

# Research on the Development Strategy and Supporting System of Villages Along the Yellow River Coast in Henan Province

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**Abstract:** The good quality development of villages along the Yellow River coast in Henan Province can help promote ecological protection in the Yellow River Basin, implement the rural revitalization strategy, and promote comprehensive rural revitalization. This article focuses on the advancement issues of villages along the Yellow River coast in Henan Province, deeply explores the challenges and opportunities faced by villages along the Yellow River in Henan Province, analyzes and studies the factors that constrain the development of villages along the Yellow River in Henan Province, summarizes the resource advantages and constraints of villages along the Yellow River, and proposes development strategies and support systems for villages along the Yellow River coast in Henan Province, such as optimizing urban spatial layout, innovating natural resource allocation, accelerating industrial structure adjustment, deepening strategy and institutional reforms, and strengthening ecological environment protection. Assist in ecological conservation and good quality development of the Yellow River Basin, promote economic prosperity and social progress of villages along the Yellow River coast, and provide reference for rural revitalization in similar areas.

**Keywords:** Yan Huang Village; New Urbanization; Resilient City; Development Strategy

## 1. Introduction

The Yellow River Basin is an important ecological protective screen in China, a significant district for winning the battle against poverty, and an important economic zone in China, and has a very significant

position in economic and social advancement and ecological security. These years, China with a view to all situation of ecological civilization construction, and the economic and social development and people's lives in the Yellow River Basin have undergone significant changes. The ecological environment continues to improve significantly, and the level of development continues to upgrading. Meanwhile, we should also be clearly aware that there are still some prominent difficulties and problems in the development along the Yellow River coast villages. Therefore, "Research on the driving factors and supporting systems of the development of villages along the Yellow River coast in Henan Province from the perspective of rural revitalization" has important theoretical and practical significance in promoting the ecological conservation and good quality advancement of the Yellow River Basin, the good quality economic advancement of Henan Province, and the implementing the rural revitalization strategy.

## 2. Research Status

The relevant research of new-type urbanization focuses on the connotation interpretation and the driving mechanism and development model of new-type urbanization. The connotation interpretation concentrate on the enhancement of urbanization in terms of culture, service, spirit, and other aspects, and emphasizes the synergism advancement of urban and rural areas [1], which is a "people-oriented" urbanization, and a dynamic mechanism and development model for pursuit of "intensive, intelligent, green, and low-carbon" urbanization [2,3]. Scholars have conducted extensive research in this field. Based on panel data from 247 prefecture level cities in China from 2011 to 2020, Li Bingchen et al. used the double difference

method to evaluate the impact of new urbanization pilot methodspoli on high-quality economic development [4]. Ren Yayun et al. innovatively proposed the concept of carbon peak potential index. Based on panel data from 30 provinces in China from 2010 to 2019, a comprehensive evaluation index system was constructed to quantitatively evaluate the two, and analyze the spatiotemporal coupling and interaction relationship between the two [5]. Holling (1973) [6] first started the study of resilience of resilience, and subsequently the idea of resilience was continuously extended and applied from natural ecology to human ecology and then to urban ecology. Meanwhile, research on city resilience center on three fields: first, the interpretation of the connotation of city resilience. Urban resilience reflects the self-coordination and self-recovery ability of urban systems in the face of uncertain risks, which has basically become a consensus [7]. The second is the horizontal measurement of city resilience. Based on the understanding of city resilience, scholars have adopted a variety of methods such as the comprehensive index method [8] and geographic detector [9] to quantitatively evaluate urban resilience from multiple perspectives. The third is the theoretical framework of resilient urban planning [10]. It can be seen that the theoretical research system of urban resilience is slowly taking shape, but there is still a lack of scientific measurement system.

At present, the existing research on how to formulate a village development support system tailored to local conditions for villages in the main functional areas of agriculture along the Yellow River coast in Henan is not yet perfect, and the research on the driving factors affecting the advancement of villages in the Yellow River coast district in Henan is not systematic. Therefore, "Study on the propelling factors and supporting systems of the advancement of villages along the Yellow River in Henan Province under the perspective of rural revitalization" has important theoretical and practical significance in promoting the ecological conservation and good quality advancement of the Yellow River Basin, the good quality economic advancement of Henan Province, and the implementation of the rural revitalization strategy.

This article summarizes the advancement patterns, processes, and mechanisms of villages along the Yellow River coast in Henan Province, and deeply analyzes their advancement and gradual progress mechanisms. From three dimensions of urbanization and ecological environment, demand side and external environment change, the supporting system of development along yellow village in Henan Province is constructed. Coordinate and optimize the framework, elaborate on the support and regulation mechanism for the progression of villages along the Yellow River coast in Henan Province, and propose the development model, support system, and development strategy.

### **3. Development Strategy and Support System**

#### **3.1. Optimize Urban Spatial Layout and Build a New Urban System**

Scientific and reasonable cities and towns spatial layout is the focus of sustainable and healthy development of urbanization, and also the key to realizing the adaptation of urbanization pattern to ecological environment pattern. Urban spatial layout mainly includes urban regional spatial structure, urban scale hierarchical structure and network structure within urban system. At present, the spatial layout characteristics of Henan Province along the Yellow town system are as follows: in terms of geographical space, the level of urbanization is decreasing outward from the provincial capital city and the central city; The population density is sparse in the middle and dense in the periphery. In terms of scale hierarchy, it shows a "spindle" structure dominated by medium-sized cities, with insufficient radiation driving capacity of big cities, insufficient development of small cities, large number of small towns but small scale, and weak ability to gather production factors. In the urban system network system, the intercity transportation of urban agglomerations is mainly dominated by expressways and national trunk highways, while the development of intercity rail transit lags behind, and the transportation network mainly serving the development of urban agglomerations has not yet formed.

The urban system should be optimized according to the regional natural basis and the

supply demanded goods state of urban ecosystem services in the regions along the Yellow River coast in Henan Province. First, in terms of optimizing the spatial structure of urban areas, a network-like urban development system should be constructed in areas with flat terrain, superior resources and environment, and relatively developed transportation and road networks in river valley plains and irrigated agricultural areas, a belt-shaped urban development system should be constructed relying on road networks and water networks, and a point-shaped urban development model should be implemented in areas with scarce water and soil resources, such as wind-blown sand areas and soil-rocky mountainous areas. Second, in terms of optimizing the urban scale structure, through technological innovation and structural optimization, we should accelerate the construction of a driving system for high-quality urbanization development, moderately control the scale of mega cities, and improve their comprehensive carrying capacity and ecological environment supply capacity. Actively tapping into the advancement potential of small-medium cities, supporting their development, and guiding the efficient aggregation and rational flow of various factors; Choose a central town with superior soil and water resources and strong ecosystem service supply capacity, and cultivate and develop it into a small and medium-sized city. Third, in terms of optimizing the urban system network, we should speed up the construction of infrastructure such as transportation and communication, improve comprehensive transportation channels, upgrade the public transport service system in big cities, accelerate the improvement of transportation conditions in middle and small towns, and strengthen the connections between provinces, cities, counties and cities. We will improve the overall bearing ability of population, economy and industry in major urbanization areas such as central cities and urban agglomerations.

### **3.2. Innovate the Allocation of Natural Resources and Build Intensive Low-carbon Cities and Towns**

The natural resources required for urbanization development mainly include water resources, land resources, energy resources, and ecological resources. From the urbanization

process and ecological environment pattern response and state response results of villages along the Yellow River coast in Henan Province, it can be seen that in mountainous areas with fragile ecological environment and lagging economic and social advancement, urbanization development is constrained by the dual constraints of scarce water and soil resources and weak economic foundation.

The hinge to solving the above difficulties rest with optimizing the allocation of resources, improve the level of economical and intensive utilization of resources, and build intensive and low carbon towns. In terms of water resources utilization, all counties and districts should, on the basis of fully tapping the potential of water resources utilization in villages along the Yellow River coast in Henan Province and ensuring ecological water security, all counties and districts should reasonably determine the size of urban population, land use and industry according to the bearing ability of water resources, and build an urban system suitable for water resources, so as to Provide support for the balance of ecological environment supply and demand in urbanization.

Meanwhile, it is necessary to accelerate the advancement and popularization of new water-saving technologies, improve the efficiency of water resource utilization, relieve water resource supply pressure, and promote the construction of water-saving towns. On side of land resource utilization, the supply of soil resources in the process of urbanization is limited, industrial land resources are scarce, and soil costs are rising, which has become a challenge faced by urban economic and social development. All counties and districts should establish the concept of "smart growth" and "compact city", reasonably assign the scale of urban land use according to the natural foundation, resource endowment, location characteristics and urban development level of Yanhuang Village in Henan Province, and further tap the potential of existing urban land resources by controlling the total amount, activating the stock, optimizing the increment and improving the quality, and constantly optimize the way of land use. In terms of energy resource utilization, with the advancement of urbanization in the Yellow River coast area of Henan Province, the demand for energy resources for urban

construction and development is increasing, and the energy resource constraints faced in the process of urbanization will exist for a long time. Upgrading the efficiency of energy resource allocation and the level of conservation and intensive utilization is a significant way to solve the contradiction between supply and demand in the ecological environment of Yanhuang Villages in Henan Province. In the procedure of promoting urbanization, all counties and districts should play the leading role of the market in resource distribution, combine technological innovation and strategy guidance, reduce the consumption of energy resources by urbanization and economic development, and upgrade resource use efficiency. In terms of ecological resource utilization, in the regulation of supply and demand of ecosystem services in urbanization, the optimization and efficient utilization of ecological resources are the key to supply-side regulation and it is also an important way to enhance the supply capacity of the ecological environment. To this end, counties and districts can reconstruct the urban economic system according to the law of ecosystem energy flow and material cycle, integrate the urbanization system into the material cycle of the natural ecosystem, continuously optimize the ecosystem structure, improve the quality and quantity of ecosystem services, and build green and low-carbon towns.

### **3.3. Accelerate the Adjustment of Industrial Structure and Facilitate Economic Transformation and Upgrading**

Urbanization is an important carrier of industrial development, and industrial development is an important supporting power for urbanization. In the rapid stage of urbanization development, correctly understanding and grasp the interaction law between urbanization and industrial development is the key to achieving sustainable and sound advancement of urbanization. In the case of entering a new normality of economic advancement and increasing downward pressure on the economy, continuing to develop traditional industries to achieve the overall advancement of villages along the Yellow River coast in Henan Province is no longer suitable for the "new normal" and regional thematic functional positioning. Therefore, optimizing and

adjusting the industrial structure, transforming the mode of economic advancement, and promoting the transformation of industrial levels from low-end to mid-to-high-end are important ways to solve the problem of "economic non-ecological and ecological non-economy" in Yanhuang Village in Henan Province.

In terms of agricultural industry advancement, we should intensify the construction of high standard farmland, enhance the level of intensive utilization of farmland, and promote the green development of grain production. According to the regional water and soil resource endowment and climatic characteristics, the counties can optimize the layout of agricultural industry and vigorously develop characteristic planting industry. We should accelerate the development of farm produce processing industry, implement deep processing of agricultural products such as grains, fruits, and meat, use modern technological means to strengthen the purification and concentration of traditional Chinese medicine, extend the industry chain, heighten the added value of agricultural products, promote the industrialization, standardization, and large scale operation of agriculture and animal husbandry in villages along the Yellow River coast in Henan Province, and improve the comprehensive supply capacity of the agricultural industry. In terms of industrial development, we should, according to market demand, focus on supply-side structural reform, implement technical innovation, accelerate the application and promotion of new technologies and new processes in the energy and raw material industry, constantly deepen the processing of energy and mineral resources, facilitate the high-end advancement of the energy heavy industry. Simultaneously utilizing the abundant green resources like wind and solar energy in the area to accelerate the development of new energy. Excavate the advantages of historical and cultural and eco-tourism resources, actively develop eco-tourism and cultural tourism through the infrastructure construction and scenic upgrading and transformation of Yanhuang Village in Henan Province, at the same time, leveraging the favorable ecological environment and unique folk cultural resources in rural areas, we will hasten the

advancement of rural tourism and rural leisure industries, promote local urbanization of rural people, and enhance the quality and level of urbanization development.

### **3.4. Deepen the Reform of Strategies and Systems, and Promote the Integrated Advancement of Urban and Rural Areas**

Deepening the reform of strategies and systems is the hinge to promoting the integrated advancement of urban and rural areas. At present, it is difficult to realize the free flow of economic, social and ecological factors in urban and rural areas along the Yellow River coast in Henan Province lies in the constraints and restrictions of the existing institutional mechanisms. The reform and implementation of strategies and systems related to population, land, and basic public services are most urgent for promoting urban-rural integration and improving the urbanization and supply of resources and environmental factors in villages along the Yellow River coast in Henan Province. First of all, we should innovate and improve the population service and management system, and abolish the registered residence system that divides city and countryside areas. We will reasonably determine the conditions, requirements and standards for household registration in megacities and big cities, fully lift restrictions on household registration in established towns and small cities, promote population, and promote rapid urbanization and social and economic development. Secondly, the mechanism for linking the fluctuate of city and countryside construction land should be improved, reasonably control the scale of urban construction land, and prevent urban space expansion from occupying a large amount of farmland. Explore the establishment of a mechanism for the withdrawal and compensation of rural homestead use rights, promote and regulate the circulation and withdrawal of idle rural homesteads through economic means, promote equal exchange of land resource elements between urban and rural areas, and improve the level of land resource conservation and intensive utilization. Third, we should take the new urbanization and rural revitalization strategies as an opportunity to accelerate institutional reforms in education, health care, employment, entrepreneurship, and city and

countryside elderly care, and facilitate the extension of basic public service facilities to central towns, key towns and central villages. Establish city and countryside public service and social security system that is in line with the actual socio-economic advancement of villages along the Yellow River coast in Henan Province and coordinated with the stage of urbanization development, improve the comprehensive service capacity of urban areas, and achieve the co-construction and sharing of basic public services.

### **3.5. Strengthen Ecological Environment Protection and Ensure Urban Ecological Security.**

According to the main functional positioning of the Yellow River region in Henan Province, with a focus on implementing the national main functional area strategy and propelling ecological civilization construction, we will improve the spatial advancement and control system of urbanization areas, agricultural product production areas, and key eco-function areas. Explore the establishment of ecological compensation trading systems among river basins, city and countryside areas, urbanization areas and ecological protection areas, continue to expand the ecological compensation industry, and accelerate the construction of ecological compensation demonstration zones. Improve the fiscal transfer payment system, strengthen the transfer payment of major agricultural products producing areas in the region, as well as concentrate on contiguous poverty-stricken areas, and improve the function of ensuring ecological security, food security and social security. Actively develop the environmental protection market, carryout carbon emission rights, pollution discharge rights, and water rights transaction systems, and promote professional treatment of environmental pollution. Compile the balance sheet of natural resources in Yanhuang Village in Henan Province, strengthen the control of water resources advancement and utilization, and limit the management of pollution in water function zones. Based on the concept of integrated ecosystem management, starting from the coordination of the supply and demand kindred between urbanization and ecological environment in Yanhuang Village in Henan Province, the intensity of urbanization

and industrialization should be optimized, and the investment in ecological environmental protection should be increased, and a new pattern of harmonious advancement between urbanization and ecological environment should be formed.

#### 4. Conclusions and Prospects

The advancement of urbanization and ecology protection along the Yellow River in Henan Province are influenced by multiple factors such as provide side, requirement side, and external environmental changes. In order to ensure the steady progress of the level of urbanization, the effective supply of ecosystem services, and the reasonable and moderate demand for ecosystem services, the good quality advancement of urbanization and the effective protection of the ecology can be achieved by optimizing the spatial layout of towns, building a new urban system, innovating the allocation of natural resources, building intensive low-carbon towns, accelerating the adjustment of industrial structure, promoting economic transformation and upgrading, deepening strategy and system reforms, promoting urban-rural integrated development, strengthening ecological environmental protection, and ensuring urban ecological security.

The construction of Henan Province along the Yellow village development support system plan will help protect and enhance rural production, life, ecology, culture and other functions, promote ecological protection and good quality economic progress of the Yellow River basin, Henan Province's good quality economic development, innovate the development ideas of Henan Province along the Yellow village, and achieve rural revitalization.

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