

Feasibility Study on the Balance of Occupation and Compensation of Degraded Forest Land Project

Kun Li

Shaanxi Dijian Guantian Investment Construction Co., Ltd., Baoji, Shaanxi 721000, China

Abstract

Fufeng County is a traditional farming area, with superior land consolidation potential and agricultural development conditions. Through the comprehensive renovation of fields, water, roads, forests, and villages, the existing cultivated land area can be increased, the quality of cultivated land can be improved, and the trinity of "quantity, quality, and ecology" can be achieved. Reasonably allocate land resources, promote agricultural structural adjustment, improve production and living conditions in the project area, and increase local farmers' income. After the implementation of this project, it has played a positive role in promoting the development of local agricultural economy, achieving the expected goals of the project, and has great significance for the rational development and utilization of land resources. It is a very necessary and feasible land remediation project.

Keywords

Balance Items Between Occupation and Compensation; Land Remediation; Degraded Forest Land; Wasteland.

1. Introduction

According to the Notice on Improving Management Methods and Effectively Implementing the Balance of Farmland Occupation and Compensation (GTZG [2017] No. 13), the Implementation Opinions of the Shaanxi Provincial Committee of the Communist Party of China and the Shaanxi Provincial People's Government on Further Strengthening Farmland Protection and Improving the Balance of Farmland Occupation and Compensation (Shaanfa [2018] No. 9), and the Notice on Improving Management Methods and Effectively Implementing the Balance of Farmland Occupation and Compensation (Shaanzi Zi Fa [2020] No. 27) Notice of the Ministry of Natural Resources, the Ministry of Agriculture and Rural Affairs, the National Forestry and Grassland Administration on Issues Related to the Strict Control of Cultivated Land Use (NZF [2021] No.166) Implementation Opinions of Shaanxi Provincial Department of Natural Resources, Shaanxi Provincial Department of Agriculture and Rural Affairs, Shaanxi Provincial Forestry Bureau on Strict Control of Cultivated Land Use (Shaanxi Natural Resources Zifa [2022] No. 52) Reasonably determine the key areas for land improvement and clarify the sources of new cultivated land. For agricultural land that has not been included in the scope of cultivated land protection, such as gardens, residual forest land, degraded grasslands, and abandoned ponds, water surfaces, ditches, rural roads, etc., which have been formed in history and are suitable for development, they can be included as a whole after feasibility assessment and demonstration organized by the county-level people's government, review conducted by the municipal natural resource management department, and review and confirmation organized by the provincial natural resource management department The spirit of "land consolidation scope, adding new arable land for balance of occupation and compensation".

2. Basic Information of the Project Location

Fufeng County is located in the middle and west of Weihe Basin in Guanzhong Plain, the second step of China's topography, between Xi'an City and Baoji City, in the west of central Shaanxi Province. It borders Yongshou County and Qianxian County in the northeast, Wugong County and Yangling Demonstration Area in the east, Zhouzhi County and Meixian County in the south, Qishan County in the west, and Linyou County in the north. It is located between 107 ° 45 ' - 108 ° 03 ' E and 34 ° 12 ' -34 ° 37 ' N, with a total area of 720 km². There are 113 administrative villages and 9 communities under the jurisdiction of 7 towns and 1 street office in the county. Including Chengguan Sub district Office, Famen Town, Jiangzhang Town, Tiandu Town, Xinglin Town, Zhaogong Town, Duanjia Town, and Wujing Town. With fertile soil and mild climate, it has been rich in wheat, corn and rape since ancient times, known as the "hometown of wheat, rice and Rapeseed oil". The population of the entire county is about 450000.

Landform: Fufeng County is longer from north to south than from east to west, and the terrain inclines from northwest to southeast, high in the north and low in the south. The territory naturally forms four distinct geomorphic and topographical units from north to south, including low mountains and hills, piedmont alluvial fans, loess plateau, and Weihe River terraces, with a stepwise drop from north to south. The highest altitude is 1579.8m, and the lowest is 438.4m, with a difference of 1141.4m.

Climate: Fufeng County has a continental humid monsoon climate. The four seasons are distinct and the rainfall is abundant. The annual average temperature is 12.4 °C, the extreme maximum temperature is 42.7 °C, the extreme minimum temperature is -19.5 °C, the average annual precipitation is 592mm, and the frost free period is 209 days.

Soil: The soil in the county belongs to 9 soil categories, 42 soil genera, and 107 soil species. Loess accounts for 60.83% of the total soil area, while Huangmian soil accounts for 28.2%. The two main types of high-quality soil account for 90% of the total soil area, accounting for over 95% of the arable land area.

3. Investigation of the Proposed Project Area

3.1. Office Data Integration

After investigation, it has been found that the proposed project area meets the requirements of policy documents, and has avoided the ecological red line protection range, natural reserve range, urban development boundary, 25 degree slope range, forestry data, and reported range over the years. The village group in which it is located has strong willingness and enthusiasm for project construction, and meets the conditions for project implementation.

3.2. Field Survey

After on-site investigation, the current land types are mainly orchards and adjustable gardens. The aging of fruit trees in inefficient gardens is severe, with uneven fields and irregular ridges. Farming is inconvenient, and some plots have poor ventilation and water permeability. The planting structure in the project area is single, and the land output is low. The inefficient aging orchard project area is mostly located near villages, with surrounding land types such as arable land and facility agricultural land. The terrain slope is less than 25 °, and it is suitable for cultivation after development.

4. Project Construction Content

The project area has been renovated into a standardized farmland with complete infrastructure through measures such as demolition engineering, land leveling engineering, cultivation and

soil conservation engineering, irrigation engineering, and field road engineering. Land remediation scale area 66.8780 hectares² (equivalent to 1003.2 acres).

4.1. Land Levelling Project

The current land types in the project area mainly include orchards and adjustable gardens, and the thickness of the cultivation layer meets the requirements for crop cultivation. Measures such as excavation of aging trees, root removal, soil leveling, construction of ridges (ridges), land plowing, and soil improvement engineering have been implemented to transform low yield and low economic benefits gardens into high-yield farmland, achieving field leveling, convenient cultivation, water and soil conservation and fertilizer conservation.

4.2. Irrigation and Drainage Engineering

Based on the actual situation on site and local water conservancy conditions, irrigation and drainage facilities will be installed in areas with irrigation conditions in the project area. According to the terrain and terrain characteristics of Fufeng County, the north is the hilly area of Yehe Mountain, and the central south is the plain area of Weihe River terrace. After preliminary identification of the cultivated land types around the project area, it is determined that the irrigated land of the project is mainly distributed in the central and southern areas with good traffic conditions and basically complete irrigation and drainage facilities nearby. Through engineering measures such as repairing damaged channels, the irrigation area is expanded, the irrigation assurance rate is improved, and the grain production capacity of cultivated land is increased. Only a few towns near the northern mountainous areas such as Famen Town and Tiandu Town rely on the weather for food, and can only be converted into dry land.

4.3. Field Road Engineering

The external transportation in the project area is very convenient, with "village to village" hardened cement roads connecting the towns and villages, as well as between villages and groups. However, the field roads leading to the interior of the fields and some long-term unmanned and inefficient gardens cannot be reached, and the internal road system of some plots is not perfect, resulting in low road quality. This plan is to build a field production road, which is based on the existing road skeleton and reduces land occupation. It is planned in a coordinated manner with fields, channels, and forest belts, and organically combined with rural main roads to form a unified rural road network.

5. Analysis of Project Implementation Benefits

5.1. Economic Benefits

After the implementation of this project, the cultivated land area in the project area has significantly increased, agricultural infrastructure has been improved, agricultural production conditions and ecological environment have been improved, and agricultural industrial structure adjustment has been coordinated. It will greatly improve the agricultural production conditions in the project area. Improving the suitability of the land and adjusting the planting structure in a timely manner according to market demand after rectification will greatly increase the income of local farmers and significantly improve the economic benefits of the cultivated land in the project area.

5.2. Ecological Benefit

The construction of the project area has improved the level of intensive land use and significantly improved the ecological landscape of the project area. During the project implementation process, the soil of the cultivated land will be improved to improve soil

environmental quality, improve farming conditions, facilitate crop growth, and further optimize the ecological environment of the project area. At the same time, the implementation of this project can effectively prevent the erosion of development and consolidation plots by river floods during the flood season, effectively prevent soil erosion and water and fertilizer conservation of farmland. The implementation of the project can also effectively control farmers' blind deforestation and land reclamation, which is more conducive to the protection of the local ecological environment.

5.3. Social Benefit

After the implementation of the project, the area of cultivated land has been effectively increased, which can alleviate the pressure of large population and less land, and is of great significance for realizing the Dynamic equilibrium of the total amount of cultivated land in the county; Improving labor productivity, making the majority of farmers truly feel the superiority of this policy, is conducive to further promoting the comprehensive development of land consolidation work; Fully attracting the participation of rural idle labor is conducive to social stability.

1) After the implementation of the project, the effective cultivated land area has been increased and the pressure of more people and less land has been alleviated, which is of great significance for realizing the Dynamic equilibrium of the total cultivated land in the county and completing the overall land use planning.

2) By improving the infrastructure supporting facilities in the project area and improving the agricultural production conditions in the project area, labor productivity can be increased, making the majority of farmers feel that comprehensive land consolidation is a cause that benefits the country and the people. It is a practical undertaking for the people, which is conducive to enhancing the support and understanding of farmers for land management work and government work, and further promoting the comprehensive development of land consolidation work.

3) Based on the principle of seeking truth from facts and adapting measures to local conditions, this provides a development direction for the application of comprehensive land consolidation in this area, provides experience for the comprehensive land consolidation in this area, and effectively controls the spontaneous blind reclamation behavior of farmers, achieving reasonable utilization of land reserve resources.

4) After the implementation of the project area plan, some soil layers have been improved to meet the needs of various crop growth; Enhance the role of soil water storage and moisture preservation to ensure the water demand of crops.

5) Once the comprehensive land consolidation in the project area is implemented, it is conducive to promoting the reasonable flow of labor, funds, and technology, fully attracting rural idle labor to participate in the comprehensive land consolidation, driving the development of construction, building materials, transportation and other related industries, increasing employment, reducing social problems caused by rural idle labor, and promoting social stability.

References

- [1] Wang Ge, Li Xiaoqiu, Gao Yingjie, Zeng Chen, Wang Bingkun, Li Xiangyu, Li Xintong. How does land consolidation drive rural industrial development? Qualitative and quantitative analysis of 32 land consolidation cases in China[J]. Land Use Policy, 2023, 130.
- [2] Pan Huiyu, Wu Yuzhe, Choguill Charles. Optimizing the rural comprehensive land consolidation in China based on the multiple roles of the rural collective organization[J]. Habitat International, 2023, 132.

- [3] Wang Xiaochen,Xu Qiang,Pu Chuanhao,Li Weile,Zhao Kuanyao,Li Zhigang,Chen Wanlin,Xiu Dehao. Effects of the Gully Land Consolidation Project on Geohazards on a Typical Watershed on the Loess Plateau of China[J]. Remote Sensing,2022,15(1).
- [4] Zhou Jian,Li Chao,Chu Xiaotong,Luo Chenying. Is Cultivated Land Increased by Land Consolidation Sustainably Used in Mountainous Areas?[J]. Land,2022,11(12).