

Analysis of Regional Development of Rural Infrastructure

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Abstract:

Rural infrastructure is a comprehensive collection of various elements that provide public services for rural economic, social, cultural development, and farmers' lives. It is an important guarantee for achieving rural revitalization and a key step in the process of agricultural and rural modernization. Rural infrastructure construction is an essential part of rural development process and plays a crucial role in rural revitalization. With the continuous improvement of the country's emphasis on rural infrastructure, the infrastructure supply system is gradually improving. However, there is still an imbalance in regional distribution and development. This article explores the regional development differences of rural infrastructure and proposes relevant improvement measures, Promote the coordinated development of rural infrastructure construction.

Keywords:

Rural Infrastructure, Regional Differences, Countermeasures, Coordinated Development

1. Introduction

After entering the 21st century, especially after the national abolition of agricultural taxes, the national public finance has increased the amount of fiscal resources allocated to agriculture, rural areas, and farmers, and investment in rural infrastructure has gradually increased [1]. The construction of rural infrastructure is not only the key to the common prosperity of rural population, but also the guarantee for the smooth implementation of rural revitalization strategy. With the strong support of national finance, many rural primary and secondary schools, rural toilets, and farmland water conservancy facilities have gradually become popular. However, in many remote areas, there are still significant regional differences in the development of education facilities, cultural facilities, water conservancy facilities, and other development areas, resulting in imbalances in quantity, quality, and total amount. How to narrow the regional differences and promote the coordinated development of rural infrastructure construction, Making it a favorable driving force for agricultural and rural development is a top priority in comprehensively promoting rural revitalization work.

2. Current Situation of Rural Infrastructure Regional Development: Taking Chongqing City as an Example

2.1. Rural road conditions have improved, but regional differences still exist

In 2016, agricultural townships in various regions of the city achieved access to village roads, with 70.1%, 56.1%, and 62.5% of administrative villages in the main urban area, northeast Chongqing, and southeast Chongqing having access to public transportation. The proportion of agricultural settlements in the main urban area, Northeast Chongqing, and Southeast Chongqing passing through highways has exceeded 97.7%, 95.7%, and 97.6%, an increase of 9.3%, 11.6%, and 15.9% compared to 2006. Significant results have been achieved in the construction of village roads, road surface conditions, and road lighting equipment such as street lamps in various regions.

Firstly, in the main urban area, the proportion of roads connecting villages has remained at 100% from 2006 to 2016, the proportion of roads in Northeast Chongqing has increased from 97% in 2006 to 100%, and the proportion of roads in Southeast Chongqing has increased from 97.6% to 100%. From this, it can be seen that in terms of the proportion of village roads, regional differences have basically achieved 100% construction of village roads in 2016.

Secondly, from the proportion of village roads with street lights, from 2006 to 2016, various regions achieved growth, with the main urban area increasing from 4.7% to 32.0%, the northeast region of Chongqing increasing from 3.5% to 28.9%, and the southeast region of Chongqing increasing from 3.2% to 34.0%.

Finally, from the perspective of highway settlements, various regions have also experienced varying degrees of growth, with the main urban area increasing from 88.4% to 97.7%, the northeast region of Chongqing increasing from 86.1% to 95.7%, and the southeast region of Chongqing increasing from 81.7% to 97.6%. Compared to the situation in various regions, although the proportion of rural residents in the northeast region of Chongqing who have access to roads is the lowest, it also reaches 95.7%, which is only 2 percentage points lower than the main urban area and the southeast region of Chongqing. The proportion of public transportation connecting various agricultural administrative villages in the main urban area is relatively high, reaching 70.1%, which is 14.0 and 7.6 percentage points higher than that in the northeast and southeast regions of Chongqing, respectively. Due to geographical conditions and lagging road construction, the Northeast and Southeast regions of Chongqing are unable to lead the main urban areas in road construction within the village, resulting in regional differences in road construction. In addition, the proportion of village committees in each district and county in the Northeast and Southeast regions to the farthest residential settlements within five kilometers is only 69% and 60.2%, respectively. Compared to the main urban area, it is 13.8 and 22.6 percentage points lower.

2.2. The coverage of communication infrastructure is wider, but the level of informatization in some regions is not high

Since the direct administration of Chongqing, various regions in Chongqing have further accelerated the construction of communication infrastructure. By 2016, all rural areas in each region had achieved telephone access, greatly improving communication conditions, and the lives of villagers became more diverse with the

improvement of communication conditions. Especially in the northeast and southeast regions of Chongqing, the problem of 4.1% and 5.7% of villages without telephone access that existed in 2006 has been completely solved. The proportion of cable TV installed in various regions has also significantly increased.

In 2016, the proportion of installing cable TV in rural areas of the main urban area, Northeast Chongqing, and Southeast Chongqing was 90.9%, 81.3%, and 61.6%, respectively, an increase of 6.7, 7.6, and 30.1 percentage points compared to ten years ago; The proportion of rural settlements installing cable television is 82.3%, 68.5%, and 42.1%, respectively, which has greatly increased compared to the previous 73.4%, 57.3%, and 19.8%.

In terms of internet broadband, with the rapid entry of the internet into the market, it is gradually becoming popular in rural areas. In 2016, 94.8%, 94.2%, and 89.7% of villages in the main urban area, Northeast Chongqing, and Southeast Chongqing had access to internet broadband. Especially in the northeast and southeast regions of Chongqing, there have been significant changes in the communication and internet access conditions of rural residents.

In contrast, there is still a certain gap between the rural informatization construction in the northeast and southeast regions of Chongqing and the main urban areas. From the perspective of cable TV installation, in 2016, the proportion of rural limited television installations in some districts and counties of the main urban area had exceeded 90%; The southeast region of Chongqing is relatively low, with only 61.6%; The northeast region of Chongqing is relatively better than the southeast region, reaching 81.3%. From the perspective of internet broadband, the main urban area and the northeast region of Chongqing are significantly higher than the southeast region of Chongqing, and the proportion of internet broadband in rural areas is 5.1 and 4.5 percentage points higher than that in the southeast region of Chongqing, respectively; The proportion of residents who have access to internet broadband is also 22.6 and 11.0 percentage points higher than that of the southeastern region of Chongqing, respectively.

2.3. Energy facilities are gradually upgraded, but some areas are constrained by conditions

In 2016, the comprehensive layout of power infrastructure construction in various regions of Chongqing was achieved, and the electricity consumption problem in residential settlements in various villages was effectively solved. With the vigorous promotion of rural power grid renovation projects, the quality of electricity consumption in most rural areas has been significantly improved. Between 2016 and 2017, Chongqing Electric Power Company invested a total of 880 million yuan to renovate the power grids of 922 small towns and villages in Chongqing, solving power problems in 317 natural villages, and improving the electricity consumption of millions of people.

Compared with the situation in various regions, there are still some townships in the northeast and southeast regions of Chongqing that have not yet completed their rural power grid transformation, and the quality of electricity consumption still needs to be improved. Meanwhile, due to geographical limitations, the natural gas consumption in rural areas of Northeast and Southeast Chongqing is lower than 24.5 and 43.5 percentage points respectively compared to the main urban area, and the use of clean energy has not been widely promoted.

2.4. Popularization of sanitation facilities with small regional differences

Since 2010, significant achievements have been made in the construction of environmental sanitation facilities in various regions of Chongqing. In terms of drinking water safety, the effective water supply for villages and towns in the main urban area, northeast Chongqing, and southeast Chongqing reached 100%, 98.2%, and 96.6% respectively in 2020.

In terms of garbage classification and treatment, except for a small number of townships in 12 districts and counties that have not yet established garbage treatment stations, all other districts and counties have garbage treatment stations. There have been significant improvements in the treatment of rural garbage, wastewater treatment facilities, public toilets, and feces in livestock and poultry breeding areas in various regions. In addition, with the effective implementation of the "Toilet Revolution", the proportion of rural areas in the main urban area, Northeast Chongqing, and Southeast Chongqing that have completed toilet renovation is 67.8%, 58.1%, and 56.4%, respectively, an increase of 47.9%, 44.5%, and 46.3% compared to ten years ago.

In summary, the construction of garbage treatment facilities in the main urban areas is better than that in the northeast and southeast regions of Chongqing, but there is not much difference in terms of sanitation facilities. Compared to before, most villages and towns in various regions of Chongqing have not built garbage treatment stations, but they have now achieved significant improvement. However, from the perspective of garbage treatment methods, the garbage treatment methods in the main urban area are superior to those in the northeast and southeast regions of Chongqing. The construction of garbage and sewage treatment facilities in rural areas in various regions is relatively backward, with the worst and relatively backward sewage treatment facilities in the northeast of Chongqing. From the perspective of toilet renovation, the main urban area is relatively better than the northeast and southeast regions of Chongqing, with 9.7% and 11.4% higher than the two regions, respectively.

2.5. Medical and elderly care facilities have been improved, with significant regional differences

At present, villages and towns in various regions of Chongqing have certain medical conditions, and the vast majority of townships have medical and health institutions and professional doctors. The proportion of rural areas with health centers in various regions has also significantly increased, with 92.6%, 92.4%, and 92.4% of villages and towns in the main urban area, northeast Chongqing, and southeast Chongqing having health centers, respectively, an increase of 5.6, 14.5, and 26.0 percentage points compared to 2006.

From the perspective of the construction of elderly care facilities, the Southeast region of Chongqing has experienced the greatest changes, with the proportion of villages and towns with social welfare adoption units reaching 83.6%, an increase of 24.1 percentage points. On the other hand, the main urban area and the northeastern region of Chongqing have shown a downward trend, with a decrease of 1.9 and 0.7 percentage points respectively compared to ten years ago. Elderly care facilities in various regions are further tilted towards rural areas.

Although the medical conditions of villages and towns in various regions of Chongqing have been greatly improved, there are still shortcomings in terms of professional personnel, with a proportion of less than 70%. The southeast region of Chongqing has the lowest, only 52.3%. From the perspective of elderly care

infrastructure construction, the proportion of villages and towns in the main urban area, northeast region, and southeast region with social welfare adoption units has reached over 90%.

2.6. Popularization of cultural and entertainment facilities, significant development in the main urban area

The construction of entertainment facilities in various regions of Chongqing has undergone significant changes. In the main urban area, northeast Chongqing, and southeast Chongqing, the proportion of libraries and cultural centers is 99.4%, 100%, and 100%, respectively, which has significantly increased compared to before; The proportion of sports venues in townships is also 15.6%, 10.1%, and 7.9%, all showing an increasing trend. The proportion of townships with parks and squares has also increased by 84.3, 82.0, and 80.4 percentage points compared to 2006, respectively; In townships with cinemas, the proportion has decreased, by 2.4, 3.4, and 1.8 percentage points respectively compared to before ^[4].

In terms of cultural and entertainment facilities, except for small regional differences in township libraries and cultural centers, the main urban area has obvious advantages in other cultural and entertainment facilities. The construction of gyms, parks, and squares in the main urban area is significantly higher than that in towns. Therefore, in this regard, there is a trend of leading the main urban area and relatively backward development in the northeast and southeast regions of Chongqing.

2.7. The development of farmland and water conservancy facilities has undergone significant changes, and each region has its own advantages in development

There have been significant changes in farmland and water conservancy facilities in various regions of Chongqing. The number of effective irrigation ponds and reservoirs in the main urban area, northeast Chongqing, and southeast Chongqing is 83600, 956, and 6500, respectively, an increase of 37800, 4800, and 3200 compared to ten years ago; The irrigated land area has exceeded 8 million, 4 million, and 1 million mu respectively, including infrastructure such as sprinkler irrigation, drip irrigation, and infiltration irrigation.

Relatively speaking, the construction of farmland and water conservancy facilities in Northeast Chongqing is relatively good. In 2016, the average irrigated area of each district and county in Northeast Chongqing was 18300 and 144700 mu more than that of the main urban area and Southeast Chongqing, respectively. Modern agriculture also involved more irrigated area than the main urban area and Southeast Chongqing.

3. Analysis of Uneven Regional Development of Rural Infrastructure

3.1. Insufficient labor and capital investment

In the process of urbanization, China's finance is more inclined to support the construction of major urban projects. Some governments may inevitably have a tendency to prioritize urban areas over rural areas when implementing rural infrastructure construction, but overall, there is always a shortage of investment in rural infrastructure. The reasons for this are mainly divided into the following two aspects: firstly, the non agricultural preference of government investment. Due to performance considerations, the government will be more inclined to invest in urban projects because they have low risks and high returns. Secondly, the return rate of

rural infrastructure projects is low. The willingness of social capital to participate in rural infrastructure construction is weak, and the level of financial development in rural areas is relatively low, making it difficult for financial institutions to provide long-term and stable financial support^[5].

Moreover, in most areas of Northeast and Southeast Chongqing, the rural economy is underdeveloped, with a weak economic foundation and limited government capabilities. In addition, many young and middle-aged people in towns go out to work in order to seek a better life, leading to the emergence of "empty shell villages" in many areas, mainly composed of elderly people, middle-aged women, and left behind children. This is one of the main reasons for the uneven construction of rural infrastructure in some regions.

3.2. Geographical limitations

Chongqing is a well-known "mountain city" among the people throughout the country. Located in hilly areas, Chongqing has a complex and undulating terrain, especially in the northeast and southeast regions of Chongqing, where the climate is unstable and the construction difficulty is relatively high, which makes rural infrastructure construction relatively difficult and restricts the development of rural infrastructure construction. For example, Daling Village is located in the southeast of Chongqing. Due to its complex mountain roads and long-term rainstorm, Daling Village's road to the village is pitted. It is located in a remote area of Sihe County, and its geographical location is extremely bad. This has led to many construction teams unwilling to go to Daling Village for construction. In addition, the long journey has made the infrastructure construction of Daling Village far behind other villages and towns.

3.3. Service capabilities need to be improved

Rural infrastructure is mostly public welfare facilities. So its high usage rate and high loss require regular maintenance, but in some villages and towns in the northeast and southeast regions of Chongqing, there is a situation where the infrastructure is left unattended and maintained. Rural infrastructure is not only unmanned, but more importantly, without money to manage it. The maintenance of rural infrastructure lacks funds for maintenance, and the government is only responsible for the initial construction costs, without considering the investment of later maintenance funds, resulting in insufficient funds for daily maintenance and subsequent investment of rural infrastructure. The cost of maintaining rural infrastructure falls on the villagers, but their income is relatively unstable. Many villagers do not have a fixed income, and their income is mostly negligible. Many villages and towns cannot even pay the salaries of village cadres, so there is no need to pay for the maintenance and management of infrastructure. The phenomenon of 'building without management' frequently occurs, making it difficult to fully utilize the economic and social benefits that infrastructure should have generated. This leads to the scrapping and abandonment of many already built infrastructure, resulting in a smaller number of existing infrastructure. Compared to areas with better infrastructure and management, such situations do not occur. As a result, changes in the number of infrastructure between regions can lead to imbalances.

3.4. Incomplete management system

In some rural areas, there is a lack of effective management mechanisms, and China already lacks a scientific management system in rural infrastructure management. In addition, many remote villages and towns are relatively far from the center of power, resulting in the situation of "mountain king" village cadres. Many village cadres will corrupt the national finance, resulting in many funds that should be used for infrastructure construction not being effectively implemented, Make the already insufficient financial resources even more difficult. In some districts and counties of Chongqing, there have also been "face saving projects", which have corrected the exterior walls of village main roads and houses on both sides, but they have turned a blind eye to the actual internal engineering, and there are many flashy facilities.

The root cause of these phenomena ultimately lies in the incomplete management system. Without a scientific hierarchical management system and effective supervision of those in power, power is excessively concentrated, ultimately leading to corruption and corruption. Ultimately, rural infrastructure construction cannot proceed smoothly, and the expected number of infrastructure cannot be achieved, This is also an important reason for the large gap in rural infrastructure construction in a small number of regions [9].

4. Strategies for Promoting Coordinated Development of Rural Infrastructure Construction

4.1. Reasonably controlling the scale of investment in rural infrastructure

Fundamentally speaking, the regional imbalance in rural infrastructure construction lies in the unequal investment scale. It is an unfair phenomenon that many areas with inherent advantages in infrastructure construction still have higher investment scale than other relatively backward areas. The advantages of advantageous areas become greater, while backward areas become more backward, which only increases the gap between regions. To solve the regional investment gap, we can start from the following aspects: first, the government should exercise reasonable control. The government can determine different investment scales based on the actual construction situation in different regions, and allocate and adjust them reasonably; Secondly, it leads to investment. In situations where the investment scale is small or insufficient, the government can actively guide other social enterprises and markets to invest in infrastructure construction in the region. Government actions can increase investment confidence and expand funding sources; Thirdly, fund redistribution. For funds that have already been invested, they can be redistributed through fund backflow. The investment between regions is not exactly the same, and there may be surplus or insufficient situations. In this case, the government can make reasonable redistribution to ensure that the funds are effectively implemented [10].

4.2. Establish a comprehensive management system

Effective management of rural infrastructure construction is a key measure for coordinated development between regions. Accurately evaluate rural infrastructure construction in advance, during and after the event, and record the performance of each process in detail for evaluation [11]. While establishing a comprehensive evaluation system, it is also necessary to establish a scientific management system for those in power, so that power cannot be too centralized, and reasonable distribution of power can be achieved. The realization of the constraint between power and power is an important guarantee to prevent corruption from occurring.

4.3. Adapt to local conditions

In the process of implementing the rural revitalization strategy and accelerating the development of rural areas, it is necessary to scientifically plan for rural infrastructure. The rural areas are scattered, and the economic development conditions of each region are different. The infrastructure in different regions needs to be carried out from different aspects, presenting diverse characteristics. When formulating plans for rural infrastructure construction, it is necessary to adapt to local conditions, focus on and have characteristics, and make the arrangement and deployment of infrastructure construction scientific and reasonable.

4.4. Regional connectivity

In terms of infrastructure such as roads, water and electricity, information technology, and the Internet, further extension can be made between villages to promote the interconnection and interconnection of infrastructure between villages and towns, as well as between urban and rural areas. An integrated platform can be built to jointly build an infrastructure relationship network and achieve “village to village connectivity”. Connect rural roads, connect power and water supply between regions, and connect regional communication to promote the coordinated development of urban and rural areas in various regions.

5. Conclusions

Rural infrastructure is the fundamental condition for agricultural development, as well as the foundation for social production and residents' lives. The road to rural revitalization is a long and arduous one. To comprehensively improve the level of rural development, create beautiful villages, build modern agriculture, and promote urban-rural integration, infrastructure construction is essential. Relevant departments should always regard the construction of rural infrastructure as an important means to improve the production and living conditions of rural residents, adjust measures to local conditions and make up for shortcomings based on practical problems, strengthen rural infrastructure construction, and lay a foundation for rural socio-economic development.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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