The impact of national spatial planning on comprehensive land consolidation

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Abstract

Territorial spatial planning is an important measure to promote the steady growth of national economy and maintain the coordinated development of regions in the context of the strategic deployment of "multi-planning". It realizes the integration of main function zone planning, land use planning and urban and rural planning, and can effectively avoid the problem of deviation in the identification results of land types, map spots and land project scope among government departments. It plays an important role in promoting the all-in-one and all-dimensional territorial space development of the "trinity" type, and has significant significance for the comprehensive land improvement cause. The objective, true and fair formation of the "one map" background of land use of land resources has a very important influence on the development of comprehensive land improvement. On the basis of the research on the concept and significance of land spatial planning, this paper analyzes the key points of land spatial planning in the overall land consolidation work, and finally puts forward necessary suggestions for the existing problems, in order to provide necessary references for the "integration of multiple planning" and the realization of "one map" of land spatial planning under the measures of land spatial planning.

Keywords

Comprehensive land consolidation across the entire territory; land and space planning; "one map"; "multi-plan integration"; influences.

1. Introduction

The rural revitalization strategy is a major strategic deployment of the Party in solving the "three rural issues". Since its proposal at the 19th National Congress, solving the "three rural issues" has always been an important task of the Party, and it is a major historical task to win the comprehensive construction of a moderately prosperous society and a socialist modernized country. The "Implementation Opinions on Implementing the Rural Revitalization Strategy" document clearly requires that significant progress should be made in rural revitalization in 2020, including a more complete institutional and policy system, improved agricultural infrastructure construction and production capacity, and improved rural living and ecological environments. In December 2019, the Ministry of Natural Resources issued a notice on carrying out pilot work for comprehensive land consolidation throughout the region (Natural Resources Development [2019] No. 194), which clearly stated that planning work should be carried out scientifically and reasonably based on townships, and agricultural land, construction land, and ecological protection and restoration should be promoted as a whole, optimizing the spatial pattern of production, life, and ecology, promoting comprehensive land consolidation throughout the region, promoting intensive and economical use of land, and assisting in the implementation of the rural revitalization strategy.

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The Fifth Plenary Session of the 18th Central Committee of the Communist Party of China proposed the strategic deployment of promoting the integration of multiple regulations. In March 2018, the State Council promoted institutional reform, optimized and adjusted institutional functions in key areas and key links, and underwent significant changes in the functional systems and institutional environments of various governments, greatly improving management and administrative efficiency and improving departmental responsibility systems. However, it can be seen that the transformation of the functions of various government departments and the implementation of relevant policies still require a period of buffering and adjustment. Moreover, due to the different original functions, contradictions between some policies, and the mismatch of basic information and materials used by various departments, especially in the land industry, which involves inconsistent land types, inconsistent definition of relevant policies, and different policy focuses, it has brought certain degrees of adverse effects to the existing comprehensive land consolidation work. National spatial planning is the basic basis for various development, protection, and construction activities. It basically realizes the unity of main functional area planning, land use planning, and urban-rural planning, orderly coordinates ecological, agricultural, and urban functional spaces, clarifies the responsibility subjects of various government functional departments, and provides clearer policy basis for defining the scope of comprehensive land consolidation, planning and design, and organizing implementation in China [7-9]. Building a map of the current state of land use has also become an important foundation for controlling the bottom line of natural resources and carrying out land spatial planning and management. Therefore, based on the overall consideration of the natural resource system, objectively, truthfully, and fairly forming the bottom line of land use of land resources has a very important impact on carrying out comprehensive land consolidation in the entire region [10-12]. The report of the 19th National Congress of the Communist Party of China proposed new green development concepts such as "harmonious coexistence between humans and nature" and "green mountains and clear waters are invaluable assets", which emphasized the responsibilities of national spatial planning and ecological protection and restoration. The Notice of the Ministry of Natural Resources on Carrying out Pilot Work of Comprehensive Land Improvement also incorporates ecosystem service functions into the comprehensive land improvement system, and the new pattern of "four in one" land comprehensive improvement also puts forward new requirements for national spatial planning [16-18]. Considering the natural resources of national territory and space as a whole is also a fundamental policy that needs to be faced in the long term under the new situation.

2. Concept and significance of national spatial planning

At present, the methods of land spatial planning in China mainly focus on the exploration of land spatial carrying capacity and suitability evaluation methods, the delineation of basic farmland scope, ecological red line scope and urban development scope. Under the new normal, while maintaining high-speed and stable economic growth, China is facing the problem of uneven and incomplete regional spatial development, mainly manifested as one-way economic growth, relatively lagging ecological environment and social development. Compared with developed countries, China's current level of land and space development is still relatively low. In addition, China's urbanization and industrialization levels are still in the development stage, and the proportion of construction land to land area is less than half of that of developed countries such as the United States. Therefore, China has left huge space for land and space development, and land and space planning has become an important content and foundation for promoting high-quality integration and coordinated development of regional economy. To solve the problem of coordinated regional development, the key core content is to accelerate the progress of national spatial planning, and promote China's regional economy to continue to

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maintain both stable growth of the national economy and coordinated regional development under the new situation. Therefore, future development needs to rely on comprehensive coordination and also on national spatial planning to address it. In June 2018, the "Opinions on the Unified Planning System to Better Play the Strategic Guidance Role of National Development Planning" and the "Several Opinions of the Central Committee of the Communist Party of China and the State Council on Establishing a National Spatial Planning System and Supervising Its Implementation" were issued in May 2019, further clarifying the overall framework and preparation requirements of the national planning system, and proposing the establishment of a national unified, clear responsibilities and scientific and efficient national spatial planning system. National spatial planning is an integral part of the overall strategy for comprehensive modernization development of the country, and it is also a basic demand for high-quality regional integration and coordinated development in China. It plays a significant role in the comprehensive land consolidation work throughout the region. Comprehensive land consolidation is an effective way to promote strict adherence to the red line of cultivated land, ensure the increase of grain production capacity, and promote the construction of beautiful rural areas. It involves the functional scope of many government departments such as land, agriculture, forestry, water conservancy, and environmental protection. As of now, there are significant differences with the field of comprehensive land consolidation in the data base map conflicts between the land department and other departments. Accelerating the promotion of national spatial planning can quickly complete a comprehensive and unified land use overall plan, which is conducive to the determination of land project scope and project approval, and has significant significance for promoting the development of comprehensive land consolidation in the entire region.

3. The focus of national spatial planning in the comprehensive land consolidation work of the entire region

3.1. Management of spatial planning compilation

Comprehensive land consolidation is the integration of the connotation, objectives, means, and benefits of land consolidation. It is based on the original land development, consolidation, reclamation, and related projects, and uses the comprehensive management of Tian Shui Lu Lin Village as a platform to effectively adhere to the ecological red line, combine the ecological protection and restoration of rural areas with the promotion of urban-rural integration construction, and form a comprehensive land consolidation model of farmland protection and land intensive and economical use. In the context of "integration of multiple regulations", the focus of national spatial planning is mainly to continue to improve the government's leading position, continuously promote the unity of ideas and goals among functional departments at all levels of government, follow the guiding principle of "integration of multiple regulations", reflect the institutional design of "multi subject participation, multi department sharing and innovation", do a good job in the specific implementation process of national spatial planning, cooperate and cooperate with government agencies, departments and technical service units, establish and improve a reasonable and efficient working mechanism, clarify the responsibility subject and task division, and achieve the strategic goals, layout, and relevant measures of spatial planning. The specific goals and implementation media of national spatial planning lie in the development of the country. The construction of a reasonable national spatial system plays a significant role in promoting the development and protection of national resources. The focus of comprehensive land consolidation is on rural construction, but due to the lag between key construction areas such as ecology and transportation in rural areas and urban construction, comprehensive planning of national spatial planning should be based on detailed data surveys, such as combining with the third national land use survey, etc., to improve the operability of national spatial planning. At the same time, it is necessary to continuously absorb new concepts, technologies, and methods, and improve business capabilities. For example, ecological environment protection has been raised to a new level of improvement, especially in combination with the requirements of beautiful rural construction and comprehensive land improvement. It is necessary to strictly adhere to the ecological red line, take effective measures to catalyze the economic value of ecological land resources, and improve the development form of land space.

3.2. Technical route for national spatial planning

To ensure the effective connection between planning data at all levels of the same functional department and planning data between different functional departments, corresponding standards and specifications should be established for data resources, indicator systems, platform construction, etc. involved in national spatial planning. The technical route of national spatial planning should highlight the strategic and rational nature of national spatial planning, fully utilize and combine global positioning technology, remote sensing technology, and geographic information technology to promote the application of national spatial planning in comprehensive land consolidation. Through GPS, the spatial positions of targets, various sensors, and transportation platforms should be quickly determined, and RS technology should be used to quickly and objectively monitor land resources and environmental information. Finally, GIS should be used to comprehensively process spatiotemporal data from multiple sources, dynamically store, integrate management, and analyze processing. The three technologies should be organically combined to dynamically and intuitively reflect the information of the target change process, and through their processing methods, timely extract, update, and analyze the change information. For comprehensive land consolidation across the entire region, it is not only necessary to achieve comprehensive management of damaged and unused land, but also to comprehensively improve water, roads, forests, beautiful rural construction, and ecological landscape construction. Through high-resolution satellite remote sensing images and drone remote sensing images, basic information such as terrain, topography, and land use status can be obtained. This not only provides reliable data support for land resource utilization, but also through coupling remote sensing data with non remote sensing data and hyperspectral remote sensing images, rapid collection of surface dynamic information such as land use change monitoring and cultivated land quality changes can be achieved. At the same time, ArcGIS software can be used to establish text information, graphic databases, and attribute databases, accelerate data updates, analysis, statistics, queries, and displays, and ultimately guide land evaluation. Farmland protection Scientific decision-making in comprehensive land consolidation across the entire region.

3.3. Improve the accuracy of basic data collection and reporting for storage

Basic geographic data survey is an important foundation for national spatial planning and the construction of a "map" of national spatial planning. It is also an important prerequisite for carrying out comprehensive land consolidation planning throughout the country. Especially in the context of the third national land use survey, new requirements have been put forward for the authenticity and reliability of basic data survey. Therefore, national spatial planning must be based on the latest land use survey data, constructing a data system that covers the data materials and results involved in the process of national spatial planning, focusing on the construction of data exchange and database standards related to data format, structure, spatial reference, and value range, and adding content such as monitoring, evaluation, and early warning of national spatial planning. At the same time, it is necessary to combine the three surveys data and the latest remote sensing image data to do a good job. Data collection and organization, It is essential to ensure the accuracy and authority of the data. At the same time, the focus is on the delineation of national spatial boundaries, especially the delineation of

ecological red lines and permanent basic farmland, through comprehensive judgment. In addition, up to now, most regions in China are still using the WGS84 and Xi'an 80 coordinate systems, and some regions even use the BJ54 coordinate system as the planning benchmark. Due to technical constraints, the accuracy of the above coordinate system results is low and cannot meet the requirements of new technologies. Therefore, in national spatial planning and construction of a national spatial "one map", it is necessary to convert it to the CGCS2000 coordinate system to achieve the unity and accuracy of reporting and warehousing data. At the same time, it is necessary to establish a comprehensive online platform for reporting and warehousing, simplify its operational processes and steps, and maximize its benefits.

4. Soil testing formula fertilization

Under the background of national spatial planning, carrying out comprehensive land consolidation work can comprehensively plan urban and rural social resources, reduce waste of land resources, promote sustainable socio-economic development, and based on land integration, economic development can reduce the impact of human production activities on the environment. The comprehensive land consolidation work can establish a comprehensive concept of land resources at the social level, which has a positive significance for the development of national spatial planning related work.

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