Realistic Dilemma and Optimization Path of Green Urbanization in Hebei Under the Background of the New Path to Urbanization

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Abstract. Based on the new perspective of green development, this research selected several towns in Baoding, Cangzhou, and Handan in Hebei Province as research units, and started from the two indicators, environmental carrying capacity and human settlements, to investigate their concrete practical dilemmas in the process of green urbanization, and analyze the deep-seated reasons behind them. After that, we put forward practical and effective optimization paths at multiple levels of economy, culture, society and ecology on the basis of theory and practice, so as to promote the continuous development of green urbanization in Hebei.

Keywords: The New Path to Urbanization; Green Urbanization; PSR Model.

1. Introduction

In this research, we centered on the two indicators, environmental carrying capacity and human settlements and firstly analyzed the mechanism of green urbanization. Then on the basis of relevant domestic and overseas research, we carried on in-depth analysis and research on the interaction coupling relationship between the two indicators, thereby clarified the internal operation mechanism of green urbanization. In order to understand the specific situation of the current region in terms of resources, ecological environment, urban living environment, etc., we conducted telephone interviews on township cadres of Shunping County in Baoding and department personnel in Cangzhou and Huanghua. Meanwhile, a questionnaire survey was adopted to further understand the common urban residents' views on green urbanization. After collating the above information, specific problems of green urbanization in the three regions were crystalized. In the end, we applied the PSR model to analyze the deep-seated reasons behind the problems, and put forward preliminary recommendations and measures.

2. Coupling relationship between urbanization and ecological environment

2.1 Bad urbanization pattern destroys the ecological environment

Without proper planning, the increasing urban population density may provide conditions for the outbreak and spread of epidemic diseases. Besides, it will inevitably lead to an increase in the demand for natural resources such as fresh water, electricity, and gas. And unreasonable way of life and consumption will cause a lot of pollution and waste of resources. Blindly expanding the scale of cities through large-scale land acquisition seriously endangers the red line of cultivated land. Major construction projects usually change the geographical environment and geological structure of the region, and easily destroy the ecological balance in the region. Industrialization will cause serious ecological environment pollution in the process of promoting urbanization. The expansion of urban traffic generates spatial pressure on the ecological environment, stimulates the increase of vehicles and increases the intensity of vehicle exhaust pollution. If the urban public pollutant treatment facilities are outdated and the urban public pollution is arbitrarily discharged because no one is responsible for the treatment, ecological environment will be damaged.

2.2 Deteriorating ecological environment hinders urbanization

The deterioration of the ecological environment will led to a decrease in the livability of cities and towns, which rejects both the urban population and non-urban population to be relocated, blocking the urbanization in terms of population. Environmental pollution seriously threatens the health of urban residents and goes against the advancement of population urbanization in terms of population quality. Besides, the destruction of cultivated land jeopardize food security, causing food crisis and pest infestation, threatens the ecological carrying capacity of urban land, and reduce the sustainability of urban land development and construction. And geological disasters will destroy the built towns and bring great resistance to the reconstruction and restoration of the towns. The destruction of habitats seriously endangers species diversity, and easily collapse the ecosystem, making it difficult to maintain the basic living conditions of urban residents. Moreover, environmental degradation damages the competitiveness of the investment environment, excludes corporate capital investment and leads to the outflow of local capital, which eventually impedes the process of urbanization.

2.3 Reasonable urbanization model improves ecological environment

People-oriented urbanization will improve the happiness index. Raising the cultural quality of the urban population is beneficial for strengthening the ecological awareness and promoting ecological environmental protection. A reasonable urbanization model protects arable land, thereby ensuring the growth of food crops and the survival of organisms that rely on them. Scientifically planned and constructed cities and towns also consume less resources, and the built-up areas will have stronger sustainable development capabilities, which is good for improving the ecological environment. The circular economy model saves natural resources and protects the ecological environment, which is an effective way to build a resource-saving and environment-friendly society. Furthermore, reasonable public transportation planning and complete public transportation services can reduce pollution caused by private transportation and prevent problems brought sbout by traffic congestion.

2.4 Good ecological environment promotes the process of urbanization

Livable towns attract non-urban populations, which can promote urbanization in terms of population. A good urban environment is beneficial to the health of residents, improves the quality of urbanization, and promotes the advancement of population urbanization. It protects cultivated land and ensure food security, reduce the possibility of food crisis and the proliferation of pests, improves the ecological carrying capacity of urban land, and promotes sustainable land development. The improvement of the ecological environment is expected to increase ecological resources, thereby providing necessary construction resources and energy for the promotion of urbanization. A good ecological environment creates a good investment atmosphere, strengthens competitiveness, prevents the outflow of local capital, and promotes economic urbanization.

3. Analysis of questionnaire results

3.1 Prominent problems

Through in-depth interviews and literature research, we have summarized the following prominent problems in the process of green urbanization in Huanghua, Cangzhou, Handan, and Shunping County in Hebei:

(1) Insufficient utilization of land resources has severely restricted the development of urbanization.

(2) Shortage of water resources, poor water quality, high fluoride problems in water resources, and great impact of total nitrogen.

(3) The air pollution problem is relatively serious, and the air quality of some cities in Hebei is at the bottom of the national rankings.

(4) The urban planning is comparatively backward, resulting in insufficient supporting green space and parks, which cannot fully meet the needs of urban residents.

3.2 Reason analysis

(1) Weak environmental infrastructure. Some water conservancy projects with serious aging and damage have been in disrepair for a long time. While the available water conservancy facilities and projects cannot fully and effectively store water resources, leading to reduced water resource utilization and serious waste.

(2) Unreasonable industrial structure. The degree of greening and ecologicalization of the industry is not enough. Labor-intensive and resource-intensive industries account for a large proportion in the local industrial structure, while the proportion of knowledge and technology-intensive industries is relatively lower. Besides, green industries, high-tech industries, low-carbon industries, and environmental protection industries represent a small part.

(3) Rapid urbanization and industrialization. The contradictions between the rapidly advancing urbanization process and the level of governance, green development, and the lag in ecological civilization construction have caused the government to take extensive way of urban development and construction, operation and management, and production and living.

(4) Ecological and environmental protection was relatively neglected in the initial urban planning. Influenced by historical limitations, today's developing situation could not be foreseen in the early urban planning, and the lack of vision for long-term development led to a lag in planning of Hebei. Urban construction of Hebei is the same, lacking features and brands.

(5) Relevant entities in rural areas in the absence of awareness of environmental protection. On the one hand, rural residents underestimate the serious consequences of environmental pollution and damage and ignore the importance of the environment to their own survival. On the other, they know little about environmental protection, laws and regulations and policies, and lack awareness of environmental rights protection.

3.3 Suggestions

(1) Improve the construction of environmental infrastructure. Strengthen the government's investment, continue to relax market access, lower investment thresholds, encourage other social capital to actively participate in investment, and achieve diversification of investment entities. Carry out urban renewal projects, concentrate on renovation of old communities, widely adopt small-scale demolition and construction and improve indoor infrastructure to improve living conditions. Put the undeveloped idle land to use, and convert the nature of the land to increase the construction area of public land and green space.

(2) Carry out scientific urban planning. Attach importance to scientific planning in the ongoing or upcoming urban planning, seek scientific prediction, planning and design from professional scholars and research institutions in Hebei and North China, treat livability as the starting point, and make sure that the quality of urban living is at a high level.

(3) Use the land resources reasonably, carry out environmental transformation, set up supporting public facilities wisely to ensure that urban residents have more leisure places. Place a high value on ecological environmental protection and restoration work. The government should increase investment in urban environmental pollution prevention and control, strengthen sewage and solid waste treatment, control pollution sources, and manage important urban water sources, key lakes and rivers, etc.

(4) Accelerate the construction of a green industrial structure. Government departments should introduce relevant policies and measures to speed up the adjustment and optimization of the industrial structure, constantly promote the transformation of industrial development to a green and intelligent direction, vigorously cultivate and develop emerging industries, and focus on building a green industrial structure.

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