

## Discussion on Ecological Land Consolidation under the Background of Rural Revitalization

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### Abstract

**The current domestic land consolidation project management has basically realized the regularization development, but with the overall popularization of green environmental protection concept and the continuous improvement of related work attention, the sustainable development of land ecological consolidation work is very important. For a long time, the imbalance between supply and demand of rural land use function is one of the main causes of rural problems. Based on the perspective of rural revitalization, this paper explains the mutual feed-back relationship between rural land consolidation and rural revitalization, and discusses how to achieve the balance between supply and demand of rural land use function through rural land consolidation, so as to promote rural revitalization.**

### Keywords

**Land Consolidation; Ecological; Rural Revitalization.**

### 1. Foreword

For a long time, the separation of urban and rural relations and the positioning of rural values under the dual partition system have resulted in the dilemma of weakening of rural population, land wasteland and industry lag, as well as the decline of "cities into villages" in today's China. Issues related to agriculture, rural areas and farmers have become a weak link in China's efforts to promote urban-rural integrated development and finish building a moderately prosperous society in all respects. On this basis, "rural revitalization" was proposed at the 19th National Congress of the Communist Party of China to address the situation of backward rural development and uncoordinated development between urban and rural areas. And put forward the general requirements of "industrial prosperity, ecological livable, rural civilization, effective governance, rich life".

Land is the carrier of human's main social and economic life, and its importance is self-evident. "Land consolidation" is clearly put forward in the National Land Consolidation Plan (2011-2015) as an important means to coordinate the relationship between man and land. Rural land consolidation is the main way to improve the intensive utilization of urban and rural construction land, improve rural production, living conditions and ecological environment, and promote the coordinated development of urban and rural areas. As a means to coordinate the relationship between man and land, land consolidation has multiple functions, such as reconstructing urban and rural space, ensuring food security, coordinating urban and rural

development, making intensive use of resources and improving the living environment, which is in line with the multiple goals of rural revitalization.

Rural revitalization is a strategy to comprehensively adjust agricultural and rural development policies on the basis of reflecting on the problems of "urban development and village decline" in the process of traditional urbanization, aiming at promoting the comprehensive rejuvenation of rural areas. The development of regional economy needs the comprehensive influence of population, land, industry and other factors. Population is the main body of regional economic development. It creates economic, social and ecological value for rural areas through production and living activities such as resource exploitation and utilization, enterprise operation and management, and is the source of power to realize rural revitalization. Land, as the main carrier of human activities, plays a basic role in providing resource support in rural revitalization. It is not only a guarantee for rural residents' spatial needs for production, life and ecology, but also a basic resource support for foreign capital to enter rural areas to develop different industrial modes. Industrial development requires the use of land resources to attract rural population, especially young and middle-aged workers to find jobs nearby, and the organic combination of population and land constitutes the driving force of rural industrial development, thus driving the increase of farmers' income and the development of rural economy. The coupling mechanism of "population, land and industry" is the key to solving the problem of "agriculture, rural areas and farmers" and rural revitalization.

In the vast rural areas, it is precisely because of the huge difference between urban and rural development that a large number of people move to the cities, leading to the weakening of population aging, which is the root cause of rural depression. In the "hollowing out" and "old weakened" rural areas, the industrial development lags behind and the industrial foundation is weak. Under the circumstance that non-agricultural industries are difficult to develop, the agricultural development is also declining due to the loss of population, the farmland is abandoned, and at the same time, the homestead is vacant and the utilization efficiency of rural land resources is low. Under the influence of the decline of industry and population, problems such as crumbling rural landscape, dilapidated or missing infrastructure and disordered rural governance emerge. Therefore, in order to cope with the loss and decline of rural internal factors, rural revitalization is to attract external capital and slow down the outflow of rural population through economic, political and cultural construction, and recombine rural population, land, industry and other development factors, so as to optimize the structure of factors, improve regional functions and reshape rural forms. The comprehensive revival of rural regional economy, society and ecology and the new pattern of urban-rural integrated development can be realized to solve the contradiction between unbalanced and inadequate development and people's ever-growing needs for a better life presented by China's urbanization.

As the main carrier of social economy, the quality improvement of land resources and the biological perfection of mechanical facilities directly affect the efficiency of agricultural production, and then affect the income and employment choice of rural residents, so as to achieve the transformation of rural industrial structure and population structure. The main purpose of agricultural land consolidation is to increase the area of effective cultivated land, improve the quality of cultivated land and improve agricultural production conditions, promote the industrialization and scale of agricultural production, or develop rural tourism based on the improvement of farmland landscape. The key point of rural construction land consolidation is to guide the population agglomeration, reduce the vacancy rate of residential land and improve the utilization rate of land resources. With the population agglomeration, industry concentration, capital to the countryside, further promote rural development. Focusing on resources in rural areas, especially the low utilization rate of land resources and imperfect facilities, land consolidation from the perspective of rural revitalization integrates new

business forms, new technologies, new entities and other elements. The transformation of the comprehensive regulation mode from "land-based" single factor regulation to the coordinated coupling of multiple factors of "people, land and industry" has been realized, forming a new way to solve the shortcomings of rural resource utilization and factor integration. The starting point of rural land consolidation and rural revitalization is to adjust the trend of rural population, land, industry and other factors that affect the process of rural development, so as to coordinate their development and create a beautiful countryside. However, with the increasingly serious environmental problems, all countries in the world pay more attention to the development of ecological environment, and the main goal of land consolidation has also begun to change to improve the rural landscape and protect the ecological environment, and land ecological consolidation has attracted widespread attention. There is a certain correlation between ecological concept and land management, and ecological management will provide evidence for the implementation of landscape design work. There are mainly three kinds of land ecological remediation technology: the first is the use of biological technology to improve soil structure, improve soil nutrients and other soil improvement technology; The second is the ecological construction control technology, vegetation protection technology and slope stereo ecological restoration technology to prevent soil and water loss in land consolidation. The third is to carry out land consolidation planning and engineering design based on ecological and landscape theories in view of the problems such as landscape unification that may be caused by land consolidation. The technique requires minimal impact on the ecological environment that plants and animals depend on, avoidance of destruction of rural landscapes, and functional restoration of important landscapes. At present, land ecological management and landscape design have been regarded as important means to maintain rural biodiversity and ecological sustainable development.

## 2. Research Progress

Rural land consolidation mainly includes farmland consolidation and rural construction land consolidation. It refers to the comprehensive consolidation of rural "fields, water, roads, forests and villages" and the optimization of the structure and layout of rural construction land by integrating all kinds of agriculture-related funds in accordance with the goals and uses set out in the general plan for land utilization in a certain area and taking the platform of linking land development and consolidation with the increase and decrease of urban and rural construction land. We will improve rural production and living conditions and the ecological environment, promote large-scale agricultural operations, concentrated residential and industrial development, and promote land use activities in the process of urban-rural integration. Its core purpose is mainly to expand the scale of farmland, improve the quality of cultivated land, optimize the layout of villages and other material aspects. In the perspective of rural revitalization, land consolidation is based on comprehensive land consolidation to expand the scale of cultivated land, improve the quality of cultivated land and the utilization form of rural construction land, so as to revitalize rural land resources, promote the reconstruction of production, life and ecological space, and activate factors affecting rural development such as population, land and industry.

## 3. Foreign Research Progress

Foreign land consolidation began in the Middle Ages, and most countries went through three stages: The first stage was from the mid-16th century to the late 19th century, which mainly carried out ownership adjustment, land consolidation and other activities. The second stage was from the early 20th century to the 1950s, during which the main purpose of land consolidation was to provide land for urban development and infrastructure construction. In

the third stage, from the 1960s, land consolidation shifted its focus to the comprehensive improvement of economy, life and ecological environment in rural areas.

The emphasis of land consolidation in Germany has changed from adjusting the form of cultivated land and improving agricultural supporting facilities to focusing on the reconstruction of rural infrastructure construction and regional planning at the present stage, attaching importance to the protection of natural landscape, and paying special attention to the public's participation in land consolidation projects. At present, the focus of land consolidation work in the Netherlands is to enhance the comprehensive effects of land, and strengthen the protection and promotion of ecological environment in the consolidation process. In Japan, land consolidation initially targeted at salinization of farmland and reclamation of sea land, and then developed overall regional planning. Since the 1980s, land consolidation has been regarded as an important means to realize the symbiosis between residential space and agricultural land, and comprehensive development planning for villages with agricultural characteristics has been formulated. It fully shows the important position and great role of land consolidation in rural development. Portugal believes that comprehensive land consolidation projects are geographically defined as rural land development activities.

Miranda D and Zvi Lerman believed that land consolidation mainly improved rural economic level and living standard by changing rural farmland production facilities and living conditions, and verified the promoting effect of land consolidation on rural development from a sociological perspective. Some foreign scholars believe that the degree of satisfaction and acceptance of farmers and the changes of farmers' agricultural activities have a great impact on the effectiveness of land consolidation, and the research believes that land consolidation has an improving effect on the prevention and control of land fragmentation. Mihara et al. 's research on the effects of land consolidation on rural revitalization and economic development in Japan shows that land consolidation is one of the important measures to promote rural economic development. Through land consolidation, soil aggregate structure in low-yielding fields can be effectively improved, thus enhancing soil water and fertilizer retention performance. At the same time, land leveling through land consolidation can promote the development of agricultural scale and mechanization, and lay a solid foundation for farmers to increase production and income.

To sum up, the content and focus of foreign land consolidation are constantly adjusted and improved, and gradually formed a complete system suitable for its own, the consolidation goal has been changed from promoting agricultural development to promoting the overall development of rural areas, land consolidation as an important means to develop rural areas; At the same time, according to the research of foreign scholars, land consolidation plays a very key role in rural development.

#### **4. Domestic Research Progress**

China has a short history of land consolidation. Since the 1990s, China began to carry out land consolidation in a planned way, with the main goals being to increase the amount of cultivated land, improve agricultural infrastructure and improve agricultural productivity. The year 1997 was the development period, which was the initial stage of land consolidation. The main purpose was to alleviate the pressure on land resources caused by economic development driven by reform and opening up. The period from 1998 to 2007 is the development period, and the main purpose of land consolidation during this period is to complete the balance of land occupation and compensation. Since 2008, land consolidation has become an important strategic deployment at the national level. "National Land Consolidation Plan (2011-2015)" proposed to build high-yield and stable farmland as a breakthrough, expand the field of land consolidation, in order to steadily promote the realization of the goal of a new socialist

countryside. The report of the 19th National Congress clearly pointed out that land consolidation is the key to get rid of poverty and realize revitalization of rural areas. In the exploration of the relationship between land consolidation and rural development, Gao Mingxiu systematically studied the coupling relationship between land consolidation and new rural construction and the theory and method of model innovation by using geographic information system technology and mathematical quantitative analysis method. It shows that land consolidation is becoming an important content and means of rural construction, and rural construction is becoming an important task and goal of land consolidation. Tao Wenxing et al. used comparative analysis and comprehensive analysis to reveal that there is a complementary relationship between land consolidation and new rural construction. Long Hualou and other scholars clarified the connotation of rural revitalization and land consolidation in the new era, analyzed their mutual feed-back relationship, and explored that land consolidation provided basic functions in the process of rural development, including providing resource support for population agglomeration and industrial development. To sum up, the connotation and objectives of land consolidation are further clarified, and the emphasis has begun to shift from simply increasing the amount of cultivated land to improving the ecological environment, changing the appearance of villages and social development. Land consolidation has become an important starting point for coordinating urban and rural development and rural revitalization. There are many scholars who combine land consolidation with urban and rural development, new rural construction, industrial development and rural governance to carry out research on the relationship. However, most of the existing researches are limited to the theoretical aspects, and there is a lack of research on the specific implementation and impact degree.

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