Research progress of high standard farmland construction

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Abstract

Land governance embodies the subjective initiative of human intervention in land use in social practice, and its objectives and focus vary from country to country and region to region, but they all aim at adjusting land use activities in land tenure relationships, realizing rational adjustment of land use layout and solving land use problems, improving the efficiency of land use, alleviating conflicts between people and land, and realizing sustainable development of economic, social, resource and ecological coordination. From the perspective of arable land preparation From the perspective of arable land preparation, it is a combination of outward expansion and inward exploration to realize the increase of arable land quantity and quality improvement. It is an important tool. The construction of high-standard basic farmland is an important tool to protect and improve the quality of farmland in the field of land management in China. High-standard farmland refers to ecologically sound, concentrated and continuous, high-yielding and stable, disaster-resilient, and equipped with facilities, which can be developed within a certain period of time through land consolidation work. The basic farmland is suitable for modern agricultural production and operation. The basic farmland also includes the basic farmland that has been included in the land after the treatment. The basic farmland also includes the basic farmland that has been included in the land after the land consolidation and the original basic farmland after the land consolidation.

Keywords

High standard; Land governance; basic farmland.

1. Introduction

The Government Work Report published in 2008 mentioned for the first time the construction of a number of high-standard farmland; the 12th Five-Year Plan called for the "large-scale construction of high-standard farmland that protects against droughts and floods". In 2014, the National Master Plan for the Construction of High-standard Farmland was released. It is clearly stated in the Plan that by 2020, 800 million mu of centralized, contiguous, drought- and flood-protected high-standard farmland will be built throughout the country, and the average grain productivity will be increased by more than 100 kilograms per mu; the No. 1 Document of the Central Government in 2016 stated that by 2020, 800 million mu of centralized, contiguous,

eco-friendly, drought- and flood-protected, stable and high-yielding high-standard farmland will be built. Since the 12th Five-Year Plan, the Ministry of Land and Resources has focused on improving the quality of arable land by means of land treatment. In November 2015, the Ministry of Agriculture issued the Action Plan for the Protection and Upgrading of Arable Land Quality, in which it was proposed to achieve "To store food in the land The Ministry of Agriculture (MOA) issued the Action Plan for the Protection and Enhancement of Arable Land Quality in November 2015, in which it is proposed to realize "hiding grain in the land" and make efforts to improve the internal quality of arable land to strengthen the foundation of national food security.

The research on the construction of high-standard farmland has gradually become a hot topic for scholars in China. The research has become a hot topic in China, providing theoretical basis and practical guidance for the construction of high-standard farmland. The focus of research is mainly on The focus of research is mainly on the pre-evaluation and post-evaluation of the construction of high-standard farmland, the management and care of the construction, and the discussion of the problems that exist in the process of construction. The research focuses mainly on the pre-evaluation and post-evaluation of the construction of high standard farmland, the management and maintenance of the construction, and the discussion of the problems in the construction process.

2. Ex ante evaluation of high standard farmland construction

Pre-evaluation studies mainly include assessment of construction potential, site selection, zoning, construction timeline and modal zoning. The pre-project evaluation study includes the evaluation of construction potential, site selection, zoning, timing and zoning pattern.

2.1.   Evaluation of construction potential

The study is mainly based on the evaluation of construction potential, quality of arable land and socio-economic conditions, and the feasibility of construction and planning arrangements. In the evaluation of the construction potential, Long Yuhan et al. (2014) integrated various factors such as natural climate, hydrology and geology, human landscape, arable land resources and economic development trends, and selected indicators such as soil thickness, irrigation guarantee rate, soil organic matter content, contiguity, road network density, farming ratio, distance from water sources, slope and terracing rate to construct an index system for evaluating the construction potential of high-standard farmland in the hilly areas of southwest China. The system of indicators for evaluating the construction potential of high-standard farmland in the southwestern hilly areas has been developed. The four models of construction are: "urban-rural integrated model villages", and "urban-rural integrated model villages" [1]. Yang Wei et al. (2013) have developed a methodological system for evaluating the potential of agricultural land for the construction and management of high-standard farmland. In order to develop a methodological system for evaluating the potential of agricultural land in the study area [2], Yang Wei et al. (2013) combined specific construction models with the evaluation of the potential of high-standard farmland construction and applied it to the study area. The method was used to analyse the potential of agricultural land in the study area. Wang Chen et al. In this study, the potential of agricultural land remediation in the study area was analysed. The study area is divided into four categories: basic condition, slightly improved and fully developed. The study area is divided into three categories: basic condition, slightly rehabilitated and fully rehabilitated [3].

2.2.   Site selection for construction projects

 Li Tao et al. (2013) based on the analysis of the current status of arable land and basic farmland and the land use of the study area [4]. constructed a system for evaluating the potential for the

construction of high-standard farmland in urban fringe areas based on the analysis of the current situation of farmland and basic farmland and the analysis of land use dynamics in the study area. Based on the analysis of the current situation of arable land and basic farmland and the analysis of land use dynamics in the study area, a system for evaluating the construction potential of high-standard farmland in the urban fringe was developed. On the basis of this analysis, a model for the construction of high-standard farmland in urban fringe areas is proposed [5].

2.3.   1.3 Area delineation

Wang Xiaoyan (2015) studied the engineering design and spatial and temporal layout of the construction of high-standard farmland based on the GIS, using the arable land patches of the Second National Land Survey as the target [6]. Han Shuai et al. (2015) used Changtu County, Liaoning, as an example, and selected natural and socio-economic factors to construct an evaluation index system to evaluate areas for the construction of high-standard farmland, and proposed a construction model based on the characteristics of the area [7]. Quiet et al. (2015) used Bayan Nur City's Ulat Qianqi as a study area, selected indicators from three aspects: socio-economic conditions, natural endowment of arable land and infrastructure conditions to construct a system of evaluation indicators, calculated the suitability level of construction units and classified the construction suitability level [8]. Liu Yuagai et al. (2015) proposed a site selection strategy for high-standard grain fields that meet the requirements of good ecology, centralized and continuous production, high and stable yield, and supporting facilities, taking Wen County in Henan as an example. Using Liangping County in Chongqing as an example [9], Cai Z. et al. (2014) used an improved set-pair analysis method combined with the entropy method to evaluate the rationality of the site selection for the 14 high-standard farmland projects planned for 2014 in the county. In terms of construction area designation [10], Wang Xinpan et al. (2013) used the Pinggu district of Beijing as an example to determine the appropriate areas for the construction of high-standard farmland, taking into account the current quality of the basic farmland and the extent to which the constraints can be modified [11]. Guo Beibei et al. (2014) take the Guanzhong region as an example, combining a comprehensive assessment of the natural risks of agricultural production with the designation of high standard farmland construction zones, based on the identification of risk types and the classification of comprehensive risk levels in the region. In terms of the chronological classification of construction, Feng Rui et al. The evaluation index system is based on three aspects: natural endowment, social and economic acceptability, infrastructure and construction conditions. The system is designed to plan and arrange the construction of high-standard farmland in the hilly areas of southwest China, and to define different modes of construction and timetables. The system is based on the following three aspects Bian Zhenxing et al. (2016) take Shenyang's Shenyei New District as an example and draw on the US Land Evaluation and Site Analysis (LEAS). In the case of the Shenyang New District [12], Bian Zhenxing et al. (2016) drew on the American concept of Land Evaluation and Site Analysis (LEASA) to carry out a comprehensive quality assessment for construction scheduling [13]. Zhang Zhong(2014) took the 853 farms in Heilongjiang Province as an example, and selected arable fields as evaluation units to assess the overall quality of the arable land in the study area. The study area was evaluated on the basis of the overall quality of the farmland and the potential for improvement of the obstacles. The study area will be used as an example to evaluate the overall quality and potential of the study area for the improvement of the barriers.

3. Ex ante evaluation of high standard farmland construction

The ex-post evaluation includes ecological benefit analysis, social benefit analysis, economic benefit analysis and construction benefit analysis. The social benefit analysis mainly focuses on food production potential, sustainable agricultural development, and public satisfaction.

Wang Yue (2014) Using the C-D production function for the D production function to analyze the improvement of grain yield and farmers' income level by high standard farmland construction.The C-D production function was used to analyze the improvement of grain yield and farmers' income level by the construction of standard farmland. The analysis of ecological benefits The main focus of the study was on the quality of the ecological environment, biodiversity, and disaster resilience [14]. Yu-Chen Jiang (2015) The evaluation system of the construction benefits of high standard farmland construction projects was analyzed and studied by using the material expandable model.The study also proposed suggestions for improving the ecological, social, economic and comprehensive benefits of the project [15]. Wang Yue et al. (2014) used the equivalence factor method of ecological service value and the agroecological value method to measure the ecological benefits of the construction of high standard farmland in China. The results of the study showed that the ecological quality of high standard farmland was significantly improved after the construction. The results of the study showed that the ecological quality of high standard farmland was significantly improved. In a study of a major land improvement project in Da'an City, Zhong Lina et al. In a study of a major land reclamation project in Da'an City, Zhong Lina et al. (2017) used the In VE S T model to analyze the effects of the land reclamation project on habitat quality changes [16].

4. Monitoring care

In terms of monitoring and management, Wang Huiqiang (2015) suggested that in order to further ensure the quality of the construction, a high standard should be maintained. In order to further ensure the quality of construction, it is necessary to strengthen the monitoring and management of high-standard farmland during the designation of high-standard farmland key areas and the vigorous construction of high-standard farmland. In order to further ensure the quality of construction [17], Wang Huiqiang (205) suggested that the monitoring and management of high-standard farmland should be strengthened when the key areas of high-standard farmland are designated and when the construction of high-standard farmland is vigorously carried out. In addition, the quality monitoring indicators and management strategies of farmland are discussed. Li Shen (2016) took Tianjin City Li Shen (2016) took Jinghai County of Tianjin as a researcher, analyzed the current situation of post-construction management of high-standard farmland, and proposed the problems of post-construction management. The system of post-construction management was constructed and the source of funds for post-construction management was proposed. The system of post-construction management is also proposed [18]. Dong Qingwei (2013) summarized the problems in the post-construction management of high-standard farmland construction projects. He also proposed scientific and effective solutions and improvements to these problems [19].

Acknowledgements

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