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Spatial Allocation of Land Use in Luodeli Village, Luquan County, Yunnan Province from the Perspective of Rural Complex

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Abstract Conceptually, rural complex is actually a comprehensive sustainable development model for new agricultural and rural areas across industries and functions. From the perspective of rural complex, combined with the actual case of Idyllic Orient in Yangshan, Wuxi, the first rural complex in China, this paper analyzes the current benefits of relevant projects. Considering the basic situation of Luodeli Village in Luquan County, Yunnan Province, the direction, development model and spatial allocation of land use are initially determined. Finally, the overall development path is proposed for Luodeli Village in Luquan County, in order to provide some ideas for its next development.

Key words Rural complex, Luodeli Village, Land use direction, Development model, Spatial allocation

1 Introduction

From rural autonomy to rural revitalization, China's rural development has never stopped. The No. 1 Central Document in 2017 points out to "support conditional rural areas to construct rural complex with farmer cooperatives as the main carrier, thus allowing farmers to fully participate and benefit and integrating rural agriculture, creative agriculture, and farming experience, and carry out pilot demonstrations through channels such as comprehensive agricultural development, rural comprehensive reforms and transfer payments"[1]. The rural complex will serve as an important starting point and core driving force to support rural revitalization. Luodeli Village in Yongding Village Committee, Maoshan Town, Luquan County, Yunnan Province has a good agricultural foundation and a natural resource base. Building and developing the village of Luodeli from the perspective of rural complex will surely bring new changes to the village, generate new vitality, promote the construction of characteristic villages suitable for living and entrepreneurship, and realize rural revitalization.

2 Overview and case study of rural complex

2.1 Overview of rural complex China's rural development has gone through many stages. Starting with rural autonomy in 1912, it has experienced rural transformation, agricultural production responsibility system, *the Outline of National Agricultural Development from 1956 to 1967*, building a rural public service and social security system, new urbanization, construction of socialist new countryside, beautiful villages, characteristic towns, rural complexes and rural revitalization and other stages[2]. Rural complex is a new comprehensive sustainable development model proposed under the background of China's urban-rural integration, with agriculture as the mainstay and surname agriculture as the core, in order to comply with the structural reform of the agricultural supply side. In the No. 1 document of the Central Committee of the Communist Party of China in 2017, rural complex debuted as a highlight of the development of new rural industries. The goal of the construction of rural complex is to build a livable, productive and ecological space for local residents. The core is "for agriculture", the characteristic is "rural", and the key is "comprehensive"[3]. Building an rural complex is to realize the organic integration of rural production, rural life and rural ecology, and the deep integration of the primary, secondary and tertiary industries, and to explore a stable and sustainable production and life style for agriculture, rural areas and farmers. After nearly two years of development, combined with actual conditions of different regions across China, taking agriculture as the core, while embodying ecological, integration and sustainability, a batch of rural complex pilot projects have been explored to be established. Based on previous research[4], the development models of rural complex are summarized. The first one is the diversified settlement model of "rurality + modernity", creating a modern agricultural base, breaking the gap between urban and rural areas while safeguarding infrastructure construction and realizing modern residential functions, and promoting mutual exchange. The second is the "agriculture + park" model. According to the development path of farmland landscaping, industrial integration, and urban-rural integration, the three industries are integrated, modern agriculture is expanded, and creative agriculture is highlighted. The third is a combination of agricultural bases and characteristic towns. First of all, it is clear that agriculture is the foundation and premise of town construction. Then, for different rural traits and resource endowments, projects of different themes are developed, rural complexes are created, and beautiful countrysides with unique characteristics are built, thereby avoiding homogenization competition[4]. After four years of continuous exploration, the leaders of

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the Central Agricultural Office have given high praise to the Idyllic Orient project in Yangshan, Wuxi and extended its development model and experience to 18 provinces across the country for pilot projects. From China's policy evolution towards the rural complex, it can be seen that the construction of rural complex is a platform for China to implement the rural revitalization strategy[5].

2.2 Case study of rural complex: taking Wuxi Idyllic Orient as an example Yangshan Town is located in Huishan District, Wuxi City, Jiangsu Province, with Taihu Lake in the south and Beijing – Hangzhou Grand Canal in the north. It has a long history of Buddhist culture and academy culture, and has a volcanic rock mountain Anyang Mountain. This unique geological setting is perfect for the growth of peaches, endowing Yangshan Town a reputation of "Hometown of China's Honey Peaches". Yangshan Town has deepened excavation of Buddhist culture and volcanic hot spring resources. Relying on the brand advantage of Yangshan Honey Peach, a characteristic town that integrates culture, trade and tourism is created. In 2012, out of concern for the social form and style of countryside, combined with EMBA project of Guanghua School of Management, Peking University, Zhang Cheng, the founder of Idyllic Orient, published the EMBA thesis *Study on the Rural Complex Model*. With the support of Yangshan Town, Huishan District, Wuxi City and the community, the first rural complex project, Wuxi Idyllic Orient, was practiced. This is the first rural complex project in China. The project is located in the north of Yangshan Town. Its southeast and southwest are adjacent to the old and new town area of Yangshan Town; the Xinyi – Changxing Railway passes through the south, and the Wuxi – Liyang Canal is its northern boundary with a total area of about 416 ha. Within the planning area, the land use is currently dominated by homestead, agricultural land and wasters. In the context of the beautiful countryside policy, Wuxi Idyllic Orient creates a new type of village that integrates modern agriculture, leisure tourism, and rural community through integrating production, living and ecology, as well as agriculture, processing industry and service industry, and incorporating the new rural urbanism concept, aiming at rural life[2].

Shifang Village, the "Honey Peach Village of Wuxi Idyllic Orient", is taken as an example. Wuxi Idyllic Orient has replanned the ecological and agricultural land of Shifang Village. The leisure and sightseeing agriculture of Shifang Village is concentrated in "four parks, three areas and one center". The "four parks" are Honey Peach Production Demonstration Park, Fruit Facility Cultivation Demonstration Park, Organic Farm Demonstration Park and Vegetable, Fruit and Vegetable Cultivation and Aquatic Breeding Demonstration Park; the "three districts" are leisure agriculture sightseeing demonstration area, fruit processing area and logistics park area; and "one center" is the Integrated Management Service Center[6]. (i) Changes in the spatial form of Shifang village. Before development, the space of Shifang village is composed of simple living, production and ecological space. After development, the space in Shifang Village is turned into a composite space. It can be divided into living space, production-life composite space, production-ecological composite space and production-life-ecological composite space. The space of Shifang Village after the development of Wuxi Idyllic Orient integrates production, residence, industries and tourism, with strong agricultural development motivation, perfect tourism service and livable and investable environment. It not only represents the idyllic thought, but also is an ideal spatial form. The living space of Shifang Village is partially retained and re-planned. The traditional living space of the village has become agglomerated and diverse. After moving the residents of Shifang Village from the original place, the interior of the village has produced a spatial integration and expansion of production, residence and tourism. This new type of composite space model replaces the original traditional agricultural family farming and daily living space functions, and the production-ecological space is mostly transformed from the cultivated land[6]. (ii) Changes in the industries of Shifang Village. Before the construction, the Shifang village was mainly based on the primary industry, *i. e.*, the honey peach planting industry. After the construction of Honey Peach Village, the industrial model is reconstructed. From the perspective of rural complex, the industries of Shifang Village will enter the stage of characteristic development, in which the secondary industry is optimized, modern agriculture is allied, and the tertiary industry is implanted. Taking the rural leisure and cultural tourism as the core, the efficiency of the primary industry is improved, the secondary industry is upgraded, and the tertiary industry is developed comprehensively, and the development of the three industries is coordinated, laying the foundation for the development of urban and rural integration[6].

Through case studies, it is found that rural construction from the perspective of rural complex has had a positive impact on rural land use and spatial allocation. The rural space of Shifang Village has changed from a primitive and distinct production-living-ecological space to a composite space. Its functions are more perfect, land use is more diversified and intensive, land utilization is higher, and rural environment is more livable and investable. The small town created in the background of rural complex is a new type of town in which agricultural and rural areas develop sustainably. It is composed of high-quality natural resources and rich cultural heritage, and operated by developers, aboriginal people, new residents and tourists. It revitalizes rural land, and effectively improves the rural environment and the living standards of farmers, thereby promoting the modern development and sustainable development of the countryside[6].

3 Benefit analysis

The development benefits from the perspective of rural complex include economic benefits, social benefits and ecological benefits. Analysis on the current benefits of the projects will help to control

the focus and direction of the rural development in the future.

3.1 Economic benefits From the perspective of rural complex, the development focuses on the improvement of the rural environment, the increase of the income of the villagers, and the upgrading of agriculture. The analysis of the expected income and investment yield of the rural complex projects in various regions will help to understand the construction results of the projects and point the way for the focus and direction of rural development in the future. The calculation shows that[7] the rural complex projects in the three provinces of Chongqing, Shandong and Sichuan are expected to reach a relatively high annual output value of more than 1.3 billion yuan, while those in Fujian and Shanxi have the lowest expected annual output value, between 400 million and 500 million yuan. The highest annual net profit is expected to be in Sichuan Province, exceeding 400 million yuan; and the lowest is in Shandong Province, which is 55 million yuan. The highest expected return on investment is in Chongqing, exceeding 30%, and the lowest is in Yunnan Province, which is 4.4%.

3.2 Social benefits Rural complex has important significance for the structural reform of rural supply side, and it is also of great significance to the improvement of the production and living conditions of the villagers. In order to protect the interests of farmers and enable farmers to fully participate and benefit, various projects have introduced a number of safeguards, mainly including farmers transfering land to obtain land transfer funds, farmers putting land or housing into shares to receive dividends, enterprises in the project areas providing jobs to farmers, enterprises in the project areas acquiring farmers' agricultural products at the protection price, quantifying the assets formed by financial funds to collective organizations and farmers and encouraging farmers' entrepreneurship to gain income (*e. g.* farmhouses and homestays). Under the rural complex model, the new agricultural management entities participate into agricultural production, promoting the formation of a farmers' interest linkage mechanism and the improvement of the infrastructure in the parks, and promoting the development of local characteristic industries and the scale of agricultural industries. In addition, the coordinated development of various supporting industries has also contributed to promoting the structural reforms of rural supply side and narrowing the gap between urban and rural areas[7].

3.3 Ecological benefits The construction of rural complex is centered on modern agriculture, especially the modern agricultural processing industry, combining leisure tourism and rural community. The core concept is ecology, harmony and sustainability. In terms of agriculture, we should adhere to green, organic, high standards and high efficiency. At the same time of agricultural production and processing, attention is paid to soil fertility, water saving and water conservation. We should also improve environmental awareness, control pollution, do a good job in classification and disposal of waste and strive to develop green agriculture, circular agriculture and ecological agriculture. In terms of tourism and leisure, attention should be paid to displaying the unique advantages of the countryside, tapping the local characteristics, and reflecting the folk customs, thus attracting tourists through the forms of farming experience, leisure sightseeing, cultural tourism, *etc.* In terms of living environment and service system, the focus is on improving the rural environment, and doing a good job in waste sorting and treatment, contaminated land and water resources restoration, village greening, *etc.* On the basis of respecting folk customs and protecting the original natural landscape, new green and ecologically livable rural areas of sustainable development are constructed[7].

4 Spatial allocation of land use in Luodeli Village

4.1 Overview of the situation and development of Luodeli Village Luquan Yi and Miao Autonomous County has been known as the "Shield of the Northwest of Guangxi" since ancient times. It is adjacent to Dongchuan District in the northeast, Fumin County in the south, Wuding in the Chuxiong Yi Autonomous Prefecture in the west and southwest, and Huili County and Huidong County of Sichuan Province in the north. Luodeli Village is a natural village under the jurisdiction of Yongding Village Committee of Maoshan Town, Luquan Yi and Miao Autonomous County, Kunming City. It is located in the north of the urban area and Maoshan Town, about 18 km from the urban area, about 7 km from the town area of Maoshan Township and about 110 km from Huili County of Sichuan Province. It is close to Luquan – Dasongshu Highway, which passes through the eastern part of Luodeli Village, goes to the urban area of Luquan County to the south, goes to Kunming through the Kunming – Luquan Highway, and goes to Jiaozi Snow Mountain through Luquan – Tangdian Highway. The land area is 128.56 ha. The highest altitude is about 1 820 m and the lowest is 1 740 m, with an altitude difference of 80 m. The average altitude is 1 750 m. The annual average temperature is 14.5℃. The annual precipitation is about 996 mm. Luodeli Village is located in a typical slope, high in the northeast and low in the southwest. The slope in the north is relatively large, mainly between 15% and 45%; the slope in the southwest is relatively flat, within 25%; and the slope in the eastern part is within 8%. Most of the slope faces south. Luodeli Village fronts waters with mountains in the north and west, and narrow dam area and Zhangjiu River in the east. The village has good natural conditions and a beautiful environment, and it belongs to the plateau characteristic agricultural demonstration zone of the county in the lower reaches of the Zhangjiu River. The land in Luodeli Village is mostly used for agriculture, construction, roads and waters. In the village, the area of arable land is 17.33 ha, and the area of woodland is 52.67 ha. The cultivated crops include wheat, maize and walnuts. The planting area of wheat and maize is 10 ha, and that of walnuts is 3.33 ha, mainly concentrated in the western mountains. The remaining excellent arable land in the village is

concentrated in a relatively flat area of the river valley, and is used for exotic modern agricultural companies to plant flowers and medicinal herbs.

Maoshan Town is a traditional agricultural town and a national ecological town, and Luodeli Village is a beautiful county-level model village. In 2010, the Yongding Village Committee transferred 53.33 ha of land to create a plateau characteristic agricultural demonstration park. At present, there are 9 enterprises in the park, including one provincial-level agricultural leading enterprise and three municipal agricultural leading enterprises, which have transferred 133.33 ha of land and completed 210 million yuan of investment, including 23 million yuan of investment for infrastructure construction. In the park, numerous well-known brands have been built, including Luguo, Yidao *Paris polyphylla*, red kiwi, fig and Jianguo Saba ham. The park is composed of high-quality fruit area represented by Sunshine Rose grape, Meixiang No. 1 grape, red kiwi and Jinxiang honey peach, precious medicinal material area represented by *Paris polyphylla* and *Dendrobium officinale*, flower area represented by edible roses, fresh cut flowers and succulent, ecological vegetable area dominated by tribute vegetable, and aquaculture area dominated by organic rice + paddy field fish farming[8]. Luodeli Village has a foundation in the agricultural industry and a geographical advantage in transportation and tourism, as well as the advantage in natural landscape environment and the ecological advantage of the dam area. The construction of its plateau characteristic agricultural demonstration park has laid a solid foundation for the next development of Luodeli Village.

4.2 Functional division of land use in Luodeli Village Rural complex is aimed at the harmonious, green and sustainable development of rural areas. Land use under its concept should be more so. Although Luodeli Village has achieved certain results in the development of the past few years, there are still some problems. First, the long-term planning is not considered enough. The current situation and layout of land use in the village is not reasonable, which restricts the benefits of land use. Second, land use efficiency is low, and there is still a large area of abandoned land in the village. The third is environmental problems. The mountain forest environment is damaged and the village environment still needs improvement. Combined with the actual situation of Luodeli Village, this paper has initially determined its land use direction. (i) Protecting cultivated land and consolidating agriculture. China implements the most stringent farmland protection system, and agriculture is also a basic industry that supports the construction and development of the national economy. Without cultivated land, there is no way to talk about agriculture. Rural complex is a new comprehensive sustainable development model based on agriculture and centered on agriculture. Therefore, it is more necessary to protect the cultivated land fundamentally. (ii) Adjusting the layout and improving the efficiency. It is necessary to optimize and adjust the layout of land use and change the land use pattern. Based on the principle of total amount control, moderate concentration and regional division, agricultural land and village construction land is adjusted, in order to achieve efficient and intensive use of land, and improve the utilization of land. (iii) Green development and environmental protection. Green is the theme of the development of the times. In terms of land use, it should also comply with the requirements of the times, practice the concept of "clear water and green mountains are equal to mountains of gold and silver" and carry out ecological land use, thereby achieving coordinated development of ecological protection and land use.

According to its advantages, this paper initially determines the development model of Luodeli Village as a model combining agricultural bases with characteristic towns. First of all, it is clear that agriculture is the foundation and premise of town construction. Then, based on the characteristics and resource conditions of Luodeli Village, projects of certain themes are developed to construct a beautiful rural countryside with characteristics and avoid homogenization competition[4]. Based on the perspective of rural complex, Luodeli Village is designed as a one-line and four-area overall structure. The line is a characteristic industrial line focusing on characteristic agriculture and eco-tourism along Luquan-Dasongshu Highway. The four areas are cultural core area, ecological leisure area, agricultural industrial area, and folk custom resort. (i) The cultural core area is mainly responsible for the cultural display and experience functions of the village. Based on rural agriculture, a local culture is created. Local culture is linked with local agricultural and tourism products to enrich its content. Innovation is localized to enhance the competitiveness and avoid a one-size-fits-all experience. (ii) The ecological leisure area mainly bears the function of allowing visitors to experience the rural special living space and experience the fun of rural life. It is identified as an ecological leisure area to the east of Ludeli Village and the west of the Luquan – Dasongshu Highway, as well as the western part of the village. The better ecological and land conditions provide a possibility for tourists to experience rural areas and enjoy various leisure activities and experience projects. (iii) The agricultural industrial zone is mainly responsible for the functions of production and processing of agricultural products. This is the support for the development and maintenance of operations. The processing of agricultural products is the core focus. It is identified as an agricultural industrial zone to the east of Luquan – Dasongshu Highway in Luodeli Village and the west of Zhangjiu River. Through modern technology, the display of innovative agriculture, recycling agriculture, agricultural education and so on is carried out to inject vitality and help develop. (iv) Folk custom resort is mainly responsible for the display of rural folk culture and the reflecting of village production and life. The folk custom resort of Luodeli Village is mainly located in the middle of the village, and it is also a residential area for villagers. This area provides an atmosphere for tourists to experience rural life and the local culture and lifestyle.

5 Spatial allocation of land use in Luodeli Village for developing a rural complex

5.1 Protecting the ecology and retaining the homesickness Ecology is an important prerequisite for today's development. Clear water and green Mountains are equal to mountains of gold and silver. Luodeli Village is located in Luquan Yi and Miao Autonomous County. It has unique local culture and resource advantages. In the course of its development, it is necessary to pay attention to protecting the local natural ecological environment, reflecting the local cultural characteristics, combining traditional culture and folklore with rural construction, and coordinating development to protect the ecology of the village and retain the homesickness.

5.2 Taking agriculture as the core and assisted by technology Agriculture, especially the agricultural products processing industry, is the core of this development. And in this, the development of the agricultural processing industry is to increase the added value of agriculture, which is the main way to achieve the integration of the three industries[9]. In the process of development, agricultural technology must be used to make the labor process mechanized, the production and processing efficient, and maintainence and business informationized. Doing a good job in pilot and demonstration, and radiation and driving to lay a foundation for further development[10].

5.3 Integrating industries and coordinating development The development from the perspective of rural complex is comprehensive and coordinated. Luodeli Village has the foundation of a plateau characteristic agricultural demonstration park, therefore, it needs to promote the integration of the three industries and the synchronization of production-living-ecological space in Luodeli Village, to achieve industrial integration, coordinated development, and to promote urban-rural integration.

5.4 Integrating resources and gathering strength to develop The development of the rural complex of Luodeli Village covers all aspects. It is necessary to increase the intensity of integration and focus on gathering strength. The first is power integration. Governments at all levels must perform their responsibilities. Then, it needs to integrate resources, such as land, natural, tourism and cultural resources. In addition, it needs to integrate capitals. Various financing channels should be expanded, and departmental funds should be integrated to solve funding problems in development. Various projects should also be integrated. The projects in Luodeli Village should be coordinated under the perspective of rural complex to avoid uncoordinated development and resource waste[11].

5.5 Improving the mechanism and efficiency The construction and development from the perspective of rural complex is inseparable from the participation of the government, farmers and enterprises. Therefore, it is necessary to improve mechanisms including funds, land, talents and services, adhere to the policy of government investment and policy support, give full play to the decisive role of the market in resource allocation, combine the processing of agricultural products with the characteristics of the village, give full play to the advantages of characteristic brands, create advantageous industries, realize the linkage effect of production, processing and tourism, and improve the comprehensive benefits of the industry[12].

5.6 Making good use of the media and publicizing widely In today's era of information explosion, the wine is also afraid of the deep alley. To extend influence, it is necessary to strengthen publicity and make extensive use of various new media, including mobile media, digital TV and Internet new media in the later stage of development and construction.

References

[1] Central Committee of the Communist Party of China, The State Council of the People's Republic of China. Some opinions on further promoting the structural reform of agricultural supply side and accelerating the cultivation of new kinetic energy for agricultural and rural development[N]. People's Daily, 2017-02-06. (in Chinese).

[2] LIU SJ. Study on the transformation and development of leisure tourism villages in Southern Jiangsu based on the "rural complex" mode[D]. Suzhou: Suzhou University of Science and Technology, 2018. (in Chinese).

[3] LU GM. Pilot project of pastoral complex: Ideas, models and promoting thoughts[J]. Sub National Fiscal Research, 2017, 14(7): 10 – 15. (in Chinese).

[4] CHEN LP. Discussion on the development model of pastoral complex in China[J]. Rural Economy and Science-Technology, 2017, 28(21): 219 – 220. (in Chinese).

[5] WANG CX, JI WN, CHEN QL. Route selection of rural complex construction in Huai'an City under the background of rural revitalization strategy: A case study of Guishan Village, a traditional village in Hongze District[J]. Housing Industry, 2018, 15(8): 12 – 16. (in Chinese).

[6] GE YQ, WANG RC. Research on rural space reconstruction under the guidance of rural complex: A case of Shifang Village of Yangshan Town in Wuxi City[J]. Resource Development & Market, 2019, 35(3): 430 – 433, 444. (in Chinese).

[7] PENG JW. Study on land use model selection of pastoral complex[D]. Zhengzhou: Zhengzhou University, 2019. (in Chinese).

[8] People's Government of Luquan Yi and Miao Autonomous County. Sidelights on Maoshan Plateau characteristic agriculture[EB/OL]. http://lq.km.gov.cn/c/2018-12-04/3200667.shtml, 2018-12-04. (in Chinese).

[9] HU XD, WANG C, WANG X, *et al*. State agriculture comprehensive development rural complex pilot project analysis[J]. Problems of Agricultural Economy, 2018, 39(2): 86 – 93. (in Chinese).

[10] CHEN DH, BAI BX, XU TT. Innovation and realization path of development model of Zhengzhou pastoral complex[J]. Bulletin of Agricultural Science and Technology, 2018, 47(6): 27 – 29. (in Chinese).

[11] JIANG YE. Basic conception of the construction of rural fishery and pastoral complex in Zhoushan City[J]. Decision-Making & Consultancy Newsletter, 2018, 29(3): 36 – 40. (in Chinese).

[12] LIU JW. Green development and construction of pastoral complex: Model, experience and path[J]. World Agriculture, 2018, 40(2): 35 – 41. (in Chinese).