

Development path of land improvement under the background of ecological civilization construction

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Abstract

Driven by the construction of ecological civilization and the strategy of rural revitalization, the national ministries and commissions and local governments have successively implemented ecological land remediation projects or pilot projects of various forms and contents. In order to realize the comprehensive protection of the ecological environment and promote the rational use of land resources, the ecological problems and principles of land remediation are pointed out, and ecological protection measures for land remediation are proposed. Protection awareness should be improved, the concept and connotation of land remediation should be clarified, and the functions of land remediation should be improved. Orientation, build a complete evaluation mechanism, and establish a complete design system.

Keywords

Land improvement; ecological civilization construction; ecological land improvement; cultivated land protection.

1. Introduction

For a long time, due to the lack of understanding of the structure and function of the ecosystem, people have excessively pursued the standardized construction of farmland with fields, roads, canals, and trees, and they have underestimated the circulation and symbiosis of the ecosystem, resulting in excessive hardening of farmland roads and ditches, River channel straightening, pond filling, etc., have severely disrupted the material circulation and energy flow between the various ecological elements of the farmland ecosystem, and eventually led to the homogenization of the pastoral landscape, the reduction of farmland biodiversity, and the reduction of the ability to resist environmental risks. Structural destruction and functional degradation of ecosystems.

In recent years, people have carried out a series of practical explorations on ecological land improvement, and while achieving a lot of results, they are also facing a series of problems and doubts. This research focuses on the evaluation and linearity of the impact of land consolidation on the ecosystem. The project sorts out and analyzes the fragmentation of the ecosystem, the contradiction between biodiversity protection and farmland management, the contradiction between ecological infrastructure and farmland protection, and the resource utilization of waste materials. Put forward relevant suggestions in order to provide references for ecological land remediation, rural revitalization and ecological civilization construction.

2. Problems in land consolidation

Protecting and improving the ecological environment is one of the important goals of ecological land improvement. Land remediation is a process of optimizing and upgrading the layout of land resources and land use methods. Usually carry out land leveling engineering, irrigation and drainage engineering, field road engineering, ecological protection engineering, fish pond

clearing and reclamation, trench dredging, construction of isolation belts, buffer zones, purification ponds, and wet restoration. Ecological restoration measures such as land, planting flowers and grass, spreading insect eggs, prohibiting fishing and hunting, but the construction process may have many direct or indirect, beneficial or harmful effects on the ecological environment of the project area, such as construction equipment and man-made disturbances that can easily lead to earthworms and other soil Animal migration and escape, vegetation destruction, soil erosion, etc. If the ecosystem service value and ecological environment of the project area are systematically assessed immediately after the completion of the land remediation project, the ecological environment quality may decline after the remediation. At present, ecological land remediation is based on the knowledge and cognition of the implementation subject to carry out ecological design, which is not necessarily able to meet the real needs of the ecosystem. It is urgent to transform the traditional understanding of land remediation to objectively respect the natural laws of ecosystem evolution.

Ecological infrastructure such as isolation belts, buffer zones, purification ponds, storage tanks, filter belts, plant hedges, and shelter forests have the ability to prevent and control soil erosion, soil erosion, and weed control, and provide habitats, protection, and protection for pollinating insects, wild animals and plants. Ecological functions such as dike reinforcement, reduction of non-point source pollution, dust prevention, and wind protection are essential to ensure the stability of farmland ecosystems, biodiversity, water purification and other ecosystem service functions. The establishment of ecological infrastructure will inevitably occupy part of the cultivated land, which is a huge challenge for cultivated land protection in areas where cultivated land indicators are in short supply. It will also put forward higher requirements for the adjustment and optimization of cultivated land after land consolidation.

3. The main ideas and contents of ecological land improvement

Ecological land remediation mainly refers to land remediation and ecological restoration carried out in accordance with the concept of "landscapes, forests, fields, lakes and grasses are a community of life". The rectification model established by the concept of boundary and other concepts is to realize the harmonious coexistence of rural revitalization, urban prosperity and natural resources. The ecological land improvement currently being carried out more shows the integration of the concept of unified restoration of landscapes, forests, fields, lakes and grasses with existing work content. In 2019, the comprehensive land consolidation pilot implemented by the Ministry of Natural Resources aims to implement the strategic plan for rural revitalization, involving three aspects: agricultural land consolidation, construction land consolidation, and rural ecological protection and restoration.

In 2018, the General Office of the People's Government of Zhejiang Province, in the "Opinions on the Implementation of Comprehensive Land Remediation and Ecological Restoration Projects in the Whole Region", positioned it as the implementation of the rural revitalization strategy and the construction of ecological civilization, and the content was also expanded to include village land use planning and agricultural land. Comprehensive improvement, inefficient use of construction land (including industrial and mining waste land reclamation), ecological environment improvement and restoration (including abandoned mine improvement, etc.), human settlement environment improvement, etc. The "Three-year Action Plan for Comprehensive Land Rehabilitation and Ecological Rehabilitation Project (2018-2020)" as the implementation plan has again adjusted the content, including the comprehensive remediation of agricultural land (including the reclamation of industrial and mining waste land), and inefficient use of construction. Re-adjustment of land use improvement and ecological environment improvement (including comprehensive treatment of abandoned

mines, etc.), and increase the comprehensive prevention and control of soil pollution, afforestation, etc.

4. Ecological land improvement measures

4.1. Improve protection awareness and clarify the concept and connotation of land improvement

Clarify the concept and connotation of land remediation, understand the ecological effects of land remediation, change the traditional land remediation concept that emphasizes arable land area, increase production conditions and improve production conditions, change the problem of focusing on strategy, focusing on technology, focusing on verbal, and focusing on implementation, from planning, design, construction, completion, acceptance, and management to the entire process of management and protection. Start with, clarify the concept and connotation of the ecological trinity of land remediation, production and life, correct misunderstandings, regard ecological protection and restoration and ecological environment evaluation as necessary conditions for the review and acceptance of planning, design and construction, and completely change the fictitiousness of land remediation from design to construction. The status quo, truly realize the economic and social and ecological benefits of land remediation.

4.2. Function-oriented positioning of land remediation

The target positioning of regional land remediation should be clarified, guided by the sustainable development of production and life ecology and regional development needs, clarify the functional positioning of land remediation, carry out differentiated land remediation, and transform traditional problem-oriented land remediation into ecological land remediation regional functions Demand-based land remediation.

4.3. Construct a sound evaluation mechanism

From land remediation planning, design and construction inspection, build an ecological environment evaluation mechanism, through effective evaluation of the ecological environment of the remediation area, combined with local actual development needs, establish remediation goals in line with regional environmental protection, and formulate a complete land remediation design and construction plan. On the basis of ensuring the sustainable development of land remediation, realize all-round protection of the local ecological environment, promote the rational use of land resources, achieve the goal of increasing production, improving conditions, protecting the ecology, and achieving green and sustainable development.

4.4. Establish a complete design system

Land remediation should establish ecological design concepts, carry out biodiversity surveys in remediation areas, focus on biodiversity protection, find the balance between land remediation and ecological protection, adopt low-carbon green ecological design schemes, and strengthen the biological habitat environment And the protection of the ecological environment. Give full play to the ecological guiding role of land remediation design, improve the soil environment, promote the multiplication of beneficial organisms, reduce environmental pollution, realize the harmonious development of human and the ecological environment, and achieve a win-win situation between ecological balance and agricultural development.

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