

# Influence of Ecological Restoration on Land Consolidation Project

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## Abstract

**Fully implement Xi Jinping's new era of ecological civilization thought, carry out land consolidation and ecological restoration, and realize the overall protection, systematic restoration and comprehensive management of mountains, rivers, forests, fields, lakes and grasslands will be the focus of the natural resources department for a long time in the future. In response to the current problems, it is necessary to earnestly seize the good opportunities of functional integration and attention from all walks of life, clarify the work priorities, make good use of policies, adhere to the goal and problem orientation, innovate the work mechanism, strengthen demonstration and guidance, and then promote land consolidation and ecological Repair work.**

## Keywords

**Ecological restoration; land consolidation; whole area; ecotype.**

## 1. Introduction

Comprehensive land and space improvement and ecological restoration have been elevated to national strategic projects. In May 2018, General Secretary Xi Jinping pointed out at the National Ecological Environmental Protection Conference that "the construction of ecological civilization is the fundamental plan for the sustainable development of the Chinese nation." Land is the space carrier of ecological civilization construction, and comprehensive improvement of land space and ecological restoration will inevitably become a major measure to promote ecological civilization construction and achieve the strategic goal of rural revitalization. The 2019 Central Document No. 1, the State Council's "Guiding Opinions on Promoting the Revitalization of Rural Industries" and other documents put forward specific requirements for comprehensive land and space improvement and ecological restoration, and further clarified the new era. requirements and goals. Although there are still many problems and deficiencies in the comprehensive renovation of land and space, and many pressures and challenges need to be dealt with, there is also a certain foundation to seize the opportunities of the times and accelerate the promotion of high-speed and high-quality development of work.

## 2. Analysis on the Status Quo of Ecological Land Consolidation

### 2.1. Inadequate Ecosystem Thinking in Land Remediation

The large-scale land consolidation in the true modern sense in China is still less than 20 years old, and the basic understanding of the nature and function of land consolidation is still not accurate and comprehensive. Most of them regard land consolidation as a project, project or task, but do not realize the essence of land consolidation. The harmony function is the process of reorganization and reoptimization of land resources and their utilization methods, as well as the readjustment of the relationship between man and land, and the comprehensive balance of service functions such as land supply, adjustment, culture, and support, which affects land consolidation. The fundamental cognition of the system positioning, essential connotation, core objectives and implementation mechanism of the land remediation process leads to over-

emphasis on the project itself and neglect of the connection with the regional and even national development planning, and over-emphasis on the production function of the land, neglecting the ecology and regulation, etc. function, pay more attention to the land itself and ignore humanistic concepts and spiritual needs.

## **2.2. The theoretical method and technical system of land ecological improvement are not perfect**

The construction of China's land ecological remediation technology system is seriously lagging behind the practical application, and a systematic and scientific land ecological remediation theory, method and technical system have not yet been formed. Practice advances in exploration [50]. The imperfection of the theoretical methods and technical systems of land ecological consolidation has led to various inconsistencies in the implementation of land consolidation, such as abandonment of rural settlements, damage to rural landscapes, degradation of ecological functions, and environmental pollution. This is far from the requirements for the development of ecological civilization. Research on theoretical methods and technical systems is the basis for solving these outstanding problems and contradictions, and is an important condition for ensuring the realization of land ecological improvement.

## **2.3. Insufficient ecological practice of land consolidation and insufficient attention to rural culture**

Land ecology is an important material basis for human survival and development. It is a system formed by the interconnection and interdependence between various elements of the land and between living things and the environment. remediation. In the specific work and practice of land remediation, some places failed to fully consider the local natural ecosystem and respect the laws of nature, and one-sidedly pursued high standards and high-quality design, resulting in a large number of roads, ditches and canals in the field paved with cement and land remediation. It is concrete; there are still some places that start from the project itself, lack of systematic thinking and collaborative thinking from the project's ditch, road, forest, canal, to a few square kilometers of mountains, rivers, forests, and villages, and then to hundreds of square kilometers of mountains, rivers, forests, fields and lakes. The natural features and architectural dwellings with cultural and local characteristics, as well as the ponds with the function of regulating and storing, were destroyed.

## **2.4. Suggestions on the Development of Land Remediation and Ecological Restoration in China**

Soil is an important medium for the growth of crops. Heavy metals that exceed the standard in soil are absorbed by crops and accumulate in crops. After being ingested by humans through the food chain, they can cause various diseases in the human body, which in turn produces bio-amplification effects and affects human life safety and health. In the 1960s, Osteopathy caused by heavy metal Cd pollution and Minamata disease caused by heavy metal Hg pollution in Japan attracted worldwide attention. In recent years, incidents such as "cadmium rice", "excessive lead in children's blood", and "cancer villages" have been frequently reported in my country because of heavy metal pollution. In addition, studies have shown that excessive intake of Pb can cause symptoms such as developmental delay and mental decline in children; excessive Cu levels in the body can cause symptoms such as anxiety, depression and neurasthenia; a large amount of exposure to Cd can cause respiratory diseases. Excessive heavy metals seriously threaten human life and health

### 3. Affect the normal growth and development of plants

Plants also do not have to be inevitably stressed when soils are contaminated with heavy metals. In plants grown in Pb-contaminated soil, the plant cell membrane system is attacked, resulting in the exudation of large amounts of salts and organic matter from the cells. A large number of heavy metal ions from the outside world enter the cells, affecting the normal structure and function of organelles, resulting in plant physiological and metabolic disorders. At the same time, soil heavy metal substances enter the farmland soil through various ways, and gradually accumulate in the farmland soil. When the enrichment concentration exceeds the carrying capacity of the soil, it will have a huge impact on the quality and yield of crops, thereby reducing farmers' economic profit. In addition, the properties of heavy metals are different, and the damage to crops is also different. According to relevant investigations, when the concentration of  $\text{Cr}^{2+}$  reaches 0.1 mg/L, it will seriously affect the germination of crop seeds.

### 4. Remediation Technology of Heavy Metal Contaminated Soil

China's implementation of land consolidation when the amount of arable land has plummeted and the food security situation is severe is more of a government-led behavior. Therefore, the traditional practice of land consolidation in China is mostly regarded as a project, technology or task aimed at ensuring food production and land financial returns, and lack of attention to land consolidation to achieve the goal of economic-society-ecological coordinated sustainable development. The basic land remediation is to level the plots, combine small and large plots, and carry out infrastructure construction such as ditch reconstruction to improve the production conditions of the land and increase its production capacity. Further land consolidation needs to pay attention to the protection and development of the ecological environment and land culture in the process of consolidation, and to closely link the land consolidation rich in the meaning of land culture with the development of villages and regions. In the era of ecological civilization construction, land consolidation is no longer simple planning, design and engineering construction. Ecological land consolidation should be based on the rational allocation of land resources and the improvement of ecological functions. It integrates land consolidation with traditional culture and regional development, improves its implementation path, public participation and development model, and reduces ecological pressure and its negative impact. The ecological transformation of land consolidation is to fully consider the ecological and environmental effects of land consolidation in the process of land consolidation. improve". In order to realize the ecological transformation of land consolidation, this paper puts forward the development suggestions for the ecological transformation of land consolidation in view of the existing ecological problems in land consolidation.

#### 4.1. Strengthening Ecosystem Cognition in Land Remediation

By changing the type and pattern of land use, land consolidation directly or indirectly affects regional water resources, soil, vegetation, atmosphere and biodiversity, thereby affecting the structure and function of ecosystems. The core guiding ideology of the concept of "landscapes, forests, fields and lakes are a community of life" is the system view and the life view. The concept of "community of life" requires that land remediation should respect nature, conform to nature, and protect nature, consider issues from the perspective of the integrity and integrity of the ecosystem, and avoid discussing projects on projects and projects on projects.

#### 4.2. Perfect the Theory and Technical System of Land Ecological Consolidation

The integration of land consolidation disciplines with landscape ecology, restoration ecology and other disciplines is the basis for the construction of the theoretical and technical system of land ecological consolidation. Research in major fields such as landscape ecology, restoration

ecology, and land planning can promote the construction of theoretical and technical systems for land ecological improvement. On the basis of a comprehensive understanding of the essential connotation and core goals of land consolidation, analyze the concept, positioning, function, object, model and other elements of land consolidation, and combine with practical work to gradually form the "Theoretical Method Exploration-Applied Technology for Land Consolidation Ecological Construction" "Innovation - Achievement Application Promotion" as one of the research system.

#### **4.3. Strengthen public participation, pay attention to rural landscape protection and application of local techniques**

Villages are the comprehensive carrier of farming civilization and the spiritual sustenance and wisdom of the Chinese nation. Therefore, land consolidation should attach great importance to the protection of rural landscape and local culture, so that the local civilization of the Chinese nation can be inherited. In land remediation, we should make full use of native landforms, use local vegetation, maintain a relatively complete ecosystem, draw the essence from local local landscapes and folk customs, use buildings and ancient trees as symbols to highlight rural local customs, and design a regional Unique architectural style and land use pattern, so as to avoid the phenomenon of "one-size-fits-all, one-size-fits-all".

### **5. Epilogue**

The ecological transformation of land consolidation is a new trend in the development of international land consolidation. In view of the current situation of poor conditions, low quality, serious pollution and insufficient reserve resources of arable land resources in China, the construction of ecological civilization has put forward new requirements for land remediation with the three-in-one "quantity control, quality management, and ecological management and protection", which has promoted the ecological transformation of land remediation. develop. However, there are still problems such as insufficient ecological system thinking, imperfect theoretical methods and technical systems, lack of new ecological materials and new processes, insufficient ecological practice and application, and insufficient attention to rural culture. In order to promote the ecological transformation of land consolidation in China, this paper puts forward suggestions for the ecological transformation and development of land consolidation: strengthen the cognition of the ecological system of land consolidation, and promote the construction of "landscape, forest, farmland and lake" life community; improve the theoretical and technical system of land ecological consolidation; speed up the ecological Research and development of new materials and new processes; strengthen public participation, and focus on rural landscape protection and the application of local techniques.

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