

Functional Orientation and Implementation Analysis of Land Spatial Planning Based on Multi-Source Data

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Abstract: In the new period, the accurate positioning of China's land space planning can clarify the nature of the overall planning, which is conducive to the formulation of effective implementation strategies. Planning the land space can scientifically guide China's space development and promote the sustainable development of China's space, which is the foundation for the continuation of China's protection and development work. Multi-source data integration is to bring the collected isolated data into a unified model, and use unified management means, unified coding and unified data structure to make the integrated data achieve certain integrity. Through rational land space planning, we can optimize the spatial protection pattern and promote ecological protection and restoration and comprehensive land improvement. This paper discusses the functional orientation and implementation of land and space, and on the basis of analyzing the heterogeneity of multi-source data involved in land and space planning, puts forward the multi-source data integration scheme of land and space planning. Based on the practice of Chongqing's spatial planning system reform, under the new background of institutional reform and the new requirements of national land and space planning system, this paper ponders and looks forward to the construction of urban land and space planning system.

1. Introduction

China's socialist construction has entered a new era. It is necessary to carry out reasonable planning and construction of land space and establish the strategic pattern and objectives of land development, so as to realize healthy and sustainable planning and development [1]. According to the current situation in China, China's Ministry of natural resources is vigorously organizing land and space planning. For some existing problems, such as excessive resource development intensity, resulting in serious shortage of resources and destruction of ecological balance in some parts of China, which is not conducive to the realization of China's sustainable development [2]. Land spatial planning is mainly to comprehensively plan the spatial layout from the aspects of resources, elements, structure and rights through the protection and rational utilization of the existing space, and combine various plans to realize the overall implementation, management and supervision mechanism of space [3]. Managing the development and use of China's land and space to promote ecological and environmental protection can be in line with China's current general trend of ecological development [4]. It can be seen that the Chinese government must scientifically and reasonably plan the existing land space, ensure that the land space promotes the overall development of the country after development and utilization, and promote the repair of China's damaged ecological environment, so as to provide a solid backing for China's social and economic development [5].

With the development of urban social economy, a series of problems caused by the uneven distribution of urban spatial functions have emerged. In order to coordinate the balance between social and economic development and ecology, population and resources, many countries and regions have carried out land spatial planning [6]. In China's planning system, land and space planning, as a category of planning work, occupies a basic position. Land space planning takes land space as the planning object. Land space mainly refers to the regional space under the jurisdiction

of national sovereignty and sovereign rights, including land and marine space and other carriers and places of human production and life [7]. Planning is an important means of governing economic and social development, so land space planning is also a means of governing land space in essence. Scientific and reliable basic data of land spatial use is the basis and basis of land spatial planning. Unified land use classification is the premise of obtaining data. Land classification should be combined according to different land use characteristics, and its purpose is to distinguish the key of different classification standards [8]. The planning function positioning is to clarify the nature, tone and foothold of the whole planning, and is the premise and basis for planning preparation and implementation. Therefore, to ensure the role of land spatial planning, it is very important to accurately grasp the function positioning in the planning process.

2. Connotation and Development of Land Spatial Planning

Land planning is not only related to the development of national economy, but also directly affects the formulation of national overall strategic objectives. Therefore, land planning should fully combine the actual situation and future trend of national economic development, integrate natural, resource, political, cultural and other factors, and formulate land planning strategies in line with China's national conditions. The purpose of territorial planning is to improve the modernization of national governance capacity and improve people's quality of life [9]. Planning the land space can not only protect the land space, but also promote and change the working mode and consciousness of government functional departments, industry personnel and planning professionals, which is of great significance. Land spatial planning is an important part of social development and national economic development. It is the direct basis for the overall layout of national construction, the formulation of strategic objectives and the comprehensive improvement of the environment. It provides a guiding strategic basis for national development. Reasonable planning of land resources can achieve the goal of national economic development and long-term stability.

If China's land space planning is to be smooth and efficient, it can be combined with information technology, and it is extremely important to integrate big data. On the basis of the original land planning, combined with information technology, the ways and methods of improving land space planning are constantly optimized to build a reasonable land space planning system. The planning of territorial space is a major deployment made by the central government to build a beautiful China [10]. It is not only a program to unify the utilization and protection of China's land and space, but also a mobilization meeting for government functions and professionals at all levels, which has important historical significance and practical value. From the overall point of view, land space planning is to integrate land resources and maximize the utilization of land resources. Partly, it is to promote the development of urban economy and the deepening of urban planning through the rational spatial layout of some areas, so as to optimize the overall level of land space planning.

3. Functional Orientation of Land Planning

3.1 Development and Protection of Land and Resources

Land planning is an important strategic plan implemented by the Chinese government, which aims to rationally develop and protect the existing land resources, thus promoting the coordinated development between social economy and resources and environmental protection. Therefore, China's urban government must make overall plans for land space, form a new strategic pattern of scientific development and taking care of the overall situation, and improve the original idea of regulating regional economy. In the process of land space planning, it is mainly to develop, protect and manage China's land resources, and to strategically deploy the whole, so as to promote the harmonious development of social and environmental protection and other aspects. When implementing the land and space planning, we must ensure that the lower-level planning obeys the higher-level planning, and the planning priorities of different levels are completely different. For example, the national-level planning focuses on strategy, the provincial-level planning focuses on

coordination, and the city, county and township-level planning focuses on implementation. In this process, according to the opinions and requirements of the state, provinces and cities, and then according to the actual problems and needs, the local area is maintained. In the process of land and space planning, the overall orientation should reflect the basic and strategic characteristics, which involves the utilization, protection and governance of land and space, and plays a guiding and controlling role in the actual construction activities. Under the background of current social development, there is a close relationship between promoting the process of land planning and the system construction of functional areas, which can make the development work better achieve the strategic objectives. Land planning is mainly the overall planning of land use and population distribution, so as to reflect the functionality of each space.

3.2 Main Planning and Renovation

With the development of land planning, the traditional land development and consolidation planning can not keep up with the pace of the times. The main reason for this situation is the development requirements of the cultivated land compensation system occupied by non-agricultural construction. Land planning mainly implements the development and protection of land resources, which belongs to rigid control and can make the protection and management more scientific. In the planning process, resources need to be reasonably developed and protected. The effect of spatial planning should also be fully reflected. Land improvement planning is also an important part of land spatial planning and an important means of comprehensive land improvement. In the actual planning process, it is necessary to make overall arrangements for various activities, so as to build a planning system at the provincial, municipal, county and township levels. With the proposal of China's ecological civilization construction, China's land planning and regulation has also achieved a new breakthrough. It no longer simply emphasizes quality, but constantly strengthens the simultaneous progress of quality and quantity to promote the renewal and optimization of land use. The construction of the main functional area is a very important planning work. In this process, we must scientifically and reasonably plan the main functional area, so as to promote the formal formation of the main functional area system. China's land space is divided into urban, agricultural and ecological areas. After understanding the population distribution and regional economic development, we will focus on the development and continuous optimization of urban areas and improve the spatial layout, so as to improve the overall quality of the city.

4. Optimization of the Layout of Chongqing's Land Space Development

4.1 Optimization Scheme of Land Spatial Pattern in Chongqing Urban Area

Chongqing should assess the situation, adapt to the conditions of market economy and keep up with the new trend of economic globalization. In the process of land use and spatial layout, we can first establish the staged goal of soil attack and realize the relaxation of land space development. Chongqing, as a mountainous and hilly city, has always faced more severe and complicated urban development difficulties than plain cities in the process of urban historical development, which is not only the negative factor of Chongqing's urbanization development, but also the regional characteristics and natural conditions of Chongqing's urban development. Standardized processing of multi-source data of land and space planning is a process of extracting all kinds of useful information for the process of land and space planning and standardizing according to unified data standards on the basis of clarifying the corresponding relationship between the framework system of land and space planning database and multi-source data. It is necessary to follow the principles of ensuring the overall development and utilization of land and space planning and scientific protection to formulate indicators. On the one hand, the optimization of the land spatial pattern in Chongqing's main urban area needs to rely on rural non-agriculture and industrialization; on the other hand, it needs to rely on the adjustment of industrial structure in the central city to move the old industrial bases to areas outside the main urban area, and the peripheral groups with good industrial base can develop in groups, share the gradient transfer of urban industrial structure and

become the sub-center of production space in Chongqing's main urban area.

The urban land space of the concept of sustainable development contains a wide range of contents, mainly divided into social, economic, cultural, environmental and other aspects. The land resources in Chongqing's main urban areas are scarce, the per capita land area is small, and the land available for future development is short. The development of the main urban areas is facing serious land problems, so the sustainable land management system and land development policy are imperative. With regard to the integration and expansion of urban spatial pattern, based on the historical evolution process of Chongqing's land form and structure and Chongqing's own development conditions, we should give full play to the leading position of urban development in the main urban area, and finally form the overall layout of urban spatial development with the coordination of production and ecology.

4.2 Optimization Strategy of Land Spatial Pattern in the Main Urban Area of Chongqing

Make full use of planning to optimize the way of resource development and utilization, enhance the resource protection ability, promote the sustainable development of ecological environment, reasonably determine the planning indicators according to the actual situation and planning priorities, ensure the richness of the types of planning indicators, and promote the rationality of land and space planning. In the process of territorial spatial planning, the whole planning process needs to be carried out in different types of spaces. In order to realize the form of sustainable development in the main urban areas, we should persist in proceeding from reality and use new theories and methods to guide the land management and planning. According to the established data warehousing standards, analyze the data sources and their corresponding relationships, and establish a comparison table of classification codes. With reference to the comparison table, directly convert the classification codes with corresponding relationships, and manually edit and process those with unclear or no comparison relationship. At the same time, the attribute structure is checked according to the data warehousing standard, and the incomplete attribute structure is supplemented and assigned.

Relevant planning departments should strengthen communication and coordination, improve the sharing and utilization efficiency of planning-related data and information, and give full play to the role of supervision and management to promote the standardized development of land and space planning. Key development areas are the new growth poles of urban economic development, important areas to enhance the core competitiveness of cities, and important fulcrums to promote the transformation of economic development mode and population agglomeration. In order to prevent industrial pollution from entering the land ecosystem and reduce the harm of industrial pollution to the ecological environment, in terms of land ecosystem protection, industrial parks should be centrally arranged to improve the level of centralized control of industrial pollution, and at the same time, over-exploitation of land and destruction of ecological environment should be avoided to ensure the coordinated development of industrial land and ecological land. It is necessary to introduce advanced pollution prevention and control technologies and new energy use technologies into industrial production in the main urban areas, gradually transform polluting enterprises into green ecological industries, monitor and deal with their pollution in real time, strictly control the generation of pollutants, reduce pollutant emissions, and continue to improve the ecological environment infrastructure construction.

5. Conclusions

The functional orientation of territorial planning includes overall orientation, main function, layout planning and renovation planning, etc. Therefore, in the process of implementation, we should adhere to the people-oriented planning concept, set planning indicators reasonably, and ensure the implementation of planning. Land spatial planning is a comprehensive process, which needs data related to all aspects of national economy, including the present situation and distribution of land resources, geographical position, economic and social orientation, social and economic reality, etc. As the direct decision-maker of national land planning, we should give full

play to the role of leaders, and introduce laws and regulations on land planning management as the unified standard for governments at all levels to ensure the effectiveness, scientificity and practicability of land planning. In the face of the existing land space planning problems, we need to actively adopt corresponding strategies to solve them, so as to effectively promote the sustainable development of land space planning and effectively protect China's existing land space. On the one hand, the optimization of the land spatial pattern in Chongqing's main urban area needs to rely on rural non-agriculture and industrialization; on the other hand, it needs to rely on the adjustment of industrial structure in the central city to move the old industrial bases to areas outside the main urban area, and the peripheral groups with good industrial base can develop in groups, share the gradient transfer of urban industrial structure and become the sub-center of production space in Chongqing's main urban area.

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