests of enterprises. Therefore, it is necessary for the project management staff to arrange other work to be synchronized according to the construction progress of the project in real time, so that the construction plan is reasonable.

For the construction project bidding may appear in the case of malicious low bid, need to review the bid experts to be firmly rejected, to combat this illegal and undisciplined behavior, to promote bidding enterprises

to pay attention to the preparation of the bidding program, in the premise of ensuring the quality of the project combined with the enterprise's own situation to prepare, do a good job of enterprise cost control, and reasonably set the bid price. To ensure that the quality of the projects constructed meet national standards, to guide the construction of enterprises in strict accordance with national standards, and to further introduce information technology for information management work, greatly relieving the pressure of construction project managers. In addition, construction managers still need to do a good job in the management of raw materials into the construction, because the quality of raw materials is directly related to the quality of the project, so when the materials are in the field need to do a good job of on-site inspection, procurement of materials that meet the construction standards, the raw materials that do not meet the specifications and standards can not be accepted, should be returned and replaced, and do a good job of registration and storage. Finally, when carrying out engineering management, it is still necessary to strengthen the management of the whole process of the project, to do a good job of management before, during and after construction, to give timely solutions to the incoherent phenomenon of management, and to strengthen supervision, especially for such a major link as concrete construction, to improve the engineering quality of rural infrastructure projects.

4.2 Improve the quality and knowledge level of construction personnel

Although China's construction level can be greatly improved, the construction industry is still a labor-intensive industry, and the main personnel of Chinese construction projects are still mainly migrant workers. Although migrant workers are hard-working and pragmatic, they have received limited education, generally have a low level of education, and generally have insufficient knowledge of construction. At the same time for the advanced to machine operation knowledge as well as construction methods are generally not mastered, the usual project construction is also operated only by

experience, there is no reliable guarantee for the quality of construction projects. It is recommended to strengthen the top-level design and systematic planning, recommend the training of migrant workers^[7], strengthen the knowledge education, strictly implement the training mechanism, so that the construction personnel are trained before they are employed, and randomly assess the construction personnel when the project is carried out to check their professional knowledge and mastery of practical operation, so as to combine theory and practice, guarantee the quality of construction and improve the quality and knowledge of the construction personnel themselves To ensure the quality of construction and to improve their own quality and knowledge.

In engineering construction management, in addition to the need to educate construction personnel, the management level of project managers plays a vital role in the improvement of the management level of engineering projects. Therefore, a higher level of management should be demanded of project leaders. On the one hand, it is necessary to carry out training on construction knowledge and management level for project management personnel to improve their professional level comprehensively, so that they can better complete the management of engineering projects. On the other hand, enterprises need to invite experts to give lectures regularly to facilitate timely communication of experience among individual project leaders and to understand the development dynamics and frontiers of engineering management technology. At the same time, we spend money to introduce highly qualified personnel to participate in the project management to improve the project engineering management level.

4.3 Strengthen the safety supervision of rural infrastructure projects

For the supervision of rural infrastructure projects with large capital investment to prevent safety hazards and safety accidents and minimize the occurrence of safety accidents, the organizational management of construction quality supervision needs to be strengthened after the construction process of quality control of construction

projects is clarified^[8]. First of all, it is necessary to enhance the safety awareness of all construction personnel, strengthen the training and assessment of safety management among various departments, comprehensively improve the ability of construction personnel to deal with emergencies, and at the same time require construction personnel to wear safety construction equipment according to the national requirement standards before entering the construction site. Secondly, educate the construction personnel to carry out construction in accordance with national standards, not to cut corners, and to repeatedly carry out standard measurements for key areas of engineering construction to guarantee the quality of township infrastructure projects.

4.4 Establish a warranty system for rural infrastructure projects

After the completion of rural infrastructure projects, the government needs to repeatedly measure whether the quality of the project meets the national standards. At the same time, when settling the project payment, the construction unit is required to sign a warranty contract for a certain number of years or withhold a certain percentage of the project payment as warranty money, and then return all the warranty money to the construction company after reaching the specified warranty period when the project quality still meets the standard. Only by establishing such a warranty system for rural infrastructure projects can we further promote construction units to pay attention to project management when building rural infrastructure projects and guarantee the quality of completed projects. And for the construction of rural infrastructure projects with quality problems of enterprises, after the warning still has not improved the quality of rural infrastructure projects, to be notified of the community. At the same time, the enterprise is prohibited from participating in the bidding of other rural infrastructure projects again, and those in serious cases will be punished by law to escort the management of rural infrastructure projects and further improve the quality of rural infrastructure projects.

5. Summary

China attaches more and more importance to the development of rural areas, which is why the rural revitalization strategy is proposed, and rural infrastructure projects, as an important part of the strategy to open up rural revitalization, are essential to realize rural revitalization. Therefore, the article analyzes the problems faced by the management of rural infrastructure projects at the present stage and proposes solutions in the hope of improving the quality of rural infrastructure projects, extending their service life, promoting the further development of China's rural industries, and responding to the call of the national rural revitalization development strategy.

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