

The effects of land planting projects on degraded forest land on the improvement of cultivated land quality and benefits

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Abstract

Land is a non-renewable resource and asset, and it is the most basic material condition for human survival, social progress and sustainable economic development. On the premise of protecting the ecological environment, the degraded forestland in Linyou County should strengthen its development and consolidation, increase the area of arable land, improve the farmland protection forest network and traffic road facilities, increase the income of farmers, and ensure the sustainable development of agriculture. At the same time, in order to solve the contradiction between supply and demand in Shaanxi Province, it is a necessary project to ensure the relocation of key projects and major projects in Shaanxi Province.

Keywords

Degraded forest land; project implementation; land consolidation; benefit analysis.

1. Introduction

At this stage, Shaanxi Province is in the process of building a moderately prosperous society in an all-round way. With the rapid economic and social development and the continuous advancement of new urbanization and industrialization, it is faced with the opportunities and challenges of the new normal of economic development. "The task of policy is enormous. On the one hand, investment is still the main way to drive economic growth, the demand for land will continue to grow, and construction of high-quality cultivated land is inevitable; The timely construction of major projects such as transportation, water conservancy, and energy, as well as livelihood projects such as pension and poverty alleviation, has been delayed. Implementing land development is an effective way to increase the area of cultivated land, improve the quality of cultivated land, realize the strategy of dynamic balance of the total amount of cultivated land, and solve the problem of exchanging and supplementing cultivated land occupied by construction. Degraded forest land projects have contributed enormously to economic development.

2. Basic information of the project area

The project area is located in the northeast of Baoji City, adjacent to Yongshou and Qianxian County in the east, Qianyang and Fengxiang in the west, Fufeng and Qishan in the south, Yibin County and Lingtai County in Gansu in the north, and is between 107°19'-108°2' east longitude. Between 34°33'-34°58' north latitude. According to the observation data of the County Meteorological Bureau from 1960 to 2010, the annual average temperature in the area is 9.1 °C, the extreme maximum temperature is 37.5 °C, and the minimum temperature is -22.1 °C. The distribution of sunshine is uneven, the annual sunshine hours are about 2200 hours, and the frost-free period is 180 days. The eastern plateau area has sufficient sunshine, the annual average temperature is 9-10 °C, and the northern annual average temperature is 8.1 °C, and the county is generally cooked once a year. The average annual precipitation in Linyou County is

680mm. The project area is a traditional agricultural county, and agricultural production is mainly based on planting and aquaculture. The annual planting area of various crops in the planting industry is 400,000 mu, of which the grain area is about 320,000 mu, mainly wheat and corn, accounting for more than 80% of the grain area, in addition to sorghum, beans, buckwheat, millet and other grains. More than 80,000 mu of economic crops are planted all year round, mainly flue-cured tobacco, vegetables and medicinal materials.

3. Main construction content of the project

Change the sloping land to horizontal terraces, plan the fields reasonably, and level the fields to level the fields, increase the area of effective arable land, minimize the amount of earthwork, and save investment; the land remediation area is 17.1211hm², and the newly added arable land is 15.5374hm²; 64 pieces, the topsoil stripping earthwork volume is 34242m³, the pushing earthwork volume is 53058m³, the topsoil backfilling earthwork volume is 34242m³, the sill compaction earthwork volume is 28405m³, the length of the ridge construction is 14693m, the ridge construction is 2204m³, and the soil ploughing is 15.54hm².

Plan production roads between fields to achieve the goal of interconnecting the fields and facilitate agricultural production. The production road adopts plain soil pavement with a designed road width of 3.0m and a compaction thickness of 30cm. The project area plans to build a production road (Sutu road) of 2152m.

Determine the layout, tree species and quantity of farmland shelterbelts. A total of 856 red-leaf plum trees are planted along both sides of the existing road entering the project area, and 8581m² of grass seeds are sown on the slopes of the fields.

Through the comprehensive development of fields, water, roads and forests, the agricultural production conditions have been greatly improved; the rational allocation of land resources will promote the adjustment of agricultural structure and increase the income of farmers; through the project construction, the defective forest land will be transformed into arable land, and finally the overall improvement of land productivity will be achieved. , the ecological environment has been significantly improved. More about this source textSource text required for additional translation information.

4. Engineering layout

4.1. land formation works

Considering reasonable distribution, balancing excavation and filling nearby, and minimizing the amount of engineering, the design will level the plots in the project area, so that the excavation and filling in the plot can balance itself.

Field standards are required in principle after leveling. According to the terrace design specification, the design of the field length should help improve the efficiency of mechanical operation, and be conducive to the rational organization of field production process, irrigation organization and land leveling. Considering the terrain conditions, the width of the field should be no less than 10m, and the narrowest should be no less than 8m. Combined with the actual topography of the project area, the design length of the field plot in the project area is controlled within 150m-200m, and the width of the field surface is controlled at about 10m. Due to the irregular shape of the plot, the length of local strips varies with terrain conditions.

4.2. Field road engineering

Land remediation projects have low grade requirements for roads. Subgrades and pavements are the main engineering structures of field roads. When planning road projects, it is necessary to follow the principle of "road runs between fields and fields on both sides of the road" to save

road land and improve land utilization. The existing road in the project area connects the project area and the residential areas, which can meet the functional requirements of the field road. Therefore, the field road is mainly arranged based on the existing road; the production road is arranged as perpendicular to the field road as possible.

4.3. Farmland Protection and Ecological Environment Conservation Project

The planning of farmland protection projects should be based on the topography and other conditions of the project area, and comprehensive consideration should be given to local conditions. The protection forest should be carried out in accordance with the corresponding standards and norms promulgated by the forestry administrative department. Combined with the layout of the field roads, set up protective forest belts on both sides of the existing roads in the project area. The road protection forest adopts red leaf plum. On the basis of protecting the original vegetation on the ridges and slopes of the project area, the easy-to-survive and perennial yellow alfalfa seeds are sown in the exposed topsoil area, and watered regularly for maintenance. Such engineering measures can reduce wind and water erosion and enhance the water and soil in the area. Stay productive.

5. Benefit Analysis

5.1. Social Benefit Evaluation

Through the implementation of this project, the first is to build terraced fields and develop the original waste sloping land into terraced fields, which increases the area of arable land, promotes the level of agricultural mechanization, and promotes the increase of local crop production and farmers' income, thereby improving the living standards of local farmers; second, through farmland The protection and ecological environment maintenance project improves the ecological environment of the area and effectively curbs soil erosion in the project area.

At the same time, through the implementation of this project, the land use structure will be transformed, which is bound to increase farmers' income, which is conducive to promoting agricultural development, speeding up the process of agricultural modernization, improving farmers' living standards, and playing a significant role in building a new socialist countryside. After the implementation of the project, the masses of the people in the villages and towns involved in the project, the governments at all levels and the land administration departments have enhanced their awareness of rational use of land and effective protection of cultivated land.

5.2. Ecological benefit evaluation

After the development of cultivated land in the project area, a protective forest net of farmland is arranged along the road to form a protective forest belt, conserve water sources, and increase the vegetation coverage rate. The invasion of crops by hot wind has great resistance to natural disasters, the ecological benefits can be fully exerted, and the regional ecological environment has been improved. After land remediation, the existing barren sloping land can be improved into high-quality dry cultivated land, the barren land area will be greatly reduced, the land in the project area will be protected, and the soil quality will be improved.

5.3. Economic Benefit Analysis

After the implementation of the project, the newly increased arable land area is 15.5374hm², and the yield of corn per hectare in dry land is 7500kg, respectively. The implementation of land remediation and field supporting projects in this project has transformed waste sloping land into dry land, improved the land grade, and added 15.5374hm² of dry land. After the implementation of the project is completed, choose to plant corn, and the annual average net

income of crops is 146,800 yuan. Calculated according to the static benefit of agricultural output value, the investment recovery period is 9 years, the static investment rate of return is 10.99%, and the newly increased cultivated land per 10,000 yuan investment is 1.74 mu.

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