

Impact of High-standard Farmland Construction Projects on Arable Land

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Abstract

Cultivated land grade evaluation is a comprehensive evaluation of cultivated land quality, and the results of cultivated land quality classification have important reference significance in various stages of land remediation project implementation. This paper makes a comprehensive evaluation of the quality of cultivated land in the high-standard farmland project in Fengxiang County, which provides a certain reference for the evaluation of cultivated land in my country.

Keywords

High-standard Farmland; Cultivated Land Level; Cultivated Land Quality; Impact.

1. Introduction

In order to better implement the decisions and arrangements of the CPC Central Committee and the State Council on improving the quality of cultivated land, in 2020, the Shaanxi Provincial Department of Natural Resources issued the "Notice on Improving Management Methods and Effectively Implementing the Balance of Cultivated Land Occupation and Compensation", proposed to further improve the management of the province's cultivated land occupation and compensation balance, establish a new "big account" mechanism based on quantity and production capacity for the balance of occupation and compensation, and improve the quality and transform the new grain production capacity of cultivated land projects. The area and the improved quality are calculated separately and included in the capacity reserve. In 2021, the Shaanxi Provincial Department of Natural Resources issued the "Notice on Regulating the Management of Cultivated Land Quality Improvement and Reconstruction Projects and Effectively Implementing the Balance of Occupation and Compensation", pointing out that focusing on improving the quality of cultivated land, vigorously Implement quality improvement projects to increase and supplement the grain production capacity of cultivated land; the Shaanxi Provincial Department of Agriculture and Rural Affairs and the Shaanxi Provincial Department of Natural Resources jointly issued the "Guiding Opinions of Shaanxi Province on Strengthening the Construction of High-Standard Farmland for New Cultivated Land and New Production Capacity"document, the new cultivated land and new production capacity of high-standard farmland will be adjusted as the balance of supplementary cultivated land, and the proceeds will be used for the construction of high-standard farmland, further improve the standard of high-standard farmland construction, and form a high-standard farmland construction A virtuous circle with economic and social development; the Shaanxi Provincial Department of Agriculture and Rural Affairs and the Shaanxi Provincial Department of Natural Resources jointly issued the "Notice on Doing a Good Job in Newly-Added Cultivated Land and New Production Capacity in the Process of High-standard Farmland Construction"document, emphasizing the urgent launch of pilot projects for new arable land and new production capacity of high-standard farmland in Guanzhong, Weibei, and northern Shaanxi, and to further standardize and improve the work related to new arable land and new production capacity.

The improvement of cultivated land quality is aimed at the current low-grade cultivated land. Through engineering measures, the agricultural production conditions such as irrigation and drainage, soil, and roads can be improved, so as to improve the quality of cultivated land. Remediation activities for irrigated land. The implementation of the arable land quality improvement project not only fulfills the requirement of arable land occupation and supplement balance, protects arable land, guarantees the overall quantity of arable land, but also maintains the quality. to increase farmers' income, increase agricultural efficiency and rural development.

2. Project Area Introduction

The project construction site is located in Beidoufang Village, Liulin Town, Fengxiang District, Baoji City. There are many highways such as G85 and Dongling Road in the project area, and the transportation is convenient. Fengxiang District belongs to the warm temperate continental monsoon climate zone, which is semi-humid and semi-arid. The annual average temperature is 11.4 degrees, the precipitation is 625mm, and the frost-free period is 209d. There are four distinct seasons throughout the year, with long winters and summers and short springs and autumns; rain and heat are in the same season, which is conducive to the growth of crops. However, during the growing season of crops, the solar radiation is strong, and the temperature and precipitation vary greatly from year to year, and droughts are also prone to occur. Due to the influence of topography, the climate difference between north and south of Fengxiang District is large. The annual average temperature in the southern plateau is 4.2 °C higher than that in the northern mountainous area, the frost-free period is about 20 days longer, and the annual precipitation is about 100 mm less. According to the current state of land use map in the project area, and statistics in accordance with the "Classification of Current Land Use Status" (GB/T21010-2017), the total land area of the project area is 5649.11 mu. Among them: 4836.87 mu of arable land, 12.67 mu of garden land, 147.06 mu of woodland, 238.86 mu of rural homestead and so on. A total of 188 plots are involved in the implementation project area. The current land use status is dry land, orchard, other garden land, arbor forest land, other forest land, shrub forest land, natural pasture grassland, other grassland, rural homestead, public facility land, and news from government agencies and groups. Publishing land, science, education, culture and health land, special land, highway land, urban and rural road land, rural roads, water surface of pits and ponds and agricultural land for facilities.

3. Project Area Construction Content

Strengthen the construction of farmland water conservancy projects and enhance the ability of farmland to prevent and resist disasters. Make full use of the large and medium-sized irrigation areas of the water conservancy department to build supporting facilities and water-saving renovation projects, improve and transform water conservancy engineering facilities, and improve the comprehensive utilization efficiency of water conservancy projects.

The roads in the area will be renovated, and at the same time, new field roads will be built for some fields that are inconvenient to cultivate, so as to improve the efficiency of agricultural production.

Increase the application of organic fertilizers. The types of fertilizers are mainly various farm manures, planting green manures and straw returning to the fields. Combined with the application of chemical fertilizers, the physical and chemical properties of the soil are improved, and the nutrient elements of the soil are enriched. Ensure that water, fertilizer, air, heat and other fertility factors are coordinated with each other to meet the needs of crop growth and development and increase crop yield.

4. Cultivated Land Quality Analysis

The evaluation of cultivated land quality is a comprehensive and comprehensive investigation of various elements of cultivated land such as climate, landform, soil, vegetation, hydrology, etc., as well as the social and economic conditions related to the use of cultivated land; to clarify the

suitability, restriction, and production potential of cultivated land for a certain use. , economic benefits and both favorable and unfavorable consequences for the environment.

4.1 Determine the Unit of Assessment

According to "Technical Key Points for Assessment of Quality Grades of Newly-Increased Cultivated Land in Land Consolidation (Trial)", "Based on the current land use map and planning and design map of the land consolidation project area, the cultivated land in the project area is relatively concentrated and contiguous, and the conditions of cultivated land plots are If the difference is not large, the project area shall be used as the evaluation unit for evaluation". During the evaluation process of this project, according to the current land use type, land parcel distribution and location unit in the project area, a total of 10 and 11 are divided into 2. an assessment unit.

4.2 Evaluation of Basic Parameters

According to the relevant standards of the "Grading Regulations on Agricultural Land Quality GB/T 28407-2012" and the "Technical Guidelines for the Assessment of Cultivated Land Quality Grading in Shaanxi Province (Trial)", determine the grading factor index area and standard farming system where Fengxiang District is located , benchmark crops, ripening, designated crops, designated crop light temperature (climate) production potential index, designated crop yield ratio coefficient, etc.

5. Evaluation Results

The "multi-factor comprehensive evaluation method" is adopted to evaluate the cultivated land in the project area, and the evaluation is carried out in strict accordance with the "Grading Regulations on the Quality of Agricultural Land" (GB/T 28407-2012). Annually update the parameters specified in the Evaluation Work Manual (2014) and formulate them according to the actual situation. After the implementation of the project, the quality evaluation results of cultivated land in the original 11 and other evaluation units are: National Natural Quality Grade 10, National Utilization Grade 10, National Economic Grade 11. The main difference of the 11th grade land in the project area is reflected in the thickness of the effective soil layer.

6. Conclusion

By improving the farmland irrigation facilities, the irrigation guarantee rate of the arable land in the project area is increased, and the use of surface water for irrigation can increase the level of the 11th grade arable land in the project area by 1. Level up to Level 2. According to the increase of one grade of arable land, the new grain production capacity will be 100kg/mu. According to statistics, the total production capacity of the project area will be increased by 964t after the planning.

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