

ECOLOGICAL LANDSCAPE CONSTRUCTION STRATEGIES FOR RURAL LAND CONSOLIDATION

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Abstract: This article aims at the existing problems of rural land use in China and the needs for rural ecological landscape construction, through analyzing domestic and foreign land consolidation goals and technology development trends, research, combined with relevant surveys. The strategic needs of ecological landscape construction in rural land consolidation in China were discussed. Summarizes the land development strategies aiming at comprehensive rural development. The goals and tasks of land remediation were proposed, and construction strategies and technical requirements related to land remediation were proposed. Key conclusions include: Land remediation should pay attention to the study of rural landscape characteristics and maintain and improve the cultural and aesthetic value of rural landscape; strengthen research on land multifunctionality, pay attention to ecological network and green infrastructure construction on a large scale, improve habitat quality and landscape diversity on a small scale, and improve land remediation productivity and ecological landscape service capabilities and carbon sequestration capabilities; strengthen research on hydrological and ecological processes in river basins, carry out rural non-point source pollution control and respond to extreme climate change events; strengthen research on ecological landscape technology for land consolidation projects, improve land consolidation technical regulations; broaden the implementation of land consolidation projects. Mechanism to improve participation in land remediation.

Keywords: Land consolidation; Land use; Rural land

1. INTRODUCTION

The rapid development of urbanization in China has led to a series of changes in rural land use. problems, such as a large number of hollow villages and idle houses in rural residential areas, land utilization rate is low, rural infrastructure is poor, non-point source pollution is serious, rural areas. It is an indisputable fact that the village landscape has been damaged and the quality of the living environment is poor. Land consolidation has been officially written into 2009 Central Committee 1 No. file. Land Resources. The Ministry of Finance recently passed the "Overall Arrangements for Promoting Land Remediation Planning Work". The National Land Consolidation Plan (2011-2020) was officially launched. "Year" revision work. In the face of future global climate change, ecological environment and food security, As well as the need for urban and rural coordination and strategic development of urban and rural integration, as a rural Land consolidation, an important means of village development, needs to be further strengthened. Concepts and engineering technical measures need to be considered in the new round of land consolidation planning the problem.

2. PROBLEMS WITH CHINA'S RURAL ECOLOGICAL LANDSCAPE

Through a survey of human settlements in 255 villages across the country and a study of typical cases. Research shows that about 60% of villages have average or poor rural landscape scenery, and about 80% of There is insufficient greening in village streets and field roads, and low green coverage in residential areas; The ditches, forest canals, and ditches are seriously damaged, and the ecological functions of rural rivers have been seriously degraded. The revetment is missing, The plant community structure and tree species of the forest network are single, and there is a lack of trees and shrubs. Grass matching and seasonal changes. China has successively carried out new rural construction village appearance improvement, rural land consolidation governance, agricultural infrastructure, comprehensive agricultural development, returning farmland to forest and other projects,

Capital investment has increased. These policies and action plans have important implications for rural development in China. Development and urban-rural integration construction are of great significance and have achieved great results. Big benefits. However, in the process of new rural construction and land consolidation, Due to the lack of ecological landscape theory and technical guidance, coupled with the lack of management and construction personnel. The staff's professional level is limited, As a result, the construction of new rural areas is the same. Featureless. Some wealthy villages and towns have built imitation European-style villa villages, with red tile roofs and white brick walls. There is a serious incompatibility in culture, massing and color; due to a lack of understanding of the local context ecosystem structure and functions composed of morphology, water system and organisms, plus Rigid understanding and pursuit of "fields form squares, roads form networks, canals are connected, and trees form rows" standardized construction, using bulldozer-like force to carry out excessive land transformation and neglect of circulation and symbiosis, resulting in a large number of ditches and roads that need to be ecologicalized. Over-hardened, diverse groves were cut down, ponds were filled, rivers Straightened, resulting in the biology, ecology and life that gave birth to our regional culture. The

rural landscape has been seriously damaged. These problems will be faced by rural land consolidation Important issues and challenges.

3. GOALS AND TASKS OF MODERN LAND CONSOLIDATION

There are many comprehensive discussions on land consolidation at home and abroad, including From past land merging and infrastructure construction to modern land consolidation, it covers Covers sustainable land use planning, rural development, land and natural resource management reason. Regarding the goals and scope of land consolidation at home and abroad [1-6] , a brief summary is as follows:

- 1) Land consolidation is to solve rural economic, social and environmental problems and implement. It is now an important means of urban-rural co-ordination and urban-rural integration.
- 2) The goal of land consolidation is not only to increase agricultural primary productivity , And we must promote comprehensive rural development and rural revitalization.
- 3) By sorting out fragmented fields and merging land ownership, expand agriculture Household land area, Increase the area of cultivated land, improve land production potential and farmers' competitiveness;
- 4) Through natural resource protection, ecological environment restoration, ecological network and Construction of ecological infrastructure, protection of biodiversity, and improvement of rural ecological services service functions and landscape values, and respond to global climate change.
- 5) Develop rural tourism and rural tourism through infrastructure construction and urban and rural reconstruction . Increase rural economic diversity, expand employment, and increase rural residents' income and standard of living.
- 6) At the national level, rural land consolidation should improve the efficiency of agriculture, forestry and animal husbandry. industrial competitiveness and promote rural economic development; improve and coordinate agriculture, transportation transportation, environment, leisure and entertainment and cultural heritage protection benefits, and improve rural social social and economic conditions and promote economic diversification.
- 7) The development and goals are different, and the content of land consolidation is also different, but it is not No matter what kind of land consolidation, land consolidation aimed at rural development should be Integrated, multi-department linkage, multi-disciplinary cooperation, informatization, participation With formula.

2009, China's urbanization rate reached 46.6% , expected to Reached in 2015 About 52% , based on the urbanization rate of high-density population countries reaching 50 % post-rural Development trends and strategies, China's rural development in the future should gradually improve rural development Exhibits versatility including:

- 1) Grain and food production security are still the main functions of rural areas. Vigorously promote food safety production and improve the productivity and competitiveness of agriculture, forestry, animal husbandry and sideline production.
- 2) Improve rural life, ecology, environment and landscape functions, and build Urban-rural integrated green infrastructure, Protect biodiversity and prevent rural areas pollution, protect natural resources, maintain and improve rural ecological landscape service functions Ability to achieve different levels of land management.
- 3) Vigorously carry out urban-rural integrated infrastructure construction, improve rural economy economic diversity, Promote the diversification of rural functions and develop rural leisure tourism tourism economy, Achieve rural revitalization.

Rural land consolidation must follow the laws of natural ecology and Maintain and repair natural ecological processes and biological chains, and improve ecosystem resilience and ecological service functions; rural areas serve as important green spaces and Ecological barriers will serve to ensure food security, protect biodiversity, and develop It is an important strategic space for developing low-carbon economy and coping with climate change. In addition, agricultural The village is also a country that possesses and preserves the richest cultural and historical landscapes of the nation. The rich spiritual place is a record of the history of human transformation of nature. Losing these Regional cultural landscape characteristics will be fatal to a nation mistake.

4. COUNTERMEASURES FOR ECOLOGICAL LANDSCAPE CONSTRUCTION IN RURAL AREAS OF CHINA

4.1 Pay Attention to the Research on Rural Landscape Characteristics, Maintain and Enhance Rural Landscape Value

To avoid monotony in land remediation, the land model should be upgraded to a landscape model. Landscape is the specific regional style or characteristics formed by the natural environment, land use , history and culture and other factors in the area that are perceived by people. It is the result of the activities and interactions between humans and nature. It is a reflection of ecology, economy, A complex of cultural and other diverse social functions and values. Every countryside has certain landscape characteristics and features, which are composed of rocks, soil, Natural and cultural forms formed by the superposition and interaction of climate, hydrology, topography, land cover, wildlife and their habitats, land use spatiotemporal patterns, house and residential characteristics, other man-made facilities and historical relics, etc. Such as farmland pattern, vegetation, streetscape, roads, buildings, courtyards, fences, etc. However fascinating these landscape features are, Still unremarkable, They are all records of the evolution of human and natural history in a region. They are not It is not only a natural landscape, but also a cultural landscape full of spiritual appeal. Has important cultural and aesthetic value. 2006 The European Union promulgated the "European

Scenario" Landscape Convention, which emphasizes the legal recognition of the value of landscapes and formulates landscape protection, management, construction and public participation mechanisms. In the European Landscape Convention Under the framework, European member states have successively carried out landscape classification and characteristic evaluation to and monitoring studies. Understand, maintain, adapt to, and continue this regional landscape characteristic Land acquisition has become an important part of land consolidation and rural revitalization [7-8].

4.1.1 Evaluation and classification of landscape features

The landscape character evaluation method (landscape character assessment) was proposed by the Scottish Rural Development Institute in the UK [8-9]. Landscape feature evaluation methods include landscape feature classification, feature description, and planning recommendations for improving features. Landscape feature classification is based on land classification and land use classification. According to land composition elements, land use spatial form similarities and differences, As well as the classification of people's perception and visual aesthetics of landscapes, it can be a multi-level classification system. According to different scales, it can be divided into landscape feature types and landscape feature units. Landscape feature classification is a classification based on administrative units or watersheds. The land consolidation plan may be the plan of the entire administrative unit or Planning of 1 to 2 landscape feature units. There is no size standard for landscape feature units; The only criterion was to have a visually distinct landscape character from other areas. Landscape feature classification methods include qualitative classification methods based on the knowledge of experts and local people; there are also quantitative classification methods based on spatial databases and in accordance with certain classification standards and logical systems [10]. Due to the lack of data on some landscape components or the difficulty in quantifying some visual aesthetic features, even with quantitative methods, must also be combined with qualitative methods, Consider the direct perception and understanding of the landscape by experts as well as local people. Landscape feature evaluation includes landscape feature description, key feature identification, and existing problem analysis. Among them, the landscape feature description stage should pay attention to the description of local landscape patterns, context, surface morphology, land use history and culture and other landscape features.

4.1.2 Landscape feature improvement planning

The basic principles of landscape feature improvement planning are: maintaining and improving landscape features; Protection and restoration of natural landscape patterns; protection and restoration of historical relics. Based on the classification and evaluation of landscape characteristics, suggestions and measures for landscape reconstruction, restoration, enhancement, maintenance, and protection of different types of landscape characteristics are proposed [8,11]. The main contents include:

- 1) According to the characteristics of different landscape types and landscape units and land consolidation production and economic goals of governance, Propose the landscape construction of each landscape unit image positioning;
- 2) From a macro perspective, propose the long-term plan and axis of landscape planning Landscape planning, landmark planning, landscape recreation accessibility planning, etc.;
- 3) Complete the conceptual planning drawing of landscape features, including landscape reconstruction, landscape Restoration, landscape enhancement, landscape maintenance, landscape sensitive areas and visual attraction planning equalize;
- 4) Landscape maintenance measures and policies: Evaluation of rural landscape characteristics should be proposed Landscape maintenance measures and policies as a basis for future development of regional land use and landscape A reference for perspective management.

4.2 Strengthen Research on Land Multifunctionality and Improve Ecological Landscape Service Functions

Land multi-functionality includes wealth reserve, production, biological habitat, climate and hydrological regulation, material storage, waste purification and pollution remediation, production and living space needs, cultural inheritance, biodiversity protection and spatial connection, Regional cultural landscape expression and other functions [12-13]. While focusing on improving the comprehensive productivity of land, land remediation should also strengthen the ecological landscape service capacity of the land and build a land use spatial pattern with biodiversity protection, ecological security and aesthetic value. The "patch - corridor - matrix" landscape structure theory proposed by landscape ecology reveals that field ridges, protective forests, and Fields, woodlands, etc. have important ecological significance [13-16]. "Patches" such as large and small fields, ponds, small woodlands, etc. all have important ecological conservation functions. "Corridors" are linear elements connecting patches and have functions such as transportation, biological migration, and aesthetic perspectives. "Matrix" It is the dominant landscape type in rural areas, such as farmland or grassland. The study of the relationship between landscape pattern and ecological processes is the basis for landscape structure optimization and design. The optimization of landscape pattern is the main measure to control the healthy development of ecological processes. By constructing a mosaic-like, A porous and permeable rural spatial matrix that improves landscape heterogeneity and the continuity of ecological processes, Provide diverse food and habitat for organisms; Realizing landscape ecological networking through linear corridor planning and design, improving landscape connectivity, and reducing the impact of landscape fragmentation on biodiversity has become a basic principle of spatial planning and land remediation; through the design of small woodlands, Hedges, buffers, groves, etc., improve rural landscape heterogeneity and biodiversity, Control soil erosion and non-point source pollution; By changing the spatial pattern (configuration) and increasing the diversity of plant community structure, the

amount of green landscape and "carbon sink" are increased; through the study of landscape pattern and processes such as floods and other disasters, Carry out regional landscape ecological pattern planning and design to respond to global climate change.

Land remediation should enhance the biodiversity protection function of the land. The most basic landscape ecological security pattern for biodiversity protection includes core area patches, buffer zones, corridors and stepping stones. Land remediation at different scales should achieve habitat networking as much as possible, but the landscape structures that need to be considered at different scales are different, and the content of analysis is different. At large and medium scales (provinces, cities and counties), The focus should be on establishing biological habitat reserves, building ecological networks and green infrastructure networks; at the medium scale (counties, towns), The focus is on improving the proportion and quality of natural and semi-natural habitats and functional connectivity; at the small scale (village level or farmland), focusing on improving the quality of natural and semi-natural habitats, diversity and landscape aesthetic value, strengthen landscape spatial heterogeneity, and improve ecological landscape service capabilities and carbon sink capabilities.

4.2.1 Large-scale ecological network and green infrastructure construction

In 1992, the European Union began to implement the "Protecting Europe's Natural Heritage : Towards a European Continental Ecological Network" plan, arrive In 1996, the Pan-European Biodiversity Diversity Conservation and Landscape Diversity Strategy" further clarifies the establishment of a trans-European Ecological network of biological protection in Asia [17]. Currently, EU countries have completed Integration of ecological network planning and spatial planning. Ecological network construction and biology Diversity protection has become an important task for rural land consolidation in the European Union [1,18-19], including the restoration of large nature reserves and the government's purchase of farmers' farmland and pasture land Ecological bridges and ecological tunnels used for ecological corridor construction and reducing habitat damage Road construction, government subsidies to farmers, improvement of natural and semi-natural vegetation on farmland environment ratio, establishing high natural value farmland and pastureland, etc. [20]

There are many ecological network planning methods, but they can be divided into landscape structure methods. method and target species method [21]; the landscape structure method is based on landscape ecology and biological spatial distribution principles to maintain high-quality diverse habitats, such as forests Forest ecosystems and wetland ecosystems, and analyze and evaluate the quantity, quality and connection status of natural and semi-natural landscape types, the distribution status of corridors with important ecological service functions (rivers, shelterbelts, roads, etc.) and their impact on human interference sensitivity, and finally determine core areas, buffer zones, potential corridors and stepping stones; the target species approach is based on island biogeography theory, Composite population theory, species suitability principle, based on species nest areas, migration and dispersal corridors, foraging behavior, etc. Divide potential core areas, buffer areas, Potential corridor and stepping stone spatial layout.

"Green" developed from the concepts of urban green space and green open space infrastructure", Its connotation and scale are constantly expanding. Green basics Facilities refer to parks, green spaces, wetlands, cultural heritage protection, biodiversity A network formed by connecting core areas such as diversity protection with green corridors structure. Integrate ecological networks with the goal of biodiversity conservation and tourism Green open space planning targeting recreational activities and building a regional green foundation Facilities are an important task in land consolidation today.

4.2.2 Improve habitat quality and landscape diversity on a small scale

As urban environmental problems become increasingly serious, Rural green spaces will surely Become a strategic space for urban development, In increasing carbon sinks, purifying air and protecting will play an increasingly important role in protecting biodiversity. in small and medium scale In terms of improving the ecological landscape service function of land consolidation, the main contents are [1,22]:

- 1) Ecological restoration of abandoned land and construction of green infrastructure; 2) Improve the quality of natural and semi-natural habitats and landscape connectivity;
- 3) Ecologically critical locations, such as forests, farmland and water ecosystem edges edge construction;
- 4) Vegetation protection and buffering around important corridors (rivers, roads) belt construction;
- 5) Non-productive areas in agricultural landscapes (such as farmland boundary zones, farmland protection woods, hedges, etc.) Landscape ecological diversity construction.

4.3 Strengthen Research on Hydrological and Ecological Processes in River Basins to Respond to Global Climate Change

4.3.1 Optimize land use pattern and prevent soil erosion and non-point source pollution

Preventing and controlling soil erosion has always been the focus of land remediation. In recent years, In recent years, non-point source pollution control has also become an urgent issue for land consolidation and rural development. environmental issues. Soil erosion and non-point source pollution are ecological processes driven by water flow. Cheng, land use / landscape spatial pattern has a significant impact on water and soil flow processes. Controlling non-point source pollution through land use / landscape pattern optimization has become an important task in land consolidation planning. In the United States and France, basin water Body quality control, biodiversity protection and arable land caused by overproduction Abandoned, research on land based on landscape patterns and water and soil processes in the watershed was carried out. Renovation planning and design have completed watershed

production, water quality control, biodiversity Design of different land use scenarios for sexual protection. System analysis and simulation show that, Land remediation planning aimed at water quality control and biodiversity protection will Reduce nitrate output by approx. 30% ~ 50% [23] .

The main technical measures to control soil erosion and non-point source pollution include: carrying out soil erosion and non-point source pollution risk assessment on a large scale at the watershed level. price, optimize land use pattern, improve perennial vegetation coverage and landscape Pattern mosaicism; On a small scale, Lower different types of rivers, farmland, etc. The water and soil flow and velocity of the "sources" and "sinks" of soil erosion and non-point source pollution, Construct various types of buffer zones, build hedges and hedges that combine trees, shrubs and grasses Protective forests, carry out contour farming, intercropping, etc.

4.3.2 Strengthen research on disaster prevention and avoidance and improve the ability to respond to extreme weather changes

Climate change will have a major impact on ecosystems and human society , especially the extreme climate impacts caused by uneven distribution of heat and precipitation. Large, such as extreme temperatures, heavy rain, and flood disasters. According to the landscape pattern and flood Study on the process of water disasters and optimize rural land use through land consolidation and landscape pattern, Improving the resilience of rural ecosystems has become a important tasks [24] .

Mitigation measures to reduce greenhouse gas emissions:

- 1) Improve energy efficiency in new and existing buildings, standardize residential living behavior;
- 2) Reduce traffic demand and build good public accessibility and other goals sustainable transportation models;
- 3) Optimize and improve land use as a “carbon sink” and strengthen Three-dimensional greening mode to increase the amount of green;
- 4) Encourage the use of renewable energy and develop new energy;
- 5) Make full use of garbage and waste, Achieve recycling and reduce biodegradation gas release.

Adaptation measures to deal with the impacts and hazards of climate change:

- 1) Carry out strategic planning and project construction guidance to prevent disasters, such as violent Rain, flood, erosion, geological disaster, drought emergency water management;
- 2) Improve the impact of new and existing buildings on climate change extreme events elasticity;
- 3) Improve sustainable drainage methods and moisture in new and existing buildings usage efficiency;
- 4) Increase flood absorption capacity, Developing new water resources and emergency response ability;
- 5) Increase flood management and emergency treatment facilities .

Regarding comprehensive land remediation, the following needs to be urgently considered:

- 1) In land remediation planning and design, Especially village land improvement Disaster emergency measures should be taken into consideration.
- 2) Analyze the occurrence and development of precipitation runoff in different types of extreme climates process, identify high, medium and low flood risk areas, and establish different flood control projects. engineering standards and areas with potential flood storage functions; the scale and pattern of water storage areas with storage functions adjusted according to different safety levels, Proper planning of land Utilization type. Within the low safety level, village and town construction should be strictly prohibited, Retain the natural wetland landscape to meet the needs of biological processes such as stagnant water and biological habitats. Basic needs.
- 3) Construct different types of water sources from the perspective of regulating floods and drought disasters Protect and conserve large ecological woodland patches; restore historic wetlands where possible, Restore artificial river channels to natural river channels to restore their flood detention function; Take a variety of rainwater utilization measures to promote rainwater retention, purification and infiltration, and ensure Protect groundwater recharge areas.
- 4) In the construction of woodlands and green corridors, According to the disaster occurrence process In relation to the landscape pattern, build isolation corridors or disconnect corridors.

4.4 Strengthen Research on Ecological Landscape Technology and Improve the Construction of Land Reclamation Projects Set Standards

Whether it is Europe, the United States or Asia’s South Korea and Japan, the green tone is prevalent in agriculture. The village has always occupied a dominant position in the process of land consolidation. Respect all ecological processes process, maintain the integrity and continuity of natural ecological processes, and reduce artificial carvings We will build production bases and local landscapes according to local conditions and try not to leave traces of carving. Destroying the original ecological landscape and its ecological elements is the basis for land remediation. this principle. In recent years, Each province has successively revised the standards for land consolidation projects. The Land and Resources Land Consolidation Center has cooperated with the European Community to establish the "Land Consolidation Engineering Standards". and Biodiversity Conservation" demonstration project [25] , ecological and landscape technology research research has received great attention [26-27] . However, compared with foreign land consolidation technology, China still has certain gaps in relevant aspects, especially for ecological landscapes. The research and demonstration application of technology are relatively lagging behind and need to be based on urban and rural integration. The target requires further improving land consolidation standards.

The construction of rural land consolidation infrastructure follows ecological, local and Based on the principles of aesthetics, humanity and spirituality, we use ecological engineering technology and Native landscape design techniques

build a healthy and sustainable ecosystem and provide High ecological service function and landscape value [12] . Vernacular landscape refers to the local man-made Living with natural processes and the land, and the spaces on the land The way of adapting to the situation and pattern is the lifestyle and values of people here and now. Projection on the ground. Vernacular landscape design is achieved through human intervention The "secondary nature, artificial nature" maintained, that is, cultivated and domesticated Nature, forming "humanized nature, domesticated nature, domesticated nature" Nature, gentle nature, healthy nature and elastic nature" make people give birth to It creates a feeling of intimacy, comfort and home [28] . According to foreign rural land consolidation With technological development [28-29] , China's rural land consolidation needs to be further strengthened. Ecological landscape construction technologies include: biological habitat restoration technology, Biodiversity protection protection technology, water body (river, ditch) ecological landscape technology, road ecology Landscape technology, rural ecological vegetation construction technology, natural and cultural landscape characteristics Collect protection and improve rural landscape style technology.

4.5 Expand the Implementation Mechanism of Land Consolidation Projects and Enhance the Participation of Land Consolidation

Land consolidation planning and project implementation at different scales require different practices. implementation mechanism. Rural development should involve the active participation of rural residents and relevant interest groups Only with extreme participation can rural development goals be better coordinated. Strengthen public participation It has become an important guiding ideology for a new round of land consolidation [30] . EU in the countryside Development Strategic Plan (2007 - 2013) [18] , in order to further strengthen the participatory nature of project planning and implementation, a leadership plan was specially formulated with a budget of overall investment 6% . Compared with the traditional top-down approach to project establishment and execution Different paths, the leadership program is a bottom-up approach for local communities [31] ,is one Articles align different projects, ideas, stakeholders and resources at the local level Experimental new way to put it all together. Here's what the EU has to say about land consolidation and rural areas The ways and methods of public participation in development [3] can be used as a guide for land consolidation regulations in various places. Plan and project implementation reference:

- 1) Land consolidation involves multiple administrative departments and different levels of operations government units, strengthen the institutional guarantee system for the linkage of various departments, and establish a " government "Leading, setting up the national territory, linking departments, pooling funds, and promoting overall" Working Mechanism;
- 2) Develop strict participation processes, mechanisms and standards, Ensure public participation and effect;
- 3) For conventional land consolidation and management projects, It is up to the farmers to choose and application, and carry out land consolidation under the supervision of technical personnel, while the government will Provide financial subsidies directly to farmers;
- 4) Technically, visualization technology should be developed to improve land remediation planning . Improve the visibility of planning and increase public participation;
- 5) Construct an ecological landscape information network to stimulate public interest in ecological landscapes Value awareness and participation interest, and conduct public evaluation of ecological landscape characteristics and suggestions.

5 DISCUSSION

This paper focuses on the existing problems of land use in rural China and discusses the urban and rural Rural land consolidation under overall planning needs to further strengthen ecological concepts and landscape construction Design technology. 1) In the process of rural land consolidation planning and design, good cooperation with There has been work on the connection between land consolidation planning and design specifications and engineering standards. exist Contents that should be further strengthened in the land remediation planning stage include: evaluation and improvement of landscape characteristics , landscape safety planning for water, soil and air processes, and ecological network construction and biodiversity protection planning, disaster prevention and avoidance planning, rural tourism ecology Landscape planning; during the engineering design stage, the original ditches, roads, forests, canals and fields should be properly integrated with Design standards and regulations are connected and integrated to meet the requirements of integrated construction goals; 2) Pay attention to the hierarchy and scale of land consolidation planning, and do a good job at the upper and lower levels Analysis and integration of various plans, as well as identity based on the continuity of ecological processes Integration of various types of planning at different levels; 3) Rural land at different levels and types The goals and tasks of land remediation planning are different, and the factors considered are also different. All land remediation plans must carry out various ecological landscape planning and designs. It should be based on actual needs and regional development goals, as well as the needs of land consolidation projects. Determine the hierarchy and requirements, add some or all of them to the planning and design, Or strengthen existing engineering construction technical measures.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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