

The Influence of Spatial Planning Ability on Land Consolidation

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Abstract

The new round of land and space planning is an important measure proposed under the background of the strategic deployment of "multiple planning in one" to promote stable growth of the national economy and maintain coordinated regional development. It has achieved the unification of major functional area planning, land use planning, and urban and rural planning. Realize the global, all-round, "triad" type of land and space development, eliminate the differences in land types and unclear map definitions between various government functional departments, determine the scope of land projects, submit projects for approval, and promote the development of comprehensive land consolidation in the whole region Has significant meaning. The objective, true, and fair formation of the "one map" background of land resources and land use has a very important impact on the development of comprehensive land consolidation. Based on the research on the concept and significance of the new round of land and space planning, this paper analyzes the focus of the new round of land and space planning in the comprehensive land consolidation work of the whole region, and finally puts forward the necessary suggestions for the existing problems, with a view to Under the new round of national land and space planning measures, "multiple planning integration" and the realization of "one map" of land and space planning provide necessary reference.

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 plan of the Party in solving the "three rural issues", and since its introduction at the 19th National Congress, it has been an important task of the Party to solve the "three rural issues", which is a major historical task to win the victory in building a moderately prosperous society and a socialist modern country. This is a major historical task [1-2]. The document "Opinions on the Implementation of Rural Revitalization Strategy" clearly requires that rural revitalization should make significant progress by 2020, with a more complete institutional policy system, agricultural infrastructure construction and production capacity improvement, and improvement of rural habitat and ecological environment [3-4]. Natural Resources Development [2019] No. 194), which clarifies the need to carry out scientific and reasonable work and planning with townships as the basic constituent elements, merging agricultural and construction land with ecological protection and restoration to contribute to optimizing ecological space, enhancing living patterns, and expanding living space, promoting comprehensive land improvement in the whole area, promoting intensive and economical land use, and helping the implementation of the rural revitalization strategy [5-6].

The Fifth Plenary Session of the 18th CPC Central Committee put forward the strategic plan to promote the "unification of multiple regulations", and in early 2018, the State Council promoted the optimization and changes of institutional functions in key areas and core links, which have resulted in important changes in various government functions and institutional environments, greatly improving administrative efficiency and gradually improving the system of departmental responsibilities. However, it is foreseeable that the changes in government functions and the implementation of related policies will require a period of buffering and integration, and due to the differences in the original functions, the contradictions between some policies and the lack of correspondence between the basic information and data used by various departments, especially in the land business involving inconsistencies in land types, the lack of uniformity in the definition of related policies and the different focus of their respective policies have brought a certain degree of negative impact on the existing comprehensive land improvement work. The spatial planning of land is the basis for all kinds of development and protection. The spatial planning of land is the basic basis for all kinds of development and protection construction activities, which basically realizes the unification of the main functional area planning, land use planning and urban and rural planning, orderly coordinates the ecological, agricultural and urban functional space, and clarifies the responsibility subjects of each government department, which provides a clearer policy basis for the scope definition, planning design and organization and implementation of comprehensive land improvement in China [7-9]. The construction of a "one map" of the current state of land use has also become an important basis for the bottom-line control of natural resources and the spatial planning and management of land, so that an objective, realistic and fair formation of the background situation of land use of national land resources based on an overall consideration of the natural resource system has a very important impact on the development of comprehensive land remediation in the whole area [10- 12]. The report of the 19th Party Congress put forward the new concept of green development such as "harmony between human and nature" and "green water and green mountains are golden mountains", which requires responsibilities for spatial planning and ecological protection and restoration of the national land [13-15]. The Notice of the Ministry of Natural Resources on the Pilot Project of Comprehensive Land Reclamation in the Whole Area also combines the ecosystem protection service function with the comprehensive land reclamation system, and the new situation of "four-in-one" comprehensive land management also puts forward new requirements for the spatial planning of the land [16-18]. Considering the natural resources of land space as a whole is also a basic policy that needs to be faced in the long term under the new situation.

2. Concept and Significance of the New Round of Territorial Spatial Planning

At present, the spatial planning methods about China's national land mainly focus on the exploration of the evaluation methods of the spatial carrying capacity and suitability of the national land [19], the delineation of the scope of basic agricultural land [20], the scope of ecological red line [21] and the scope of urban development [22], etc. Under the new normal, China is facing the problem of unbalanced and incomplete regional spatial development while maintaining high and stable economic growth, which is mainly manifested by the rapid and unilateral economic development and slightly delayed ecological and social development. Compared with European and American countries, China's current degree of territorial spatial development is still relatively low, in addition, China's urbanization and industrialization level is still in the development stage, the proportion of construction land to the national land area is less than half of the United States and other developed countries, so it leaves a huge space for China's territorial spatial development, and territorial spatial planning has also become an

important part in promoting regional economic quality integrated and coordinated development. If we want to deal with the issue of coordinated regional development, the key lies in accelerating the new round of territorial spatial planning process and urging China's regional economy to both promote stable growth of the national economy and maintain the coordination of regional development in the new pattern. Therefore, future development needs to rely on comprehensive coordination and a new round of territorial spatial planning to address it. In June 2018, the Opinions on Unifying the Planning System to Better Play the Role of Strategic Orientation of National Development Planning and the Opinions of the Central Committee of the Communist Party of China and the State Council on Establishing a Territorial Spatial Planning System and Supervising its Implementation were issued in May 2019, which made the overall framework of the national planning system clearer and preparation requirements, and proposed the establishment of a nationally unified, clear, scientific and efficient national land spatial planning system [23]. Territorial spatial planning is an important component of the comprehensive national modernization and development policy, as well as a basic requirement for the high-quality integrated and harmonious development of China's regions, and it has a significant role in the work of comprehensive territorial land improvement. It is an effective way to promote strict adherence to the red line of arable land, ensure the improvement of food production capacity and promote the construction of beautiful countryside, which involves the functions of many government departments such as land, agriculture, forestry, water conservancy and environmental protection, etc. Up to now, there is a big disagreement with the area of comprehensive land improvement for the conflict of data base maps between the land department and other departments. Accelerate the promotion of land spatial planning, is conducive to the rapid completion of the overall unified land use planning, to clarify the scope of land projects and project submissions, and is of great significance in promoting the progress and development of the cause of comprehensive land remediation across the region.

3. The Focus of the New Round of Territorial Spatial Planning in the Comprehensive Land Improvement Work in the Whole Area

3.1. New Round of Spatial Planning Preparation Management

The whole area of comprehensive land remediation is not only the core and goal of land remediation, but also the means and benefits of land remediation. It is based on the original content, taking the comprehensive management of fields, water, roads, forests and villages as a platform, holding fast to the red line of 1.8 billion mu of arable land, combining with the ecological restoration of the countryside and urban-rural integration construction, forming a new land improvement model - arable land protection and intensive and economical use of land. In the context of "multi-planning", the focus of the new round of national land spatial planning is to continue to improve the leading position of the government, and constantly promote the unification of ideas and objectives among government departments at all levels, follow the guiding principles of "multi-planning", and reflect The system design of "multi-body participation and multi-sectoral sharing and innovation", the cooperation and collaboration among various government departments and technical service units in the concrete implementation process of territorial spatial planning, the establishment of a sound and reasonable efficient working mechanism, the clear division of responsibilities and tasks, the realization of the strategic objectives of spatial planning, the layout and the preparation of related initiatives. The specific objectives and medium of realization of territorial spatial planning lie in territorial development, and the construction of a reasonable territorial spatial system has a significant role in promoting the development and protection of territorial resources. The focus of comprehensive land development in the whole area lies in rural

construction, but because there is a certain lag between key construction areas such as ecology and transportation in rural areas and urban construction, the new round of territorial spatial planning should be planned comprehensively on the basis of detailed data survey, such as combining with the Third National Land Use Survey, etc., which should improve the operability of territorial spatial planning. At the same time, new ideas, technologies and methods should be continuously absorbed to improve business capabilities, such as ecological protection of the environment has been mentioned to a new height of remediation, especially in combination with the construction of beautiful countryside and the requirements of comprehensive improvement of the whole land area, it is necessary to strictly adhere to the ecological red line, take reasonable measures to urge the economic value of ecological natural resources and improve the development pattern of the national land space.

3.2. Technical Route of the New Round of Territorial Spatial Planning

In order to guarantee the effective connection of planning data at all levels between the same functional departments and between different functional departments, corresponding standards and specifications should be established for the data resources, index system and platform construction involved in the land and space planning. The technical route of the new round of territorial spatial planning should highlight the strategy and rationality of territorial spatial planning, fully utilize and combine global positioning technology, remote sensing technology and geographic information technology to promote the application of the new round of territorial spatial planning in the comprehensive improvement of land in the whole area, quickly determine the spatial location of targets, various sensors and delivery platforms through GPS, accurately and efficiently monitor land resources and environmental information using RS technology, and use GIS to conduct a comprehensive analysis of all spatial and temporal data. The three technologies are flexibly applied to realize the dynamic visualization of the target change process through GPS to quickly determine the spatial location of the target, various sensors and delivery platforms, RS technology to accurately and efficiently monitor land resources and environmental information, and GIS to diversify the processing of various spatial and temporal data sources, and software processing to timely filter, analyze and update the change information. For the comprehensive improvement of the whole area of land, it is not only to realize the comprehensive treatment of the damaged and unused land, but also to realize the comprehensive improvement of water, road, forest as well as the construction of beautiful countryside and ecological landscape construction. Through the high spatial resolution satellite remote sensing images and UAV remote sensing images to obtain the basic information of topography, landform and land use status, it not only provides the reliable data support for the land resource utilization, but also provides the reliable data support through remote sensing data coupled with non-remote sensing data and high spatial or hyperspectral remote sensing images, it can realize the rapid acquisition of dynamic information on land surface such as land use change monitoring and arable land quality change, meanwhile, ArcGIS software can be used to realize the establishment of textual information, graphic database and attribute database, accelerate data update, analysis, statistics, query and display, and finally guide the scientific decision in land evaluation, arable land protection and whole area land scientific decision-making in comprehensive land improvement.

4. Deficiencies of the New Round of Territorial Spatial Planning in the Work of Comprehensive Land Management in the Whole Area

4.1. Lack of a System of Laws and Regulations Related to Territorial Spatial Planning

The new round of territorial spatial planning is an important basis for promoting the collation of agricultural land and construction land in the context of "multi-planning". From the economic point of view, the new round of territorial spatial planning is an important measure to relieve the pressure of regional economic growth and solve the unbalanced and incomplete development. However, up to now, especially in the field of land in China, the Land Management Law, the Urban and Rural Planning Law and the Environmental Protection Law and other related laws have problems such as not strictly implemented, especially in recent years, the public's legal awareness is weak, and the implementation of the responsibility of the popularization of law in some regions is not in place, and the lack of overall interest thinking of the public in the projects such as the balance of occupation, the development of residual forest land and the increase/decrease pegging has occurred. In some regions, there is a lack of overall interest of the public in the projects such as the balance of land, the residual forest land development project and the increase-reduction peg project, and the phenomenon of hindering the project. At present, China's new round of territorial spatial planning system has just been established, while the corresponding laws and regulations on territorial spatial development and protection, spatial planning and regional planning have not yet been introduced, which brings certain difficulties to the promotion of related planning work.

4.2. Weak Awareness of Eco-efficiency Planning

Up to now, the focus of land remediation work still remains on maximizing the arable land area and enhancing the arable land capacity, and the fundamental purpose is to maximize economic benefits, thus the consideration of land development benefits and ecological and environmental benefits is still very lacking, as land remediation projects often have a certain tendency of interest dimension, which brings great pressure to the planning of the new round of national land space in terms of ecological benefits. In 2016, the ecological restoration work of "Mountain, Water, Forest, Field, Lake and Grass" also included the restoration of polluted land, degraded and unused land and ecological restoration into the land remediation system, which is highly consistent with the Party's concept of "green water and green mountains are the silver mountain of gold" and has a great impact on the overall land. The comprehensive improvement of the ecological environment has put forward higher requirements, and has also clarified the future direction of land remediation. It will be led by conservation, environmental protection and restoration, and focus on the concept of human natural life community, forming a change of consciousness from the simple element of land improvement to the big integrated element of landscape, forest, field, lake and grass. From the policy guidelines of the new period to the specific requirements of the new round of spatial planning, all of them reflect the important role of ecological benefits. Therefore, the important role of ecological benefits should be highlighted in the new round of land spatial planning, and the ecological red line should be effectively guarded to the death, and the new round of land spatial planning should be combined with the rural ecological protection and restoration, and the promotion of urban-rural integration construction work, so as to maximize the optimization of the overall planning.

5. Suggestions Related to the New Round of Territorial Spatial Planning in the Work of Comprehensive Land Improvement in the Whole Area

5.1. Strengthen Relevant Legal Mechanisms

The development of a new round of territorial spatial planning is a strategic deployment proposed at the national level. At present, there are laws and regulations on territorial spatial planning that have not been established. Therefore, systematic laws and regulations should be used as a guide to formulate and improve the laws and regulations and related mechanisms from the central to local level with the new round of national land spatial planning as soon as possible, so as to clarify the legal benefits of the new round of national land spatial planning, to promote the national land spatial planning law to have theoretical support for other regional planning, and to reach the effect of weakening the constraints of other laws and regulations. Combined with the comprehensive improvement of land in the whole region, there are still some illegal land use, so it is necessary to combine the actual local situation to make relevant laws and regulations targeted to re-specify and refine, and to formulate effective punitive measures for violations, to enhance the authority of the new round of laws and regulations related to land spatial planning, and to continuously strengthen the popularization of law in each region to enhance the national legal awareness.

5.2. Consolidate the Main Responsibility of the Government and Strengthen the Cooperation and Coordination of Various Departments

In order to implement the new round of national land spatial planning and build a national land spatial "one map", it is necessary to adhere to the overall leadership of the Party and the collaborative mechanism with the full cooperation of various government departments. Give full play to the government's absolute core role of coordination across the board, especially the leadership of the Ministry of Natural Resources, to form a strong synergy to promote the development of comprehensive land improvement across the region. Through various channels, the government should formulate macro strategies in accordance with relevant laws, convey the spirit of relevant policy documents to various governmental functional departments, and continue to convey the guiding spirit to the grassroots through the division of labor among various departments to point out the general direction of planning for the lower-level government. Grasping the spirit of policies and documents, the grassroots departments should take into account the local conditions and the actual situation of the region to effectively implement the macro strategy into the grassroots planning. In the process of concrete implementation, some information will need to be collected and summarized and fed back to various government departments, such as the delineation of ecological red line areas and other ecological functional areas, the definition of forest land and residual forest land, etc., which require the grassroots departments to do a good job of field investigation and evidence. The new round of national land spatial planning is based on the third national land use survey, based on the actual physical survey to form a "one map" of national land spatial planning, in principle, eliminating the differences between various government departments and unclear map spot definition, more clearly defined the division of labor and functions between the government can only departments. Then through the government-led, the new round of land spatial planning as a guide, integrated land, agriculture, water conservancy, forestry and environmental protection and other departments views and suggestions, based on this unified planning in line with the actual situation of the local comprehensive land improvement projects, even if the financial waste, but also gradually expand the advantages of the project, and actively seek the economic growth point of each region.

5.3. Improve the Comprehensive Level of the New Round of National Land Spatial Planning

The new round of territorial spatial planning is an important initiative to promote the steady growth of national economy and maintain the coordinated development of the region in the context of the strategic deployment of "multi-planning", which has the characteristics of high starting point, high requirements, systemic and comprehensive. The comprehensive improvement of the whole land area is a comprehensive reflection of the functions of government departments such as land, agriculture, water conservancy, forestry and environmental protection. Effectively combining the new round of land spatial planning with comprehensive land remediation requires it to continuously improve the level of planning, fully consider the various influencing factors involved in the project, do a good job of all-round control of the project's pre-feasibility, planning and design, do a good job of water resources demonstration, environmental impact assessment, soil and water conservation, biodiversity demonstration, emergency plans, and geological disaster assessment, etc., in the land remediation implementation plan Enhance the construction of ecological civilization and forestry protection, combine the planning scheme with the comprehensive land remediation of the whole area to achieve high standards, promote the "integration of multiple regulations", and guide the implementation of land use planning projects in a forward-looking manner.

5.4. Ensure High Public Participation

The focus area of comprehensive land improvement is in the countryside, and it is also an effective way to realize the rural revitalization strategy. The Central Committee of the Communist Party of China and the State Council issued the Opinions on the Implementation of Rural Revitalization Strategy in March 2018, which specifies the detailed requirements for rural revitalization by 2020, including the construction of institutional policy system, agricultural infrastructure construction and production capacity improvement, rural habitat environment and ecological environment improvement, etc. It is suggested that departments at all levels should effectively implement grassroots work, and land authorities at township level should give full play to their initiative, fully explain and answer questions on land-related policies involving local people, and fully communicate and coordinate the wishes of local people in the process of data collection for the new round of territorial spatial planning and in the formulation of planning schemes, so as to reflect their wishes into the planning design in a reasonable and legal manner.

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References

- [1] Xu Mengyao, Zhang Zhengfeng. Transformation of rural industrial land in Beijing-Tianjin-Hebei region in the context of rural industrial revitalization[J]. *Economic Geography*, 2020, 40(5):174-182.
- [2] Ding Bo . Rural collective economy and rural governance effectiveness in the context of rural revitalization--a field survey based on four villages in southern Anhui[J]. *Journal of Nanjing Agricultural University (Social Science Edition)*, 2020, 20(3):53-61.
- [3] He Xuefeng. Rural revitalization and rural collective economy[J]. *Journal of Wuhan University (Philosophy and Social Science Edition)*, 2019, (4).185-192.
- [4] Zhang Zhaoshu. Urban-rural relationship and administrative matching: the double logic of village development in rural revitalization strategy [J]. *Journal of Wuhan University (Philosophy and Social Science Edition)*, 2019, (5).176-183.

- [5] Ding Qinglong, Ye Yanmei. Exploring the transformation of land remediation and the path of comprehensive land remediation in the whole area in the context of rural revitalization[J]. Land Resources Information, 2020, (4):48-56.
- [6] Feng Danyue, Jin Xiaobin, Liang Xinyuan, et al. Identification of village characteristics and remediation measures based on a comprehensive perspective of "type-rank-potential"[J]. Journal of Agricultural Engineering, 2020, 36(8):226-237, Feng4.
- [7] Yan Jinming, Zhang Dongsheng, Dilishati Yakuf. Modern rule of law in territorial spatial planning: good law and good governance[J]. China Land Science, 2020, 34(4):1-9.
- [8] Yu, Liangliang, Cai, Yinying, Luo, Cheng. Spatial planning control measurement and spatial correlation analysis in Hubei Province[J]. Geography and Geographic Information Science, 2020, 36(3):97-103.
- [9] Chen Jiang. Exploring the idea of intelligent territorial spatial planning based on information technology[J]. North China Natural Resources, 2020, (2):124-125, 128.
- [10] Han Qing, Sun Zhongyuan, Sun Chengmiao, et al. Construction and application of one map of the current situation of national land spatial planning based on natural resources background--Qingdao city as an example[J]. Journal of Natural Resources, 2019, 34(10):2150-2162.
- [11] Zhao Kun, Xu Jingquan, Shen Chi. Exploring the idea of preparing control measures for city and county territorial space master plan based on the perspective of human behavior[J]. Journal of Natural Resources, 2019, 34(10):2234-2243.
- [12] Han Zongwei, Jiao Sheng, Hu Liang, et al. The construction of ecological security pattern in national land space with the coordination of corridor and source land[J]. 2019, 34(10):2244-2256.
- [13] Fang Y, Wang J, Huang LY, et al. Diagnosis and identification of key areas for ecological protection and restoration in national land space based on ecological security pattern--An example of Yantai city[J]. Journal of Natural Resources, 2020, 35(1):190-203.
- [14] NI Qinglin, HOU Huping, DING Zhongyi, et al. Ecological restoration zoning of national land space based on ecological security pattern identification: the example of Jiawang District, Xuzhou City[J]. Journal of Natural Resources, 2020, 35(1):204-216.
- [15] Zang L, Wang B, Bai S. Exploration and reflection on natural ecological space use control in Hebi City[J]. Land and Resources Science and Technology Management, 2020, 37(1):52-60.
- [16] Yang Lei, Utopian Wenju, Li Chen, et al. Practice and consideration of comprehensive land improvement in highly urbanized areas across the whole area[J]. China Land, 2019, (11):32-33.
- [17] Zhou Yuanbo. Consideration of some problems of comprehensive land improvement in the whole area[J]. China Land, 2020, (1):4-7.
- [18] Yan Qiaolai, Shen Zhiqin, He Youyong. Zhejiang: Promoting comprehensive land improvement and ecological restoration in the whole area of the countryside[J]. China Land, 2019, (12):57-58.
- [19] Yue W Z, Dai Z W, Gao J B, et al. Reflections on resource and environmental carrying capacity evaluation for provincial land spatial planning. China Land Science, 2018, 32(12): 66-73.
- [20] Yang X. H., Jin X. B., Jia P. H., et al. Methodology and empirical study of permanent basic farmland delineation in counties from the perspective of multiple regulations. Journal of Agricultural Engineering, 2019, 35(2):250-259.
- [21] Li YG, Li Zongsheng, Feng Q, et al. Research on ecological protective development of Qilian Mountains based on ecological red line delineation. Journal of Ecology, 2019, 39(7): 1-10.
- [22] Zhong Shan, Zhao Xiaomin, Guo Xi, et al. Delineation of urban development boundary in the central city of Guixi based on spatial suitability evaluation and population carrying capacity. Journal of Natural Resources, 2018, 33(5): 83-94.
- [23] Qin Xiao, Zhen Feng, Li Yaqi, et al. Exploring the framework of big data application methods for territorial spatial planning[J]. Journal of Natural Resources, 2019, 34(10): 2134-2149.