To Explore the Application of Agricultural Land Classification Results in Territorial Spatial Planning

Zuliang Luo and Rongrong Liu[✉]

Guangxi Institute of Natural Resources Survey and Monitoring, Nanning, Guangxi, China
Liurongrong@gxsdxy.cn

Abstract. With the continuous development of Chinese society, the results of agricultural land classification and the minimum demand for cultivated land are combined in land and spatial planning, and the number and scope of permanent basic farmland protection areas can be determined, and the benchmark is set as 105–110% of the number of permanent basic farmland, and we can know that the area where the natural isogram overlaps at the county level is the permanent basic farmland protection area. Therefore, this paper mainly studies the application of agricultural land classification results in land and spatial planning, hoping to provide certain reference value.

Keywords: Agricultural land division results · Land use · Territorial spatial planning

1 Current Status of Agricultural Land Classification Achievements

With the completion of the provincial agricultural land classification results, so the work of agricultural land classification is basically completed, and the difficulty and focus of the current work is to transform and apply the grading results in the territorial spatial planning, agricultural land classification is a macro-level work, in the national has a strong comparability, it is not only for the grading work, but also needs to be applied in the actual planning, how to actively apply the results of agricultural land grading in the territorial spatial planning, It needs to be carried out in strict accordance with the Land Management Law so that it can play its maximum value in daily land management work [1].

2 An Overview of the Results of Agricultural Land Classification

2.1 Meaning of Agricultural Land

Agricultural land is land that mainly grows crops or serves agricultural production. In the agricultural land classification regulations, agricultural land is directly engaged in agricultural production of land, which includes not only cultivated land and garden land,

but also forest land and pasture land, etc., here not only the concept and type structure of agricultural land are clarified, but also clearly point out the scope of agricultural land application and related legal basis, the current social agricultural land classification work is to classify cultivated land.

2.2 Overview of Agricultural Land Classification

Classification of agricultural land refers to the comprehensive assessment of the quality of agricultural land in accordance with certain methods and procedures in accordance with the relevant farming system standards and standards, and then the division of agricultural land into categories. It is mainly a process of evaluating the quality of agricultural land by scientific and advanced means, focusing on some natural quality utilization efficiency and level data that reflect the potential of agricultural land, and can have a deeper understanding of how these factors will affect the productivity level of agricultural land.

2.3 Overview of the Results of Agricultural Land Classification

The results of agricultural land classification are generally divided into original, intermediate and final results. In the process of classification, the original results include the original map and related questionnaires, etc., the intermediate results include the graded unit chart factors, score map and land economic coefficient table, etc., the final results include the classification of natural quality, the classification of agricultural land and the distribution of standard sample land, attributes and area summary data, the final result of agricultural land classification can directly reflect the quality of agricultural land, and can also fully reflect the distribution and area of agricultural land of different quality.

3 The Application of Agricultural Land Classification Results in Territorial Spatial Planning

According to the classification of agricultural land, more results can be obtained, and the application direction and scope of different agricultural land and other achievements are different, so this paper mainly analyzes the adjustment of land use structure and layout, and the delineation of permanent basic farmland protection areas.

3.1 It Should Be Applied to the Delineation of Permanent Basic Farmland Conservation Areas

Permanent basic farmland is mainly a very important task in land management by predicting construction land according to the socio-demographic and economic development situation in a certain period of time, distinguishing permanent basic farmland from general farmland, delimiting the scope of permanent basic farmland protection, and implementing permanent basic farmland protection areas. Determining the amount of

permanent basic farmland can be determined using the results of the grading of farmland and in combination with relevant economic indicators, it is possible to implement specific plots that are spatially oriented towards the grading results [2].

First of all, it is necessary to determine the amount of permanent basic farmland protection, because the distribution of agricultural land is very continuous and wide-ranging, and there is a land quality evaluation system that reflects basic fertility and actual productivity throughout the country. Agricultural land utilization reflects the distribution law of the horizontal space of agricultural land utilization, mainly considering the light and heat conditions in the area and the existing production level. In determining the amount of permanent basic farmland to be protected, the high-quality cultivated land in the permanent basic farmland area should be clarified, and the results of agricultural land classification that can be used are the results related to the use of agricultural land and natural quality. First, the benchmark is the minimum demand for cultivated land, and it is ensured that the protection rate of farmland cannot be lower than the existing percentage of cultivated land, and finally the permanent basic farmland tenure is calculated, and this parameter is used as a reference to accumulate the cultivated land area of the higher of the natural category, so as to analyze and compare the tenure of permanent basic farmland. Secondly, it is necessary to implement the scope of permanent basic farmland protection areas, at present, it is mainly county-level land management departments to complete the implementation of the scope of permanent basic farmland area, and the scope of delineating the specific area of permanent basic farmland cannot only rely on the relevant experience and feelings of the land management department, and should be guided by the actual theoretical basis, and effectively use feasible delineation methods to carry out work, in order to fully reflect the requirements in the relevant regulations, first of all, according to the classification map in the grading results. Draw the quantitative range of permanent basic farmland protection such as the use of higher grades, if the number of higher categories meets the relevant requirements, it can be extended to the lower range, and then use the same method to draw a range of 105–110% on the natural quality of agricultural land, overlapping two maps, overlapping areas can be divided into farmland permanent basic farmland protection areas, if the overlapping area is larger or smaller than the number of permanent basic farmland that needs to be protected, Isometric maps and standard sample maps can be actively used and compared, so as to finally determine the protected area of permanent basic farmland [3].

3.2　It is Applied to the Adjustment of Land Use Structure and Layout

After the promulgation of the new land classification law, China has a certain theoretical reference basis for the use structure and adjustment of the layout of land, and the subsequent adjustment of the land use structure is more convenient, and the land resources can be optimized and combined by adjusting the land structure and layout, so that the layout of the planting structure can be improved. Fully excavating the basic soil strength of the land is an important development direction for exploring the potential of land resources, first of all, it is necessary to adjust the structure and layout of land use, make full use of the results of land grading, for some cultivated land with poor quality and low utilization level, the results can be used to adjust its structure in time, and in the face of some cultivated land with more serious soil erosion, can be returned to forest and other

work [4]. Through the comparative advantage of economic benefits, the proportion of planting structure between crops and cash crops can also be adjusted, so that the potential of land resources can be fully realized, so as to effectively increase the economic income of crops. Secondly, low-yield fields and fertilizer fertility can also be improved, in the process of low-yield field and crop fertilizer improvement and transformation, by analyzing the use of lower plots in agricultural land classification, and comparing it with the soil fertility distribution map in the factor map, the reasons for low yield can be effectively analyzed, such as poor basic soil fertility or low nutrient content, if the agricultural structure cannot be adjusted, targeted improvements can be carried out, so that the land can increase investment, and actively build the basic facilities of permanent basic farmland. Let the grade of agricultural land be raised as much as possible and continuously promote the development of agricultural production.

3.3 Application in Rural Planning and Construction Layout Adjustment

The evaluation of cultivated land quality based on the results of agricultural land classification serves as an important reference material for planning, rational use of construction land, prediction and planning of urban construction land development, and orderly implementation of rural land remediation [5]. The development and construction of rural construction land should fully utilize hills, gentle slopes, and other non arable land, and strictly prohibit the occupation of high-quality arable land. By analyzing the hierarchical system and functional structure of each village, combined with the current situation and industrial structure of construction land use in each village, the development types of village construction land are determined as expansion type, internal potential tapping type, reduction type, and whole village relocation type. For villages in the Sichuan region with good farmland quality, strict restrictions should be placed on internal potential tapping. Existing idle land should be fully utilized to solve the problem of farmers building new buildings without demolishing old ones and having multiple households, increase the intensification of village land use, and protect high-quality farmland around the village. By reasonably allocating land resources, optimizing land use structure, and taking strict protection of arable land as the premise, we will coordinate and arrange various construction land to achieve comprehensive, coordinated, and sustainable economic and social development. We cannot simply consider the needs of construction and reduce the requirements for protecting farmland. Planning should focus on intensive land use and reasonably compact layout of various construction land in villages.

4 Concluding Remarks

The agricultural land classification project has a high scientific and technological content, and its results are large, with a relatively broad application prospect, and the value of the application of agricultural land classification results is very large, but the results of agricultural land classification should not only be applied in land spatial planning. By combining the results of agricultural land classification with agricultural land productivity accounting, agricultural land circulation, etc., it also has great application value, so relevant researchers also need to carry out more in-depth research work, so that the

results of agricultural land classification play the greatest role in land spatial planning and construction land layout and control, and continuously promote the further development of China's agriculture, and ultimately achieve the goal of sustainable development.

5   Fund Projects

References

1. Zhao Shanshan, Hao Runmei., Bai Wenke, Review of environmental impact assessment of land use master planning[J]. Western Resources, 2019(03): 183–186
2. Liu Linlin. Research on permanent basic farmland delineation in urban marginal areas based on LESA[D]. Shenyang Agricultural University, 2016
3. Lin Yunzhi. On the Protection and Delineation of Permanent Basic Farmland [J]. Rural Economy and Technology, Issue 05, 2012
4. Bai Yuxian . Research on the application of agricultural land classification results in Jinta County[D] South China University of Technology, 2014
5. Yun Wenju, Yang Hong. New Thoughts on Rural Land Remediation [J]. China Land, 2010