

Economical and intensive construction land demand classification forecast analysis

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Abstract: For the intensive use of land, it mainly refers to effectively through the strengthening of the land investment, so as to improve the management and management of the land to a certain extent, which is also a way to strengthen the land income. For many regions in China, the use of local land resources is very limited, and with the continuous development of industrialization and urbanization, relevant land resources will become very scarce, which will also lead to the contradiction between human and land becoming more prominent. Therefore, for the scarcity of land and non-renewable, it is a step by step restricting the economic development and social development of mountainous areas in China. Therefore, it is very important to effectively classify and forecast its land planning and economy. Based on this, this paper analyzes land planning classification and economical and intensive construction land demand classification prediction for reference.

1. Introduction

Territorial spatial planning is an important technical measure for government departments to make overall arrangements for regional spatial construction, integrate land and resources, coordinate regional issues and realize healthy economic and social development. In March 2018, the Ministry of Natural Resources was established to coordinate the planning functions of various ministries and commissions. In 2019, the State Council issued the Opinions on Establishing and Supervising the Implementation of a Territorial Space Planning System, which calls for the establishment of a sound system of territorial space planning. At present, as the carrier of production, living and ecological construction, it is one of the urgent scientific problems to promote the coordination and unification of spatial planning. However, various types of planning in China

have their own system, and the separation of departments makes it difficult to effectively control space resources. In order to solve the contradictions among various types of planning, it is necessary to gradually develop and form a spatial planning framework from "two plans in one" to "multiple plans in one". However, the time limit of different planning, the inconsistency of land use classification system and the different statistical caliber are still the key factors hindering national land planning [1-2].

2. The connotation of the classification of land use planning

Land use classification is the premise and basis of planning, and long-term human activities depend on the construction and development of land use classification. The understanding of land use classification has been widely discussed by domestic and foreign scholars. Wai kong, ray, and tianjin tianjin university doctoral hole, a professor at the university of thyself thy land use classification is to effectively understand and control status quo of land resources, formulate reasonable land development and use of the policy, a basic task of further optimizing the allocation of land resources, mainly in the service of land and resources survey, urban and rural planning and land use planning [3]. On the basis of analyzing the demands of green space planning, Ye Lin, associate professor of Chongqing University, believes that classification is a kind of planning and utilization mode, a means of managing and distributing green space land use, and has strong operational significance for the implementation of planning. The land use classification in the UK can distinguish land attributes through government-led planning approval and permission, especially in the classification standard, which has greater flexibility and stronger policy. Japan has gradually established a comprehensive multi-objective and multi-dimensional control compound land classification system which effectively guarantees the intensive and efficient use of land resources.

3. Construction of land classification system for territorial spatial planning

At present, there are many land classification systems, which have different classification standards. According to the land use mode, use, management characteristics and land cover characteristics, land use types are classified according to the main use. Geographical national conditions survey classification is based on the existing classification system of basic geographic information, referring to the investigation and classification carried out by relevant professional departments, according to the application needs of geographical national conditions analysis, appropriate screening and expansion; The classification of urban and rural land use focuses on the social and economic properties of land according to the characteristics of land use, the way of land use and the nature of dominant facilities of land cover. It serves various departments and industries of urban construction and provides basic guarantee and implementation for urban and rural areas [4-5]. The classification of forestry survey is mainly based on the forest cover type, supplemented by the planning and utilization type of forest land. The emphasis is on the expression of the current utilization characteristics of forest land, and the classification of non-forest land types is relatively rough. However, these classified data can not meet the needs of territorial spatial planning, spatial function division and "double evaluation". Therefore, in order to meet the needs of the compilation of territorial spatial planning, this paper, based on the land classification standards of the third

territorial survey, establishes a land classification system for territorial spatial planning, which is connected with various land classification systems, according to the opinions of national planning compilation and based on the land classification standards of the third territorial survey.

4. Comparison and analysis of different types of spatial planning land

(1) There are significant differences in the classification of the planned land

As the basis of land use management, land use classification is a technical means to ensure the preparation and smooth implementation of land use planning. By comparing the contents of various spatial plans, it is found that the interests of various departments are diversified and lack of coordination, the classification standards of various plans are inconsistent, the planning objectives are not unified, and the planning contents overlap. Based on the analysis of the main conflicts between land use planning and land classification standards for urban and rural planning, it is found that the conflict and lack of corresponding land classification are prominent. Therefore, it is necessary to establish a unified land use classification system under the national spatial planning to ensure the implementation of spatial planning.

(2) Integrate the existing various types of planning, pay attention to the classification of land use connection

It is imperative to link up land use classification in territorial spatial planning. However, due to the differences at the level of control and the shackles on the link up of land use classification in existing planning, it is difficult to be fundamentally coordinated. In this regard, the author puts forward "two major reconstructions", namely, strict compilation and control responsibilities, reasonable division of "production-production" space, strengthening the construction of ecological civilization, and ensuring the coordinated and healthy development of all kinds of planning. One is boundary reconstruction. As planning boundaries cross, the phenomenon of "multi-head management" occurs from time to time, which seriously affects the planning efficiency. The spatial pattern should be optimized, the boundary of public interest should be delimited, and the disorderly expansion of collective land should be restricted under the clear rights and responsibilities. Guided by bottom-line thinking, rigid control lines should be delimited to limit the disorderly spread of construction land, especially village collective land, and ensure the coordinated development of economic and social attributes of all kinds of land. Second, spatial reconstruction. Land use planning and land classification in urban and rural planning are obvious in the conflict of corresponding land types, and their spatial overlap becomes a blank place for various departments to manage. Therefore, based on the overall development of various plans, a coordination mechanism should be established to integrate various plans, improve the spatial value, reduce the spatial fragmentation, and form a balanced pattern of interests under the thinking of checks and balances. At the same time, we will strengthen the protection of the ecological environment and implement a space management strategy that combines rewards and punishments.

(3) Unified coordinate system and attribute structure of multi-source data

Due to the differences in the data establishment standards and forms of various departments, it is necessary to standardize the collected data: the basic data should be transformed by projection, unified coordinate system and attribute structure, and imported into the basic database of national land identification according to the unified coordinate system and attribute structure. The national

land category identification model is established and the land category identification is carried out for the national land category space under multi-source data.

(4) The construction of national land category identification criteria

Solve the conflict of multi-source data class conversion. The identification methods of national land types based on the combination of multiple classification systems are established: a. For the map spot units conforming to the second class of the land use classification system of territorial spatial planning, they are directly converted to the corresponding land types according to the conversion criteria of national land types; b. due to various global survey data classification criteria and survey, a part of the figure combination spot has a variety of different land types, and then on the basis of the land class definitions, established land class under the combination of different countries to identify benchmark data, for some in line with the national spatial planning and land use classification system, level 2 class diagram unit according to the classification of the third national land survey is converted to the corresponding land use classification.

5. The principle of the index decomposition of construction land in land planning

(1) Adhere to the principle of "five overall plans"

The five overall planning principles are "overall planning for economic and social development, urban and rural development, regional development, harmonious development between man and nature, and overall planning for national development and opening to the outside world". These five strategic planning systems are the major strategic decision-making requirements for realizing the scientific and sustainable development of urban national economy and society. When studying and formulating urban construction land planning and development land planning arrangements, we must always adhere to the "five planning".

(2) The principle of comprehensive benefits

In the process of land resource construction, we pursue the maximum economic and social benefits, and realize the basic economic model integrating society, economy and nature. In the process of considering the comprehensive benefits of construction land, we should consider these three factors to achieve the maximum economic benefits.

(3) The principle of fairness and efficiency

In the process of building public resources and services, equity and efficiency should be fully considered. In the construction of some economically developed areas, the demand for land resources is large, and these economically developed areas often give consideration to social benefits and maximize the utilization rate of land and social benefits. In some economically underdeveloped areas, the comprehensive consideration of land resources is relatively low, and the index of new development and construction land can create more social and economic benefits for them.

6. The construction land demand classification forecast way analysis

In China, the demand for land in each region is not consistent, so we need to carry out the work arrangement according to its actual situation, so as to take into account the improvement of economic development and possibly meet the demand for intensive land. Therefore, in the process of urban and rural construction, we need to forecast both the new increment and the decrease

amount, so that the local land can be expressed according to the actual needs of each region.

7. Forecast of construction land demand

(1) Ground class conversion

In our country in 2009 issued by the relevant planning guidance, and each kind of statistics is also in accordance with the national land classification system to work, therefore, in the face of such a situation, we in order to be able to effectively strengthen the new arrangement, you need to transform originally traditional land types change for land planning content, the other related land makes its foundation needs the relationship with the analysis of land use planning has a match.

(2) Forecast of urban and rural construction land planning

Related to urban land use forecast analysis, according to the local land use situation and related data, we can find that in 2005, local urban land area of about 5 km, and the population in the town with 60000 people, so in the face of such a situation, we need to adopt policies and issued by the way, to carry on the forecast. It is predicted that in 2020, the local per capita land area will not be less than 100m²/ person.

(3) The weights and standard values of evaluation indexes for intensive use of construction land

By adopting a unified standard of evaluation index system and index, the reasonable simulation for different parts of the evaluation, by comparing the different levels of the traditional linear analysis method (ahp) and Delphi method, etc, under different evaluation area determine different levels of different index assessment model and standard index evaluation factors under different area and the average and weights of different evaluation index factor weight value.

8. The importance of the overall planning analysis

The increasing lack of resources will inevitably lead to the contradiction between people and land more prominent. The scarcity and non-renewable nature of land is becoming one of the main bottlenecks restricting the local economic and social development in mountainous areas of China. Therefore, it is of great significance to study the protection and intensification of mountainous land. As for the basic work of the overall land planning, we need to effectively control the local land demand, so as to work out a reasonable calculation to arrange the local land and the relevant construction land. In such a way, it can effectively arrange the local construction land, so as to ease the relationship between people and land to a certain extent, so that the local economy can develop in a better direction. In addition, based on land planning and related forecast demand analysis is also the characteristics of the current new land planning, so that it has the characteristics of rationalization in the internal, we can carry out related work according to the classification and protection of land planning.

Based on the current we need a classification of land use planning and managing collective as the foundation to develop related work content, but also should be built into a new round of planning working practice, to provide a new round of planning work, safeguard the thinking of construction land demand forecasting can be inspired, to make it among the biggest limit to lay the foundation for overall planning of work.

9. Conclusion

With the establishment of the Ministry of Natural Resources and the effective progress of the pilot project of "integrating multiple plans into one", the exploration of territorial spatial planning has been carried out actively. From a horizontal perspective, the Ministry of Natural Resources, the Ministry of Housing and Urban-Rural Development should be based on the main attributes of land use, and consider the land use mode and management characteristics, the current classification standards docking. Look from the vertical, the hierarchical classification using direction must be clear, the integrated use of administrative, economic, technical and legal measures, planning and implementation plan, strengthen the ability of cooperation and coordination between departments, and cohesion, from macroscopic to microcosmic, from the overall to local, compiling unified specification, will establish a unified information management platform, ensure the smooth implementation of planning. Therefore, the construction of a reasonable and unified land use classification standard is the key to territorial spatial planning. We should fully expand the public participation, actively promote the compilation and implementation of territorial spatial planning, and realize the unification of land use classification.

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References

- [1] Xu Yong, Zhao Shen, Duan Jian. *Geographical Research*, 2019, 38 (10): 2388-2401. (in Chinese with English abstract)
- [2] Yu Shulun, Duan Juanli, Yang Yongbo. *Land use status and classification criteria from the perspective of spatial planning [J]. Resources Information and Engineering*, 2019, 34 (05): 68-71+75.
- [3] Ma Biao. *Suggestions on the Survey and Evaluation of Economical and Intensive Use of Construction Land [J]. Land and Resources*, 2019 (07): 46-47.
- [4] Yang Xiuqin. *Discussion on the economical and intensive use of construction land in China [J]. Science, Technology and Economy Guide*, 2018, 26 (34): 4-7.
- [5] Lu Ruhua. *The existing problems and improvement ideas of China's land use master planning [J]. Urban Construction Theory Research (Electronic Edition)*, 2018 (04): 202.